



April 20, 2021

Mr. Brian Sadowski  
New York State Department of Environmental Conservation  
270 Michigan Ave.  
Buffalo, NY 14203

**Re: 2020 Periodic Review Report  
Pfohl Brothers Landfill, Town of Cheektowaga, New York  
Site 915043**

Dear Mr. Sadowski:

Enclosed is the 2020 Periodic Review Report for the Pfohl Brothers Landfill in Cheektowaga, New York. URS has prepared this report on the behalf of the Town of Cheektowaga in accordance with Department correspondence to Jon Sundquist on April 15, 2014. Specifically, the Semi-Annual Report for the July-December period is only submitted as an attachment to this report rather than separately. Additionally, the Data Applicability Report for each semi-annual period is included.

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

Sincerely,

**URS CORPORATION**

A handwritten signature in black ink, reading "Robert J. Murphy".

Robert J. Murphy, P.G.  
Project Manager

Enclosures

cc: Patrick Bowen, P.E. – Town of Cheektowaga (w/attachments)  
File 11172700 (C-1)

**PERIODIC REVIEW REPORT 2020  
PFOHL BROTHERS LANDFILL  
CHEEKTOWAGA, NY**

**Submitted to:**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
270 MICHIGAN AVENUE  
BUFFALO, NEW YORK 14203**

**Prepared by:**

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**Prepared for:**

**TOWN OF CHEEKTOWAGA  
ENGINEERING DEPARTMENT  
275 ALEXANDER AVE  
CHEEKTOWAGA, NEW YORK 14211**

**APRIL 2021**

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Figure 2-1      Site Plan

## ATTACHMENTS

Attachment A    January 2020 – June 2020 Semi Annual Report and Data Applicability Report  
Attachment B    July 2020 – December 2020 Semi Annual Report and Data Applicability Report  
Attachment C    IC/EC Certification

## **1.0 INTRODUCTION**

This Periodic Review Report (PRR) is being submitted for the Pfohl Brothers Landfill Site (Site) to document the implementation of, and compliance with, the site-specific site management requirements stated in the Operation and Maintenance (O&M) Plan, which was issued as draft in 2002 and approved as final in 2006. The PRR was prepared using the guidance presented in of Section 6.3(b) of New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10 *Technical Guidance for Site Investigation and Remediation*.

### **1.1 Background**

The Pfohl Brothers Landfill Site (NYSDEC Site No. 915043) is a 130 acre landfill located on the north and south sides of Aero Drive in the Town of Cheektowaga, New York State, Erie County. The site is located in a commercial area just west of Transit Road. The landfill was operated between 1940 and 1969 receiving household and industrial wastes. The industrial waste included paints, waste solvents, thinners, pine tar pitch, cellulose, rubber, scrap metal and phenolic tars. A Remedial Investigation and Feasibility Study was completed in 1991. The data showed that on-site soils, groundwater, seeps, and sediments were contaminated with volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. The data did not show any significant off-site impact. A Record of Decision (ROD) was issued in 1992 requiring the landfill to be consolidated and closed. A second ROD was issued in 1994 which stipulated the removal of the northern portion of the site (located immediately south of Interstate 90) from the site description. The ROD also stated that there will be no action in regard to off-site groundwater.

The final remedial design for the site was completed in 2000. The remedial construction consisted of waste consolidation; capping of landfills on either side of Aero Drive; providing leachate collection around these areas; restoring wetlands; and fencing the landfill. Work started in 2001 and was completed in 2002. The consolidated landfill was reduced to 94 acres. Deed restrictions have been filed by the Potentially Responsible Parties (PRPs). The Operation and Maintenance (O&M) Plan was approved in March 2006 and is being implemented by the Town of Cheektowaga.



## **1.2 Effectiveness of Remedial Program**

During 2020, the capping and remedial action remedy continued to successfully prevent exposure of buried waste to health or environmental receptors. Effectiveness has been demonstrated through maintenance of the landfill cap, effective hydraulic control of groundwater beneath the cap, and regular semi-annual groundwater sampling.

## **1.3 Compliance**

The management of the site is in compliance with the O&M Plan. Institutional controls in the form of deed restrictions remain in place.

## **1.4 Recommendations**

No changes to the operation, maintenance and monitoring of the site are recommended.

## **2.0 SITE OVERVIEW**

### **2.1 Site Description**

The boundaries of the site are shown on Figure 2-1. The site is located immediately southwest of the Interstate 90 Ramp at Transit Road in the Town of Cheektowaga. The site is bisected by the east/west Aero Drive. Each of the two portions of the landfill are covered with a cap comprised of a gas venting layer, a low permeability synthetic membrane, and a barrier protection fill layer. Surrounding the entire site is a groundwater/leachate collection system consisting of a collection trench that drains into six wet wells. Leachate and groundwater collected in the wet wells is pumped via submersible pumps to a 15-inch sanitary sewer line on the south side of Aero Drive. This sanitary sewer, installed as part of the remedy, connects to the existing 15-inch sanitary sewer on Rein Road south of Aero Drive. The collected groundwater/leachate discharges to the sanitary sewer under a permit from the Buffalo Sewer Authority.

### **2.2 Chronology**

The principal elements of the remedy were consolidation of waste materials, construction of a landfill cap and construction of a perimeter leachate collection system. Construction of the remedy was completed in 2002.

O&M started in 2002 upon completion of construction. These efforts are performed in accordance with the O&M Plan issued as draft in 2002 and approved as final in 2006. Based on the results of the first three years of surface water, sediment and groundwater monitoring, the surface water/sediment sampling was discontinued in 2008, and the list of parameters evaluated during groundwater sampling was reduced in 2006 (limiting the list of VOC, SVOC, and metal parameters) and 2007 (discontinuing dioxin and radionuclide analyses).

### **3.0 REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS**

The principal elements of the O&M are:

- ▶ Groundwater monitoring
- ▶ Effluent monitoring
- ▶ Hydraulic monitoring
- ▶ Wetlands monitoring
- ▶ General physical and mechanical maintenance.

The Town of Cheektowaga submits O&M reports to NYSDEC twice per year reporting on the performance, effectiveness, and protectiveness of each of these elements. The two reports covering the calendar year of 2020 are attached to this PRR. A summary of the findings of performance, effectiveness, and protectiveness for 2020 is presented in the sections below.

#### **3.1 Groundwater Monitoring**

As the O&M contractor for the Town of Cheektowaga, URS Corporation (URS) has performed 34 rounds of semi-annual groundwater sampling. The most recent sampling was conducted in May and November 2020. Results of this sampling continue to show no impacts to groundwater from the landfill. In brief, no VOCs or SVOCs were detected above Class GA water quality standards, with one exception for SVOCs during each event. The SVOC 1,4-dichlorobenzene was detected in well GW-03D at an estimated concentration of 3.1 micrograms per liter ( $\mu\text{g/L}$ ), slightly exceeding its standard of 3.0  $\mu\text{g/L}$  in May 2020. The SVOC phenol was detected in well GW-29S at an estimated concentration of 3.4 micrograms per liter ( $\mu\text{g/L}$ ), slightly exceeding its standard of 1.0  $\mu\text{g/L}$  in November 2020.

The metals iron, magnesium, manganese, and sodium exceeded Class GA standards in most site wells. Other metals detected above Class GA standards in 2020 were chromium, lead, and nickel in well GW-07D during both sampling events. During the May 2020 event, chromium

was also present at concentrations slightly exceeding its Class GA standard in wells GW-01D and GW-08D and arsenic was detected a concentration slightly exceeding its water quality standard in well GW-29S.

No significant changes in metals concentrations were observed when compared to previous analytical results. Results were within the historical range of concentrations observed for these metals. The attached semi-annual reports present the 2020 data in tables, graphs, and charts.

### **3.2 Surface Water/Sediment Sampling**

Surface water and sediment sampling was discontinued in 2008 after three years of sampling showed that no site-related contaminants were present in these media. This sampling was eliminated in accordance with the O&M Plan as approved by NYSDEC.

### **3.3 Effluent Monitoring**

Effluent monitoring was performed on a quarterly basis during 2020. The permit requires quarterly sampling and analysis of metals (barium, cadmium, chromium, copper, lead, nickel, and zinc) and total suspended solids. The parameter values in the effluent were below the discharge criteria for all quarterly sampling events conducted in 2020. The results of the sampling are reported in the attached semi-annual reports.

### **3.4 Hydraulic Monitoring**

Hydraulic monitoring was performed on a quarterly basis during 2020. Hydraulic monitoring is performed through measuring the water elevation in each of the six wet wells and in nine manholes associated with the perimeter collection system and comparing each of these elevations with the groundwater elevations in paired monitoring wells adjacent to each wet well or manhole. Hydraulic control is demonstrated by groundwater levels outside the collection system that are higher than the levels measured in the corresponding wet well or manhole for each measurement date (i.e., a downward vertical hydraulic gradient). The vertical hydraulic gradient was downwards relative to the groundwater collection system for every quarterly measurement taken during 2020, with one exception. During the September 3, 2020 measurement event, the water level in monitoring well GW-34S was lower (1.88') than the nearby wet well WW-06, however this is attributable an extended period of dry weather resulting in very low water table outside of the landfill. Therefore, these data demonstrate that the collection system is largely operating as designed.

### **3.5 Wetlands Monitoring**

The monitoring of wetlands mitigation measures has not been performed as originally planned in the O&M Plan. Initially, the wetlands species planted for mitigation fared poorly due to trampling from geese and deer. Fences were erected in 2004 to keep this wildlife out. Some wetland vegetation was also lost during landfill cap mowing in 2005 when the mowing contractor mowed a greater area than had been specified. The wetland vegetation species were replanted in 2005. However, in the time since construction ended in 2002, the *Phragmites sp.* vegetation that is quite abundant in this area has spread and established itself throughout the areas formerly disturbed during construction. *Phragmites sp.* does not provide robust food source for wildlife but does act to stabilize soil in the interface zone between the landfill and the existing pond and wetlands. As such, monitoring of the planted wetland mitigation species is no longer performed.

### **3.6 General Physical and Mechanical Maintenance**

The Town of Cheektowaga performs general physical and mechanical maintenance of the Site, as needed. Example maintenance items are routine maintenance and replacement of pumps and instrumentation used for groundwater/leachate collection, annual cap mowing, snow plowing, etc. A summary of the general maintenance activities performed during 2020 is provided in the attached semi-annual reports.

## **4.0 IC/EC PLAN COMPLIANCE**

There is no formal Institutional Control/Engineering Control (IC/EC) plan for this site. However, there are IC/ECs in place, and they are functioning as intended. These are discussed below.

### **4.1 Institutional Controls**

ICs consist of restrictions on land use for the various parcels that comprise this site. The parcels and their restrictions are listed on the attached Site Management PRR Notice Institutional and Engineering Controls Certification Form (Attachment C). The restrictions address building use, groundwater use, and land use. Compliance with these ICs is evaluated by observation to see if any infringing activities are occurring on these parcels. These ICs remain in effect, as certified in Attachment C.

## **4.2     Engineering Controls**

ECs consist of the landfill cap, fencing and access control, collection of the groundwater/leachate, and vapor mitigation. Compliance with these ECs is evaluated at a minimum through inspection of these elements during each semi-annual monitoring event. In most cases, inspection is more frequent. For example, collection of the groundwater/leachate is monitored continuously by Town of Cheektowaga personnel and effluent compliance reports are submitted quarterly to the BSA. These ECs remain in effect, as certified in Attachment C.

## **5.0     OPERATION & MAINTENANCE AND MONITORING PLAN COMPLIANCE**

The components of the O&M Plan are discussed above in Section 3.0. Summaries of O&M activities performed during 2020 are provided in the attached semi-annual reports. The O&M activities show that the landfill and its groundwater/leachate collection system are operating as intended and receive repairs and maintenance as needed in a timely fashion. Analysis of the groundwater in monitoring wells and the effluent generated by the groundwater/leachate collection system show that no landfill contamination is migrating to these media, and therefore the wastes remain effectively contained.

## **6.0     CONCLUSIONS AND RECOMMENDATIONS**

The remedy at the Pfohl Brothers Landfill Site is operating as designed and remains protective of human health and the environment. No changes to the O&M for this site are recommended.

## FIGURES



J:\Projects\11172700.00000\GIS\ARCMAP\Site Plan.mxd 4/9/2020



PFOHL BROTHERS LANDFILL  
SITE PLAN



FIGURE 2-1



## **ATTACHMENTS**



**ATTACHMENT A**

**January 2020 – June 2020**

**Semi Annual Report**

**And**

**Data Applicability Report**

**SEMI ANNUAL REPORT  
OPERATION AND MAINTENANCE  
JANUARY 2020 TO JUNE 2020  
PFOHL BROTHERS LANDFILL  
CHEEKTOWAGA, NY**

**Submitted to:**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
270 MICHIGAN AVENUE  
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2021**

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Table 3-2	Groundwater Sample Analytical Results

## FIGURES

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## APPENDICES

Appendix A	Example Daily Inspection Sheets
Appendix B	Monthly Flow Summaries (January 2020 – June 2020)
Appendix C	Hydraulic Monitoring Tables
Appendix D	Groundwater Purge and Sample Collection Logs
Appendix E	Groundwater Trend Analysis
Appendix F	BSA Permit 19-04-CH016
Appendix G	Discharge Report Summary Tables
Appendix H	Monitoring Well Inspection Logs

## **1.0 INTRODUCTION**

### **1.1 Background**

The Pfohl Brothers Landfill is located on Aero Drive in the Town of Cheektowaga, New York (Figure 1-1). The site is listed as Site No. 915043 on the New York State Department of Environmental Conservation's (NYSDEC's) Registry of Inactive Hazardous Waste Disposal Sites. A Consent Order between NYSDEC and potentially responsible parties (PRPs) for closure of the site was signed in 2001 and remedial construction commenced in 2001. The remedy included consolidation of waste material, capping of the waste disposal and consolidation areas, and encircling the landfill areas with a groundwater collection system to prevent off-site migration. The remedial action was completed in 2002.

Responsibility for implementing the remedy was divided between a "steering committee" of industrial PRPs and the Town of Cheektowaga. The steering committee responsibilities lay generally with the capital construction activities of the remedy including waste consolidation, cap and drainage system installation, etc. The Town of Cheektowaga, which was named as a PRP for disposal of municipal waste at the Pfohl Brothers Landfill when it was operating, is performing the operation and maintenance (O&M) activities at the landfill, pursuant to a settlement agreement between the Town and the steering committee.

### **1.2 Operation and Maintenance Activities**

While construction of the remedy was substantially complete by late 2002, the final O&M Plan which was issued as draft in 2002, was not approved by the NYSDEC until March 10, 2006. However, the Town of Cheektowaga and its consultant (URS Corporation – New York (URS)) assumed most of the operational responsibilities since 2002. This includes a variety of general maintenance activities as outlined in Section 2 and sampling and other monitoring activities outlined in Section 3.

Beginning in 2004, the Town and URS assumed all of the O&M activities described in the O&M Plan. This is the semi-annual report as called for by Section 3.6 of the O&M Plan.

## **2.0 GENERAL MAINTENANCE ACTIVITIES**

Since completion of construction activities in 2002, personnel from the Town of Cheektowaga Engineering Department have performed general activities to ensure the physical operation of the landfill as intended by the design. The various O&M activities performed by the Town from January through June 2020 included the following actions:

- Recorded the amount of groundwater discharged through the collection system daily. The flow rate displayed by each wet well pump at the time of daily inspection and the total cumulative volume of flow was recorded for each wet well on daily inspection sheets. A few examples of the daily inspection sheet for this reporting period are attached in Appendix A.
- Summarized total cumulative effluent flow rates and volumes on a monthly basis. The monthly totals for the period, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- Shut down the wet well pumps during wet weather flow conditions as necessary at various times throughout the year. Such actions were only taken upon request of the Buffalo Sewer Authority (BSA) during heavy storm events in order to reduce the hydraulic load on the BSA treatment system during such events. Shutdown events are recorded and included with the monthly flow data in Appendix B as previously requested by NYSDEC.
- Plowed snow to access the Control Building when necessary.
- Cleaned/replaced check valves as necessary at all six (6) wet wells (e.g., replaced a plugged check valve in wet well #5) and replaced surge suppressors and fuses as needed for pump station instrumentation equipment.
- Cleaned upper level equipment and applied corrosion inhibitor fluid.
- Inspected wet wells for excessive corrosion to critical equipment.
- Surge suppressor reset after numerous power outages.
- Level transmitter faults, fuses, and surge protection were replaced as needed.
- Removed and disposed of roadside litter/debris/illegal dumping along the roadside on the north and south sides of Aero Drive.

- Performed bimonthly site/security check, data retrieval, and analysis.

### **3.0 MONITORING ACTIVITIES**

The Town of Cheektowaga retained URS to perform monitoring activities as outlined in Section 3.1 of the O&M Plan. During the period of January 2004 through the present, groundwater hydraulic monitoring (Section 3.1.1.2 of the O&M Plan) and effluent monitoring (Section 3.1.4 of the O&M Plan) was performed on a quarterly basis. Semi-annual groundwater quality monitoring (Section 3.1.1.3 of the O&M Plan) was performed during this period. A summary of the monitoring activities is presented in the following subsections. Hydraulic and groundwater sampling locations are shown on Figure 3-1.

#### **3.1 Groundwater Hydraulic Monitoring**

Groundwater and surface water elevations were monitored on a quarterly basis at all locations listed in Table 3.1 of the O&M Plan. The hydraulic monitoring data tables showing groundwater elevations are presented in Appendix C. In Appendix C, Table C-1 lists the measured elevations and Table C-2 provides a comparison of the measured levels in the wells and corresponding manholes/wet wells.

The data presented in Appendix C indicate that groundwater levels outside the collection system were higher than the levels measured in the corresponding wet well or manhole for each measurement date. Therefore, these data demonstrate that the collection system is operating as designed.

#### **3.2 Groundwater Quality Monitoring**

This semi-annual round of groundwater sampling was conducted between May 12 and 14, 2020. Overburden and bedrock wells listed in Table 3.2 of the O&M Plan were purged and sampled using dedicated/disposable equipment. Figure 3-1 shows the well locations. Low flow sampling techniques were used with the exceptions noted below.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on April 9, 2020. The PDBs were removed from the wells during the May 2020 sampling event, and the water poured into the appropriate sample containers for analysis of volatile organic compounds (VOCs). Following removal of the PDBs, the three wells were purged dry. Field water quality parameters (i.e., pH, specific conductivity, temperature,

dissolved oxygen, oxidation reduction potential, and turbidity) were measured during the purging process. The other required analytical parameters (i.e., semivolatile organic compounds [SVOCs] and metals) were collected after water levels recovered (the next day for monitoring wells GW-07D and GW-07S and later the same day for monitoring well GW-04S).

Purge logs and sampling summary sheets with water quality measurements are provided in Appendix D. Following collection, the samples were packed with ice in coolers and transported under chain-of-custody control to Eurofins TestAmerica Laboratories of Amherst, New York.

The groundwater samples were analyzed for the VOCs, SVOCs, and metals listed in Table 3.2 of the O&M Plan as revised in accordance with Table 3-6 in the Semi-Annual Report dated September 2007 (January through June 2007) and as approved by the December 6, 2006 and November 29, 2007 correspondence from the NYSDEC authorizing a reduction in the parameters list (included as Table 3-1 in this report).

#### Laboratory Report

The groundwater analytical data package was prepared by Eurofins TestAmerica in accordance with NYSDEC Category A deliverable requirements. A limited data review was performed by a URS chemist in accordance with the following United States Environmental Protection Agency (USEPA) guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Rev. 4, October 2014;*
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D, SOP HW-22, Rev. 5, December 2010;*
- *ICP-AES Data Validation, SOP HW-3a, Rev. 1, September 2016; and*
- *Mercury and Cyanide Data Validation, SOP HW-3c, Rev. 1, September 2016.*

Qualifications applied to the data include “J” (estimated concentration) and “U” (not detected).

URS prepared a Data Applicability Report (DAR) following the guidelines provided in NYSDEC Division of Environmental Remediation (DER-10) *Technical Guidance for Site*



*Investigation and Remediation, Appendix 2B*, dated May 2010. The DAR dated June 2020 is submitted separately from this report.

## Results

Table 3-2 of this report presents the groundwater sample results compared with NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Class GA water quality standards.

No VOCs were detected at concentrations above the Class GA water quality standards at any location. Only one SVOC, 1,4-dichlorobenzene, was detected at an estimated concentration above its Class GA water quality standard. It was present in well GW-03D at an estimated concentration of 3.1 micrograms per liter ( $\mu\text{g/L}$ ), slightly exceeding its water quality standard of 3.0  $\mu\text{g/L}$ .

The metals iron, magnesium, manganese, and sodium exceeded Class GA standards in most site wells. The sample from well GW-07D also had concentrations of chromium, lead, and nickel exceeding the respective Class GA standards. Chromium was also present at concentrations slightly exceeding its Class GA standard in wells GW-01D and GW-08D. Arsenic was detected in well GW-29S at a concentration of 0.029 milligrams per liter ( $\text{mg/L}$ ), slightly exceeding its water quality standard of 0.025  $\text{mg/L}$ .

## Comparison to Historical Results

### *Organics*

Results are consistent with historical results; there have been very few and infrequent detections of VOCs/SVOCs.

### *Metals*

No significant changes in metals concentrations were observed when compared to previous analytical results. The concentrations of iron, magnesium, manganese, and sodium in most site wells were similar to the concentrations found during previous sampling events.

Sodium concentrations were generally elevated in bedrock wells (GW-01D, GW-03D, GW-08D, and GW-26D) and shallow wells adjacent to roads (GW-01S). The sodium

concentrations were also elevated in GW-03S and GW-08SR. The higher sodium concentrations in the bedrock wells may be attributed to the bedrock composition and the elevated concentrations in the shallow wells may be the result of seasonal road de-icing activities.

### Trend Analysis

#### *Organics*

There is an insufficient number and frequency of detections to define trends.

#### *Metals*

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented graphically in Figures E-1 through E-19 of Appendix E. A review of the trend analysis indicated that no significant changes or trends in concentrations of any of the parameters exceeding groundwater standards have occurred over the semi-annual sampling events. The Mann-Kendall Nonparametric Test for Trend was used to determine the trends summarized below (“--” indicates no discernable trend):

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-1	GW-01D	--	--	--	Upward
E-2	GW-01S	Downward	--	Upward	Downward
E-3	GW-03D	Downward	Downward	Downward	Downward
E-4	GW-03S	Downward	Upward	Downward	Upward
E-5	GW-04D	Downward	Upward	Downward	Upward
E-6	GW-04S	--	Upward	Downward	--
E-7	GW-07D	--	Upward	--	--
E-8	GW-07S	Downward	Upward	Downward	Upward
E-9	GW-08D	Downward	Downward	Downward	--
E-10	GW-08SR	--	Upward	--	--
E-11	GW-26D	Downward	Downward	Downward	Upward
E-12	GW-28S	Downward	Downward	Downward	Downward
E-13	GW-29S	--	--	--	Downward
E-14	GW-30S	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-15	GW-31S	Upward	Downward	Downward	Downward
E-16	GW-32S	Downward	Downward	Upward	Downward (with seasonal variation)
E-17	GW-33S	Downward	Downward	Downward	Downward
E-18	GW-34S	Downward	Downward	Seasonal Variation	Downward
E-19	GW-35S	Downward	Downward	Downward	Downward

### 3.3 Groundwater Discharge Monitoring

Two quarterly sampling events (March 2020 and June 2020) of the groundwater collection system discharge were completed since the previous semi-annual report. The sampling was performed in accordance with the requirements of Discharge Permit No. 19-04-CH016 between the BSA and the Town of Cheektowaga. The permit requires quarterly sampling and analysis of metals (barium, cadmium, chromium, copper, lead, nickel, and zinc) and total suspended solids. A copy of the permit, which shows the monitoring parameters and associated discharge limits, is included as Appendix F.

During the sampling events in March 2020 and June 2020, each regulated parameter was below the limits set by the permits. Copies of the data summary tables that were included with the monitoring reports submitted to the BSA are included as Appendix G.

### 3.4 Monitoring Well Inspections

During the May 2020 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing minor damage to the risers on monitoring wells GW-07D, GW-01S, and GW-01D. The wells are still functional. The monitoring well inspection logs may be found in Appendix H.

#### **4.0 SUMMARY AND RECOMMENDATIONS**

**General Maintenance:** The Town of Cheektowaga will continue to maintain mechanical equipment at the landfill on an as-needed basis and operate the groundwater collection and discharge system as designed. The Town will also continue regular inspections, mow the cap once per year, and plow snow to access the Control Building, as necessary.

**Groundwater Hydraulic Monitoring:** Hydraulic monitoring has been performed on a quarterly basis in conjunction with the discharge monitoring. Water level measurement data demonstrates that the collection trench water levels are maintained at lower elevations than monitoring points outside the landfill system, as designed. Continued quarterly monitoring is recommended.

**Groundwater Quality Monitoring:** Groundwater sample results indicate that only low levels of SVOCs and metals are present. Similar concentrations of most parameters were found during previous sampling events. The next round of groundwater sampling will be conducted in November 2020. Low flow sampling techniques will be used. Passive diffusion bags will be used again for VOC analyses at the three wells (GW-04S, GW-07S, and GW-07D) that go dry when using low flow sampling.

**Groundwater Discharge Monitoring:** Groundwater discharges remain within permit limits. Continued quarterly monitoring is recommended.

## **TABLES**

**TABLE 3-1**

**APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN**

**GROUNDWATER SAMPLING SUMMARY  
OPERATION AND MAINTENANCE PLAN  
PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK**

**LOCATIONS**

GW-1D/1S  
GW- 3D/3S  
GW- 4D/4S  
GW- 7D/7S  
GW- 8D/8S(R)  
GW- 26D/35S  
GW- 28S  
GW- 29S  
GW- 30S  
GW- 31S  
GW- 32S  
GW- 33S  
GW- 34S

**FREQUENCY**

semi-annually for overburden and bedrock groundwater

**PARAMETERS**

<i>Field</i>	pH conductivity temperature turbidity
<i>VOCs</i>	Acetone Benzene 1,2-Dichloroethene (total) 1,1,2-Trichloroethane Vinyl chloride
<i>SVOCs</i>	Phenol 1,3-Dichlorobenzene 1,4-Dichlorobenzene bis(2-Ethylhexyl)phthalate

**TABLE 3-1 (continued)**

**APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN**

**GROUNDWATER SAMPLING SUMMARY  
OPERATION AND MAINTENANCE PLAN  
PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK**

**PARAMETERS (cont'd)**

<i>Metals</i>	Antimony
	Arsenic
	Barium
	Cadmium
	Chromium
	Copper
	Iron
	Lead
	Magnesium
	Manganese
	Mercury
	Nickel
	Silver
	Sodium
	Zinc

**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**MAY 2020**

Location ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/12/20	05/12/20	05/13/20	05/13/20	05/12/20
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5					
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3			2.2 J		
1,4-Dichlorobenzene	UG/L	3			3.1 J		
bis(2-Ethylhexyl)phthalate	UG/L	5					
<b>Metals</b>							
Arsenic	MG/L	0.025			0.0068 J		
Barium	MG/L	1	0.082 J	0.15 J	0.097 J	0.097 J	0.097 J
Cadmium	MG/L	0.005			0.00071 J	0.0021	0.00076 J
Chromium	MG/L	0.05	0.084		0.022	0.016	0.0019 J
Copper	MG/L	0.2	0.0021 J		0.0039 J	0.0036 J	
Iron	MG/L	0.3	0.88	6.4	2.4	0.95	0.073
Lead	MG/L	0.025					
Magnesium	MG/L	35	37.4	16.4	16.9	90.3	78.4
Manganese	MG/L	0.3	0.055	0.81	0.31	0.27	0.020
Nickel	MG/L	0.1	0.10		0.0095 J	0.039	
Sodium	MG/L	20	116	180	237	106	94.3
Zinc	MG/L	2	0.028		0.035	0.15	0.097

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed

Only Detected Results Reported.



**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**MAY 2020**

Location ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/12/20	05/12/20	05/13/20	05/12/20	05/13/20
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5			NA		NA
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
bis(2-Ethylhexyl)phthalate	UG/L	5		NA	3.5 J	NA	
<b>Metals</b>							
Arsenic	MG/L	0.025	0.0060 J	NA		NA	
Barium	MG/L	1	0.12 J	NA	0.14 J	NA	0.47 J
Cadmium	MG/L	0.005	0.0015	NA	0.0048	NA	0.0011
Chromium	MG/L	0.05	0.018	NA	1.2	NA	0.0037 J
Copper	MG/L	0.2	0.0069 J	NA	0.10	NA	
Iron	MG/L	0.3	2.7	NA	35.2	NA	0.16
Lead	MG/L	0.025	0.0032 J	NA	0.42	NA	
Magnesium	MG/L	35	29.1	NA	40.7	NA	47.8
Manganese	MG/L	0.3	0.16	NA	0.29	NA	0.027
Nickel	MG/L	0.1	0.012	NA	0.55	NA	0.014
Sodium	MG/L	20	32.1	NA	82.2	NA	60.8
Zinc	MG/L	2	0.018	NA	0.24	NA	0.0025 J

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



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J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed

Only Detected Results Reported.

**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**MAY 2020**

Location ID			GW-08D	GW-08SR	GW-08SR	GW-26D	GW-28S
Sample ID			GW-08D	FD-051320	GW-08SR	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/13/20	05/13/20	05/13/20	05/13/20	05/14/20
Parameter	Units	*		Field Duplicate (1-1)			
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5				0.89 J	
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
<b>Metals</b>							
Arsenic	MG/L	0.025			0.0077 J		
Barium	MG/L	1	0.075 J	0.062 J	0.065 J	0.12 J	0.080 J
Cadmium	MG/L	0.005		0.00062 J	0.00050 J		
Chromium	MG/L	0.05	0.062	0.0014 J	0.0016 J	0.0015 J	
Copper	MG/L	0.2	0.0021 J				
Iron	MG/L	0.3	0.68	5.5	5.9	2.1	0.38
Lead	MG/L	0.025					
Magnesium	MG/L	35	17.1	48.3	48.1	16.6	25.2
Manganese	MG/L	0.3	0.052	0.44	0.45	0.32	0.90
Nickel	MG/L	0.1	0.014				
Sodium	MG/L	20	231	63.8	69.1	329	9.9
Zinc	MG/L	2	0.0061 J			0.041	

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed

Only Detected Results Reported.

**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**MAY 2020**

Location ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/14/20	05/14/20	05/14/20	05/14/20	05/14/20
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5					
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
<b>Metals</b>							
Arsenic	MG/L	0.025	0.029				
Barium	MG/L	1	0.18 J	0.11 J	0.091 J	0.055 J	0.063 J
Cadmium	MG/L	0.005	0.00068 J				
Chromium	MG/L	0.05	0.0017 J				0.0014 J
Copper	MG/L	0.2					
Iron	MG/L	0.3	16.3	5.3	3.3		0.022 J
Lead	MG/L	0.025					
Magnesium	MG/L	35	58.5	30.3	30.6	29.2	27.0
Manganese	MG/L	0.3	0.64	0.57	0.65	0.51	0.029
Nickel	MG/L	0.1				0.0017 J	
Sodium	MG/L	20	7.2	21.9	3.3	3.0	2.6
Zinc	MG/L	2	0.29	0.21	0.0024 J	0.0032 J	0.0020 J

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

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NA - Not Analyzed

Only Detected Results Reported.

**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**MAY 2020**

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			05/13/20	05/13/20
Parameter	Units	*		
<b>Volatile Organic Compounds</b>				
1,2-Dichloroethene (total)	UG/L	5		
<b>Semivolatile Organic Compounds</b>				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
bis(2-Ethylhexyl)phthalate	UG/L	5		
<b>Metals</b>				
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.13 J	0.084 J
Cadmium	MG/L	0.005	0.00069 J	
Chromium	MG/L	0.05		
Copper	MG/L	0.2		
Iron	MG/L	0.3	0.27	0.072
Lead	MG/L	0.025		
Magnesium	MG/L	35	37.7	22.0
Manganese	MG/L	0.3	0.79	0.24
Nickel	MG/L	0.1	0.0030 J	0.0015 J
Sodium	MG/L	20	17.3	2.2
Zinc	MG/L	2		0.0020 J

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



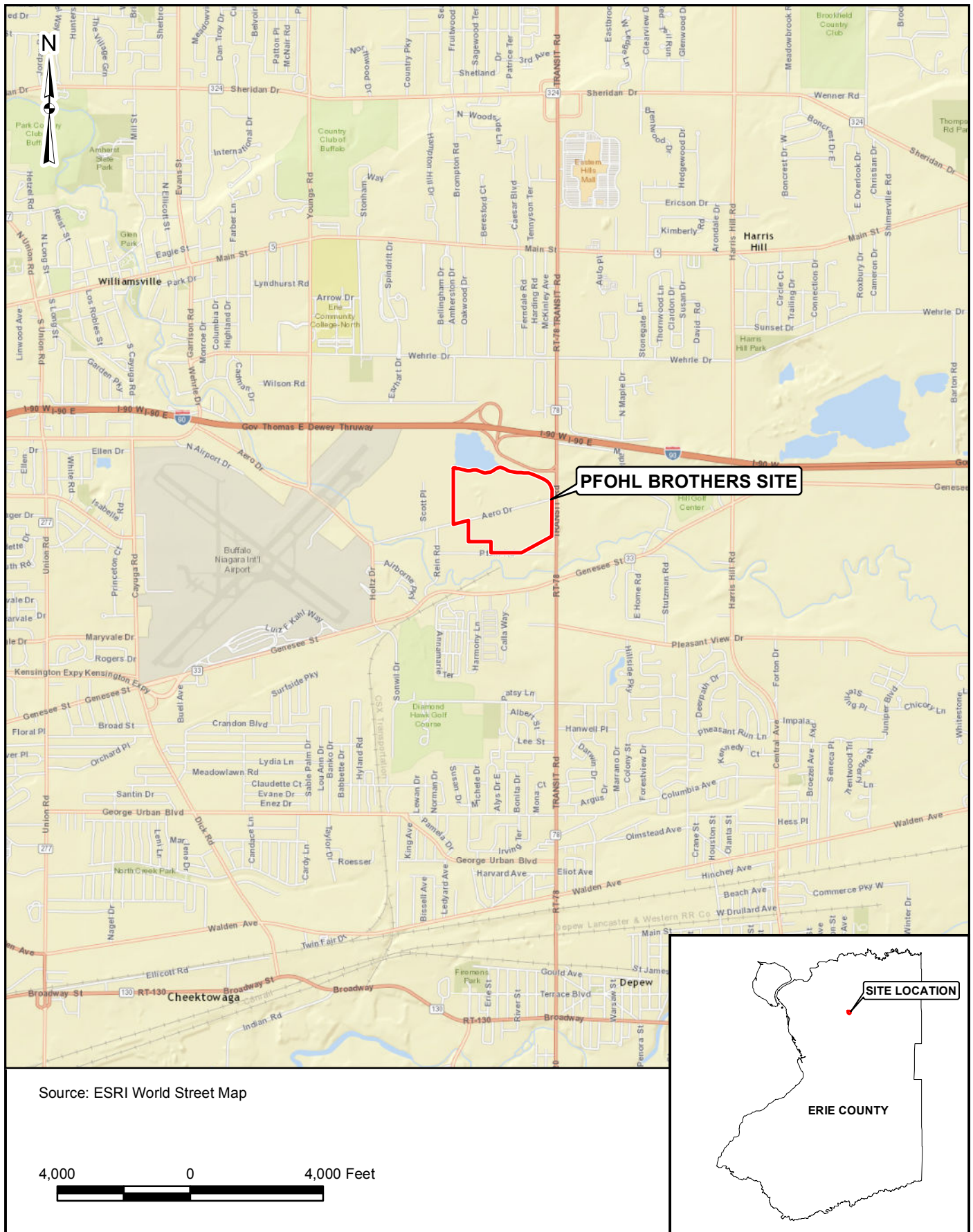
Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed

Only Detected Results Reported.

## **FIGURES**





J:\Projects\11172700.00000\GIS\ARCMAP\Site Plan.mxd 4/9/2020





**APPENDIX A**

**EXAMPLE DAILY INSPECTION SHEETS**



# Pfohl Brothers Landfill Site

Daily Logsheets

Town of Cheektowaga

Date 3/3/20  
Time 1252

Weather conditions lt rain  
Read by: JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0</u>	<u>0</u>	<u>136</u>	<u>2792</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>460</u>	<u>172</u>
WW-1	<u>4.5</u>	<u>0</u>	<u>440891</u>	<u>7750</u>
WW-6	<u>7.5</u>	<u>0</u>	<u>3572229</u>	<u>18511</u>
WW-4	<u>6.9</u>	<u>0</u>	<u>650146</u>	<u>8774</u>
WW-5	<u>6.8</u>	<u>25.6</u>	<u>3044690</u>	<u>3321</u>

Flow Totalizer at Meter chamber

7699730

Heat Trace

Outside temp T = 51  
Current A = 0

Set point SP = 40

Surge Suppressor events

15

Motor Control Center

Volts 480 volts  
Amps 5 amps

Which WW was running?

1 2 3 4 5 6

Filter

Checked ☒

Changed

Comments and/or Current Conditions

Data ☒

# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 4/2/20  
Time 1138

Weather conditions Clear  
Read by: TWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	136	2792
WW-2	99.0	0	462	172
WW-1	99.0	0	440891	7750
WW-6	71	0	4127693	18669
WW-4	6.9	0	650146	8774
WW-5	6.2	0	3528822	3651

Flow Totalizer at Meter chamber 8800399

Heat Trace  
Outside temp T = 48  
Current A = 0  
Set point SP = 40

Surge Suppressor events 98

Motor Control Center  
Volts 480 volts  
Amps 2 amps  
Which WW was running?  
1 2 3 4 5 6

Filter Checked Changed

Comments and/or Current Conditions

Notified GHD of Level Sensor Issues  
WW-1 + WW-2  
ASAP  
Data ✓

# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

6/3/20  
1317

Time

Weather conditions

Cloudy  
JWN

Read by:

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0</u>	<u>0</u>	<u>134</u>	<u>2792</u>
WW-2	<u>99.0</u>	<u>0</u>	<u>10030</u>	<u>184</u>
WW-1	<u>99.0</u>	<u>0</u>	<u>453713</u>	<u>7758</u>
WW-6	<u>7.1</u>	<u>0</u>	<u>5348793</u>	<u>18991</u>
WW-4	<u>6.8</u>	<u>35.0</u>	<u>732374</u>	<u>8820</u>
WW-5	<u>99.0</u>	<u>-12</u>	<u>4329753</u>	<u>4240</u>

Flow Totalizer at Meter chamber

10953568

Heat Trace

Outside temp T = 72  
Current A = 6

Set point SP = 40

Purge Suppressor events

146

Motor Control Center

Volts 480 volts

Amps 6 amps

Which WW was running?

1 2 3 4 5 6

Filter

Checked

Changed

Comments and/or Current Conditions

Level Invalid Faults won't clear  
Damage from storm (fuses)  
WW-1 WW-2 WW-5

**APPENDIX B**

**MONTHLY FLOW SUMMARIES**  
**JANUARY 2020 – JUNE 2020**

# Direct Discharge Flow Data

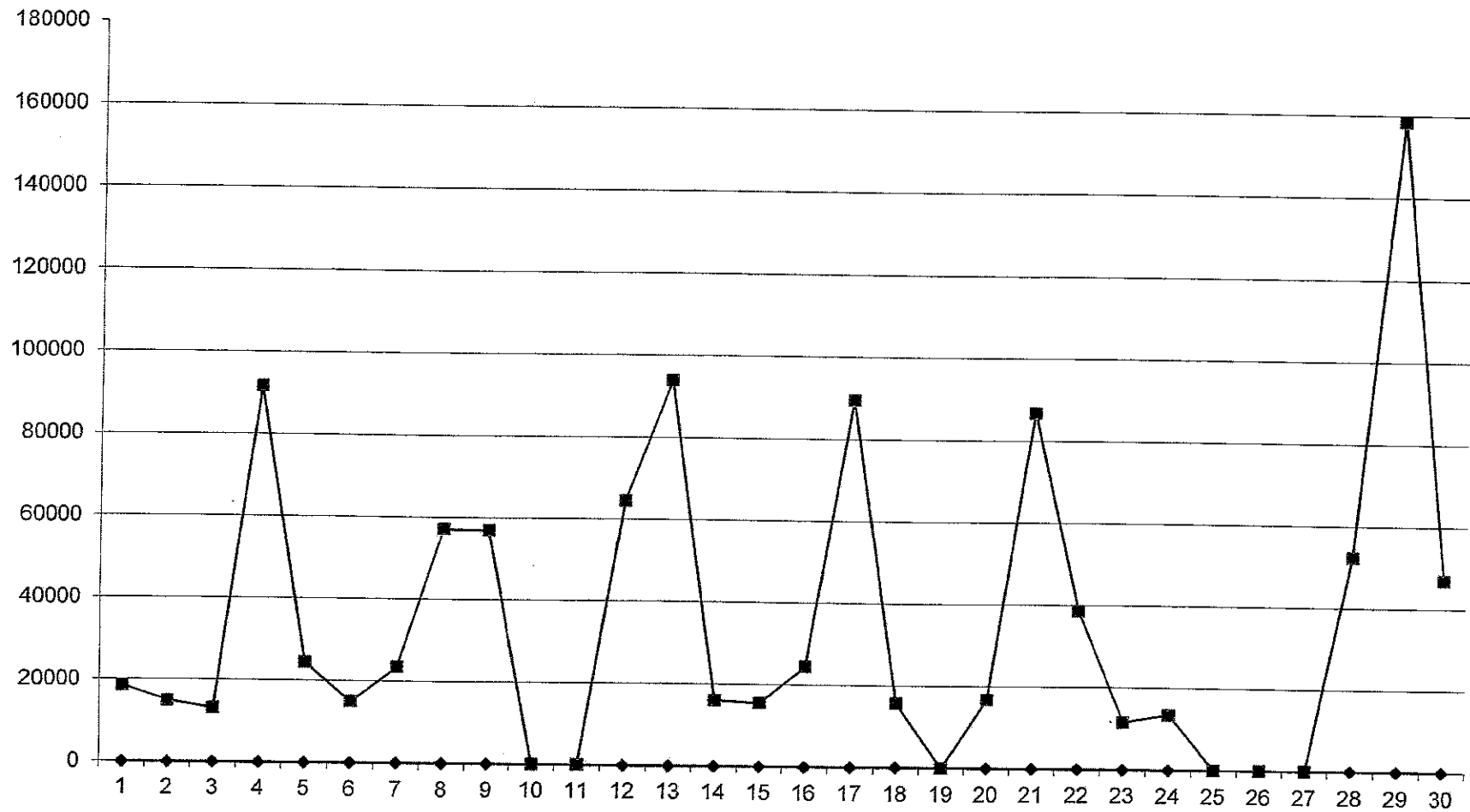
12/31/2019

5570815

11,990

Jan-20	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		5,589,351	18,536	
2		5,604,206	14,854	
3		5,617,299	13,093	
4		5,708,910	91,611	
5		5,733,294	24,384	
6		5,748,209	14,914	
7		5,771,603	23,394	
8		5,828,742	57,139	
9		5,885,644	56,902	
10		5,885,644	0	
11		5,885,644	0	04:09 inhibit
12		5,950,232	64,587	11:08 enable
13		6,044,135	93,903	
14		6,060,081	15,946	
15		6,075,496	15,415	
16		6,099,847	24,351	
17		6,189,288	89,441	
18		6,204,968	15,680	23:14 inhibit
19		6,204,968	0	
20		6,221,717	16,749	13:59 enable
21		6,308,441	86,723	
22		6,347,087	38,646	
23		6,358,612	11,524	
24		6,371,991	13,379	23:58 inhibit
25		6,371,991	0	
26		6,371,991	0	
27		6,371,991	0	
28		6,424,297	52,306	16:39 enable
29		6,582,735	158,437	
30		6,629,704	46,969	
31		6,629,704	0	
		1,058,889	1,058,883	

January  
2020

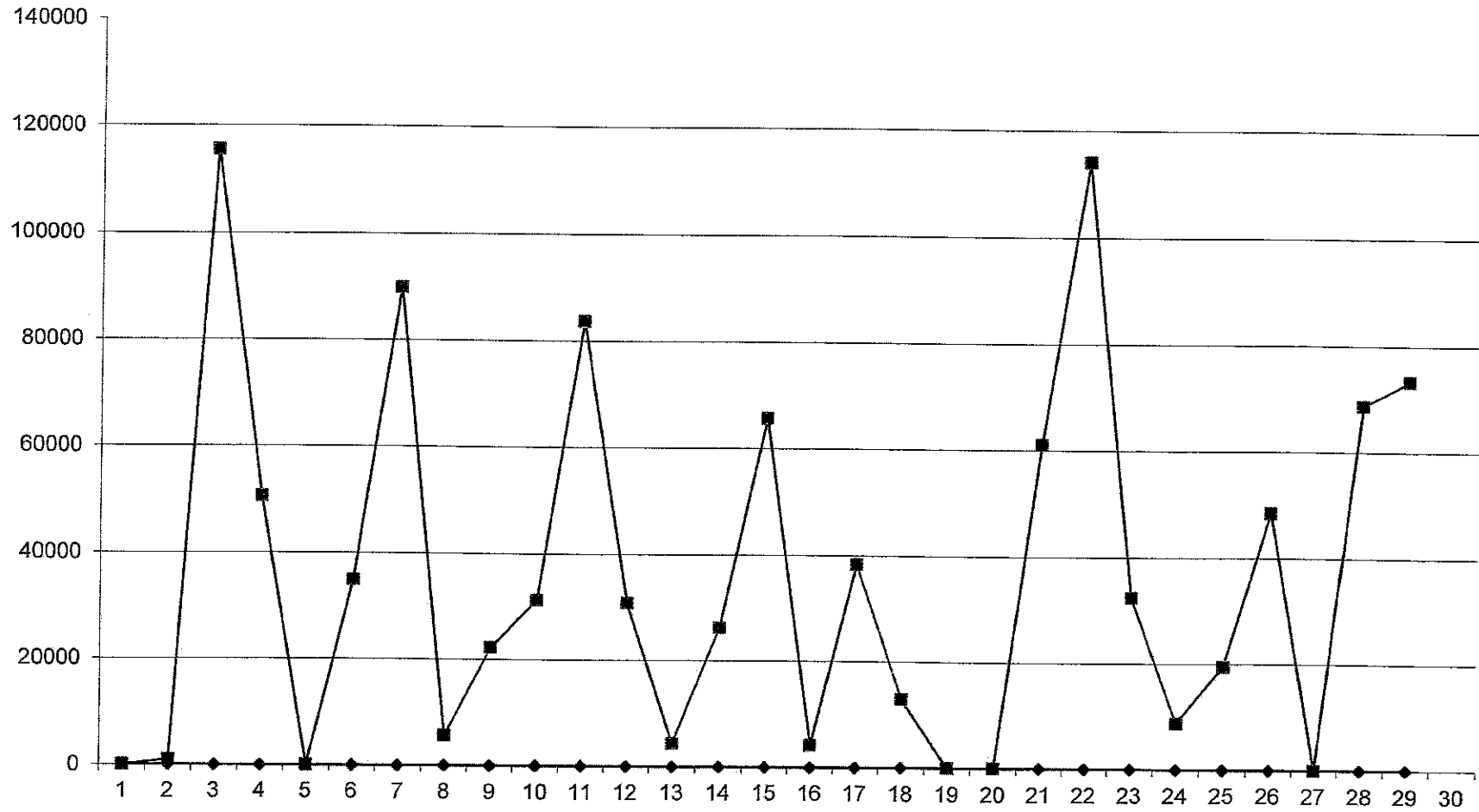


# Direct Discharge Flow Data

1/31/2020

Feb-20		6629704	0	
	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		6,629,704	0	
2		6,630,629	925	
3		6,746,232	115,602	
4		6,796,888	50,656	
5		6,796,888	0	
6		6,831,857	34,969	
7		6,921,712	89,855	
8		6,927,371	5,659	
9		6,949,546	22,175	
10		6,980,760	31,213	
11		7,064,388	83,628	
12		7,095,177	30,789	
13		7,099,496	4,319	
14		7,125,719	26,223	
15		7,191,439	65,719	
16		7,195,665	4,226	
17		7,233,984	38,319	
18		7,146,892	12,908	07:38 inhibit
19		7,246,892	0	
20		7,246,892	0	
21		7,307,944	61,052	12:52 enable
22		7,422,062	114,118	
23		7,454,506	32,444	
24		7,463,271	8,765	
25		7,482,765	19,493	
26		7,531,361	48,596	21:04 inhibit
27		7,531,361	0	
28		7,600,050	68,689	11:16 enable
29		7,673,370	73,320	
		1,043,666	1,043,662	

February  
2020





# Direct Discharge Flow Data

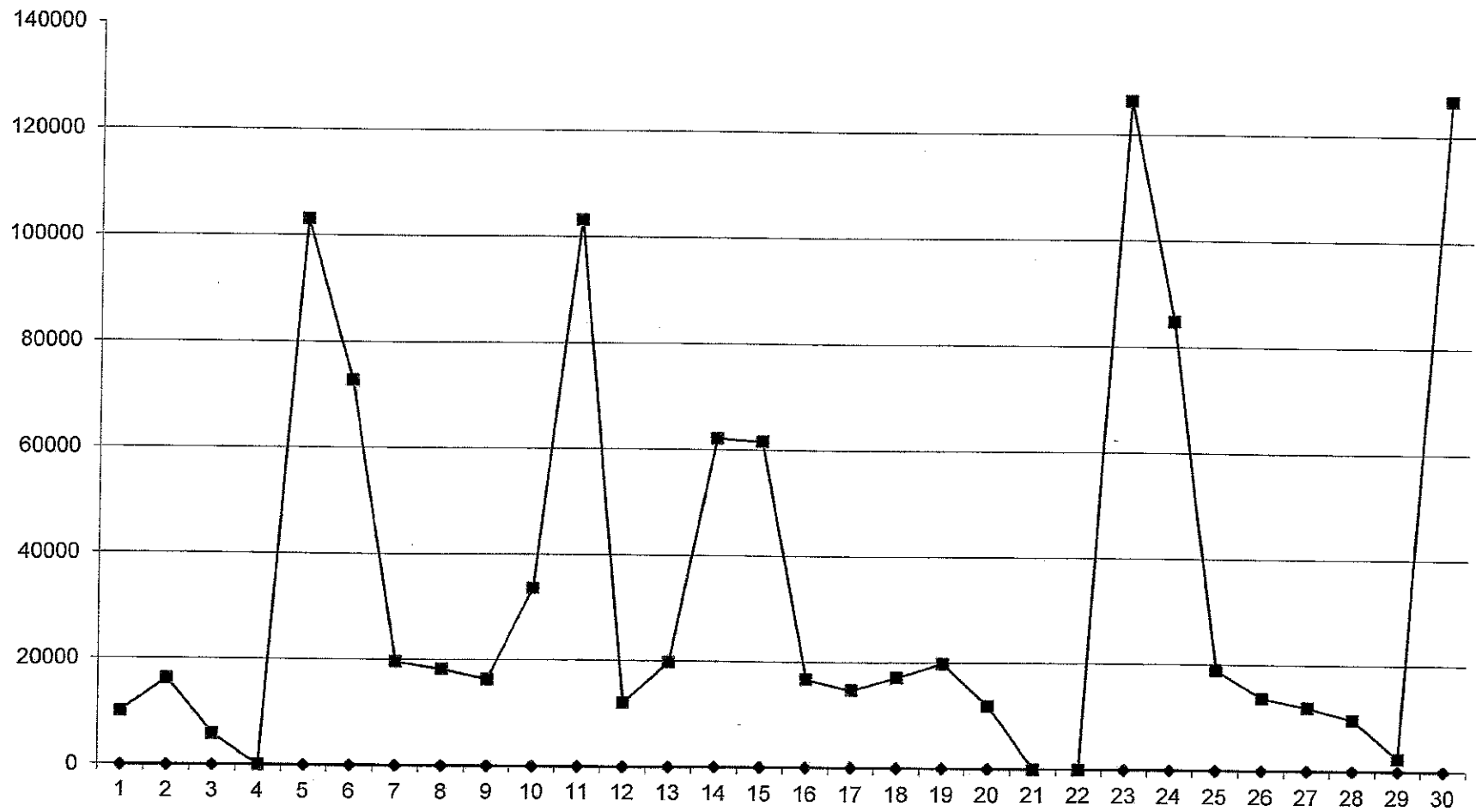
2/29/2020

7673370

73,320

Mar-20	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		7,683,398	10,028	
2		76,999,642	16,243	10:34 inhibit
3		7,705,396	5,754	
4		7,705,396	0	
5		7,808,474	103,078	05:09 enable
6		7,881,127	72,653	
7		7,900,673	19,545	
8		7,918,845	18,172	
9		7,935,171	16,325	
10		7,968,767	33,596	12:14 inhibit 17:35 enable
11		8,071,996	103,229	
12		8,083,970	11,973	
13		8,103,728	19,758	08:14 inhibit 12:28 enable
14		8,165,850	62,122	
15		8,227,367	61,517	
16		8,244,038	16,671	
17		8,258,669	14,630	
18		8,275,754	17,085	
19		8,295,479	19,725	
20		8,307,328	11,849	02:21 inhibit
21		8,307,328	0	
22		8,307,328	0	
23		8,433,629	126,300	00:05 enable
24		8,518,484	84,855	
25		8,537,401	18,917	
26		8,551,045	13,644	
27		8,562,909	11,864	
28		8,572,429	9,588	12:26 inhibit
29		8,574,998	2,501	23:28 enable
30		8,701,648	126,650	
31		8,771,509	69,861	
		1,098,139	1,098,133	

March  
2020

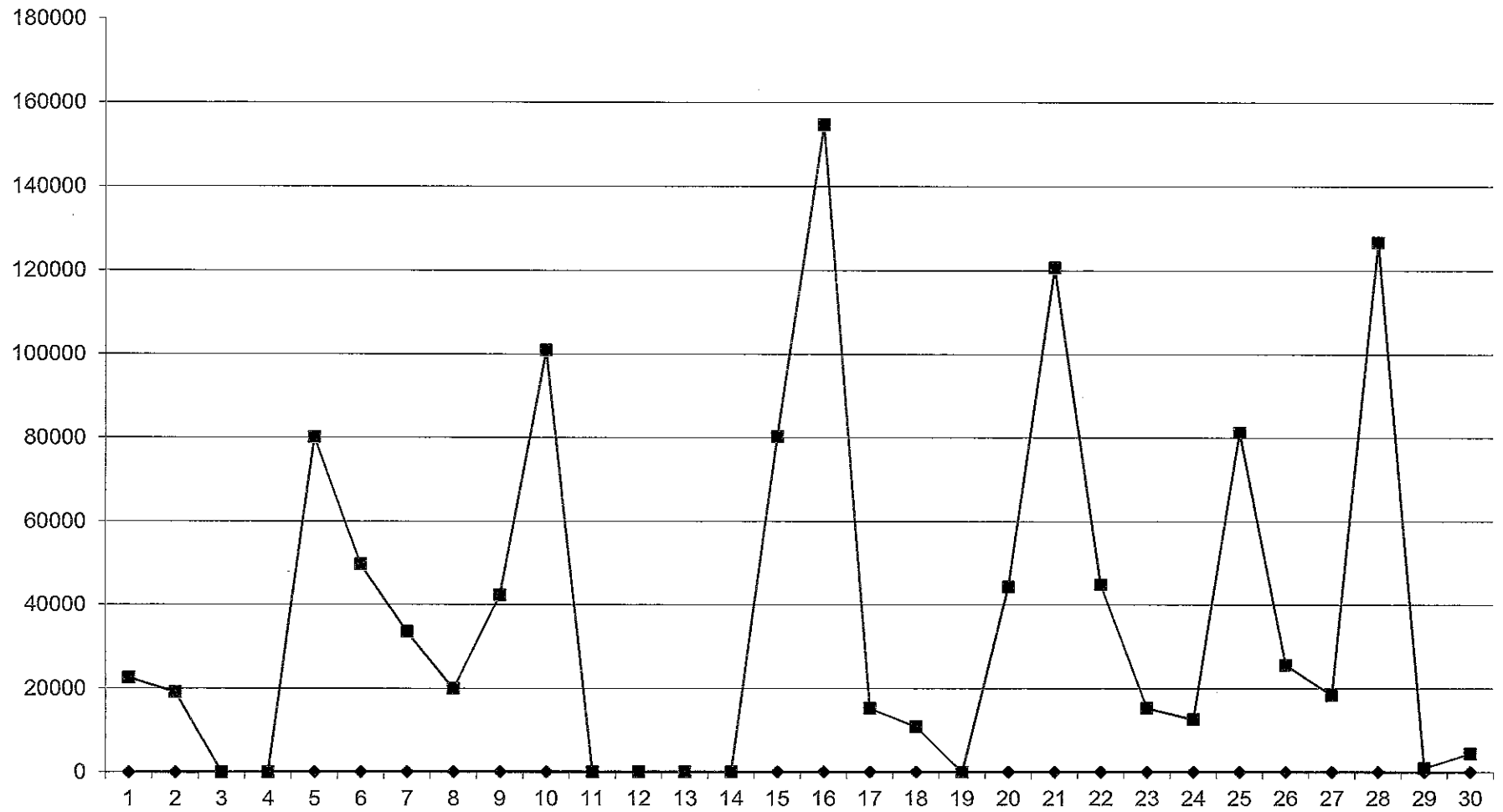


# Direct Discharge Flow Data

3/31/2020

3/31/2020		8771509	69,861	
<b>Apr-20</b>	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		8,794,021	22,512	
2		8,813,067	19,046	
3		8,813,067	0	
4		8,813,067	0	
5		8,893,241	80,174	
6		8,942,877	49,636	
7		8,976,297	33,420	23:10 inhibit
8		8,996,192	19,895	10:08 enable
9		9,038,421	42,229	
10		9,139,257	100,836	
11		9,139,257	0	
12		9,139,257	0	
13		9,139,257	0	03:52 inhibit
14		9,139,257	0	
15		9,219,505	80,248	11:40 enable
16		9,374,082	154,577	
17		9,389,330	15,248	
18		9,400,193	10,863	
19		9,400,193	0	15:29 inhibit
20		9,444,453	44,260	15:30 enable
21		9,565,091	120,638	
22		9,609,914	44,823	
23		9,625,213	15,299	
24		9,637,819	12,606	
25		9,719,142	81,323	
26		9,744,728	25,586	06:08 inhibit
27		9,763,086	18,358	18:59 enable
28		9,889,802	126,716	
29		9,890,708	906	23:14 inhibit
30		9,895,207	4,499	20:42 enable
31				
		<b>1,123,698</b>	<b>1,123,698</b>	

April  
2020



# Direct Discharge Flow Data

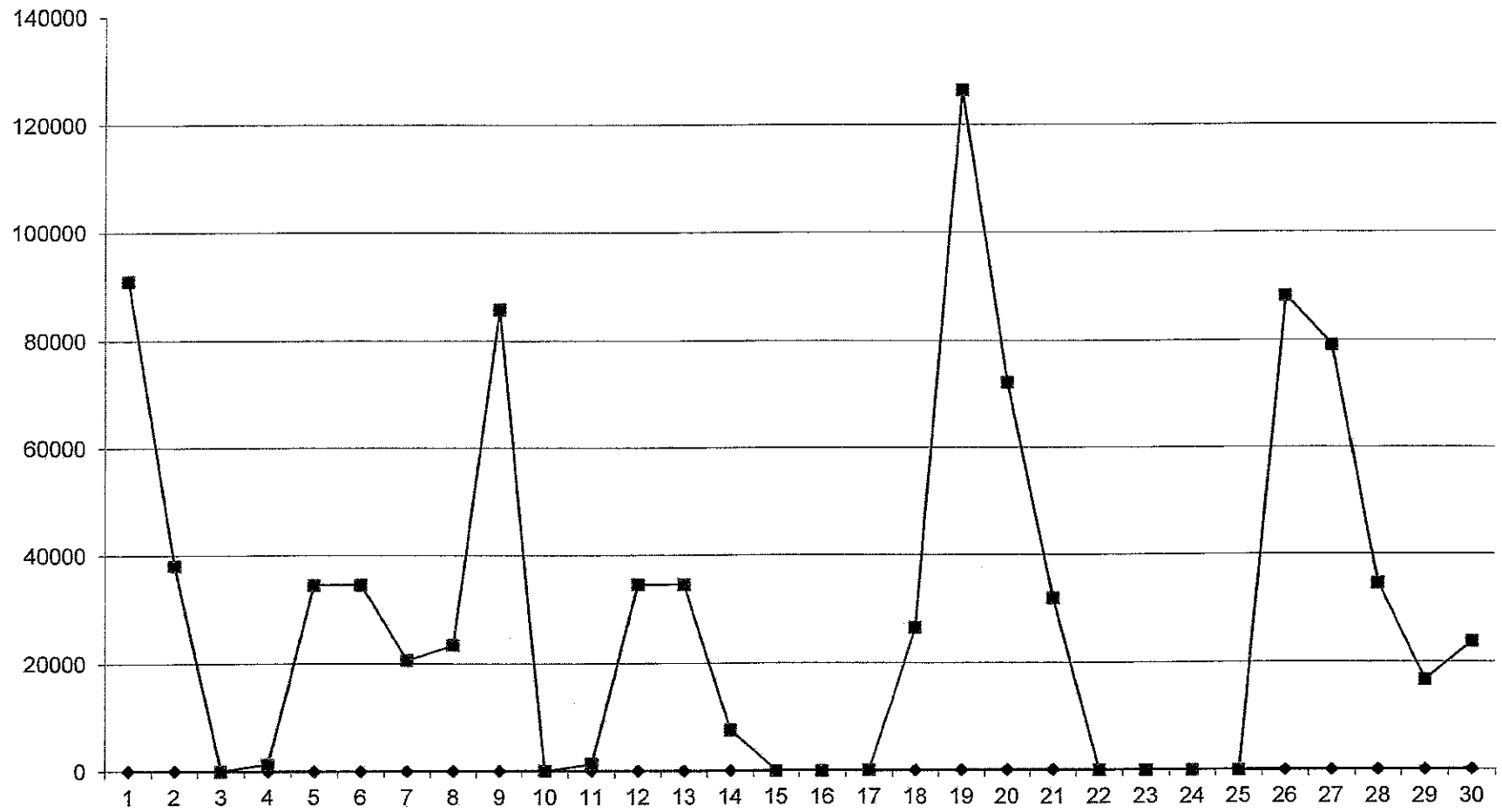
4/30/2020

9895207

4,499

May-20	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		9,986,208	91,001	
2		10,024,320	38,112	
3		10,024,320	0	
4		10,025,572	1,252	
5		10,060,138	34,566	
6		10,094,698	34,560	
7		10,115,300	20,602	
8		10,138,618	23,318	
9		10,224,394	85,776	
10		10,224,394	0	
11		10,225,672	1,278	
12		10,260,232	34,560	
13		10,294,798	34,566	
14		10,302,406	7,608	16:40 inhibit 23:45 enable
15		10,302,406	0	
16		10,302,406	0	
17		10,302,495	89	
18		10,328,904	26,409	23:38 inhibit
19		10,455,243	126,339	18:42 enable
20		10,527,401	72,158	
21		10,559,219	31,818	
22		10,559,219	0	
23		10,559,219	0	09:25 inhibit
24		10,559,219	0	
25		10,559,219	0	
26		10,647,443	88,224	06:27 enable
27		10,726,583	79,140	
28		10,761,143	34,560	
29		10,777,917	16,774	12:29 inhibit
30		10,801,627	23,710	07:51 enable
31		10,911,654	110,027	
		1,016,447	1,016,447	

May  
2020

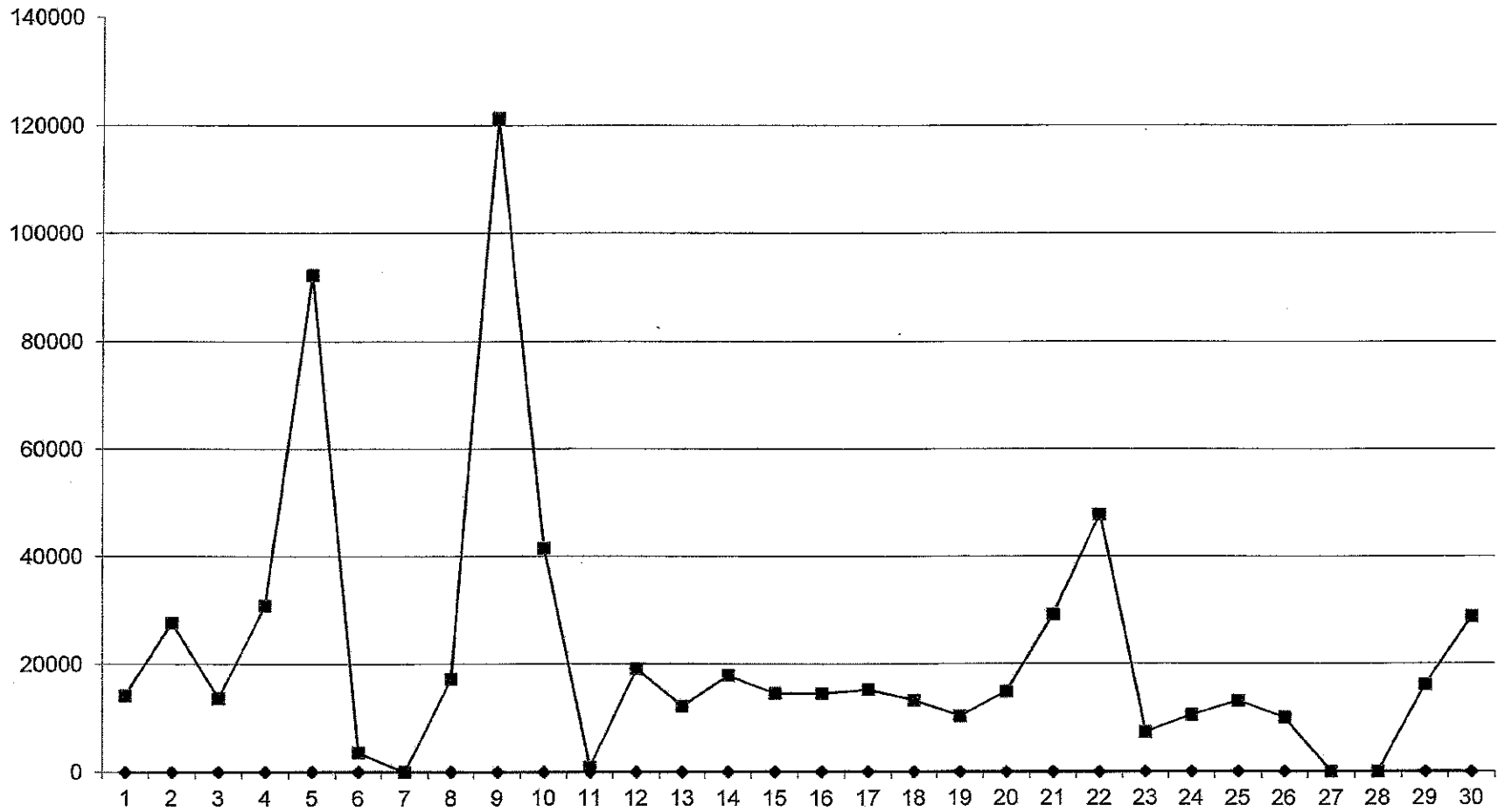


# Direct Discharge Flow Data

5/31/2020

		10911654	110,027	
Jun-20	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
	1	10,925,889	14,235	
	2	10,953,449	27,560	22:52 inhibit
	3	10,967,093	13,644	20:50 enable
	4	10,997,840	30,747	
	5	11,090,000	92,160	
	6	11,093,632	3,632	
	7	11,093,632	0	
	8	11,110,832	17,200	
	9	11,232,119	121,287	
	10	11,273,654	41,535	23:03 inhibit
	11	11,274,500	846	23:13 enable
	12	11,293,538	19,038	
	13	11,305,648	12,110	
	14	11,323,446	17,798	
	15	11,337,994	14,548	
	16	11,352,462	14,468	
	17	11,367,660	15,198	
	18	11,380,838	13,178	
	19	11,391,208	10,370	
	20	11,406,009	14,801	
	21	11,435,163	29,154	
	22	11,483,050	47,887	
	23	11,490,383	7,333	17:57 inhibit
	24	11,500,877	10,494	15:12 enable
	25	11,513,922	13,045	
	26	11,523,912	9,990	12:00 inhibit
	27	11,523,912	0	14:13 enable
	28	11,523,912	0	
	29	11,540,042	16,130	
	30	11,568,842	28,800	
		657,188	657,188	

June  
2020





# **APPENDIX C**

## **HYDRAULIC MONITORING TABLES**

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JANUARY - JUNE 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-01D</b>	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								3/11/2020 1527	2.18	693.94	0.00	693.94	
MNW								5/12/2020 1235	2.93	693.19	0.00	693.19	
MNW								6/17/2020 1353	3.41	692.71	0.00	692.71	
<b>GW-01S</b>	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								3/11/2020 1527	2.95	693.24	0.00	693.24	
MNW								5/12/2020 1236	3.99	692.20	0.00	692.20	
MNW								6/17/2020 1353	4.95	691.24	0.00	691.24	
<b>GW-03D</b>	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								3/11/2020 1417	1.42	692.46	0.00	692.46	
MNW								5/12/2020 0847	1.70	692.18	0.00	692.18	
MNW								6/17/2020 1237	1.97	691.91	0.00	691.91	
<b>GW-03S</b>	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								3/11/2020 1417	2.11	691.69	0.00	691.69	
MNW								5/12/2020 0847	2.48	691.32	0.00	691.32	
MNW								6/17/2020 1236	4.08	689.72	0.00	689.72	
<b>GW-04D</b>	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								3/11/2020 1538	12.03	680.72	0.00	680.72	
MNW								5/12/2020 1501	12.19	680.56	0.00	680.56	
MNW								6/17/2020 1401	12.34	680.41	0.00	680.41	
<b>GW-04S</b>	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								3/11/2020 1538	3.76	688.96	0.00	688.96	
MNW								5/12/2020 1500	4.23	688.49	0.00	688.49	
MNW								6/17/2020 1400	4.81	687.91	0.00	687.91	

NM - No Measurement

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**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JANUARY - JUNE 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-07D</b>	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								3/11/2020 1519	48.60	651.34	0.00	651.34	
MNW								5/12/2020 1009	43.35	656.59	0.00	656.59	
MNW								6/17/2020 1348	56.31	643.63	0.00	643.63	
<b>GW-07S</b>	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								3/11/2020 1520	4.07	695.44	0.00	695.44	
MNW								5/12/2020 1008	4.77	694.74	0.00	694.74	
MNW								6/17/2020 1347	5.14	694.37	0.00	694.37	
<b>GW-08D</b>	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								3/11/2020 1433	5.37	692.42	0.00	692.42	
MNW								5/12/2020 0903	5.65	692.14	0.00	692.14	
MNW								6/17/2020 1249	5.97	691.82	0.00	691.82	
<b>GW-08SR</b>	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								3/11/2020 1434	5.04	692.46	0.00	692.46	
MNW								5/12/2020 0903	5.16	692.34	0.00	692.34	
MNW								6/17/2020 1248	5.56	691.94	0.00	691.94	
<b>GW-26D</b>	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								3/11/2020 1509	6.22	692.28	0.00	692.28	
MNW								5/12/2020 0950	6.54	691.96	0.00	691.96	
MNW								6/17/2020 1334	6.80	691.70	0.00	691.70	
<b>GW-28S</b>	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								3/11/2020 1440	7.84	693.11	0.00	693.11	
MNW								5/12/2020 0911	9.05	691.90	0.00	691.90	
MNW								6/17/2020 1256	9.43	691.52	0.00	691.52	

NM - No Measurement

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**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JANUARY - JUNE 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-29S</b>	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								3/11/2020 1454	5.75	693.88	0.00	693.88	
MNW								5/12/2020 0928	8.33	691.30	0.00	691.30	
MNW								6/17/2020 1310	8.73	690.90	0.00	690.90	
<b>GW-30S</b>	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								3/11/2020 1457	7.26	689.32	0.00	689.32	
MNW								5/12/2020 0938	7.62	688.96	0.00	688.96	
MNW								6/17/2020 1313	7.82	688.76	0.00	688.76	
<b>GW-31S</b>	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								3/11/2020 1502	2.47	696.15	0.00	696.15	
MNW								5/12/2020 0944	2.96	695.66	0.00	695.66	
MNW								6/17/2020 1322	4.49	694.13	0.00	694.13	
<b>GW-32S</b>	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								3/11/2020 1505	2.12	696.25	0.00	696.25	
MNW								5/12/2020 0947	2.94	695.43	0.00	695.43	
MNW								6/17/2020 1326	4.56	693.81	0.00	693.81	
<b>GW-33S</b>	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								3/11/2020 1512	3.07	695.17	0.00	695.17	
MNW								5/12/2020 0954	4.20	694.04	0.00	694.04	
MNW								6/17/2020 1338	5.87	692.37	0.00	692.37	
<b>GW-34S</b>	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								3/11/2020 1508	2.68	692.09	0.00	692.09	
MNW								5/12/2020 0837	2.57	692.20	0.00	692.20	
MNW								6/17/2020 1229	3.85	690.92	0.00	690.92	

NM - No Measurement

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**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JANUARY - JUNE 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-35S</b>	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								3/11/2020 1509	2.94	694.45	0.00	694.45	
MNW								5/12/2020 0951	3.35	694.04	0.00	694.04	
MNW								6/17/2020 1334	4.95	692.44	0.00	692.44	
<b>MH-01</b>	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								3/11/2020 1413	11.17	687.45	0.00	687.45	
MH								5/12/2020 0842	10.50	688.12	0.00	688.12	
MH								6/17/2020 1232	10.05	688.57	0.00	688.57	
<b>MH-03</b>	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								3/11/2020 1427	11.26	688.14	0.00	688.14	
MH								5/12/2020 0851	11.26	688.14	0.00	688.14	
MH								6/17/2020 1242	10.93	688.47	0.00	688.47	
<b>MH-07</b>	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								3/11/2020 1429	9.47	687.35	0.00	687.35	
MH								5/12/2020 0900	9.48	687.34	0.00	687.34	
MH								6/17/2020 1245	9.15	687.67	0.00	687.67	
<b>MH-10</b>	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								3/11/2020 1438	14.46	688.55	0.00	688.55	
MH								5/12/2020 0906	14.56	688.45	0.00	688.45	
MH								6/17/2020 1252	15.18	687.83	0.00	687.83	
<b>MH-15</b>	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								3/11/2020 1453	14.90	684.12	0.00	684.12	
MH								5/12/2020 0926	14.50	684.52	0.00	684.52	
MH								6/17/2020 1309	14.85	684.17	0.00	684.17	

NM - No Measurement

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**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JANUARY - JUNE 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>MH-16</b> MH	1072133.714	1117748.238	698.57	NM	698.57	NA	1	3/11/2020 1457	14.47	684.10	0.00	684.10	
								5/12/2020 0931	14.16	684.41	0.00	684.41	
								6/17/2020 1313	14.52	684.05	0.00	684.05	
<b>MH-17</b> MH	1071813.137	1117180.019	702.16	NM	702.16	NA	1	3/11/2020 1500	18.14	684.02	0.00	684.02	
								5/12/2020 0943	17.82	684.34	0.00	684.34	
								6/17/2020 1320	18.15	684.01	0.00	684.01	
<b>MH-20</b> MH	1071756.395	1115997.024	706.20	NM	706.20	NA	1	3/11/2020 1507	19.81	686.39	0.00	686.39	
								5/12/2020 0949	19.80	686.40	0.00	686.40	
								6/17/2020 1332	19.75	686.45	0.00	686.45	
<b>MH-22</b> MH	1072158.023	1115589.309	698.05	NM	698.05	NA	1	3/11/2020 1512	9.00	689.05	0.00	689.05	
								5/12/2020 0953	9.00	689.05	0.00	689.05	
								6/17/2020 1338	9.00	689.05	0.00	689.05	
<b>MH-25</b> MH	1072483.928	1114820.313	698.17	NM	698.17	NA	1	3/11/2020 1405	10.46	687.71	0.00	687.71	
								5/12/2020 0825	10.13	688.04	0.00	688.04	
								6/17/2020 1225	9.68	688.49	0.00	688.49	
<b>SG-01</b> SG	1073882.887	1114813.101	NM	NM	690.00	NA	1	3/11/2020 1415	-0.87	690.87	0.00	690.87	
								5/12/2020 0843	-0.81	690.81	0.00	690.81	
								6/17/2020 1234	NM	-	NM	-	Dry at -0.78'

NM - No Measurement

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**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JANUARY - JUNE 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>SG-02</b>	1073738.27	1116805.85	NM	NM	690.00	NA	1						
SG								3/11/2020 1435	-3.38	693.38	0.00	693.38	
SG								5/12/2020 0902	-3.28	693.28	0.00	693.28	
SG								6/17/2020 1249	NM	-	NM	-	Dry at -3.10'
<b>WW-01</b>	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								3/11/2020 1315	-4.00	688.02	0.00	688.02	
MH								5/12/2020 0916	-4.00	688.02	0.00	688.02	
MH								6/17/2020 1258	-4.30	688.32	0.00	688.32	
<b>WW-02</b>	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								3/11/2020 1315	-4.70	688.88	0.00	688.88	
MH								5/12/2020 0916	-4.60	688.78	0.00	688.78	
MH								6/17/2020 1258	-3.90	688.08	0.00	688.08	
<b>WW-03</b>	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								3/11/2020 1315	-5.17	688.97	0.00	688.97	
MH								5/12/2020 0916	-4.71	688.51	0.00	688.51	
MH								6/17/2020 1258	-4.77	688.57	0.00	688.57	
<b>WW-04</b>	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								3/11/2020 1315	-6.90	683.52	0.00	683.52	
MH								5/12/2020 0916	-7.30	683.92	0.00	683.92	
MH								6/17/2020 1258	-6.90	683.52	0.00	683.52	
<b>WW-05</b>	1071661.368	1116370.876	NM	NM	676.14	NA	1						
MH								3/11/2020 1315	-5.60	681.74	0.00	681.74	
MH								5/12/2020 0916	-7.00	683.14	0.00	683.14	
MH								6/17/2020 1258	-5.70	681.84	0.00	681.84	

NM - No Measurement

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**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge



**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JANUARY - JUNE 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>WW-06</b>	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								3/11/2020 1315	-6.10	687.99	0.00	687.99	
MH								5/12/2020 0916	-6.80	688.69	0.00	688.69	
MH								6/17/2020 1258	-7.00	688.89	0.00	688.89	

**NM - No Measurement**

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-2  
PFOHL BROTHERS LANDFILL SITE  
OVERBURDEN HYDRAULIC GRADIENT**

WELL PAIR:	WW-1	*	Level	WW-2	GW-8SR	Level	SG-02	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft)
3/11/2020	688.02	---	---	688.88	692.45	3.57	693.38	4.50
5/12/2020	688.02	---	---	688.78	692.34	3.56	693.28	4.50
6/17/2020	688.32	---	---	688.08	691.94	3.86	Dry	NA

WELL PAIR:	WW-3	GW-28S	Level	WW-4	*	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/11/2020	688.97	693.11	4.14	683.52	---	---
5/12/2020	688.51	691.90	3.39	683.92	---	---
6/17/2020	688.57	691.52	2.95	683.52	---	---

WELL PAIR:	WW-5	GW-32S	Level	WW-6	GW-34S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/11/2020	681.74	696.25	14.51	687.99	692.09	4.10
5/12/2020	683.14	695.43	12.29	688.69	692.20	3.51
6/17/2020	681.84	693.81	11.97	688.89	690.92	2.03

WELL PAIR:	MH-1	SG-1	Level	MH-15	GW-29S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/11/2020	687.45	690.87	3.42	684.12	693.88	9.76
5/12/2020	688.12	690.81	2.69	684.52	691.30	6.78
6/17/2020	688.57	DRY	NA	684.17	690.90	6.73

WELL PAIR:	MH-16	GW-30S	Level	MH-17	GW-31S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/11/2020	684.10	689.32	5.22	684.02	696.15	12.13
5/12/2020	684.41	688.96	4.55	684.34	695.66	11.32
6/17/2020	684.05	688.76	4.71	684.01	694.13	10.12

WELL PAIR:	MH-20	GW-35S	Level	MH-22	GW-33S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/11/2020	686.39	694.45	8.06	689.05	695.17	6.12
5/12/2020	686.40	694.04	7.64	689.05	694.04	4.99
6/17/2020	686.45	692.44	5.99	689.05	692.37	3.32

Notes:

\* = No corresponding monitoring well.  
NA = Not applicable

**APPENDIX D**

**GROUNDWATER PURGE AND SAMPLE COLLECTION  
LOGS**

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01S

Date: 5/12/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.99'	Depth to Well Bottom:	14.94'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.8	Estimated Purge Volume (liters):	6.1
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Sample ID:	GW-01S	Sample Time:	14:30	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Riser pipe is bulged inwards, could not remove stainless steel bailer from within well, sampled around it.

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01D

Date: 5/12/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.93'	Depth to Well Bottom:	39.65'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	90.7	Purge Volume (liters):	41.0
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Sample ID:	GW-01D	Sample Time:	13:45	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
12:45	7.98	8.75	1.29	6.61	5.0	38	750	2.93
12:50	7.95	8.70	1.29	5.11	4.9	20	750	2.97
12:55	7.91	8.71	1.29	2.69	4.8	-2	750	2.97
13:00	7.82	8.60	1.29	2.11	4.2	-42	750	2.97
13:05	7.81	8.52	1.29	1.55	4.6	-61	750	2.97
13:10	7.80	8.47	1.28	1.48	4.4	-72	750	2.97
13:15	7.79	8.38	1.29	1.43	5.0	-76	750	2.97
13:20	7.69	8.35	1.29	1.37	2.4	-82	750	2.97
13:25	7.69	8.31	1.29	1.35	2.4	-88	550	2.97
13:30	7.70	8.29	1.29	1.30	2.0	-95	550	2.97
13:35	7.66	8.21	1.29	1.27	1.4	-99	550	2.97
13:40	7.64	8.29	1.29	1.22	1.1	-103	550	2.97
13:45	7.63	8.24	1.29	1.21	0.0	-108	550	2.97
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03S

Date: 5/13/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.61'	Depth to Well Bottom:	13.22'	Well Diameter:	2"	Screen Length:	
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.5	Estimated Purge Volume (liters):	11.0
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Sample ID:	GW-03S	Sample Time:	10:00	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03D

Date: 5/13/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	1.75'	Depth to Well Bottom:	35.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	83.9	Estimated Purge Volume (liters):	33.0
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Sample ID:	GW-03D	Sample Time:	11:25	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
10:25	7.69	8.14	1.75	6.19	7.7	16	550	1.75
10:30	7.52	8.02	1.73	3.21	1.2	-21	550	1.75
10:35	7.44	7.94	1.72	1.25	0.6	-47	550	1.75
10:40	7.46	7.96	1.72	1.26	0.0	-49	550	1.75
10:45	7.46	7.99	1.72	1.18	1.4	-51	550	1.75
10:50	7.45	8.05	1.72	1.12	1.6	-52	550	1.75
10:55	7.43	8.08	1.72	1.12	6.5	-52	550	1.75
11:00	7.43	8.09	1.71	1.11	3.4	-53	550	1.75
11:05	7.42	8.20	1.71	1.09	2.7	-55	550	1.75
11:10	7.43	8.16	1.71	1.07	3.7	-54	550	1.75
11:15	7.42	8.22	1.71	1.06	2.2	-55	550	1.75
11:20	7.41	8.31	1.71	1.05	1.7	-56	550	1.75
11:25	7.40	8.30	1.71	1.07	2.7	-56	550	1.75
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

# LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04S

Date: 5/12/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2		Tubing Type:	LDPE/Silicone		Pump/Tubing Inlet Location:	Screen midpoint	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.23'	Depth to Well Bottom:	16.23'	Well Diameter:	2"	Screen Length:
Casing Type:	Stainless Steel		Volume in 1 Well Casing (liters):	7.4		Estimated Purge Volume (liters):	13.3	

Sample ID: GW-4S Sample Time: VOC's- 15:05/ SVOC's and Metals- 16:50 QA/QC: none

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 4/9/2020, sampled VOCs from PDB at 15:05 on 5/12/2020.  
Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 16:50.

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:15	9.24	7.04	0.540	5.82	0.7	-89	initial	
15:17	9.28	7.00	0.526	4.84	1.8	-88	1.0 gallons	
15:19	9.06	7.14	0.534	13.67	35	-77	2.0 gallons	
15:22	9.02	7.34	0.528	8.47	237	-72	3.5 gallons	Dry
	Allow Recharge							
16:50	8.96	7.10	0.540	6.35	77.4	-171.0		13.02
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.;  
4 inch diameter well = 2470 ml/ft. ( $vol_{cy} = \pi r^2 h$ )



# LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04D

Date: 5/12/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2		Tubing Type:	LDPE/Silicone		Pump/Tubing Inlet Location:	Screen midpoint	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	12.19'	Depth to Well Bottom:	45.57'	Well Diameter:	4"	Screen Length:
Casing Type:	Stainless Steel		Volume in 1 Well Casing (liters):	82.4		Estimated Purge Volume (liters):	11.4	

Sample ID: GW-4D Sample Time: 16:35 QA/QC: none

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:30	7.89	8.23	1.78	5.61	2.0	-19	175	12.19
15:35	7.68	8.41	1.78	4.30	2.4	-30	175	12.43
15:40	7.65	8.49	1.80	2.19	0.9	-42	175	12.60
15:45	7.63	8.57	1.81	1.99	0.0	-55	175	12.79
15:50	7.62	8.51	1.82	1.55	0.5	-68	175	12.94
15:55	7.60	8.47	1.82	1.52	0.8	-75	175	13.00
16:00	7.60	8.46	1.82	1.44	0.1	-89	175	13.10
16:05	7.58	8.49	1.83	1.33	0.1	-98	175	13.17
16:10	7.56	8.45	1.83	1.24	0.1	-115	175	13.25
16:15	7.54	8.43	1.83	1.19	0.0	-130	175	13.30
16:20	7.54	8.39	1.83	1.16	0.0	-149	175	13.35
16:25	7.53	8.41	1.83	1.14	0.0	-164	175	13.41
16:30	7.53	8.37	1.84	1.12	0.0	-171	175	13.45
16:35	7.55	8.36	1.84	1.07	0.0	-174	175	13.50
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.;  
4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

# WELL PURGING LOG

**URS Corporation**

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-07S
PROJECT NO.:	60411174		
STAFF:	Rob Murphy, Tom Urban		
DATE(S):	5/12/2020 & 5/13/2020		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	35.33	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	4.77	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	30.56	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	5.20	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	7.5	8"	2.60

$V=0.0408 \times (\text{CASING DIAMETER [INCHES]})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	1.5	3.0	4.5	6.0	7.5	Sample			
pH	8.37	8.35	8.34	8.29	8.28	8.21	8.07			
SPEC. COND. (mS/cm)	0.750	0.738	0.745	0.743	0.746	0.723	0.799			
DO (mg/l)	13.37	7.75	12.69	12.28	10.19	9.88	10			
TEMPERATURE (°C)	8.46	8.01	8.30	8.99	9.10	9.25	9.9			
TURBIDITY (NTU)	0.3	0.0	3.1	1.4	26.3	>1000	0.2			
ORP (millivolts)	-77	-70	-59	-46	-22	8	-15			
TIME	11:48	11:50	11:53	11:55	12:00	12:05	12:10 on 5/13/20			

COMMENTS: 10:30 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 4/9/2020.  
 11:48 - Begin hand bailing well.  
 12:05 - Well dry after removing 7.5 gallons.  
 5/13/2020 12:10 - Return to well, depth to water = 4.86 feet.  
 12:10 - Collect sample for SVOCs and Metals.

# WELL PURGING LOG

**URS Corporation**

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-07D
PROJECT NO.:	60411174		
STAFF:	Rob Murphy, Tom Urban		
DATE(S):	5/12/2020 & 5/13/2020		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	60.83	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	43.35	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	17.48	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.66	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	11.54	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	11.5	8"	2.60

$V=0.0408 \times (\text{CASING DIAMETER [INCHES]})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	Initial	3.0	6.0	9.0	11.5	Sample					
pH	7.73	7.93	7.96	8.03	8.34	N/A					
SPEC. COND. (mS/cm)	0.756	0.762	0.831	0.894	0.908	N/A					
DO (mg/l)	9.94	12.77	10.25	6.87	8.39	N/A					
TEMPERATURE (°C)	10.47	10.50	10.36	10.48	10.01	N/A					
TURBIDITY (NTU)	0.0	3.6	6.7	18.1	70.1	N/A					
ORP (millivolts)	93	20	-31	-88	-85	N/A					
TIME	10:55	11:05	11:15	11:30	11:40	11:45 on 5/13/20					

COMMENTS: 10:25 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 4/9/2020.  
 10:55 - Begin hand bailing well.  
 11:40 - Well dry after removing 11.5 gallons.  
 5/13/2020 11:45 - return to well, depth to water = 59.96 feet.  
 11:45 - Collect sample for SVOCs and Metals.

Strong Sulfur Odor                      Could not take sample paramaters, all available water used in sample bottles

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08SR

Date: 5/13/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.21'	Depth to Well Bottom:	13.02'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.8	Estimated Purge Volume (liters):	5.0
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Sample ID:	GW-8SR	Sample Time:	14:15	QA/QC:	Field Dup. FD-051320
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:50	7.03	10.23	1.25	4.17	62.0	-36	200	5.21
13:55	7.10	9.88	1.15	1.78	25.4	-39	200	6.72
14:00	7.09	9.78	1.09	1.28	9.9	-34	200	7.18
14:05	7.09	9.64	1.08	1.21	6.5	-35	200	7.37
14:10	7.08	9.75	1.09	1.17	4.8	-37	200	7.61
14:15	7.06	9.74	1.12	1.16	5.1	-39	200	7.72
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08D

Date: 5/13/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.76'	Depth to Well Bottom:	36.54'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	76.0	Estimated Purge Volume (liters):	60.0
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Sample ID:	GW-8D	Sample Time:	13:35	QA/QC:	MS/MSD
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-26D

Date: 5/13/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.61'	Depth to Well Bottom:	40.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	84.2	Estimated Purge Volume (liters):	37.2
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Sample ID:	GW-26D	Sample Time:	16:33	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
15:33	7.17	10.77	2.17	2.04	13.9	-18	620	6.61
15:38	7.12	10.55	2.21	1.18	3.2	-28	620	6.61
15:43	7.14	10.60	2.21	1.19	0.0	-29	620	6.61
15:48	7.16	10.62	2.21	1.21	0.0	-30	620	6.61
15:53	7.15	10.69	2.21	1.19	0.0	-31	620	6.61
15:58	7.13	10.74	2.22	1.13	0.0	-33	620	6.61
16:03	7.12	10.73	2.23	1.15	0.0	-33	620	6.61
16:08	7.12	10.68	2.23	1.09	0.0	-32	620	6.61
16:13	7.11	10.60	2.22	1.04	0.0	-32	620	6.61
16:18	7.10	10.55	2.22	1.04	0.0	-32	620	6.61
16:23	7.09	10.50	2.22	1.05	0.0	-32	620	6.61
16:28	7.08	10.50	2.22	1.00	0.0	-31	620	6.61
16:33	7.08	10.49	2.22	0.99	0.0	-31	620	6.61
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-28S

Date: 5/14/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	9.11'	Depth to Well Bottom:	15.52'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.0	Estimated Purge Volume (liters):	5.3
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Sample ID:	GW-28S	Sample Time:	8:05	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-29S

Date: 5/14/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	8.27'	Depth to Well Bottom:	20.04'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.3	Estimated Purge Volume (liters):	7.2
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Sample ID:	GW-29S	Sample Time:	9:08	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange particulates at start of purge.

Bypassed Horiba for first 2 minutes of flow.

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES—0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )



## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-30S

Date: 5/14/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	7.70'	Depth to Well Bottom:	17.97'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.3	Estimated Purge Volume (liters):	9.2
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Sample ID:	GW-30S	Sample Time:	10:00	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange particulates at start of purge.

Bypassed Horiba for first 2 minutes of flow.

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES—0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-31S

Date: 5/14/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.17'	Depth to Well Bottom:	9.57'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.9	Estimated Purge Volume (liters):	9.4
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Sample ID:	GW-31S	Sample Time:	11:12	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:17	7.63	9.59	0.705	6.95	8.0	-69	170	3.17
10:22	7.59	9.15	0.674	5.00	2.0	-40	170	4.25
10:27	7.49	9.23	0.670	5.04	0.0	-29	170	4.42
10:32	7.40	9.38	0.684	4.17	0.0	-35	170	4.49
10:37	7.38	9.35	0.706	3.89	0.0	-42	170	4.56
10:42	7.36	9.59	0.716	3.57	0.0	-50	170	4.55
10:47	7.37	9.91	0.719	3.20	0.0	-55	170	4.57
10:52	7.36	10.23	0.722	2.95	0.0	-59	170	4.50
10:57	7.35	10.47	0.726	2.61	0.0	-62	170	4.52
11:02	7.34	10.58	0.728	2.14	0.0	-63	170	4.57
11:07	7.34	11.00	0.725	2.16	0.0	-65	170	4.57
11:12	7.34	10.70	0.732	2.10	0.0	-66	170	4.60
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-32S

Date: 5/14/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.27'	Depth to Well Bottom:	9.93'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.1	Estimated Purge Volume (liters):	7.7
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Sample ID:	GW-32S	Sample Time:	12:07	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES—0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-33S

Date: 5/14/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.68'	Depth to Well Bottom:	8.21'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.2	Estimated Purge Volume (liters):	3.3
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Sample ID:	GW-33S	Sample Time:	12:50	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-34S

Date: 5/13/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.50'	Depth to Well Bottom:	10.01'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.6	Estimated Purge Volume (liters):	9.8
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Sample ID:	GW-34S	Sample Time:	8:40	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-35S

Date: 5/13/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.52'	Depth to Well Bottom:	7.46'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.4	Estimated Purge Volume (liters):	6.0
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Sample ID: GW-35S      Sample Time: 15:20      QA/QC: none

### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date of Sampling: May 12, 2020

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-07D	GW-07D	43.5	43.5	10:25	Groundwater	VOCs	Not Applicable
GW-07S	GW-07S	19.7	28.4	10:30	Groundwater		Not Applicable
GW-01D	GW-01D	90.7	41.0	13:45	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-01S	GW-01S	6.8	6.1	14:30	Groundwater		Not Applicable
GW-04S	GW-04S	7.4	13.3	15:05,16:35	Groundwater		Not Applicable
GW-04D	GW-04D	82.4	11.4	16:50	Groundwater		Not Applicable
							Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization with the exception of wells GW-04S, GW-07D, and GW-07S that were sampled for VOCs using passive diffusion bags (PDBs).  
GW-04S, GW-07D, and GW-07S were then purged dry. Remaining parameters were collected after recovery at GW-04S.

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date of Sampling: May 13, 2020

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-34S	GW-34S	4.6	9.8	8:40	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-03S	GW-03S	6.5	11.0	10:00	Groundwater		Not Applicable
GW-03D	GW-03D	83.9	33.0	11:25	Groundwater		Not Applicable
GW-07D	GW-07D	43.5	43.5	11:45	Groundwater	SVOCs/Metals	Not Applicable
GW-07S	GW-07S	19.7	28.4	12:10	Groundwater		Not Applicable
GW-08D	GW-08D	76.0	60.0	13:35	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-08D	GW-08D	76.0	60.0	13:35	Matrix Spike		Not Applicable

Additional Comments: GW-07D and GW-07S were sampled for SVOCs and Metals after recharging overnight.  
All other wells were purged using low flow methods until parameter stabilization.  
 \_\_\_\_\_  
 \_\_\_\_\_



## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date of Sampling: May 13, 2020

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-08D	GW-08D	76.0	60.0	13:35	Matrix Spike Duplicate	VOCs/SVOCs/ TAL Metals	Not Applicable
GW-08SR	GW-08SR	4.8	5.0	14:15	Groundwater		Not Applicable
FD-051320	GW-08SR	4.8	5.0	14:15	Groundwater		Not Applicable
GW-35S	GW-35S	2.4	6.0	15:20	Groundwater		Not Applicable
GW-26D	GW-26D	84.2	37.2	16:33	Groundwater		Not Applicable
TB-051320	-	-	-	-	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.  
 \_\_\_\_\_  
 \_\_\_\_\_

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date of Sampling: May 14, 2020

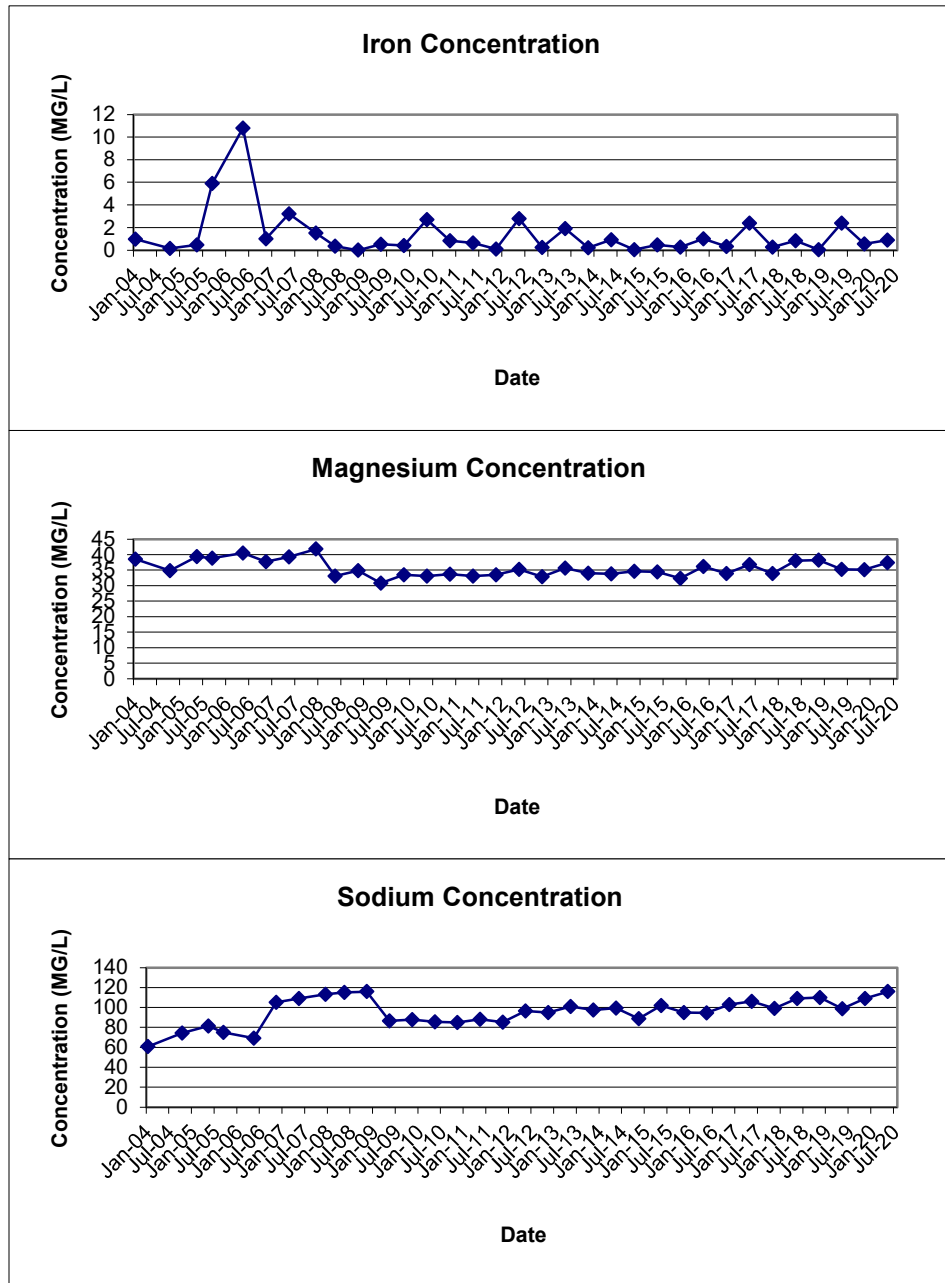
<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-28S	GW-28S	4.0	5.3	8:05	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-29S	GW-29S	7.3	7.2	9:08	Groundwater		Not Applicable
GW-30S	GW-30S	6.3	9.2	10:00	Groundwater		Not Applicable
GW-31S	GW-31S	3.9	9.4	11:12	Groundwater		Not Applicable
GW-32S	GW-32S	4.1	7.7	12:07	Groundwater		Not Applicable
GW-33S	GW-33S	2.2	3.3	12:50	Groundwater		Not Applicable
TB-051420	-	-	-	-	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.  
 \_\_\_\_\_  
 \_\_\_\_\_

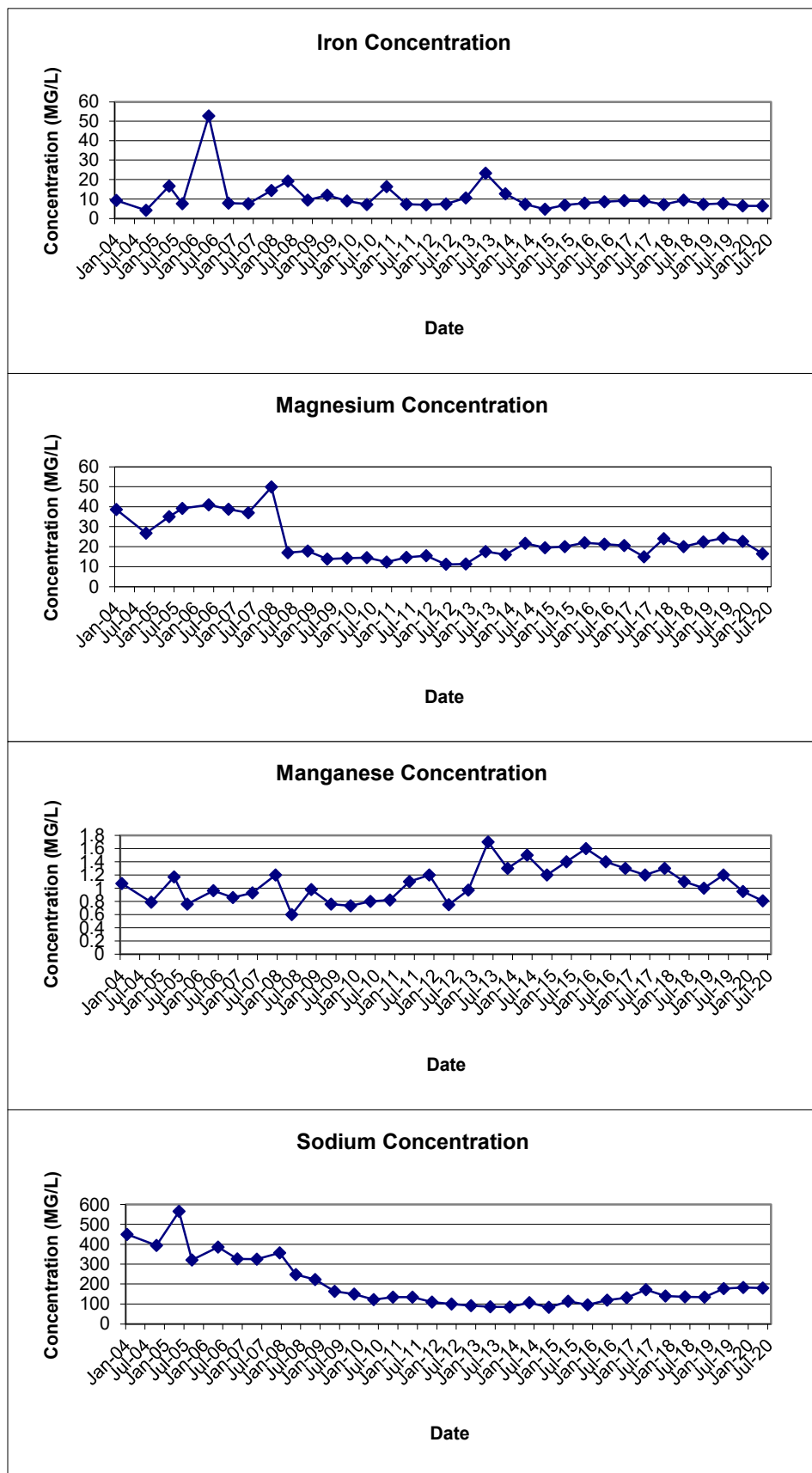
# **APPENDIX E**

## **GROUNDWATER TREND ANALYSIS**

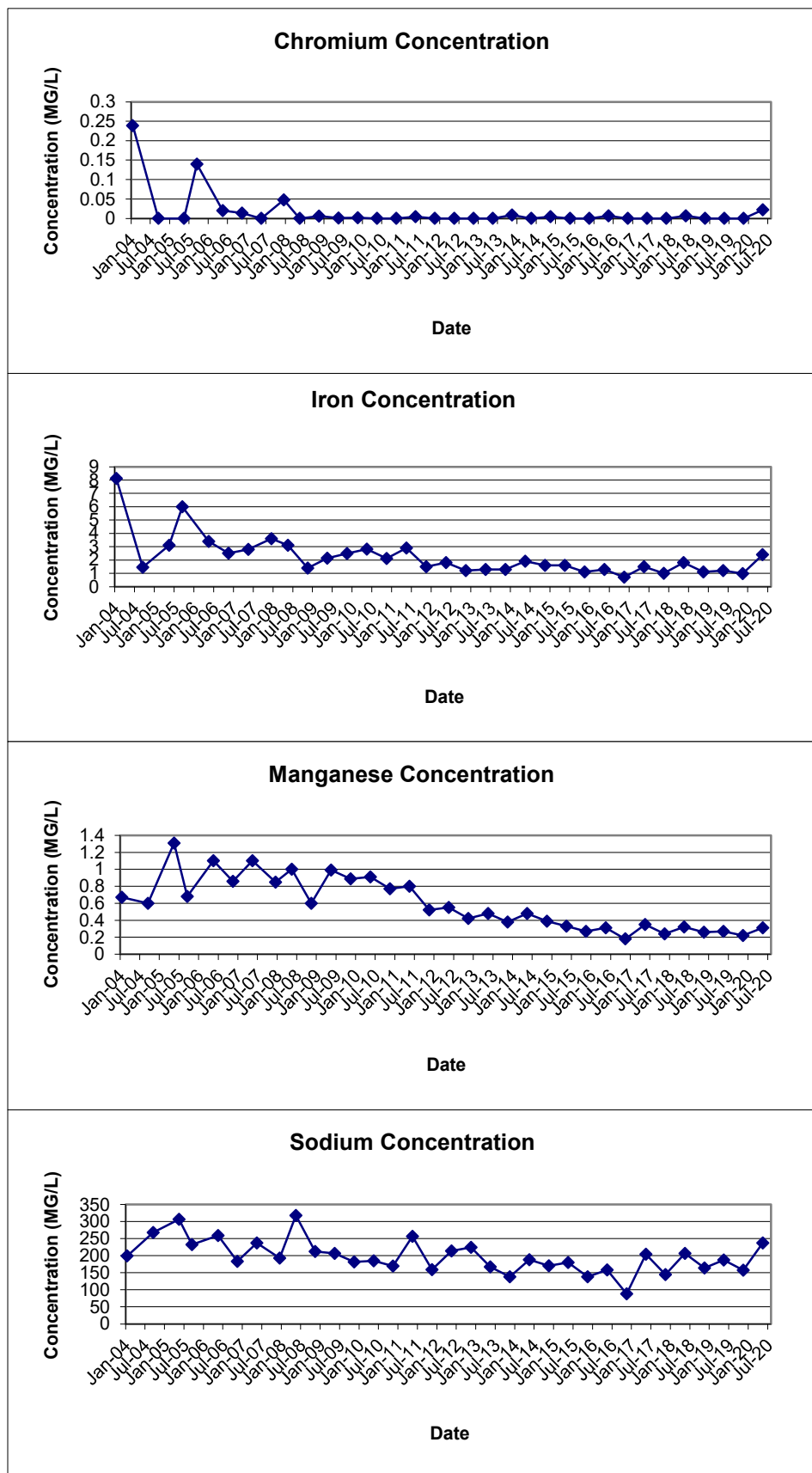
**FIGURE E-1**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-01D**



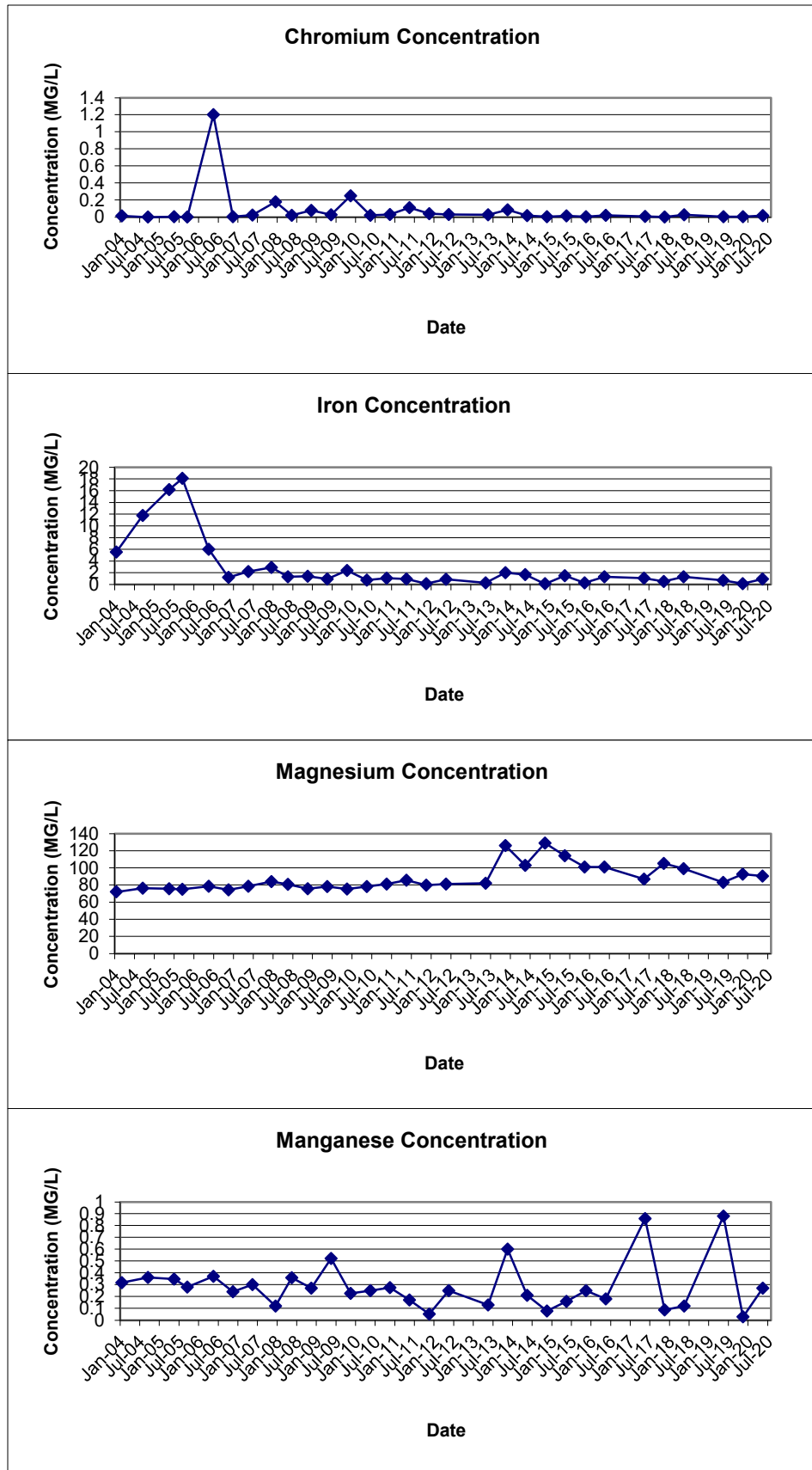
**FIGURE E-2**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-01S**



**FIGURE E-3**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-03D**

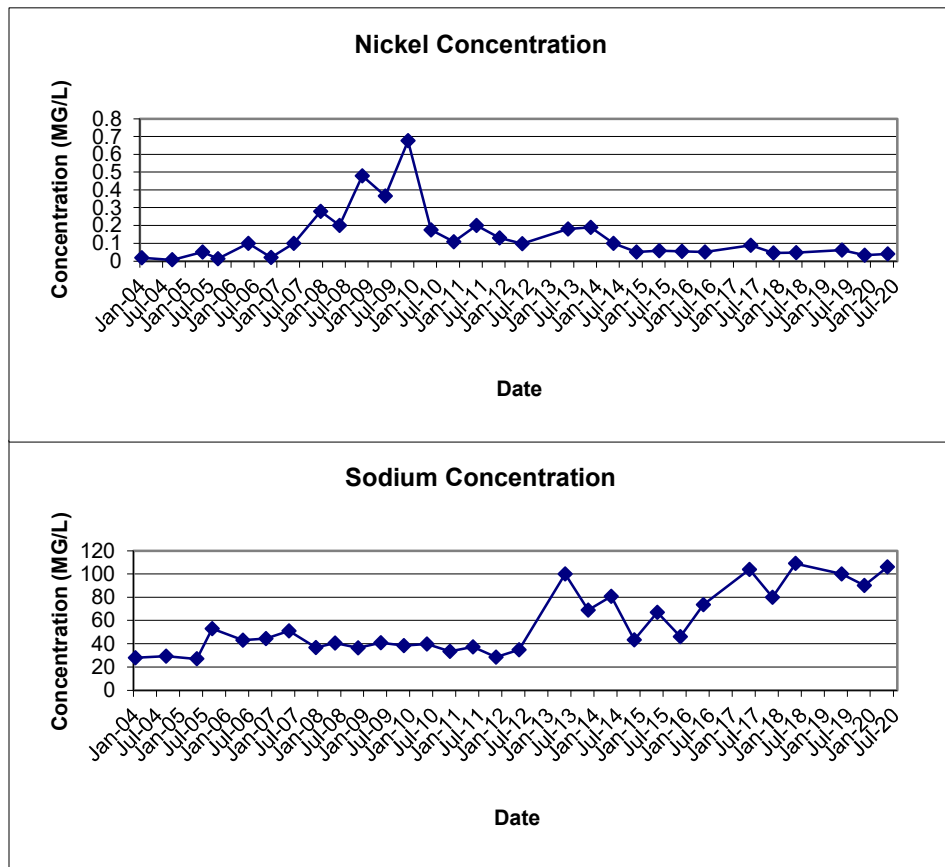


**FIGURE E-4**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-03S**



Well was dry and was not sampled in November 2016 or November 2018

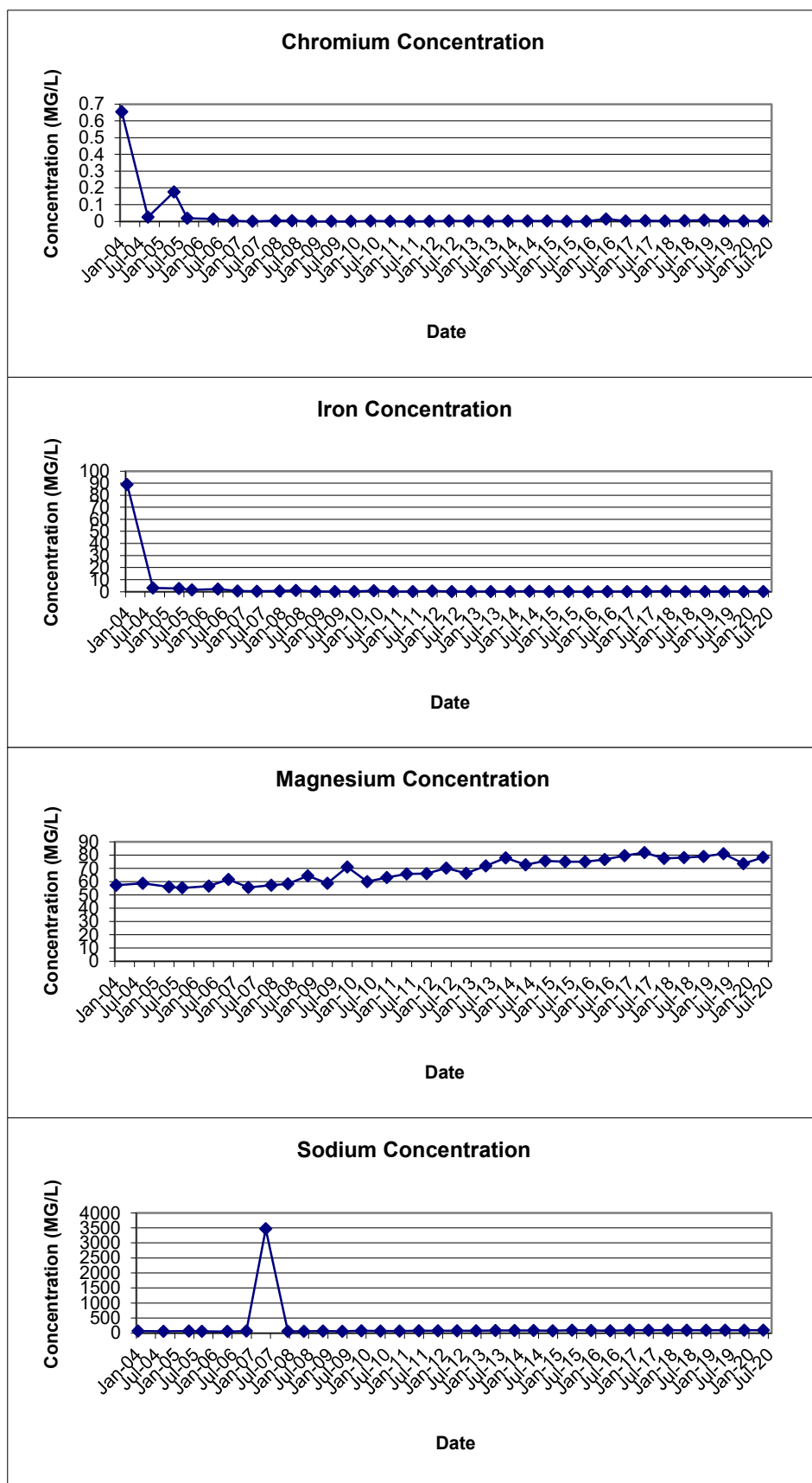
FIGURE E-4  
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS  
IN MONITORING WELL GW-03S



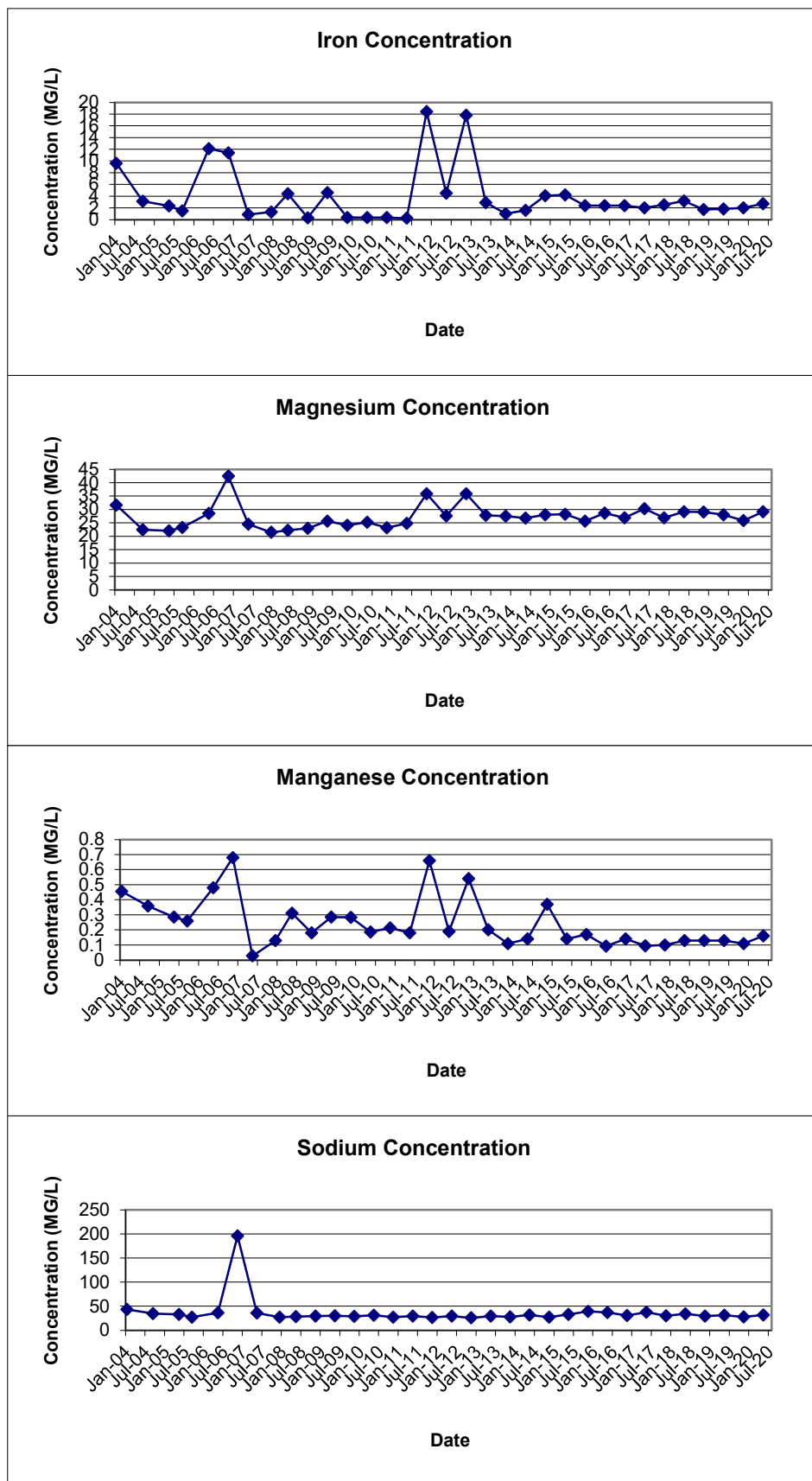
Well was dry and was not sampled in November 2016 or November



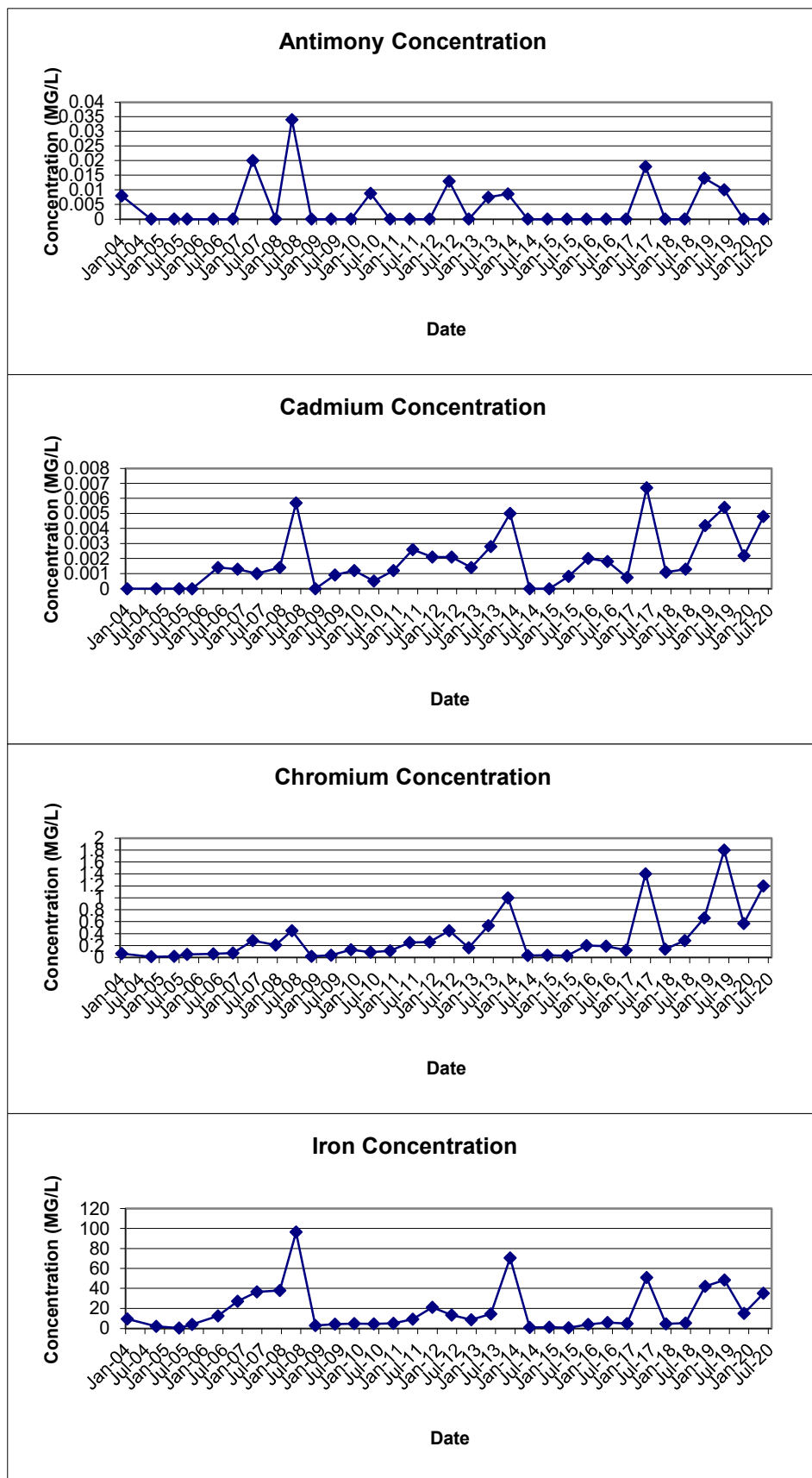
**FIGURE E-5**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-04D**



**FIGURE E-6**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-04S**



**FIGURE E-7**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-07D**



**FIGURE E-7**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-07D**

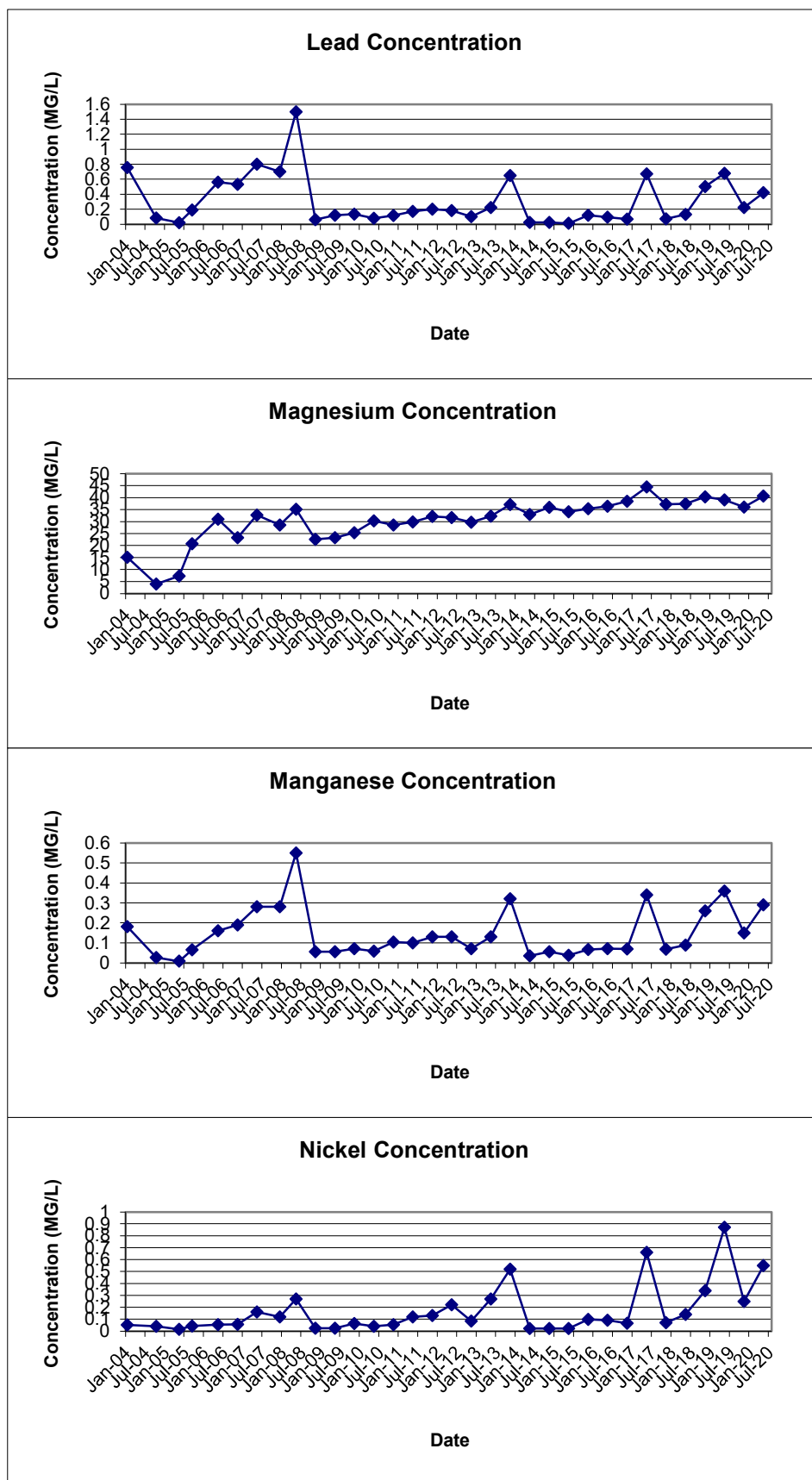
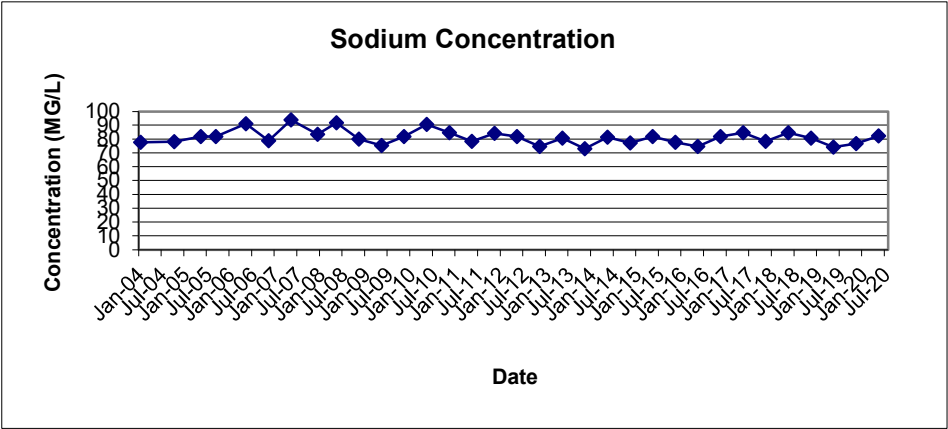
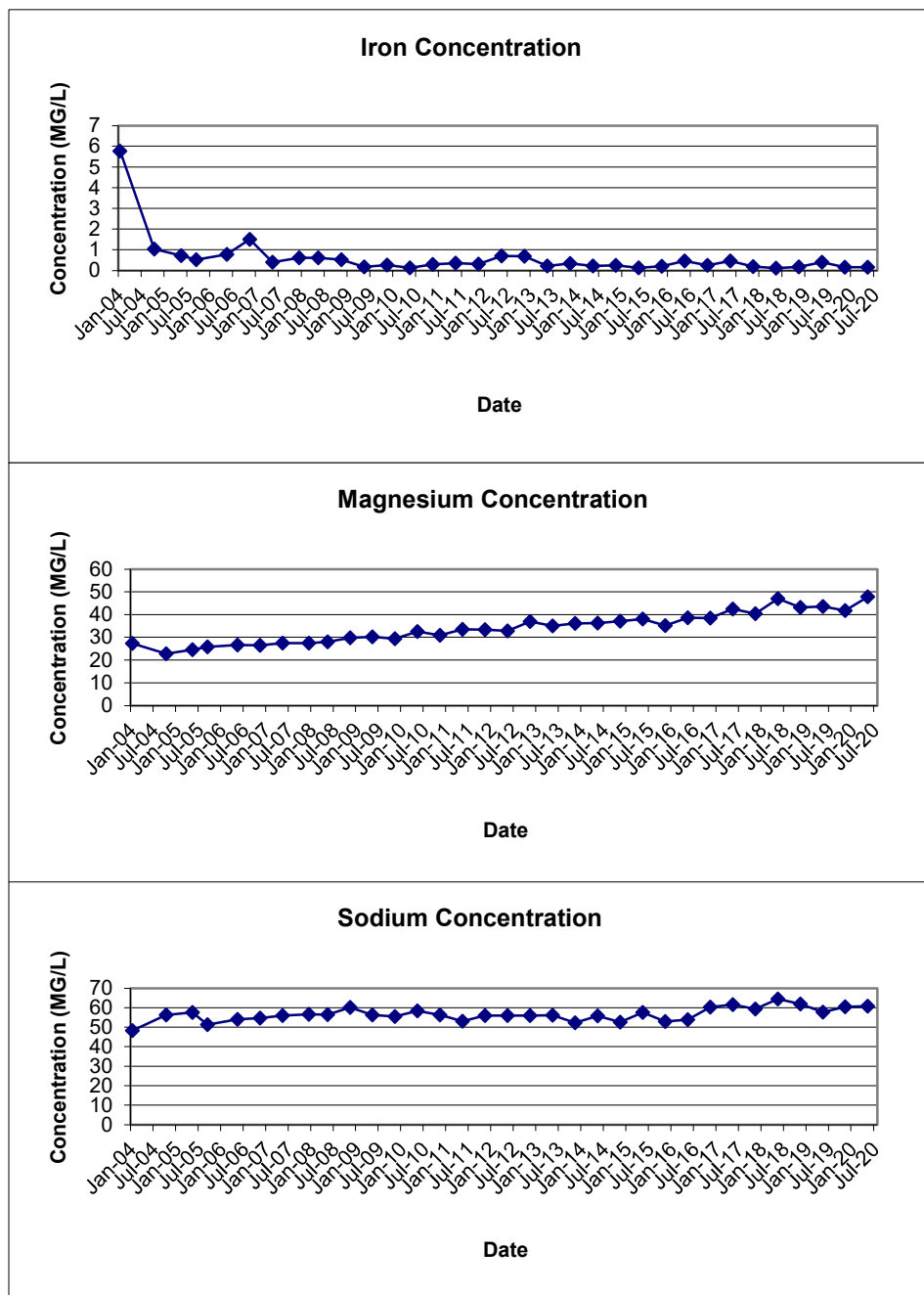


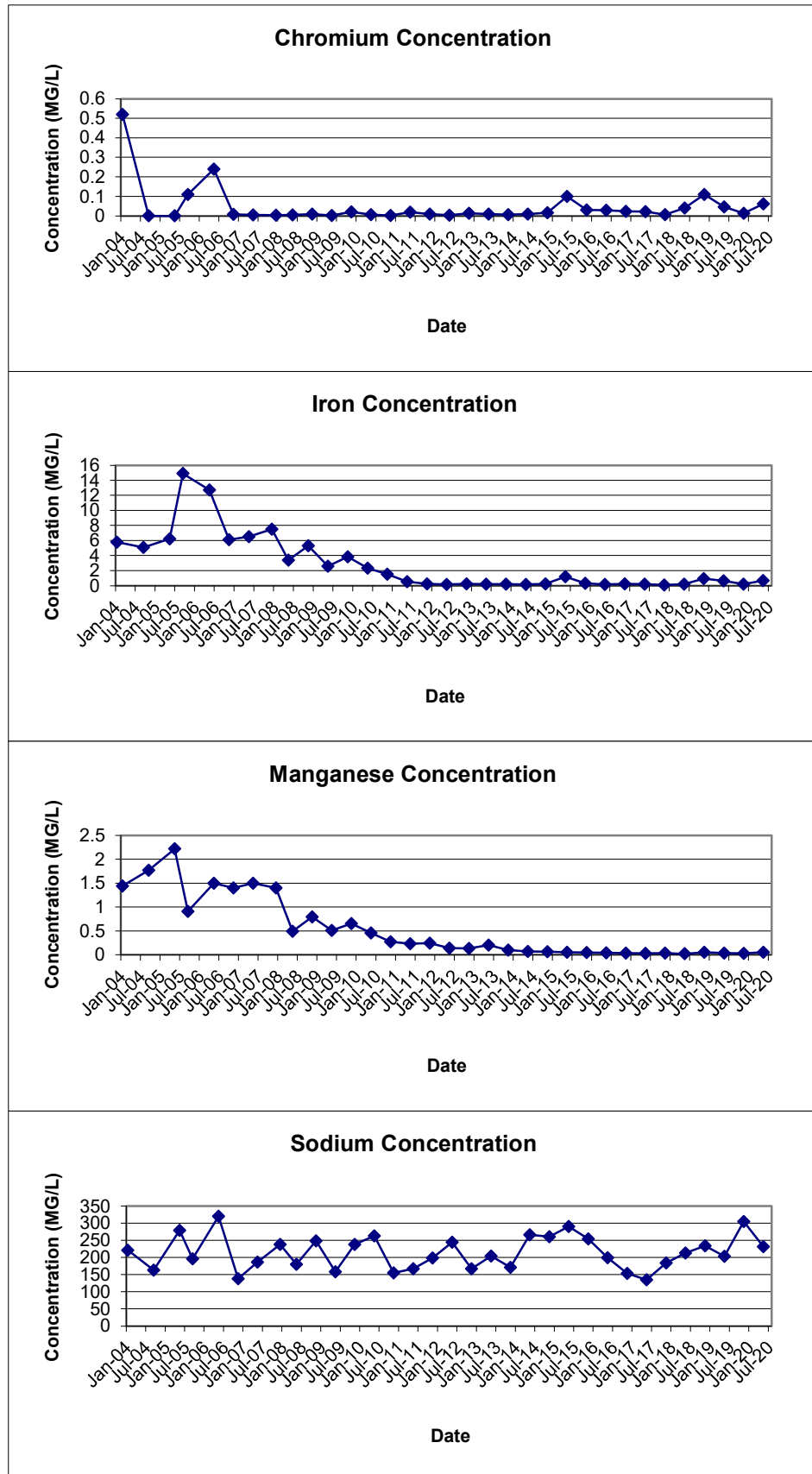
FIGURE E-7  
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS  
IN MONITORING WELL GW-07D



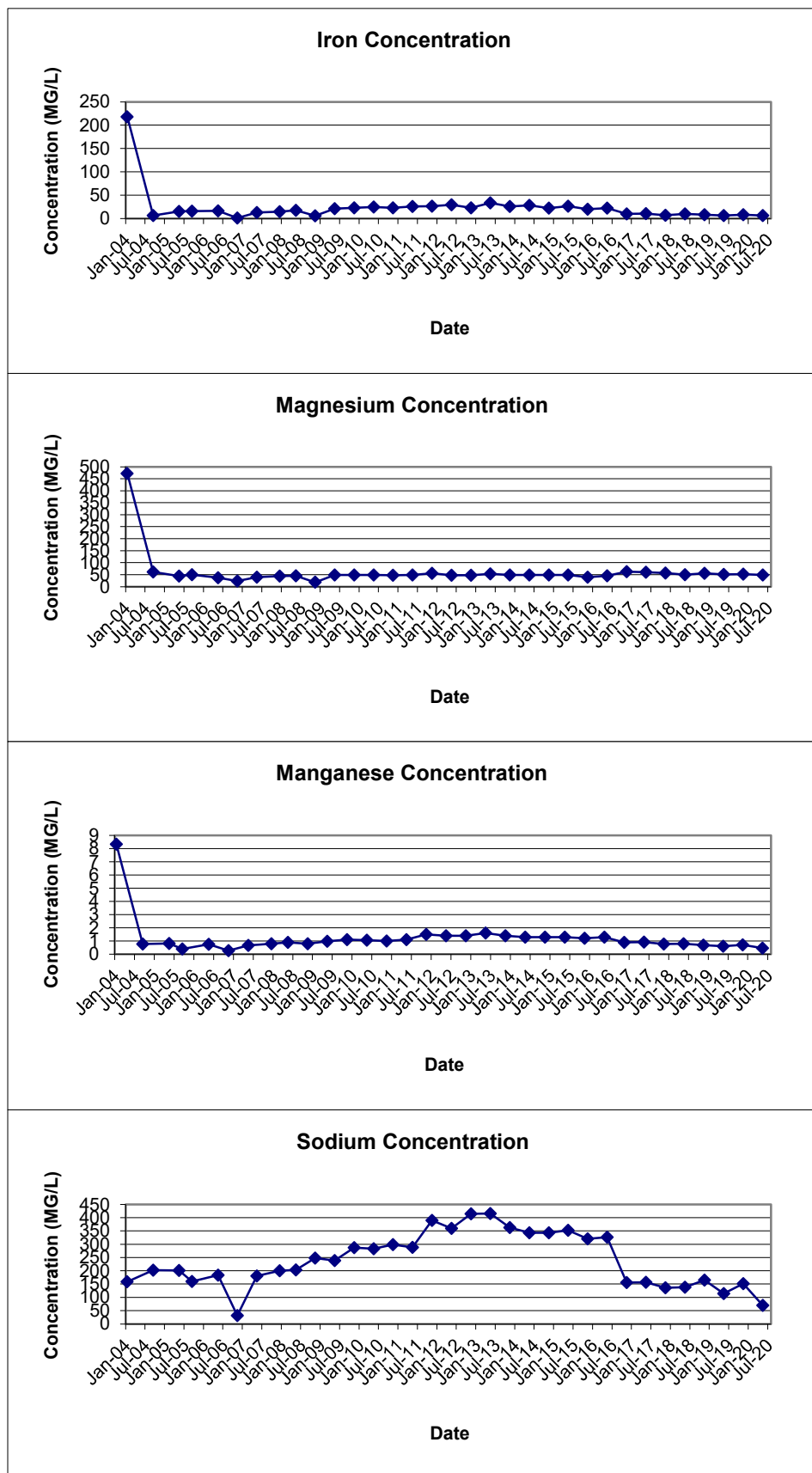
**FIGURE E-8**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-07S**



**FIGURE E-9**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-08D**

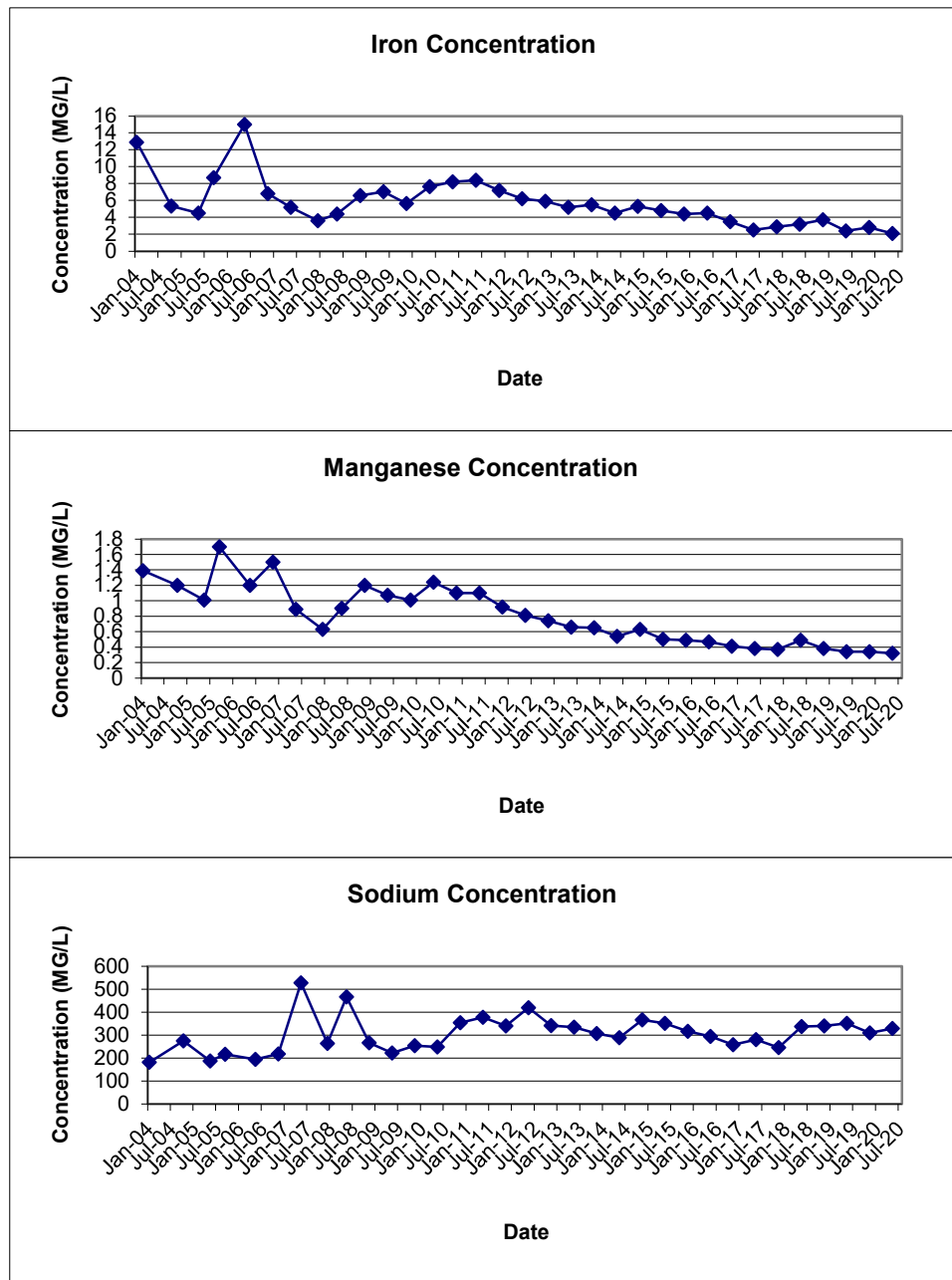


**FIGURE E-10**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-08SR**

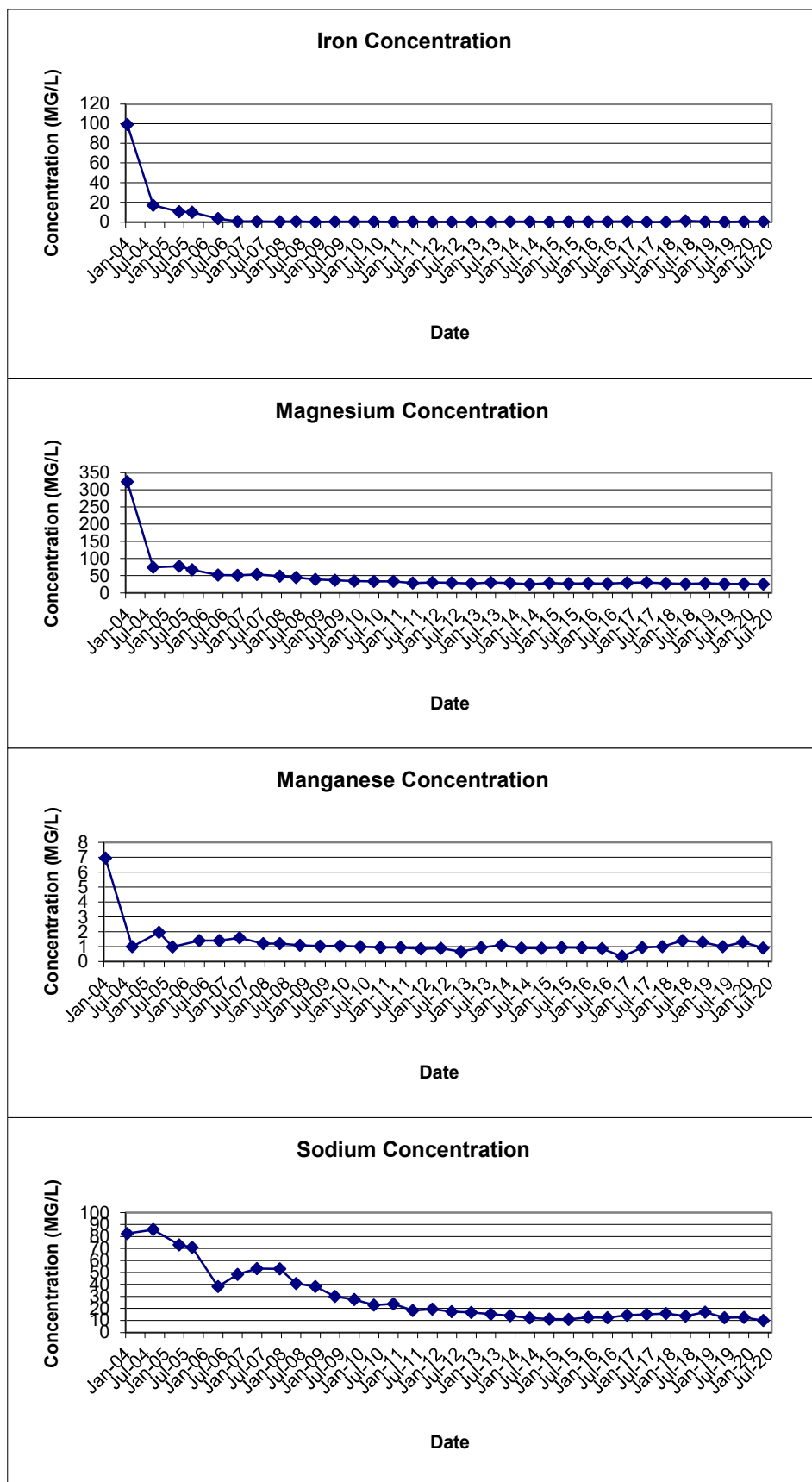




**FIGURE E-11**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-26D**



**FIGURE E-12**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-28S**



**FIGURE E-13**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-29S**

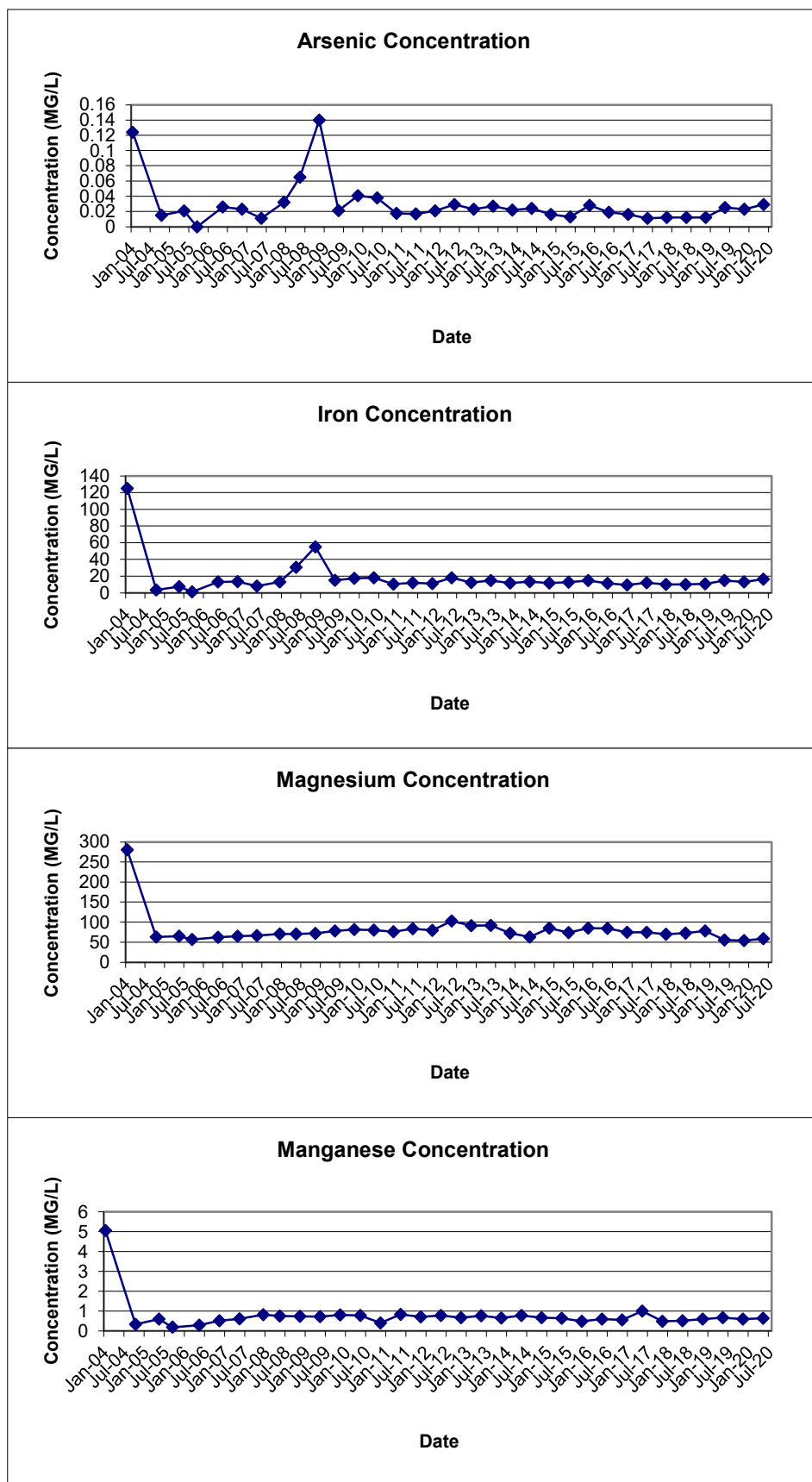
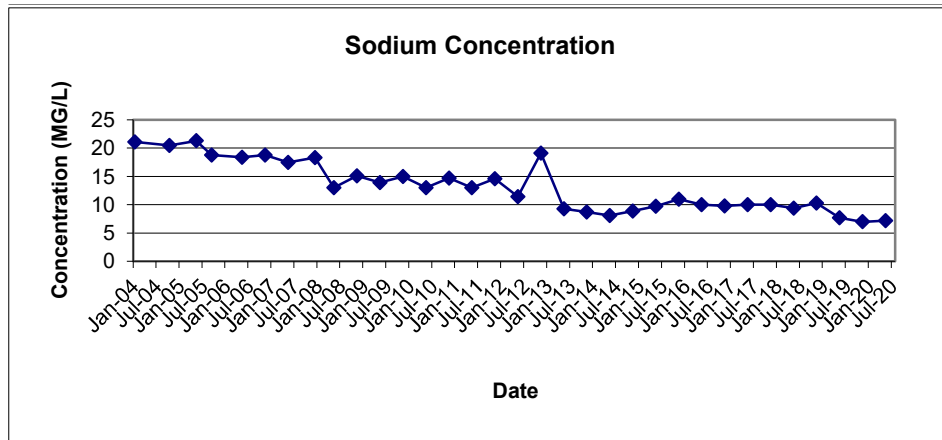
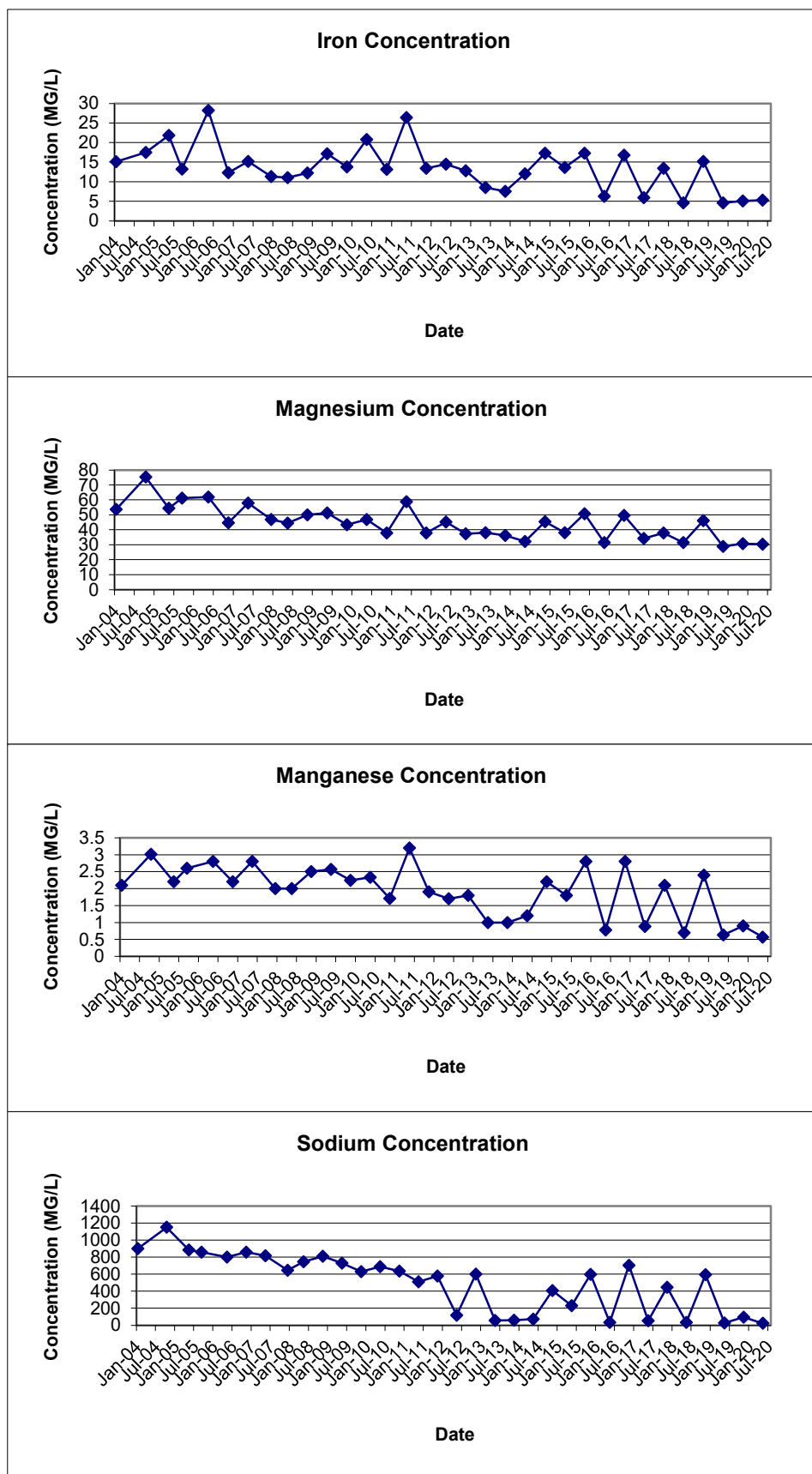


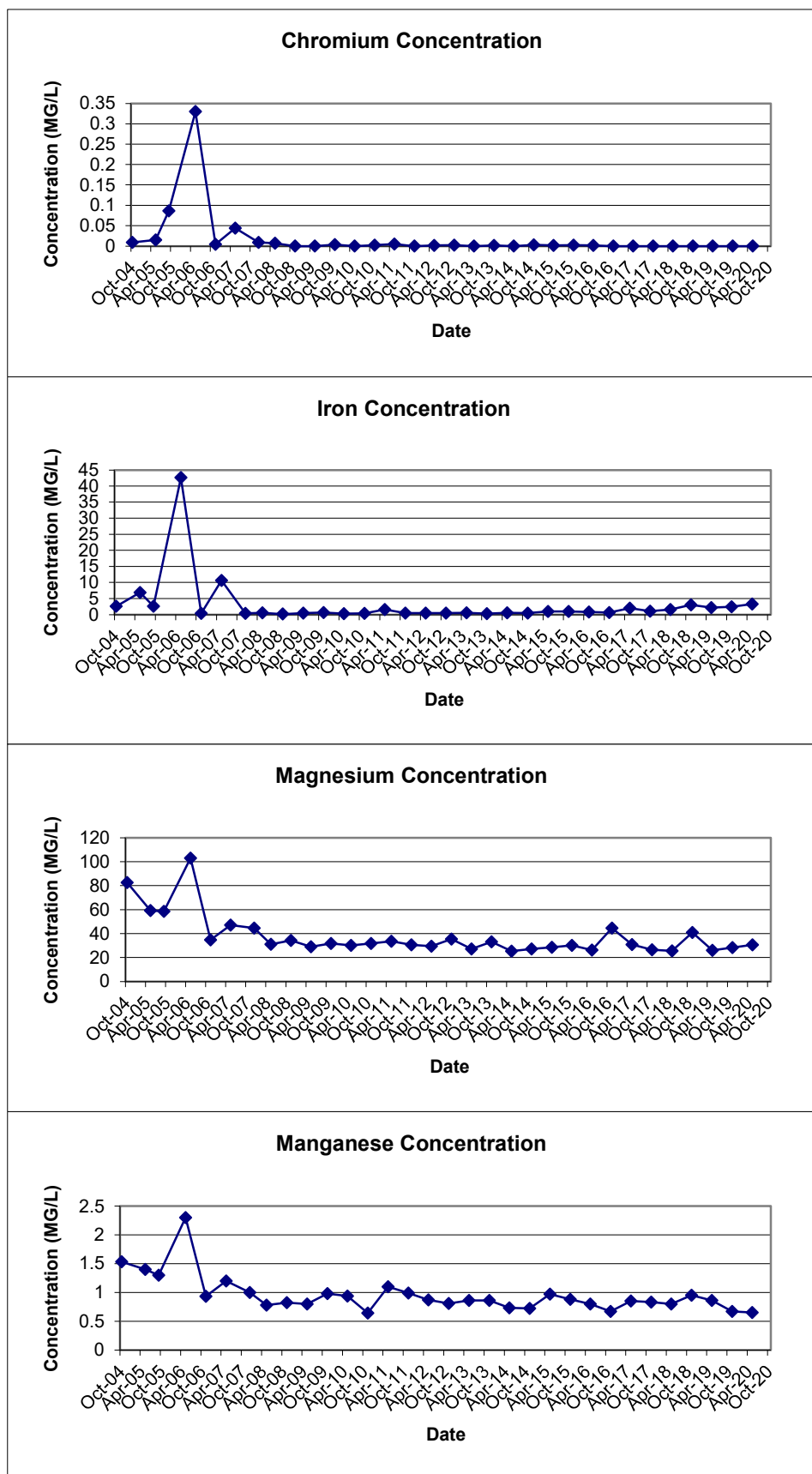
FIGURE E-13  
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS  
IN MONITORING WELL GW-29S



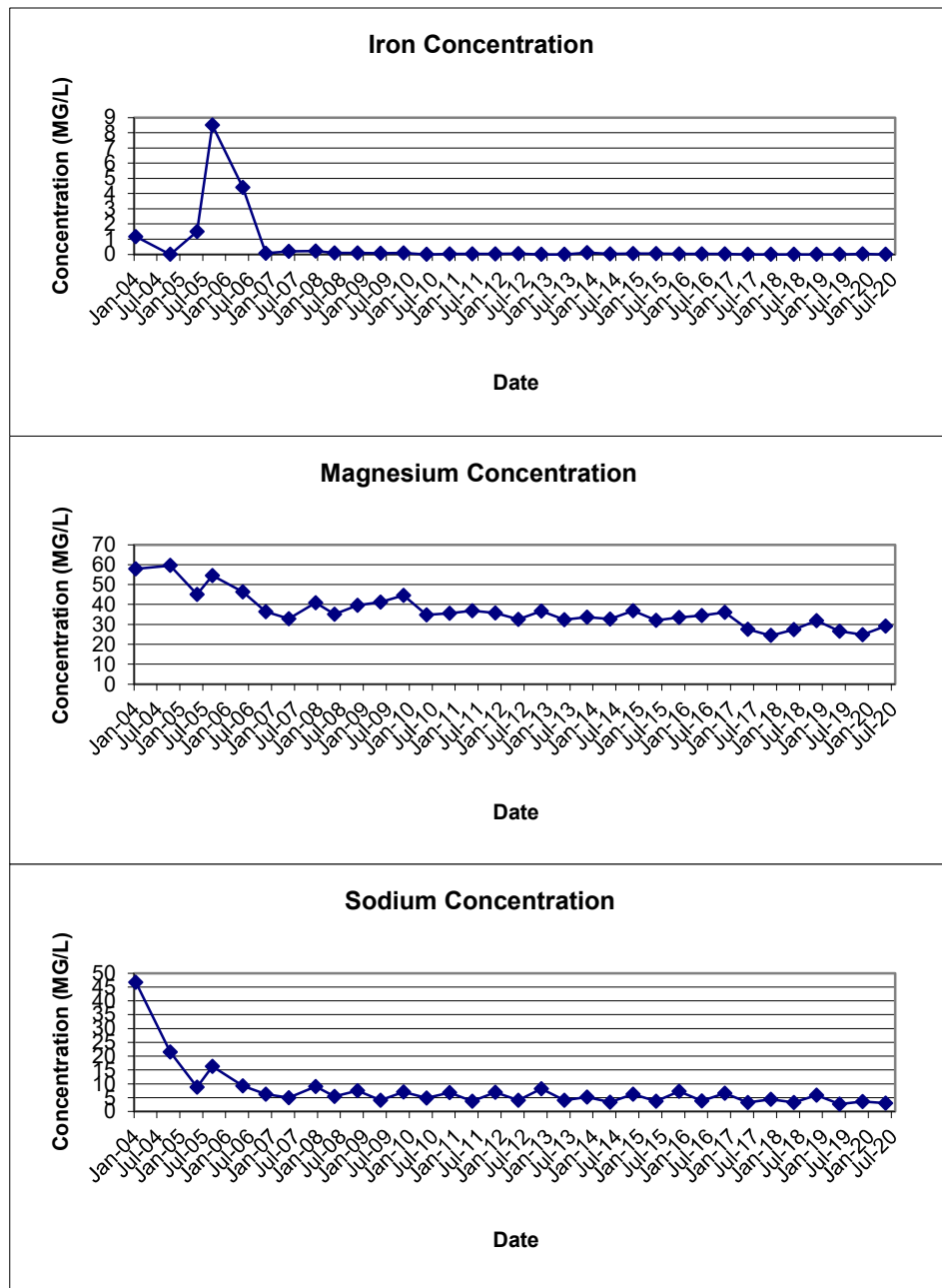
**FIGURE E-14**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-30S**



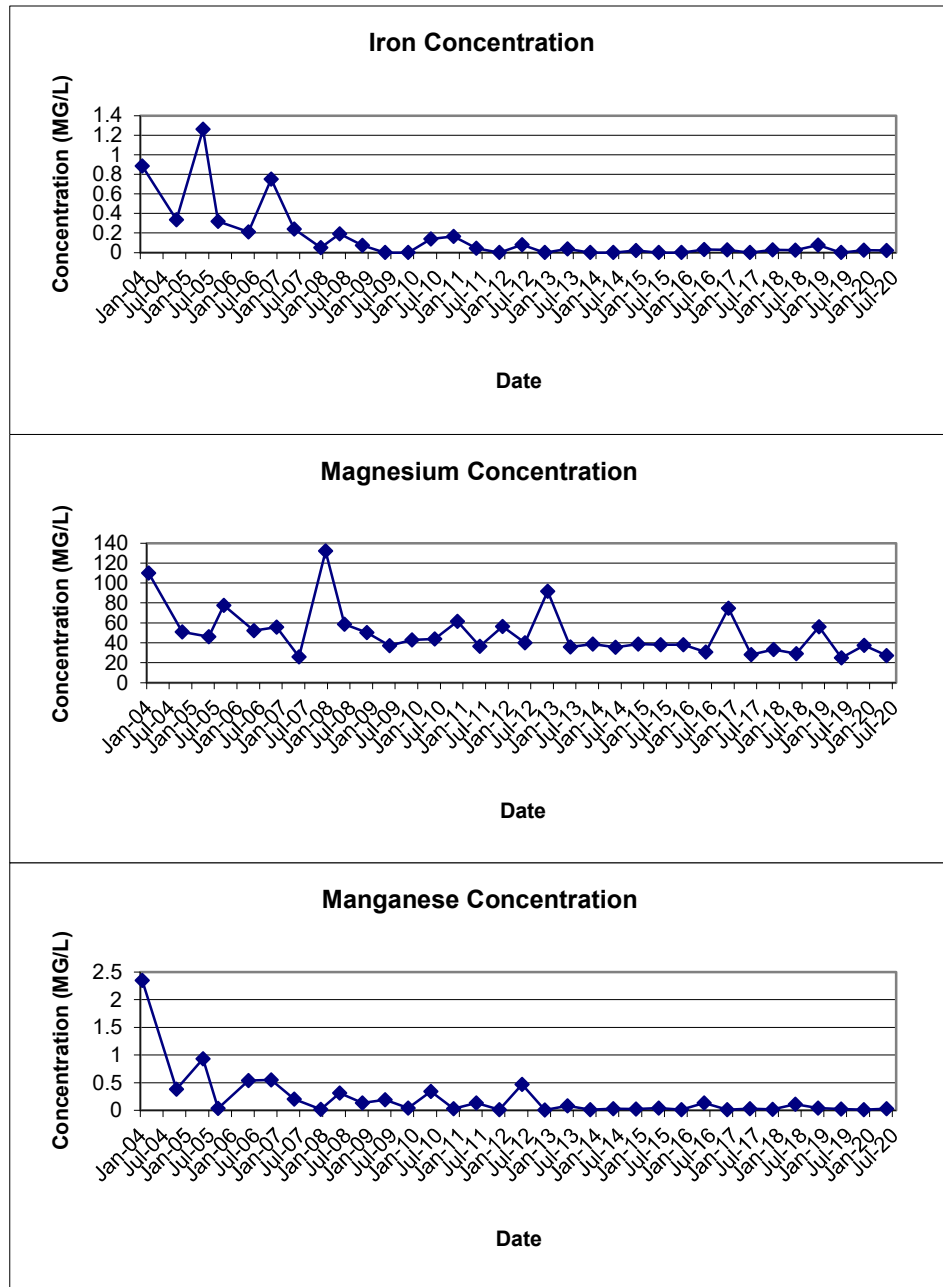
**FIGURE E-15**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-31S**



**FIGURE E-16**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-32S**

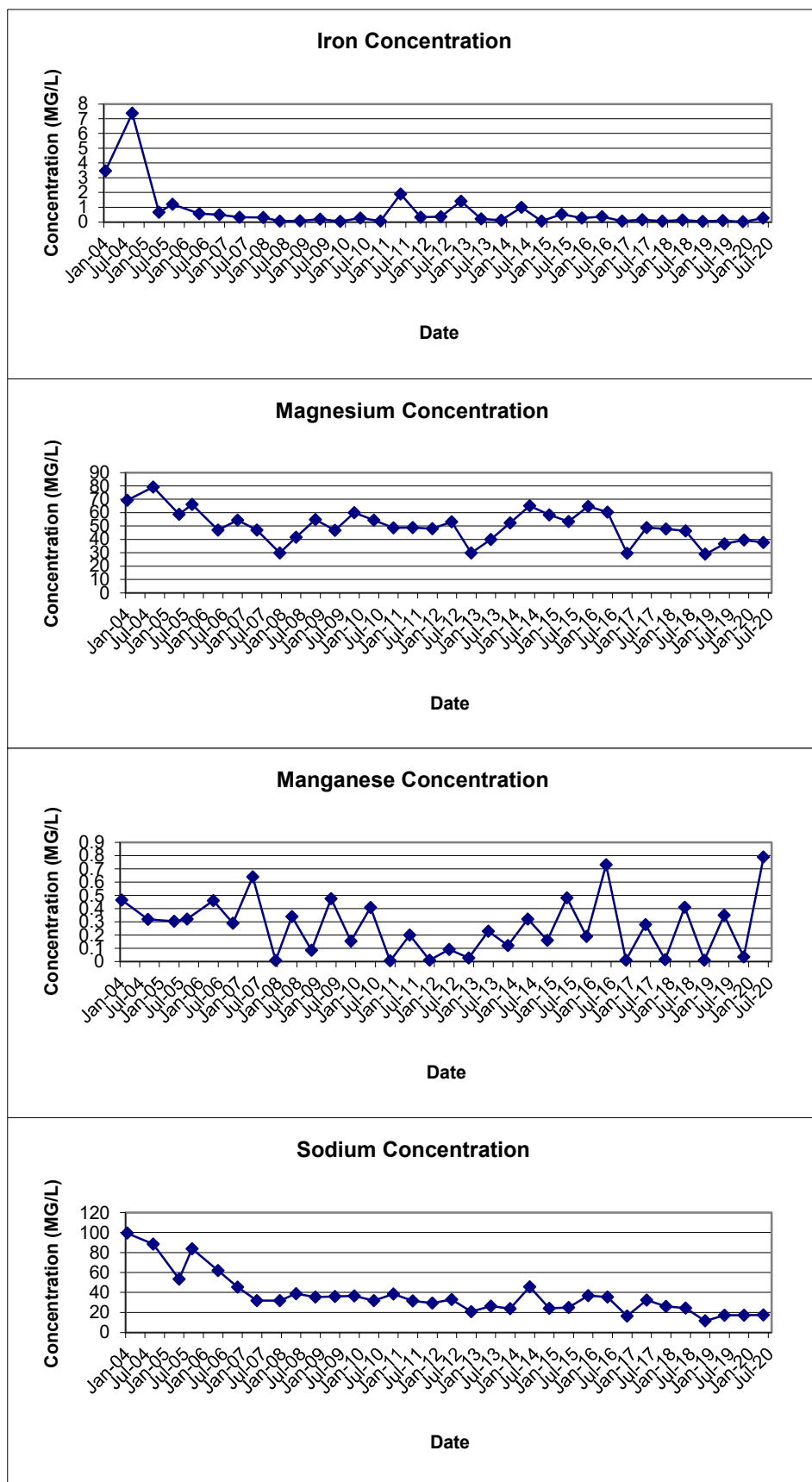


**FIGURE E-17**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-33S**

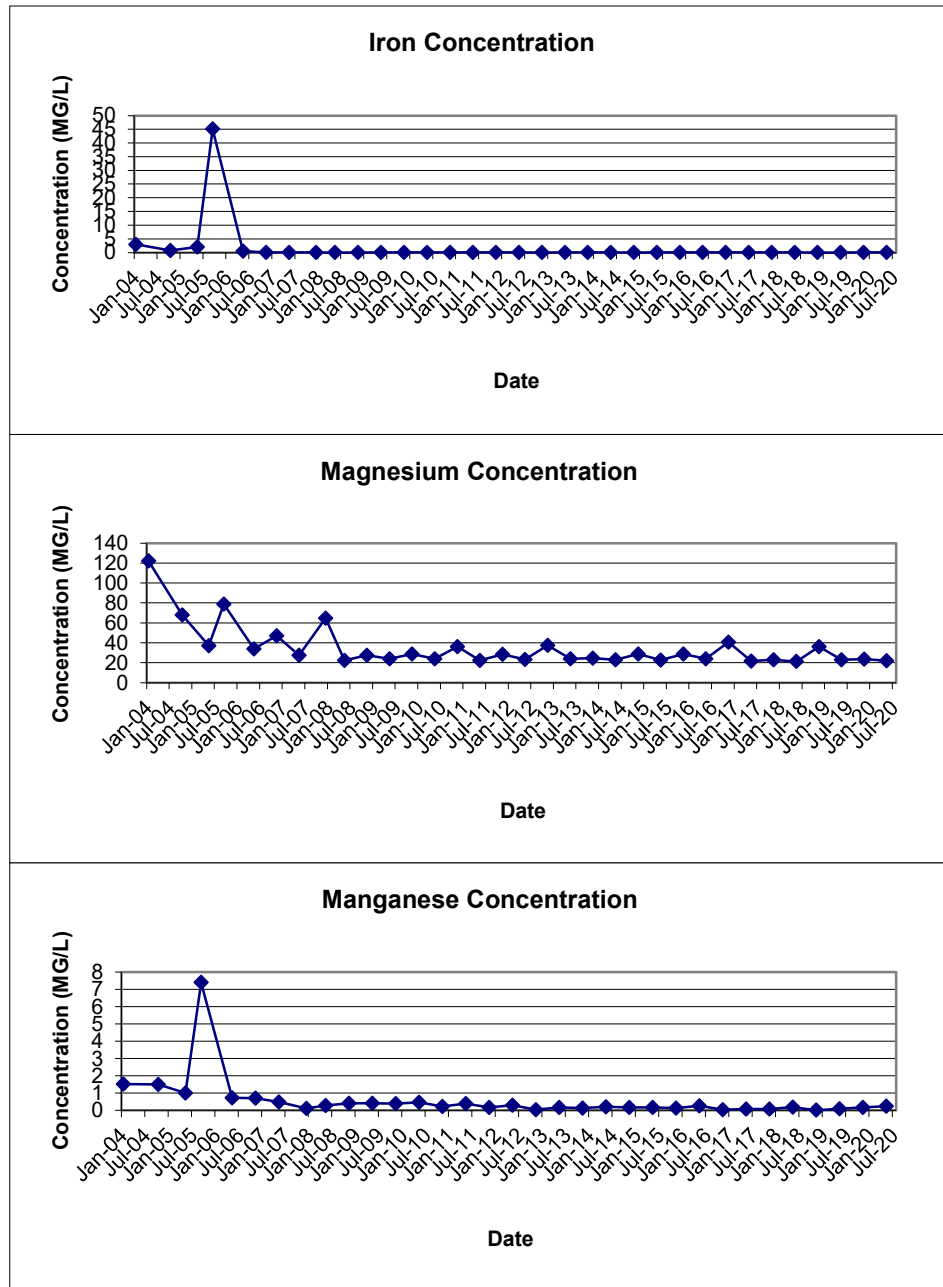




**FIGURE E-18**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-34S**



**FIGURE E-19**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-35S**



## **APPENDIX F**

### **BSA PERMIT 19-04-CH016**

**AUTHORIZATION TO DISCHARGE UNDER THE BUFFALO  
POLLUTANT DISCHARGE ELIMINATION SYSTEM**

**PERMIT NO. 19-04-CH016**

**USEPA Category 40 CFR Part 403**

In accordance with the provisions of the Federal Water Pollution Control Act, as amended, and the  
Sewer Regulations of the Buffalo Sewer Authority, authorization is hereby granted to:

**THE TOWN OF CHEEKTOWAGA**

to discharge wastewater from a facility located at:

**PFOHL BROTHERS LANDFILL REMEDIATION SITE**

**1000 AERO DRIVE**

**CHEEKTOWAGA, NEW YORK 14225**

The wastewater permitted herein shall be discharged to the Town of Cheektowaga sewer system,  
which is connected to the Buffalo Municipal Sewer System and Treatment facilities, and which  
wastewater will be treated at the Buffalo Sewer Authority's Treatment Plant.

Issuance of this permit is based upon a permit application filed on **February 19, 2019** analytical  
data. This permit is granted in accordance with discharge limitations, monitoring requirements and  
other conditions set forth in Parts I and II hereof.

**Effective this 1st<sup>day</sup> of April, 2019**

**To Expire the 31st day of March, 2022**

  
\_\_\_\_\_  
**General Manager**

Signed this 20<sup>th</sup> day of MARCH, 2019

**RECEIVED**

**MAR 27 2019**

**ENGINEERING DEPT.**

**PART I: SPECIFIC CONDITIONS****A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS**

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **quarterly** by the permittee as specified below.

Sample Point	Parameter	Discharge Limitations <sup>(1)</sup>	Sampling Requirements	
		Daily Max	Period	Type
001	pH	5.0 – 12.0 S.U.	1 day	Composite <sup>2</sup>
	Total Cadmium	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Chromium	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Copper	3.74 lbs.	1 day	Composite <sup>2</sup>
	Total Lead	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Nickel	3.27 lbs.	1 day	Composite <sup>2</sup>
	Total Zinc	5.84 lbs.	1 day	Composite <sup>2</sup>
	Total Barium	2.34 lbs.	1 day	Composite <sup>2</sup>
	Total Suspended Solids <sup>5</sup>	250 mg/l	1 day	Composite <sup>2</sup>
	Total Flow	140,100 gallons <sup>6</sup>	1 day	Discharge meter reading

Footnotes are explained on page 5.

**PART I: SPECIFIC CONDITIONS****A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS**

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **once** by the permittee as specified below.

Sample Point	Parameter	Discharge Limitations <sup>(1)</sup>	Sampling Requirements	
		Daily Max	Period	Type
001	Total Mercury USEPA Test Method 608 <sup>4</sup>	0.001 lbs.	1 day	Composite <sup>2</sup>
	USEPA Test Method 624 <sup>4</sup>	To be monitored	1 day	Grab <sup>3</sup>
	USEPA Test Method 625 <sup>4</sup>	To be monitored	1 day	Grab <sup>3</sup>
	USEPA Test Method 625 <sup>4</sup>	To be monitored	1 day	Grab <sup>3</sup>

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

**B. DISCHARGE MONITORING REPORTING REQUIREMENTS**

During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2019	Every March 31 <sup>st</sup> , June 30 <sup>th</sup> , September 30 <sup>th</sup> and December 31 <sup>st</sup>
	USEPA Test Methods 608, 624 and 625 & T Mercury	June 30, 2019	

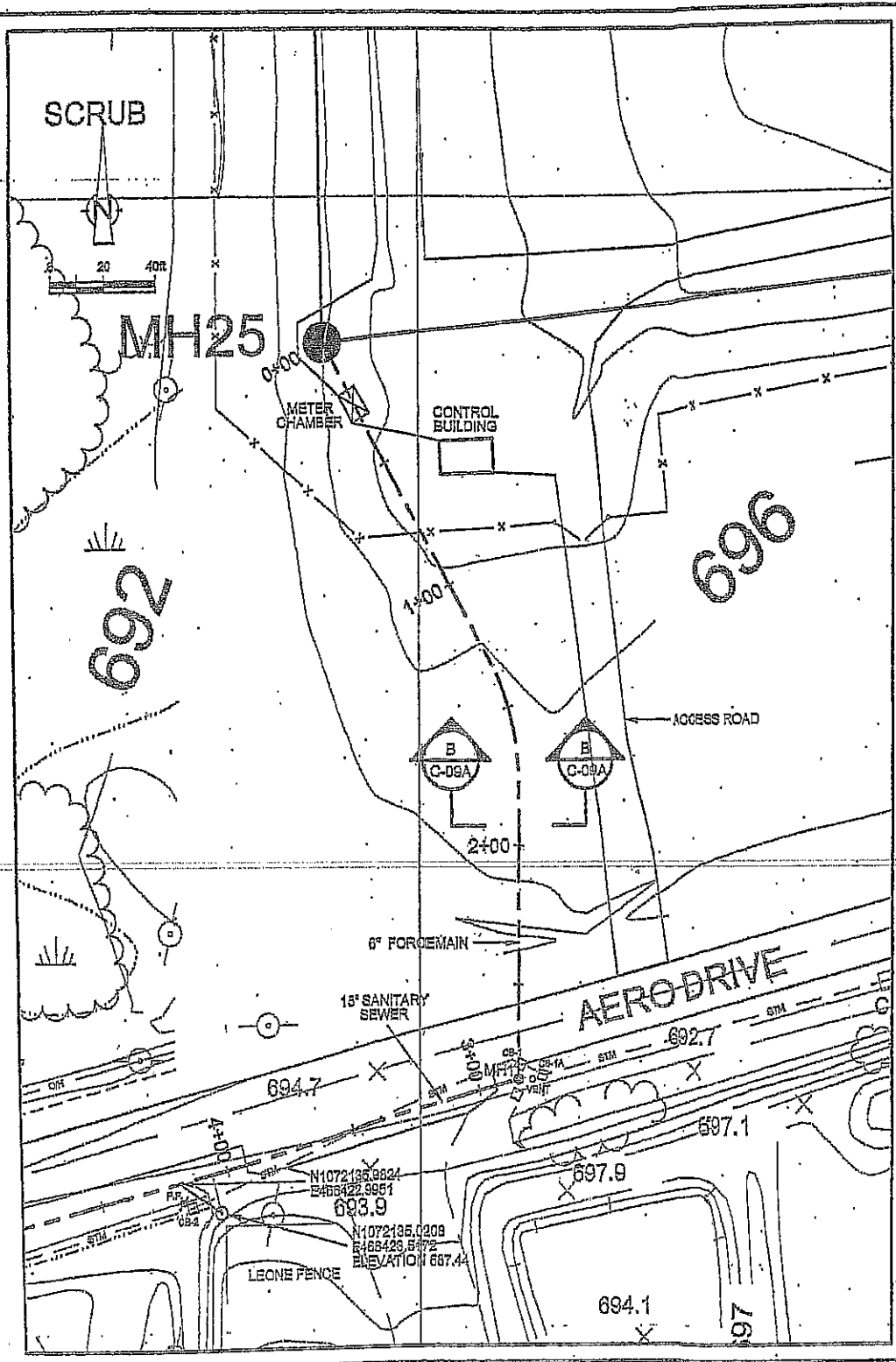
\* Please submit new discharge permit application 6 months prior to the expiration of this permit\*

## **PART I: SPECIFIC CONDITIONS**

### **C. SPECIAL REQUIREMENTS**

1. Mass limits based on an average discharge of 140,100 gpd.
2. Composite samples may be time proportioned.
3. Four grab samples must be collected at equally spaced intervals throughout the sample day. The four (4) grab samples must be composited by a NYSDOH certified laboratory prior to analysis.
4. The permittee must report any compound whose concentration is equal to or greater than 0.01 mg/L. The permittee is not authorized to discharge any of the parameters evaluated by these test procedures which may cause or contribute to a violation of water quality standards or harm the sewerage system. Any parameter detected may, at the discretion of the BSA, be specifically limited and incorporated in this permit.
5. Surchargeable over 250 mg/L.
6. Flow is an action level only. If the permittee consistently exceeds this level, the BSA must be notified so that this permit can be modified.





**TOWN OF CHEEKTOWAGA/BUFFALO POLLUTANT DISCHARGE ELIMINATION SYSTEM  
PERMIT**

**PART II GENERAL CONDITIONS**

**A. MONITORING AND REPORTING**

**1. Local Limits**

Except as otherwise specified in this permit, the permit holder shall comply with all specific prohibitions, limits on pollutants or pollutant parameters set forth in the Buffalo Sewer Authority Sewer Use Regulations, as amended from time to time, and such prohibitions, limits and parameters shall be deemed pretreatment standards for purposes of the Clean Water Act

**2. Definitions**

Definitions of terms contained in this permit are as defined in the Town of Cheektowaga Local Law No. 2 and the Buffalo Sewer Authority Sewer Use Regulations.

**3. Discharge Sampling Analysis**

All Wastewater discharge samples and analyses and flow measurements shall be representative of the volume and character of the monitored discharge. Methods employed for flow measurements and sample collections and analyses shall conform to the Buffalo Sewer Authority "Sampling Measurement and Analytical Guidelines Sheet."

**4. Recording of Results**

For each measurement or sample taken pursuant to the requirements of the permit, the Permittee shall record the information as required in the "Sampling Measurement and Analytical Guidelines Sheet."

**5. Additional Monitoring by Permittee**

If the Permittee monitors any pollutants at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in 40 CFR Part 136 the results of such monitoring shall be included in the calculation and reporting of values required under Part I, B. Such increased frequency shall also be indicated.

**6. Reporting**

All reports prepared in accordance with this Permit shall be submitted to:

**Patrick Bowen, P.E.**  
**Town Engineer**  
**275 Alexander Ave.**  
**Cheektowaga, New York, 14211**

All self-monitoring reports shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines Sheet." These reporting requirements shall not relieve the Permittee of any other reports, which may be required by the

N.Y.S.D.E.C. or the U.S.E.P.A.

**B. PERMITTEE REQUIREMENTS**

**1. Change in Discharge**

All discharges authorized herein shall be consistent with the terms and conditions of this permit and with the information contained in the TC/BPDES Permit Application on which basis this permit is granted. In the event of any facility expansions, production increases, process modifications or the installation, modification or repair of any pretreatment equipment which may result in new, different or increased discharges of pollutants, a new TC/BPDES Permit Application must be submitted prior to any change. Following receipt of an amended application, the BSA may modify this permit to specify and limit any pollutants not previously limited. In the event that the proposed change will be covered under an applicable Categorical Standard, a Baseline Monitoring Report must be submitted at least ninety (90) days prior to any discharge.

**2. Records Retention**

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation shall be retained at this facility for a minimum of three (3) years, or longer if requested by the General Manager and/or Town Engineer.

**3. Notification of Slug, Accidental Discharge or Spill**

In the event that a slug, accidental discharge or any spill occurs at the facility for which this permit is issued, it is the responsibility of the Permittee to immediately notify the B.S.A. Treatment Plant at 883-1820 of the quantity and character of such discharge. If requested by the B.S.A., within five (5) days following all such discharges, the Permittee shall submit a report describing the character and duration of the discharge, the cause of the discharge, and measures taken or that will be taken to prevent a recurrence of such discharge.

**4. Noncompliance Notification**

If, for any reason, the Permittee does not comply with or will be unable to comply with any discharge limitation specified in this permit, the Permittee or their assigns must verbally notify the Industrial Waste Section at 883-1820 within twenty-four (24) hours of becoming aware of the violation. The Permittee shall provide the Industrial Waste Section with the following information, in writing, within five (5) days of becoming aware of such condition:

- a. a description of the discharge and cause of noncompliance and;
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

**5. Adverse Impact**

The Permittee shall take all reasonable steps to minimize any adverse impact to the Buffalo and Town Sewerage System resulting from noncompliance with any discharge limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

**6. Waste Residuals**

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters, shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the Buffalo or Town Sewer System.

**7. Power Failures**

In order to maintain compliance with the discharge limitations and prohibitions of this permit, the Permittee shall provide an alternative power source sufficient to operate the wastewater control facilities; or, if such alternative power source is not provided the Permittee shall halt, reduce or otherwise control production and/or controlled discharges upon the loss of power to the wastewater control facilities.

**8. Treatment Upsets**

- a. Any industrial user which experiences an upset in operations that places it in a temporary state of noncompliance, which is not the result of operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation, shall inform the Industrial Waste Section immediately upon becoming aware of the upset. Where such information is given verbally, a written report shall be filed by the user within five (5) days. The report shall contain:
  - (i) A description of the upset, its cause(s) and impact on the discharger's compliance status.
  - (ii) The duration of noncompliance, including exact dates and times of noncompliance, and if the noncompliance is continuing, the time by which compliance is reasonably expected to be restored
  - (iii) All steps taken or planned to reduce, eliminate, and prevent recurrence of such an upset.
- b. An industrial user which complies with the notification provisions of this Section in a timely manner shall have an affirmative defense to any enforcement action brought by the Industrial Waste Section/Town Engineer for any noncompliance of the limits in this permit, which arises out of violations attributable to and alleged to have occurred during the period of the documented and verified upset.

**9. Treatment Bypasses**

- a. A bypass of the treatment system is prohibited unless the following conditions are met:
  - (i) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; or
  - (ii) There was no feasible alternative to the bypass, including the use of auxiliary treatment or retention of the wastewater; and
  - (iii) The industrial user properly notified the Industrial Waste Section as described in paragraph b. below.
- b. Industrial users must provide immediate notice to the Industrial Waste Section upon delivery of an unanticipated bypass. If necessary, the Industrial Waste Section may require the industrial user to submit a written report explaining the cause(s), nature, and duration of the bypass, and the steps being taken to prevent its recurrence.
- c. An industrial user may allow a bypass to occur which does not cause pretreatment standards or requirements to be violated, but only if it is for essential maintenance to ensure efficient operation of the treatment system. Industrial users anticipating a bypass must submit notice to the Industrial Waste Section at least ten (10) days in advance. The Industrial Waste Section may only approve the anticipated bypass if the circumstances satisfy those set forth in paragraph a. above.

**C. PERMITTEE RESPONSIBILITIES**

**1. Permit Availability**

The originally signed permit must be available upon request at all times for review at the address stated on the first page of this permit.

**2. Inspections**

The Permittee shall allow the representatives of the Buffalo Sewer Authority or Town of Cheektowaga upon the presentation of credentials and during normal working hours or at any other reasonable times, to have access to and copy any records required in this permit; and to sample any discharge of pollutants.

**3. Transfer of Ownership or Control**

In the event of any change in control or ownership of facilities for which this permit has been issued the permit shall become null and void. The succeeding owner shall submit a completed Town of Cheektowaga/ Buffalo Sewer Authority permit application prior to discharge to the sewer system.

**D. PERMITTEE LIABILITIES**

**1. Permit Modification**

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to the following:

- a. Violation of any terms or conditions of this permit,
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts,
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

**2. Imminent Danger**

In the event there exists an imminent danger to health or property, the permitter reserves the right to take immediate action to halt the permitted discharge to the sewerage works.

**3. Civil and Criminal Liability**

Nothing in this permit shall relieve the Permittee from any requirements, liabilities, or penalties under provisions of the Town of Cheektowaga Local Law No. 2, the "Sewer Regulations of the Buffalo Sewer Authority" or any Federal, State and/or local laws or regulations.

**4. Penalties for Violations of Permit Conditions**

The "Sewer Regulations of the Buffalo Sewer Authority" and Town of Cheektowaga Local Law No. 2, provide that any person who violates a B.P.D.E.S. permit condition is liable to the Authority and/or the Town for a civil penalty of up to \$10,000 per day for each violation. Any person who willfully or negligently violates permit conditions will be referred to the New York State Attorney General.

**E. NATIONAL PRETREATMENT STANDARDS**

If a pretreatment standard or prohibition (including any Schedule of Compliance specified in such pretreatment standard or prohibition) is established under Section 307 (b) of the Act for a pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with such pretreatment standard or prohibition.

**F. PLANT CLOSURE**

In the event of plant closure, the Permittee is required to notify the Industrial Waste Section/Town Engineer in writing as soon as an anticipated closure date is determined, but in no case later than five (5) days of the actual closure.

**G. CONFIDENTIALITY**

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Buffalo Sewer Authority or Town Engineer of the Town of Cheektowaga. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

**H. SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

# **APPENDIX G**

## **DISCHARGE REPORT SUMMARY TABLES**



# SAMPLING FIELD SHEET



Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Patrick T. Bowen, P.E. Phone: 716-897-7288

**Installation:**

Sample Point: SP-001

Sample Location: Meter Chamber - ball valve on 6" HDPE forcemain

Date: 3/10/20 Crew: R. Murphy, T. Urban, C. Bourne

Weather: 47° F, cloudy, light rain

Sampling Device: NA

Time of Installation: 13:30 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells running at the time of sample set-up.

PLC display volumes: WW-01 (440,891 gals), WW-02 (460 gals), WW-03 (136 gals),

WW-04 (650,146 gals), WW-05 (3,163,071 gals), WW-06 (3,633,166 gals) & MH-25 (7,939,385 gals).

Date: 3/11/20 Crew: R. Murphy, K. McGovern

Weather: 44° F, partly sunny

Time of Collection: 13:30

Field Measurements:

13:30/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10  
(time/initial)

pH Measurement: 7.53

Temperature: 10.4°C

Identification: EFF-031120

Physical Observations: Light red tint, few red particulates

Laboratory: TestAmerica, Buffalo, NY

Comments: Well WW-06 running at the time of sample pick-up.

PLC display volumes: WW-01 (440,891 gals), WW-02 (460 gals), WW-03 (136 gals),

WW-04 (650,146 gals), WW-05 (3,184,917 gals), WW-06 (3,711,359 gals) & MH-25 (8,039,850 gals).

Reviewed By: Robert J. Murphy Date: 3/11/20  
(Supervisor)

**TABLE 1**

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING  
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS  
MARCH 2020**

<b>Sample ID</b>	<b>EFF-031120</b>			
<b>Matrix</b>	<b>Effluent Water</b>			
<b>Date Sampled</b>	<b>3/11/2020</b>			
<b>Parameter</b>	<b>Result</b>	<b>Mass Loading</b>	<b>Discharge Limitation</b>	<b>Violations</b>
	<b>(mg/L)</b>	<b>(lbs/day)</b>	<b>(lbs/day)</b>	<b>(Y/N)</b>
Total Barium	0.23	0.19	2.34	No
Total Cadmuim	< <sup>(1)</sup> 0.0005	< 0.0004	1.17	No
Total Chromium	< 0.0010	< 0.0008	1.17	No
Total Copper	0.0021 J	0.0018	3.74	No
Total Lead	< 0.0030	< 0.0025	1.17	No
Total Nickel	0.0021 J	0.002	3.27	No
Total Zinc	0.0072 J	0.006	5.84	No
Total Suspended Solids	9.2	NA <sup>(2)</sup>	250 <sup>(3)</sup>	No
pH <sup>(4)</sup>	7.53	NA	5.0 - 12.0	No
Total Flow <sup>(5)</sup>		100,465	140,100	No

**Notes:**

- (1) < = Compound not detected, method detection limit shown
- (2) NA = Not Applicable
- (3) Discharge Limitation in units of mg/L
- (4) pH measurement and Discharge Limitation in Standard Units
- (5) Total Flow reported in gallons, sample was collected over a 24 hour period
- J= Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

$$\text{Calculation: } \left( \frac{x \text{ mg}}{\text{L}} \right) \left( \frac{y \text{ gal}}{\text{day}} \right) \left( \frac{1 \text{ lb}}{453,600 \text{ mg}} \right) \left( \frac{3.785 \text{ L}}{\text{gal}} \right) = \frac{x \times y}{119,841} \frac{\text{lb}}{\text{day}}$$

# SAMPLING FIELD SHEET



Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Patrick T. Bowen, P.E. Phone: 716-897-7288

**Installation:**

Sample Point: SP-001

Sample Location: Meter Chamber - ball valve on 6" HDPE forcemain

Date: 6/17/20 Crew: R. Murphy, T. Urban

Weather: 80° F, sunny

Sampling Device: NA

Time of Installation: 12:00 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Well WW-05 running at the time of sample set-up.  
PLC display volumes: WW-01 (471,420 gals), WW-02 (31,504 gals), WW-03 (136 gals),  
WW-04 (843,016 gals), WW-05 (4,423,245 gals), WW-06 (5,486,390 gals) & MH-25 (11,356,981 gals).

Date: 6/18/20 Crew: R. Murphy, T. Urban

Weather: 85° F, sunny

Time of Collection: 12:00

Field Measurements:

12:00/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10  
(time/initial)

pH Measurement: 7.59

Temperature: 19.1°C

Identification: EFF-031120

Physical Observations: Light red tint, no particulates

Laboratory: TestAmerica, Buffalo, NY

Comments: Well WW-05 running at the time of sample pick-up.  
PLC display volumes: WW-01 (471,420 gals), WW-02 (31,504 gals), WW-03 (136 gals),  
WW-04 (843,016 gals), WW-05 (4,438,071 gals), WW-06 (5,486,390 gals) & MH-25 (11,371,843 gals).

Reviewed By: Robert J. Murphy Date: 6/18/20  
(Supervisor)

**TABLE 1**

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING  
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS  
JUNE 2020**

<b>Sample ID</b>	<b>EFF-061820</b>			
<b>Matrix</b>	<b>Effluent Water</b>			
<b>Date Sampled</b>	<b>6/18/2020</b>			
<b>Parameter</b>	<b>Result</b>	<b>Mass Loading</b>	<b>Discharge Limitation</b>	<b>Violations</b>
	<b>(mg/L)</b>	<b>(lbs/day)</b>	<b>(lbs/day)</b>	<b>(Y/N)</b>
Total Barium	0.26 ^	0.03	2.34	No
Total Cadmuim	< <sup>(1)</sup> 0.0005	< 0.0001	1.17	No
Total Chromium	< 0.0010	< 0.0001	1.17	No
Total Copper	0.0049 J	0.0006	3.74	No
Total Lead	< 0.0030	< 0.0004	1.17	No
Total Nickel	0.0034 J	0.0004	3.27	No
Total Zinc	0.0099 JB	0.001	5.84	No
Total Suspended Solids	< 4.0	NA <sup>(2)</sup>	250 <sup>(3)</sup>	No
pH <sup>(4)</sup>	7.59	NA	5.0 - 12.0	No
Total Flow <sup>(5)</sup>		14,862	140,100	No

Notes:

(1) < = Compound not detected, method detection limit shown

(2) NA = Not Applicable

(3) Discharge Limitation in units of mg/L

(4) pH measurement and Discharge Limitation in Standard Units

(5) Total Flow reported in gallons, sample was collected over a 24 hour period

^= The interference check standard solution (ICSA) associated with the following samples showed results for Barium at a level greater than 2 times the limit of detection (LOD). It is believed that the solution contains trace impurities of this element and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution.

J= Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

B= Compound was found in the blank and sample.

$$\text{Calculation: } \left( \frac{x \text{ mg}}{\text{L}} \right) \left( \frac{y \text{ gal}}{\text{day}} \right) \left( \frac{1 \text{ lb}}{453,600 \text{ mg}} \right) \left( \frac{3.785 \text{ L}}{\text{gal}} \right) = \frac{x \times y}{119,841} \frac{\text{lb}}{\text{day}}$$

# **APPENDIX H**

## **MONITORING WELL INSPECTION LOGS**

## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date(s) of Inspection: May 12, 2020

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-01S	OK	OK	OK	Bulged	3.99	14.94	
GW-01D	OK	OK	OK	Bulged	2.93	39.65	
GW-03S	OK	OK	OK	OK	2.48	13.22	
GW-03D	OK	OK	OK	OK	1.7	35.70	
GW-04S	OK	OK	OK	OK	4.23	16.23	
GW-04D	OK	OK	OK	OK	12.19	45.57	
GW-07S	OK	OK	OK	OK	4.77	35.33	
GW-07D	OK	OK	OK	Damaged	43.35	60.83	

Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date(s) of Inspection: May 12, 2020

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-08SR	OK	OK	OK	OK	5.16	13.02	
GW-08D	OK	OK	OK	OK	5.65	36.54	
GW-26D	OK	OK	OK	OK	6.54	40.70	
GW-28S	OK	OK	OK	OK	9.05	15.52	
GW-29S	OK	OK	OK	OK	8.33	20.04	
GW-30S	OK	OK	OK	OK	7.62	17.97	
GW-31S	OK	OK	OK	OK	2.96	9.57	
GW-32S	OK	OK	OK	OK	2.94	9.93	

Additional Comments:

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## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date(s) of Inspection: May 12, 2020

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-33S	OK	OK	OK	OK	4.20	8.21	
GW-34S	OK	OK	OK	OK	2.57	10.01	
GW-35S	OK	OK	OK	OK	3.35	7.46	

Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**DATA APPLICABILITY REPORT**

**SEMI-ANNUAL GROUNDWATER MONITORING**

**PFOHL BROTHERS LANDFILL SITE**

**Analyses Performed by:**

**EUROFINS TESTAMERICA, BUFFALO  
10 HAZELWOOD DRIVE  
AMHERST, NY**

**Prepared for:**

**TOWN OF CHEEKTOWAGA  
CHEEKTOWAGA, NY 14225**

**Prepared by:**

**AECOM  
257 WEST GENESEE STREET, SUITE 400  
BUFFALO, NY 14202-2657**

**MAY 2020**

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### TABLES (Following Text)

Table 1	Validated Groundwater Sample Results
Table 2	Validated Field QC Sample Results

### APPENDICES

Appendix A – Validated Sample Reporting Forms
Appendix B – Support Documentation

## **I. INTRODUCTION**

This Data Applicability Report (DAR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B-Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, May 2010. This DAR discusses the usability of the analytical data for groundwater samples collected during the May 2020 semi-annual monitoring program at the Pfohl Brothers Landfill Site, located in Cheektowaga, NY.

## **II. ANALYTICAL METHODOLOGIES and DATA APPLICABILITY PROCEDURES**

The data being evaluated are from the May 12-14, 2020 sampling of nineteen (19) groundwater samples, one (1) field duplicate, one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair, and two (2) trip blanks. The analytical laboratory that performed the analyses was Eurofins TestAmerica, Buffalo located in Amherst, NY. The samples were analyzed for the following project specific parameters: Volatile Organic Compounds (VOCs) following United States Environmental Protection Agency (USEPA) Method 8260C, Semivolatile Organic Compounds (SVOCs) by USEPA Method 8270D, and metals by USEPA Methods 6010C/7470A. Not all samples were analyzed for all parameters.

A limited data review was performed in accordance with the following USEPA guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Rev. 4, October 2014;*
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D, SOP HW-22, Rev. 5, December 2010;*
- ICP-AES Data Validation, SOP HW-3a, Rev. 1, September 2016; and
- Mercury and Cyanide Data Validation, SOP HW-3c, Rev. 1, September 2016.

The data applicability evaluation included a review of completeness of all required deliverables; holding times; quality control (QC) results (blanks, matrix spike recoveries, duplicate analyses, and laboratory control sample recoveries) to determine if the data are within the protocol-required QC limits and specifications; a determination that all samples were analyzed using established and agreed upon analytical protocols; and a review of laboratory data qualifiers.

Definitions of USEPA data qualifiers are presented at the end of this text. The analytical results are presented on Table 1 (groundwater) and Table 2 (field QC). Copies of the laboratory results (i.e., sample reporting forms) are presented in Appendix A. Documentation supporting the qualification of data is presented in Appendix B. Only analytical deviations affecting data usability are discussed in this report.

### **III. DATA DELIVERABLE COMPLETENESS**

In accordance with the project requirements, limited deliverable data packages (level 2) were provided by the laboratory, which only consisted of analytical summaries, QC reporting forms and case narratives.

### **IV. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES**

All samples were received by the laboratory intact, properly preserved and under proper chain-of-custody (COC). All samples were analyzed within the required holding times (HT).

Due to the low recharge rates of monitoring wells GW-07D and GW-07S, the VOC aliquots were collected on 05/12/20, while the SVOC/metals aliquots were collected on 05/13/20.

### **V. NON-CONFORMANCES**

#### Laboratory Method Blanks/Trip Blanks

Acetone was detected in the trip blanks at a concentration below the reporting limit (RL). The detected results for acetone in samples GW-07D and GW-07S were qualified 'U' at the RL.

Manganese (Mn) was detected in the metals laboratory blanks below the reporting limit (RL). The Mn results in all samples were greater than the RL, therefore the 'B' qualifier applied by the lab was removed.

#### Interference Check Sample

The laboratory noted in the case narrative that the interference check sample recovered above the QC limit for Barium (Ba). They believe the cause to be impurities in the ICS standard. To be conservative, the detected results for Ba in all samples have been qualified 'J'.

### **VI. SAMPLE RESULTS AND REPORTING**

All RLs were reported in accordance with method requirements and were adjusted for sample size and dilution factors. Results for compounds/analytes detected below the RL are qualified 'J'.

A field duplicate was collected at groundwater location GW-08SR. The field duplicate results exhibited good field and analytical precision.

### **VII. SUMMARY**

All sample analyses were found to be compliant with the method criteria, except where previously noted. All results qualified 'J' are conditionally usable. All results qualified 'U' should be considered non-detect. All other sample results are usable as reported. AECOM does not recommend the recollection of any samples.

Prepared By: Ann Marie Kropovitch, Chemist

*AK*  
Date: 6/1/20

Reviewed by: Peter R. Fairbanks, Senior Chemist

*PF*  
Date: 6/1/20

## **DEFINITIONS OF USEPA DATA QUALIFIERS**

- U – The analyte was analyzed for, but was not detected above the level of the sample reporting limit.
- J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ – The metal result is an estimated quantity, but the result may be biased high.
- J- – The metal result is an estimated quantity, but the result may be biased low.
- UJ – The analyte was analyzed for, but not detected. The reporting limit is approximate and may be inaccurate or imprecise.
- R – The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/12/20	05/12/20	05/13/20	05/13/20	05/12/20
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	10 U	10 U	2.2 J	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	3.1 J	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.0068 J	0.010 U	0.010 U
Barium	MG/L	0.082 J	0.15 J	0.097 J	0.097 J	0.097 J
Cadmium	MG/L	0.0010 U	0.0010 U	0.00071 J	0.0021	0.00076 J
Chromium	MG/L	0.084	0.0040 U	0.022	0.016	0.0019 J
Copper	MG/L	0.0021 J	0.010 U	0.0039 J	0.0036 J	0.010 U
Iron	MG/L	0.88	6.4	2.4	0.95	0.073
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	37.4	16.4	16.9	90.3	78.4
Manganese	MG/L	0.055	0.81	0.31	0.27	0.020
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.10	0.010 U	0.0095 J	0.039	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 5/26/20

CHECKED BY: PRF 5/27/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID		GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/12/20	05/12/20	05/13/20	05/13/20	05/12/20
Parameter	Units					
<b>Metals</b>						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	116	180	237	106	94.3
Zinc	MG/L	0.028	0.010 U	0.035	0.15	0.097

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL



**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/12/20	05/12/20	05/13/20	05/12/20	05/13/20
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	NA	2.0 U	NA
Acetone	UG/L	10 U	10 U	NA	10 U	NA
Benzene	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
Vinyl chloride	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	10 U	NA	10 U	NA	10 U
1,4-Dichlorobenzene	UG/L	10 U	NA	10 U	NA	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	NA	3.5 J	NA	5.0 U
Phenol	UG/L	5.0 U	NA	5.0 U	NA	5.0 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	NA	0.020 U	NA	0.020 U
Arsenic	MG/L	0.0060 J	NA	0.010 U	NA	0.010 U
Barium	MG/L	0.12 J	NA	0.14 J	NA	0.47 J
Cadmium	MG/L	0.0015	NA	0.0048	NA	0.0011
Chromium	MG/L	0.018	NA	1.2	NA	0.0037 J
Copper	MG/L	0.0069 J	NA	0.10	NA	0.010 U
Iron	MG/L	2.7	NA	35.2	NA	0.16
Lead	MG/L	0.0032 J	NA	0.42	NA	0.0050 U
Magnesium	MG/L	29.1	NA	40.7	NA	47.8
Manganese	MG/L	0.16	NA	0.29	NA	0.027
Mercury	MG/L	0.00020 U	NA	0.00020 U	NA	0.00020 U
Nickel	MG/L	0.012	NA	0.55	NA	0.014

Flags assigned during chemistry validation are shown.

MADE BY: AMK 5/26/20

CHECKED BY: PRF 5/27/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/12/20	05/12/20	05/13/20	05/12/20	05/13/20
Parameter	Units					
<b>Metals</b>						
Silver	MG/L	0.0030 U	NA	0.0030 U	NA	0.0030 U
Sodium	MG/L	32.1	NA	82.2	NA	60.8
Zinc	MG/L	0.018	NA	0.24	NA	0.0025 J

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-08D	GW-08SR	GW-08SR	GW-26D	GW-28S
Sample ID		GW-08D	FD-051320	GW-08SR	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/13/20	05/13/20	05/13/20	05/13/20	05/14/20
Parameter	Units		Field Duplicate (1-1)			
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	0.89 J	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.0077 J	0.010 U	0.010 U
Barium	MG/L	0.075 J	0.062 J	0.065 J	0.12 J	0.080 J
Cadmium	MG/L	0.0010 U	0.00062 J	0.00050 J	0.0010 U	0.0010 U
Chromium	MG/L	0.062	0.0014 J	0.0016 J	0.0015 J	0.0040 U
Copper	MG/L	0.0021 J	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.68	5.5	5.9	2.1	0.38
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	17.1	48.3	48.1	16.6	25.2
Manganese	MG/L	0.052	0.44	0.45	0.32	0.90
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.014	0.010 U	0.010 U	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 5/26/20

CHECKED BY: PRF 5/27/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-08D	GW-08SR	GW-08SR	GW-26D	GW-28S
Sample ID		GW-08D	FD-051320	GW-08SR	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/13/20	05/13/20	05/13/20	05/13/20	05/14/20
Parameter	Units		Field Duplicate (1-1)			
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	231	63.8	69.1	329	9.9
Zinc	MG/L	0.0061 J	0.010 U	0.010 U	0.041	0.010 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/14/20	05/14/20	05/14/20	05/14/20	05/14/20
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.029	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.18 J	0.11 J	0.091 J	0.055 J	0.063 J
Cadmium	MG/L	0.00068 J	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0017 J	0.0040 U	0.0040 U	0.0040 U	0.0014 J
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	16.3	5.3	3.3	0.050 U	0.022 J
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	58.5	30.3	30.6	29.2	27.0
Manganese	MG/L	0.64	0.57	0.65	0.51	0.029
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.010 U	0.010 U	0.010 U	0.0017 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 5/26/20

CHECKED BY: PRF 5/27/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/14/20	05/14/20	05/14/20	05/14/20	05/14/20
Parameter	Units					
<b>Metals</b>						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	7.2	21.9	3.3	3.0	2.6
Zinc	MG/L	0.29	0.21	0.0024 J	0.0032 J	0.0020 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 5/26/20

CHECKED BY: PRF 5/27/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-34S	GW-35S
Sample ID		GW-34S	GW-35S
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		05/13/20	05/13/20
Parameter	Units		
<b>Volatile Organic Compounds</b>			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>			
1,3-Dichlorobenzene	UG/L	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U
<b>Metals</b>			
Antimony	MG/L	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U
Barium	MG/L	0.13 J	0.084 J
Cadmium	MG/L	0.00069 J	0.0010 U
Chromium	MG/L	0.0040 U	0.0040 U
Copper	MG/L	0.010 U	0.010 U
Iron	MG/L	0.27	0.072
Lead	MG/L	0.0050 U	0.0050 U
Magnesium	MG/L	37.7	22.0
Manganese	MG/L	0.79	0.24
Mercury	MG/L	0.00020 U	0.00020 U
Nickel	MG/L	0.0030 J	0.0015 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 5/26/20  
 CHECKED BY: PRF 5/27/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-34S	GW-35S
Sample ID		GW-34S	GW-35S
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		05/13/20	05/13/20
Parameter	Units		
<b>Metals</b>			
Silver	MG/L	0.0030 U	0.0030 U
Sodium	MG/L	17.3	2.2
Zinc	MG/L	0.010 U	0.0020 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 5/26/20  
 CHECKED BY: PRF 5/27/20

**Detection Limits shown are PQL**



**TABLE 2**  
**VALIDATED FIELD QC SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		FIELDQC	FIELDQC
Sample ID		TB-051320	TB-051420
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		05/13/20	05/14/20
Parameter	Units	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	4.1 J	3.9 J
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 5/26/20

CHECKED BY: PRF 5/27/20

Detection Limits shown are PQL

**APPENDIX A**

**VALIDATED SAMPLE REPORTING FORMS**

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-07D

Lab Sample ID: 480-169931-1

Date Collected: 05/12/20 10:25

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/14/20 23:44	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/14/20 23:44	1
Acetone	ND		10		ug/L			05/14/20 23:44	1
Benzene	ND		1.0	0.41	ug/L			05/14/20 23:44	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/14/20 23:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		77 - 120		05/14/20 23:44	1
Toluene-d8 (Surr)	100		80 - 120		05/14/20 23:44	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/14/20 23:44	1
Dibromofluoromethane (Surr)	107		75 - 123		05/14/20 23:44	1

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-07S

Lab Sample ID: 480-169931-2

Date Collected: 05/12/20 10:30

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 00:09	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 00:09	1
Acetone	ND		10		ug/L			05/15/20 00:09	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 00:09	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 00:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/15/20 00:09	1
Toluene-d8 (Surr)	101		80 - 120		05/15/20 00:09	1
4-Bromofluorobenzene (Surr)	103		73 - 120		05/15/20 00:09	1
Dibromofluoromethane (Surr)	101		75 - 123		05/15/20 00:09	1

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-01D

Lab Sample ID: 480-169931-3

Date Collected: 05/12/20 13:45

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 00:34	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 00:34	1
Acetone	ND		10	3.0	ug/L			05/15/20 00:34	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 00:34	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 00:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		05/15/20 00:34	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 00:34	1
4-Bromofluorobenzene (Surr)	103		73 - 120		05/15/20 00:34	1
Dibromofluoromethane (Surr)	97		75 - 123		05/15/20 00:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 18:41	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 18:41	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 18:41	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 18:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	86		41 - 120	05/14/20 15:27	05/15/20 18:41	1
2-Fluorobiphenyl	91		48 - 120	05/14/20 15:27	05/15/20 18:41	1
2-Fluorophenol	62		35 - 120	05/14/20 15:27	05/15/20 18:41	1
Nitrobenzene-d5	87		46 - 120	05/14/20 15:27	05/15/20 18:41	1
Phenol-d5	45		22 - 120	05/14/20 15:27	05/15/20 18:41	1
p-Terphenyl-d14	87		60 - 148	05/14/20 15:27	05/15/20 18:41	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 00:34	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 00:34	1
Barium	0.082	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 00:34	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 00:34	1
Chromium	0.084		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 00:34	1
Copper	0.0021	J	0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 00:34	1
Iron	0.88		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 00:34	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 00:34	1
Magnesium	37.4		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 00:34	1
Manganese	0.055		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 00:34	1
Nickel	0.10		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 00:34	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 00:34	1
Sodium	116		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 00:34	1
Zinc	0.028		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 00:34	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:13	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-01S

Lab Sample ID: 480-169931-4

Date Collected: 05/12/20 14:30

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 00:59	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 00:59	1
Acetone	ND		10	3.0	ug/L			05/15/20 00:59	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 00:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 00:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		77 - 120		05/15/20 00:59	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 00:59	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 00:59	1
Dibromofluoromethane (Surr)	106		75 - 123		05/15/20 00:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 19:10	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 19:10	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 19:10	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 19:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	82		41 - 120	05/14/20 15:27	05/15/20 19:10	1
2-Fluorobiphenyl	94		48 - 120	05/14/20 15:27	05/15/20 19:10	1
2-Fluorophenol	66		35 - 120	05/14/20 15:27	05/15/20 19:10	1
Nitrobenzene-d5	91		46 - 120	05/14/20 15:27	05/15/20 19:10	1
Phenol-d5	48		22 - 120	05/14/20 15:27	05/15/20 19:10	1
p-Terphenyl-d14	83		60 - 148	05/14/20 15:27	05/15/20 19:10	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 00:38	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 00:38	1
Barium	0.15	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 00:38	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 00:38	1
Chromium	ND		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 00:38	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 00:38	1
Iron	6.4		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 00:38	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 00:38	1
Magnesium	16.4		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 00:38	1
Manganese	0.81		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 00:38	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 00:38	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 00:38	1
Sodium	180		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 00:38	1
Zinc	ND		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 00:38	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:14	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-04S

Lab Sample ID: 480-169931-5

Date Collected: 05/12/20 15:05

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 01:24	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 01:24	1
Acetone	ND		10	3.0	ug/L			05/15/20 01:24	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 01:24	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 01:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		77 - 120		05/15/20 01:24	1
Toluene-d8 (Surr)	102		80 - 120		05/15/20 01:24	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/15/20 01:24	1
Dibromofluoromethane (Surr)	106		75 - 123		05/15/20 01:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 19:39	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 19:39	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 19:39	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 19:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	87		41 - 120	05/14/20 15:27	05/15/20 19:39	1
2-Fluorobiphenyl	103		48 - 120	05/14/20 15:27	05/15/20 19:39	1
2-Fluorophenol	71		35 - 120	05/14/20 15:27	05/15/20 19:39	1
Nitrobenzene-d5	103		46 - 120	05/14/20 15:27	05/15/20 19:39	1
Phenol-d5	50		22 - 120	05/14/20 15:27	05/15/20 19:39	1
p-Terphenyl-d14	94		60 - 148	05/14/20 15:27	05/15/20 19:39	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 00:41	1
Arsenic	0.0060	J	0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 00:41	1
Barium	0.12	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 00:41	1
Cadmium	0.0015		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 00:41	1
Chromium	0.018		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 00:41	1
Copper	0.0069	J	0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 00:41	1
Iron	2.7		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 00:41	1
Lead	0.0032	J	0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 00:41	1
Magnesium	29.1		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 00:41	1
Manganese	0.16		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 00:41	1
Nickel	0.012		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 00:41	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 00:41	1
Sodium	32.1		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 00:41	1
Zinc	0.018		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 00:41	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:16	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-04D

Lab Sample ID: 480-169931-6

Date Collected: 05/12/20 16:35

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 01:49	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 01:49	1
Acetone	ND		10	3.0	ug/L			05/15/20 01:49	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 01:49	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 01:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		05/15/20 01:49	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 01:49	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/15/20 01:49	1
Dibromofluoromethane (Surr)	99		75 - 123		05/15/20 01:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 20:08	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 20:08	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 20:08	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 20:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		41 - 120	05/14/20 15:27	05/15/20 20:08	1
2-Fluorobiphenyl	100		48 - 120	05/14/20 15:27	05/15/20 20:08	1
2-Fluorophenol	66		35 - 120	05/14/20 15:27	05/15/20 20:08	1
Nitrobenzene-d5	95		46 - 120	05/14/20 15:27	05/15/20 20:08	1
Phenol-d5	48		22 - 120	05/14/20 15:27	05/15/20 20:08	1
p-Terphenyl-d14	80		60 - 148	05/14/20 15:27	05/15/20 20:08	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 00:45	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 00:45	1
Barium	0.097	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 00:45	1
Cadmium	0.00076	J	0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 00:45	1
Chromium	0.0019	J	0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 00:45	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 00:45	1
Iron	0.073		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 00:45	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 00:45	1
Magnesium	78.4		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 00:45	1
Manganese	0.020		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 00:45	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 00:45	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 00:45	1
Sodium	94.3		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 00:45	1
Zinc	0.097		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 00:45	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:17	1

Eurofins TestAmerica, Buffalo



# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-34S

Lab Sample ID: 480-169931-7

Date Collected: 05/13/20 08:40

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 02:15	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 02:15	1
Acetone	ND		10	3.0	ug/L			05/15/20 02:15	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 02:15	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 02:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		05/15/20 02:15	1
Toluene-d8 (Surr)	101		80 - 120		05/15/20 02:15	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 02:15	1
Dibromofluoromethane (Surr)	99		75 - 123		05/15/20 02:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 20:37	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 20:37	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 20:37	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 20:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		41 - 120	05/14/20 15:27	05/15/20 20:37	1
2-Fluorobiphenyl	96		48 - 120	05/14/20 15:27	05/15/20 20:37	1
2-Fluorophenol	71		35 - 120	05/14/20 15:27	05/15/20 20:37	1
Nitrobenzene-d5	94		46 - 120	05/14/20 15:27	05/15/20 20:37	1
Phenol-d5	50		22 - 120	05/14/20 15:27	05/15/20 20:37	1
p-Terphenyl-d14	85		60 - 148	05/14/20 15:27	05/15/20 20:37	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:00	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:00	1
Barium	0.13	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:00	1
Cadmium	0.00069	J	0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:00	1
Chromium	ND		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:00	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:00	1
Iron	0.27		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:00	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:00	1
Magnesium	37.7		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:00	1
Manganese	0.79		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:00	1
Nickel	0.0030	J	0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:00	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:00	1
Sodium	17.3		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:00	1
Zinc	ND		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:00	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:18	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-03S

Lab Sample ID: 480-169931-8

Date Collected: 05/13/20 10:00

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 02:40	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 02:40	1
Acetone	ND		10	3.0	ug/L			05/15/20 02:40	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 02:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 02:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		77 - 120		05/15/20 02:40	1
Toluene-d8 (Surr)	101		80 - 120		05/15/20 02:40	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 02:40	1
Dibromofluoromethane (Surr)	102		75 - 123		05/15/20 02:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 21:05	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 21:05	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 21:05	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 21:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	85		41 - 120	05/14/20 15:27	05/15/20 21:05	1
2-Fluorobiphenyl	103		48 - 120	05/14/20 15:27	05/15/20 21:05	1
2-Fluorophenol	66		35 - 120	05/14/20 15:27	05/15/20 21:05	1
Nitrobenzene-d5	96		46 - 120	05/14/20 15:27	05/15/20 21:05	1
Phenol-d5	47		22 - 120	05/14/20 15:27	05/15/20 21:05	1
p-Terphenyl-d14	82		60 - 148	05/14/20 15:27	05/15/20 21:05	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:04	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:04	1
Barium	0.097	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:04	1
Cadmium	0.0021		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:04	1
Chromium	0.016		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:04	1
Copper	0.0036	J	0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:04	1
Iron	0.95		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:04	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:04	1
Magnesium	90.3		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:04	1
Manganese	0.27		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:04	1
Nickel	0.039		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:04	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:04	1
Sodium	106		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:04	1
Zinc	0.15		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:04	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:20	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-03D

Lab Sample ID: 480-169931-9

Date Collected: 05/13/20 11:25

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 03:05	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 03:05	1
Acetone	ND		10	3.0	ug/L			05/15/20 03:05	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 03:05	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 03:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		77 - 120		05/15/20 03:05	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 03:05	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 03:05	1
Dibromofluoromethane (Surr)	108		75 - 123		05/15/20 03:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	2.2	J	10	0.48	ug/L		05/14/20 15:27	05/15/20 21:34	1
1,4-Dichlorobenzene	3.1	J	10	0.46	ug/L		05/14/20 15:27	05/15/20 21:34	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 21:34	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 21:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	86		41 - 120	05/14/20 15:27	05/15/20 21:34	1
2-Fluorobiphenyl	102		48 - 120	05/14/20 15:27	05/15/20 21:34	1
2-Fluorophenol	72		35 - 120	05/14/20 15:27	05/15/20 21:34	1
Nitrobenzene-d5	98		46 - 120	05/14/20 15:27	05/15/20 21:34	1
Phenol-d5	52		22 - 120	05/14/20 15:27	05/15/20 21:34	1
p-Terphenyl-d14	87		60 - 148	05/14/20 15:27	05/15/20 21:34	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:08	1
Arsenic	0.0068	J	0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:08	1
Barium	0.097	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:08	1
Cadmium	0.00071	J	0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:08	1
Chromium	0.022		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:08	1
Copper	0.0039	J	0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:08	1
Iron	2.4		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:08	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:08	1
Magnesium	16.9		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:08	1
Manganese	0.31		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:08	1
Nickel	0.0095	J	0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:08	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:08	1
Sodium	237		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:08	1
Zinc	0.035		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:08	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:21	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-07D

Lab Sample ID: 480-169931-10

Date Collected: 05/13/20 11:45

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 22:03	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 22:03	1
Bis(2-ethylhexyl) phthalate	3.5	J	5.0	2.2	ug/L		05/14/20 15:27	05/15/20 22:03	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 22:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	94		41 - 120	05/14/20 15:27	05/15/20 22:03	1
2-Fluorobiphenyl	102		48 - 120	05/14/20 15:27	05/15/20 22:03	1
2-Fluorophenol	74		35 - 120	05/14/20 15:27	05/15/20 22:03	1
Nitrobenzene-d5	97		46 - 120	05/14/20 15:27	05/15/20 22:03	1
Phenol-d5	53		22 - 120	05/14/20 15:27	05/15/20 22:03	1
p-Terphenyl-d14	81		60 - 148	05/14/20 15:27	05/15/20 22:03	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:11	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:11	1
Barium	0.14	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:11	1
Cadmium	0.0048		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:11	1
Chromium	1.2		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:11	1
Copper	0.10		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:11	1
Iron	35.2		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:11	1
Lead	0.42		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:11	1
Magnesium	40.7		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:11	1
Manganese	0.29		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:11	1
Nickel	0.55		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:11	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:11	1
Sodium	82.2		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:11	1
Zinc	0.24		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:11	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:22	1

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-07S

Lab Sample ID: 480-169931-11

Date Collected: 05/13/20 12:10

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 22:32	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 22:32	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 22:32	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 22:32	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	88		41 - 120				05/14/20 15:27	05/15/20 22:32	1
2-Fluorobiphenyl	106		48 - 120				05/14/20 15:27	05/15/20 22:32	1
2-Fluorophenol	78		35 - 120				05/14/20 15:27	05/15/20 22:32	1
Nitrobenzene-d5	104		46 - 120				05/14/20 15:27	05/15/20 22:32	1
Phenol-d5	58		22 - 120				05/14/20 15:27	05/15/20 22:32	1
p-Terphenyl-d14	93		60 - 148				05/14/20 15:27	05/15/20 22:32	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:15	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:15	1
Barium	0.47	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:15	1
Cadmium	0.0011		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:15	1
Chromium	0.0037	J	0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:15	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:15	1
Iron	0.16		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:15	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:15	1
Magnesium	47.8		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:15	1
Manganese	0.027		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:15	1
Nickel	0.014		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:15	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:15	1
Sodium	60.8		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:15	1
Zinc	0.0025	J	0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:15	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:26	1

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-08D

Lab Sample ID: 480-169931-12

Date Collected: 05/13/20 13:35

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 03:30	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 03:30	1
Acetone	ND		10	3.0	ug/L			05/15/20 03:30	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 03:30	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 03:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		77 - 120		05/15/20 03:30	1
Toluene-d8 (Surr)	102		80 - 120		05/15/20 03:30	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 03:30	1
Dibromofluoromethane (Surr)	104		75 - 123		05/15/20 03:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 16:16	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 16:16	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 16:16	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	87		41 - 120	05/14/20 15:27	05/15/20 16:16	1
2-Fluorobiphenyl	100		48 - 120	05/14/20 15:27	05/15/20 16:16	1
2-Fluorophenol	72		35 - 120	05/14/20 15:27	05/15/20 16:16	1
Nitrobenzene-d5	98		46 - 120	05/14/20 15:27	05/15/20 16:16	1
Phenol-d5	50		22 - 120	05/14/20 15:27	05/15/20 16:16	1
p-Terphenyl-d14	93		60 - 148	05/14/20 15:27	05/15/20 16:16	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:19	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:19	1
Barium	0.075	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:19	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:19	1
Chromium	0.062		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:19	1
Copper	0.0021	J	0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:19	1
Iron	0.68		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:19	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:19	1
Magnesium	17.1		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:19	1
Manganese	0.052		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:19	1
Nickel	0.014		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:19	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:19	1
Sodium	231		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:19	1
Zinc	0.0061	J	0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:19	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:27	1

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# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-08SR

Lab Sample ID: 480-169931-13

Date Collected: 05/13/20 14:15

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 03:55	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 03:55	1
Acetone	ND		10	3.0	ug/L			05/15/20 03:55	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 03:55	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 03:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/15/20 03:55	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 03:55	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 03:55	1
Dibromofluoromethane (Surr)	100		75 - 123		05/15/20 03:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/15/20 23:01	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/15/20 23:01	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/15/20 23:01	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/15/20 23:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	89		41 - 120	05/14/20 15:27	05/15/20 23:01	1
2-Fluorobiphenyl	103		48 - 120	05/14/20 15:27	05/15/20 23:01	1
2-Fluorophenol	73		35 - 120	05/14/20 15:27	05/15/20 23:01	1
Nitrobenzene-d5	99		46 - 120	05/14/20 15:27	05/15/20 23:01	1
Phenol-d5	53		22 - 120	05/14/20 15:27	05/15/20 23:01	1
p-Terphenyl-d14	84		60 - 148	05/14/20 15:27	05/15/20 23:01	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:48	1
Arsenic	0.0077	J	0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:48	1
Barium	0.065	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:48	1
Cadmium	0.00050	J	0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:48	1
Chromium	0.0016	J	0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:48	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:48	1
Iron	5.9		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:48	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:48	1
Magnesium	48.1		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:48	1
Manganese	0.45		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:48	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:48	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:48	1
Sodium	69.1		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:48	1
Zinc	ND		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:48	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:33	1

# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: FD-051320

Lab Sample ID: 480-169931-14

Date Collected: 05/13/20 00:00

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 04:20	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 04:20	1
Acetone	ND		10	3.0	ug/L			05/15/20 04:20	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 04:20	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 04:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		05/15/20 04:20	1
Toluene-d8 (Surr)	101		80 - 120		05/15/20 04:20	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/15/20 04:20	1
Dibromofluoromethane (Surr)	98		75 - 123		05/15/20 04:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/16/20 01:25	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/16/20 01:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/16/20 01:25	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/16/20 01:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	99		41 - 120	05/14/20 15:27	05/16/20 01:25	1
2-Fluorobiphenyl	106		48 - 120	05/14/20 15:27	05/16/20 01:25	1
2-Fluorophenol	74		35 - 120	05/14/20 15:27	05/16/20 01:25	1
Nitrobenzene-d5	104		46 - 120	05/14/20 15:27	05/16/20 01:25	1
Phenol-d5	54		22 - 120	05/14/20 15:27	05/16/20 01:25	1
p-Terphenyl-d14	82		60 - 148	05/14/20 15:27	05/16/20 01:25	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:52	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:52	1
Barium	0.062	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:52	1
Cadmium	0.00062	J	0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:52	1
Chromium	0.0014	J	0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:52	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:52	1
Iron	5.5		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:52	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:52	1
Magnesium	48.3		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:52	1
Manganese	0.44		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:52	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:52	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:52	1
Sodium	63.8		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:52	1
Zinc	ND		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:52	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:34	1

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# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-35S

Lab Sample ID: 480-169931-15

Date Collected: 05/13/20 15:20

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 04:46	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 04:46	1
Acetone	ND		10	3.0	ug/L			05/15/20 04:46	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 04:46	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 04:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		05/15/20 04:46	1
Toluene-d8 (Surr)	101		80 - 120		05/15/20 04:46	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 04:46	1
Dibromofluoromethane (Surr)	99		75 - 123		05/15/20 04:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/16/20 01:53	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/16/20 01:53	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/16/20 01:53	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/16/20 01:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	88		41 - 120	05/14/20 15:27	05/16/20 01:53	1
2-Fluorobiphenyl	101		48 - 120	05/14/20 15:27	05/16/20 01:53	1
2-Fluorophenol	70		35 - 120	05/14/20 15:27	05/16/20 01:53	1
Nitrobenzene-d5	98		46 - 120	05/14/20 15:27	05/16/20 01:53	1
Phenol-d5	51		22 - 120	05/14/20 15:27	05/16/20 01:53	1
p-Terphenyl-d14	90		60 - 148	05/14/20 15:27	05/16/20 01:53	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:56	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:56	1
Barium	0.084	J	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:56	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:56	1
Chromium	ND		0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:56	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:56	1
Iron	0.072		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:56	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:56	1
Magnesium	22.0		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:56	1
Manganese	0.24		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:56	1
Nickel	0.0015	J	0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:56	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:56	1
Sodium	2.2		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:56	1
Zinc	0.0020	J	0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:56	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:35	1

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# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: GW-26D

Lab Sample ID: 480-169931-16

Date Collected: 05/13/20 16:33

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 05:11	1
<b>1,2-Dichloroethene, Total</b>	<b>0.89</b>	<b>J</b>	2.0	0.81	ug/L			05/15/20 05:11	1
Acetone	ND		10	3.0	ug/L			05/15/20 05:11	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 05:11	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 05:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		77 - 120		05/15/20 05:11	1
Toluene-d8 (Surr)	101		80 - 120		05/15/20 05:11	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 05:11	1
Dibromofluoromethane (Surr)	107		75 - 123		05/15/20 05:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/14/20 15:27	05/16/20 02:22	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/20 15:27	05/16/20 02:22	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/14/20 15:27	05/16/20 02:22	1
Phenol	ND		5.0	0.39	ug/L		05/14/20 15:27	05/16/20 02:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	89		41 - 120	05/14/20 15:27	05/16/20 02:22	1
2-Fluorobiphenyl	105		48 - 120	05/14/20 15:27	05/16/20 02:22	1
2-Fluorophenol	68		35 - 120	05/14/20 15:27	05/16/20 02:22	1
Nitrobenzene-d5	100		46 - 120	05/14/20 15:27	05/16/20 02:22	1
Phenol-d5	48		22 - 120	05/14/20 15:27	05/16/20 02:22	1
p-Terphenyl-d14	81		60 - 148	05/14/20 15:27	05/16/20 02:22	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:15	05/16/20 01:59	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:15	05/16/20 01:59	1
<b>Barium</b>	<b>0.12</b>	<b>J</b>	0.0020	0.00070	mg/L		05/15/20 10:15	05/16/20 01:59	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:15	05/16/20 01:59	1
<b>Chromium</b>	<b>0.0015</b>	<b>J</b>	0.0040	0.0010	mg/L		05/15/20 10:15	05/16/20 01:59	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:15	05/16/20 01:59	1
<b>Iron</b>	<b>2.1</b>		0.050	0.019	mg/L		05/15/20 10:15	05/16/20 01:59	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:15	05/16/20 01:59	1
<b>Magnesium</b>	<b>16.6</b>		0.20	0.043	mg/L		05/15/20 10:15	05/16/20 01:59	1
<b>Manganese</b>	<b>0.32</b>		0.0030	0.00040	mg/L		05/15/20 10:15	05/16/20 01:59	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:15	05/16/20 01:59	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:15	05/16/20 01:59	1
<b>Sodium</b>	<b>329</b>		1.0	0.32	mg/L		05/15/20 10:15	05/16/20 01:59	1
<b>Zinc</b>	<b>0.041</b>		0.010	0.0015	mg/L		05/15/20 10:15	05/16/20 01:59	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/18/20 13:55	05/18/20 18:37	1

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# Client Sample Results

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

Client Sample ID: TB-051320

Lab Sample ID: 480-169931-17

Date Collected: 05/13/20 00:00

Matrix: Water

Date Received: 05/13/20 17:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 05:36	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 05:36	1
Acetone	4.1	J	10	3.0	ug/L			05/15/20 05:36	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 05:36	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 05:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		77 - 120		05/15/20 05:36	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 05:36	1
4-Bromofluorobenzene (Surr)	100		73 - 120		05/15/20 05:36	1
Dibromofluoromethane (Surr)	101		75 - 123		05/15/20 05:36	1

# Client Sample Results

Client: AECOM

Job ID: 480-169958-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-28S

Lab Sample ID: 480-169958-1

Date Collected: 05/14/20 08:05

Matrix: Water

Date Received: 05/14/20 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 05:58	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 05:58	1
Acetone	ND		10	3.0	ug/L			05/15/20 05:58	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 05:58	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 05:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		05/15/20 05:58	1
Toluene-d8 (Surr)	96		80 - 120		05/15/20 05:58	1
4-Bromofluorobenzene (Surr)	103		73 - 120		05/15/20 05:58	1
Dibromofluoromethane (Surr)	101		75 - 123		05/15/20 05:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/15/20 15:26	05/18/20 22:20	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/15/20 15:26	05/18/20 22:20	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/15/20 15:26	05/18/20 22:20	1
Phenol	ND		5.0	0.39	ug/L		05/15/20 15:26	05/18/20 22:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	99		41 - 120	05/15/20 15:26	05/18/20 22:20	1
2-Fluorobiphenyl	110		48 - 120	05/15/20 15:26	05/18/20 22:20	1
2-Fluorophenol	73		35 - 120	05/15/20 15:26	05/18/20 22:20	1
Nitrobenzene-d5	104		46 - 120	05/15/20 15:26	05/18/20 22:20	1
Phenol-d5	52		22 - 120	05/15/20 15:26	05/18/20 22:20	1
p-Terphenyl-d14	93		60 - 148	05/15/20 15:26	05/18/20 22:20	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:12	05/18/20 19:50	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:12	05/18/20 19:50	1
Barium	0.080	J	0.0020	0.00070	mg/L		05/15/20 10:12	05/18/20 19:50	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:12	05/18/20 19:50	1
Chromium	ND		0.0040	0.0010	mg/L		05/15/20 10:12	05/18/20 19:50	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:12	05/18/20 19:50	1
Iron	0.38		0.050	0.019	mg/L		05/15/20 10:12	05/18/20 19:50	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:12	05/18/20 19:50	1
Magnesium	25.2		0.20	0.043	mg/L		05/15/20 10:12	05/18/20 19:50	1
Manganese	0.90		0.0030	0.00040	mg/L		05/15/20 10:12	05/18/20 19:50	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:12	05/18/20 19:50	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:12	05/18/20 19:50	1
Sodium	9.9		1.0	0.32	mg/L		05/15/20 10:12	05/18/20 19:50	1
Zinc	ND		0.010	0.0015	mg/L		05/15/20 10:12	05/18/20 19:50	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/20 12:30	05/19/20 15:44	1

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# Client Sample Results

Client: AECOM

Job ID: 480-169958-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-29S

Lab Sample ID: 480-169958-2

Date Collected: 05/14/20 09:08

Matrix: Water

Date Received: 05/14/20 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 06:22	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 06:22	1
Acetone	ND		10	3.0	ug/L			05/15/20 06:22	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 06:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 06:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		05/15/20 06:22	1
Toluene-d8 (Surr)	98		80 - 120		05/15/20 06:22	1
4-Bromofluorobenzene (Surr)	105		73 - 120		05/15/20 06:22	1
Dibromofluoromethane (Surr)	95		75 - 123		05/15/20 06:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/15/20 15:26	05/18/20 18:30	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/15/20 15:26	05/18/20 18:30	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/15/20 15:26	05/18/20 18:30	1
Phenol	ND		5.0	0.39	ug/L		05/15/20 15:26	05/18/20 18:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	88		41 - 120	05/15/20 15:26	05/18/20 18:30	1
2-Fluorobiphenyl	101		48 - 120	05/15/20 15:26	05/18/20 18:30	1
2-Fluorophenol	75		35 - 120	05/15/20 15:26	05/18/20 18:30	1
Nitrobenzene-d5	96		46 - 120	05/15/20 15:26	05/18/20 18:30	1
Phenol-d5	52		22 - 120	05/15/20 15:26	05/18/20 18:30	1
p-Terphenyl-d14	87		60 - 148	05/15/20 15:26	05/18/20 18:30	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:12	05/18/20 19:54	1
Arsenic	0.029		0.010	0.0056	mg/L		05/15/20 10:12	05/18/20 19:54	1
Barium	0.18	J	0.0020	0.00070	mg/L		05/15/20 10:12	05/18/20 19:54	1
Cadmium	0.00068	J	0.0010	0.00050	mg/L		05/15/20 10:12	05/18/20 19:54	1
Chromium	0.0017	J	0.0040	0.0010	mg/L		05/15/20 10:12	05/18/20 19:54	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:12	05/18/20 19:54	1
Iron	16.3		0.050	0.019	mg/L		05/15/20 10:12	05/18/20 19:54	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:12	05/18/20 19:54	1
Magnesium	58.5		0.20	0.043	mg/L		05/15/20 10:12	05/18/20 19:54	1
Manganese	0.64		0.0030	0.00040	mg/L		05/15/20 10:12	05/18/20 19:54	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:12	05/18/20 19:54	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:12	05/18/20 19:54	1
Sodium	7.2		1.0	0.32	mg/L		05/15/20 10:12	05/18/20 19:54	1
Zinc	0.29		0.010	0.0015	mg/L		05/15/20 10:12	05/18/20 19:54	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/20 12:30	05/19/20 15:46	1

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# Client Sample Results

Client: AECOM

Job ID: 480-169958-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: TB-051420

Lab Sample ID: 480-169958-3

Date Collected: 05/14/20 00:00

Matrix: Water

Date Received: 05/14/20 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 06:47	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 06:47	1
Acetone	3.9	J	10	3.0	ug/L			05/15/20 06:47	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 06:47	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 06:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		05/15/20 06:47	1
Toluene-d8 (Surr)	95		80 - 120		05/15/20 06:47	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 06:47	1
Dibromofluoromethane (Surr)	102		75 - 123		05/15/20 06:47	1

# Client Sample Results

Client: AECOM

Job ID: 480-169958-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-30S

Lab Sample ID: 480-169958-4

Date Collected: 05/14/20 10:00

Matrix: Water

Date Received: 05/14/20 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 07:11	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 07:11	1
Acetone	ND		10	3.0	ug/L			05/15/20 07:11	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 07:11	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 07:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		05/15/20 07:11	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 07:11	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/15/20 07:11	1
Dibromofluoromethane (Surr)	100		75 - 123		05/15/20 07:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/15/20 15:26	05/18/20 18:59	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/15/20 15:26	05/18/20 18:59	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/15/20 15:26	05/18/20 18:59	1
Phenol	ND		5.0	0.39	ug/L		05/15/20 15:26	05/18/20 18:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	89		41 - 120	05/15/20 15:26	05/18/20 18:59	1
2-Fluorobiphenyl	103		48 - 120	05/15/20 15:26	05/18/20 18:59	1
2-Fluorophenol	73		35 - 120	05/15/20 15:26	05/18/20 18:59	1
Nitrobenzene-d5	95		46 - 120	05/15/20 15:26	05/18/20 18:59	1
Phenol-d5	52		22 - 120	05/15/20 15:26	05/18/20 18:59	1
p-Terphenyl-d14	83		60 - 148	05/15/20 15:26	05/18/20 18:59	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:12	05/18/20 19:57	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:12	05/18/20 19:57	1
Barium	0.11	J	0.0020	0.00070	mg/L		05/15/20 10:12	05/18/20 19:57	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:12	05/18/20 19:57	1
Chromium	ND		0.0040	0.0010	mg/L		05/15/20 10:12	05/18/20 19:57	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:12	05/18/20 19:57	1
Iron	5.3		0.050	0.019	mg/L		05/15/20 10:12	05/18/20 19:57	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:12	05/18/20 19:57	1
Magnesium	30.3		0.20	0.043	mg/L		05/15/20 10:12	05/18/20 19:57	1
Manganese	0.57		0.0030	0.00040	mg/L		05/15/20 10:12	05/18/20 19:57	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:12	05/18/20 19:57	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:12	05/18/20 19:57	1
Sodium	21.9		1.0	0.32	mg/L		05/15/20 10:12	05/18/20 19:57	1
Zinc	0.21		0.010	0.0015	mg/L		05/15/20 10:12	05/18/20 19:57	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/20 12:30	05/19/20 15:47	1

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# Client Sample Results

Client: AECOM

Job ID: 480-169958-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-31S

Lab Sample ID: 480-169958-5

Date Collected: 05/14/20 11:12

Matrix: Water

Date Received: 05/14/20 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 07:35	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 07:35	1
Acetone	ND		10	3.0	ug/L			05/15/20 07:35	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 07:35	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 07:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		05/15/20 07:35	1
Toluene-d8 (Surr)	99		80 - 120		05/15/20 07:35	1
4-Bromofluorobenzene (Surr)	100		73 - 120		05/15/20 07:35	1
Dibromofluoromethane (Surr)	99		75 - 123		05/15/20 07:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/15/20 15:26	05/18/20 19:28	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/15/20 15:26	05/18/20 19:28	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/15/20 15:26	05/18/20 19:28	1
Phenol	ND		5.0	0.39	ug/L		05/15/20 15:26	05/18/20 19:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	87		41 - 120	05/15/20 15:26	05/18/20 19:28	1
2-Fluorobiphenyl	101		48 - 120	05/15/20 15:26	05/18/20 19:28	1
2-Fluorophenol	71		35 - 120	05/15/20 15:26	05/18/20 19:28	1
Nitrobenzene-d5	96		46 - 120	05/15/20 15:26	05/18/20 19:28	1
Phenol-d5	49		22 - 120	05/15/20 15:26	05/18/20 19:28	1
p-Terphenyl-d14	87		60 - 148	05/15/20 15:26	05/18/20 19:28	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:12	05/18/20 20:12	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:12	05/18/20 20:12	1
Barium	0.091	J	0.0020	0.00070	mg/L		05/15/20 10:12	05/18/20 20:12	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:12	05/18/20 20:12	1
Chromium	ND		0.0040	0.0010	mg/L		05/15/20 10:12	05/18/20 20:12	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:12	05/18/20 20:12	1
Iron	3.3		0.050	0.019	mg/L		05/15/20 10:12	05/18/20 20:12	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:12	05/18/20 20:12	1
Magnesium	30.6		0.20	0.043	mg/L		05/15/20 10:12	05/18/20 20:12	1
Manganese	0.65		0.0030	0.00040	mg/L		05/15/20 10:12	05/18/20 20:12	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:12	05/18/20 20:12	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:12	05/18/20 20:12	1
Sodium	3.3		1.0	0.32	mg/L		05/15/20 10:12	05/18/20 20:12	1
Zinc	0.0024	J	0.010	0.0015	mg/L		05/15/20 10:12	05/18/20 20:12	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/20 12:30	05/19/20 15:48	1

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# Client Sample Results

Client: AECOM

Job ID: 480-169958-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-32S

Lab Sample ID: 480-169958-6

Date Collected: 05/14/20 12:07

Matrix: Water

Date Received: 05/14/20 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 18:16	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 18:16	1
Acetone	ND		10	3.0	ug/L			05/15/20 18:16	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 18:16	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		05/15/20 18:16	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 18:16	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/15/20 18:16	1
Dibromofluoromethane (Surr)	107		75 - 123		05/15/20 18:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/15/20 15:26	05/18/20 19:56	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/15/20 15:26	05/18/20 19:56	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/15/20 15:26	05/18/20 19:56	1
Phenol	ND		5.0	0.39	ug/L		05/15/20 15:26	05/18/20 19:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		41 - 120	05/15/20 15:26	05/18/20 19:56	1
2-Fluorobiphenyl	99		48 - 120	05/15/20 15:26	05/18/20 19:56	1
2-Fluorophenol	73		35 - 120	05/15/20 15:26	05/18/20 19:56	1
Nitrobenzene-d5	91		46 - 120	05/15/20 15:26	05/18/20 19:56	1
Phenol-d5	54		22 - 120	05/15/20 15:26	05/18/20 19:56	1
p-Terphenyl-d14	91		60 - 148	05/15/20 15:26	05/18/20 19:56	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:12	05/18/20 20:16	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:12	05/18/20 20:16	1
Barium	0.055	J	0.0020	0.00070	mg/L		05/15/20 10:12	05/18/20 20:16	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:12	05/18/20 20:16	1
Chromium	ND		0.0040	0.0010	mg/L		05/15/20 10:12	05/18/20 20:16	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:12	05/18/20 20:16	1
Iron	ND		0.050	0.019	mg/L		05/15/20 10:12	05/18/20 20:16	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:12	05/18/20 20:16	1
Magnesium	29.2		0.20	0.043	mg/L		05/15/20 10:12	05/18/20 20:16	1
Manganese	0.51		0.0030	0.00040	mg/L		05/15/20 10:12	05/18/20 20:16	1
Nickel	0.0017	J	0.010	0.0013	mg/L		05/15/20 10:12	05/18/20 20:16	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:12	05/18/20 20:16	1
Sodium	3.0		1.0	0.32	mg/L		05/15/20 10:12	05/18/20 20:16	1
Zinc	0.0032	J	0.010	0.0015	mg/L		05/15/20 10:12	05/18/20 20:16	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/20 12:30	05/19/20 15:50	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM

Job ID: 480-169958-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

Client Sample ID: GW-33S

Lab Sample ID: 480-169958-7

Date Collected: 05/14/20 12:50

Matrix: Water

Date Received: 05/14/20 14:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/15/20 18:40	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/15/20 18:40	1
Acetone	ND		10	3.0	ug/L			05/15/20 18:40	1
Benzene	ND		1.0	0.41	ug/L			05/15/20 18:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/15/20 18:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		77 - 120		05/15/20 18:40	1
Toluene-d8 (Surr)	100		80 - 120		05/15/20 18:40	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/15/20 18:40	1
Dibromofluoromethane (Surr)	110		75 - 123		05/15/20 18:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/15/20 15:26	05/18/20 20:25	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/15/20 15:26	05/18/20 20:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		05/15/20 15:26	05/18/20 20:25	1
Phenol	ND		5.0	0.39	ug/L		05/15/20 15:26	05/18/20 20:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		41 - 120	05/15/20 15:26	05/18/20 20:25	1
2-Fluorobiphenyl	94		48 - 120	05/15/20 15:26	05/18/20 20:25	1
2-Fluorophenol	64		35 - 120	05/15/20 15:26	05/18/20 20:25	1
Nitrobenzene-d5	90		46 - 120	05/15/20 15:26	05/18/20 20:25	1
Phenol-d5	48		22 - 120	05/15/20 15:26	05/18/20 20:25	1
p-Terphenyl-d14	87		60 - 148	05/15/20 15:26	05/18/20 20:25	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/15/20 10:12	05/18/20 20:20	1
Arsenic	ND		0.010	0.0056	mg/L		05/15/20 10:12	05/18/20 20:20	1
Barium	0.063	J	0.0020	0.00070	mg/L		05/15/20 10:12	05/18/20 20:20	1
Cadmium	ND		0.0010	0.00050	mg/L		05/15/20 10:12	05/18/20 20:20	1
Chromium	0.0014	J	0.0040	0.0010	mg/L		05/15/20 10:12	05/18/20 20:20	1
Copper	ND		0.010	0.0016	mg/L		05/15/20 10:12	05/18/20 20:20	1
Iron	0.022	J	0.050	0.019	mg/L		05/15/20 10:12	05/18/20 20:20	1
Lead	ND		0.0050	0.0030	mg/L		05/15/20 10:12	05/18/20 20:20	1
Magnesium	27.0		0.20	0.043	mg/L		05/15/20 10:12	05/18/20 20:20	1
Manganese	0.029		0.0030	0.00040	mg/L		05/15/20 10:12	05/18/20 20:20	1
Nickel	ND		0.010	0.0013	mg/L		05/15/20 10:12	05/18/20 20:20	1
Silver	ND		0.0030	0.0017	mg/L		05/15/20 10:12	05/18/20 20:20	1
Sodium	2.6		1.0	0.32	mg/L		05/15/20 10:12	05/18/20 20:20	1
Zinc	0.0020	J	0.010	0.0015	mg/L		05/15/20 10:12	05/18/20 20:20	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/20 12:30	05/19/20 15:51	1

Eurofins TestAmerica, Buffalo

**APPENDIX B**

**SUPPORT DOCUMENTATION**

## Chain of Custody Record

Environment Testing  
America

<b>Client Information</b> Client Contact: Ms. Ann Marie Kropovitch Company: AECOM Address: 257 West Genesee Street Suite 400 City: Buffalo State: NY, 14202-2657 Phone: 716-691-2600 Email: ann.marie.kropovitch@aecom.com Project Name: Pfohl Brothers Landfill GW Monitoring Site:		Sampler: R. Murphy / T. Urban Lab PM: Schove, John R Phone: 716-903-1346 E-Mail: john.schove@testamericainc.com		Carrier Tracking No(s): COC No: 480-145747-13273.2 Page 2 of 2 Job #: 2	
Due Date Requested: TAT Requested (days): PO #: 111666 Line 2 WO #: 60411174.11175616.00000 Project #: 48002609 SSOW#:		<b>Analysis Requested</b>  480-169931 Chain of Custody			
Sample Identification GW-08D GW-08D MS GW-08D MSD GW-08SR FP-051320 GW-35S GW-26D TB-051320		Sample Date 5/13/20 5/13/20 5/13/20 5/13/20 5/13/20 5/13/20 5/13/20 5/13/20	Sample Time 1335 1335 1335 1415 — 1520 1633 —	Sample Type (C=comp, G=grab) G G G G G G G G	Matrix (W=water, S=solid, O=waste, BI=tissue, A=air) Water Water Water Water Water Water Water Water Water Water Water Water
Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 6010C, 7470A 8270D - Semivolatiles - Pfohl List 8260C - Volatiles - Pfohl List		Total Number of Containers 6 6 6 6 6 6 6 1		Special Instructions/Note: MATRIX SPIKE MATRIX SPIKE DUP.	
Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Anchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:					
<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
<b>Special Instructions/OC Requirements:</b>					
Empty Kit Relinquished by: Robert Murphy Relinquished by: Robert Murphy Relinquished by:		Date: 5/13/20 Date: 5/13/20 Date: 5/13/20		Method of Shipment: DROP OFF Date/Time: 5/13/20 17:20 Date/Time: 5/13/20 17:30 Date/Time: 5/13/20 17:30	
Relinquished by: Robert Murphy Relinquished by:		Date: 5/13/20 Date: 5/13/20 Date: 5/13/20		Company: AECOM Company: AECOM Company: AECOM	
Relinquished by:		Date:		Company:	
Custody Seal Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 3.2, 3.3, 2.9 #1	



## Chain of Custody Record

<b>Client Information</b>		Sampler: <u>R. Murphy / T. Wozniak</u>		Lab PM: <u>Schove, John R</u>		Carrier Tracking No(s):		COC No: <u>480-145747-13273.1</u>	
Client Contact: <u>Ms. Ann Marie Kropovitch</u>		Phone: <u>716-903-1346</u>		E-Mail: <u>john.schove@testamericainc.com</u>				Page: <u>1 of 2</u>	
Company: <u>AECOM</u>								Job #:	
Address: <u>257 West Genesee Street Suite 400</u>		Due Date Requested: <u>STANDARD TAT</u>		Analysis Requested				Preservation Codes:	
City: <u>Buffalo</u>		TAT Requested (days):						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO <sub>4</sub> F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
State, Zip: <u>NY, 14202-2657</u>		PO #: <u>111666 Line 2</u>						M - Hexane N - None O - AcNaO <sub>2</sub> P - Na <sub>2</sub> O <sub>4</sub> S Q - Na <sub>2</sub> SO <sub>3</sub> R - Na <sub>2</sub> SO <sub>3</sub> S - H <sub>2</sub> SO <sub>4</sub> T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Email: <u>ann.marie.kropovitch@aecom.com</u>		WO #: <u>60411174.11175616.00000</u>						Total Number of containers	
Project Name: <u>Pfchl Brothers Landfill GW Monitoring</u>		Project #: <u>48002609</u>						Special Instructions/Note:	
Site:		SSOW#:							

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 7470A	8270D - Semivolatiles - Pfohl List	8260C - Volatiles - Pfohl List	Total Number of containers	Special Instructions/Note:
GW-07D	5/12/20	1025	G	Water						3	
GW-07S	5/12/20	1030	G	Water						3	
GW-01D	5/12/20	1345	G	Water			1 2 3			6	
GW-01S	5/12/20	1430	G	Water			1 2 3			6	
GW-04S	5/12/20	1505	G	Water			1 2 3			6	
GW-04D	5/12/20	1635	G	Water			1 2 3			6	
GW-34S	5/13/20	0840	G	Water			1 2 3			6	
GW-03S	5/13/20	1000	G	Water			1 2 3			6	
GW-03D	5/13/20	1125	G	Water			1 2 3			6	
GW-07D	5/13/20	1145	G	Water			1 2			3	
GW-07S	5/13/20	1210	G	Water			1 2			3	

**Possible Hazard Identification**  
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological  
 Deliverable Requested: I, II, III, IV, Other (specify)

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

**Special Instructions/QC Requirements:**

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by: <u>R. Murphy</u>		Date: <u>5/13/20</u>		Time: <u>1725</u>		Received by: <u>AECom</u>	
Relinquished by:		Date/Time:		Date/Time:		Received by: <u>Company</u>	
Relinquished by:		Date/Time:		Date/Time:		Received by: <u>Company</u>	
Custody Seals Intact: <u>Yes</u>		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Ver: 01/16/2019	

# Case Narrative

Client: AECOM  
Project/Site: Pfohl Brothers Landfill

Job ID: 480-169931-1

## Job ID: 480-169931-1

Laboratory: Eurofins TestAmerica, Buffalo

### Narrative

#### Job Narrative 480-169931-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 5/13/2020 5:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.9° C, 3.2° C and 3.3° C.

#### GC/MS VOA

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

#### GC/MS Semi VOA

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

#### Metals

Method 6010C: The interference check standard solution (ICSA) associated with the following samples showed results for Barium at a level greater than 2 times the limit of detection (LOD). It is believed that the solution contains trace impurities of this element / these elements and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution. GW-01D (480-169931-3), GW-01S (480-169931-4), GW-04S (480-169931-5), GW-04D (480-169931-6), GW-34S (480-169931-7), GW-03S (480-169931-8), GW-03D (480-169931-9), GW-07D (480-169931-10), GW-07S (480-169931-11), GW-08D (480-169931-12), GW-08D MS (480-169931-12[MS]), GW-08D MSD (480-169931-12[MSD]), GW-08SR (480-169931-13), FD-051320 (480-169931-14), GW-35S (480-169931-15), GW-26D (480-169931-16), (LCS 480-531855/2-A), (MB 480-531855/1-A), (480-169931-C-12-A PDS) and (480-169931-C-12-A SD ^5)

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

#### Organic Prep

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

## Chain of Custody Record



<b>Client Information</b> Client Contact: Ms. Ann Marie Kropovitch Company: AECOM Address: 257 West Genesee Street, Suite 400 City: Buffalo State, Zip: NY, 14202-2657 Phone: 111666 Line 2 Email: ann.marie.kropovitch@aecom.com Project Name: Pfuhl Brothers Landfill GW Monitoring Site:		Supplier: R. Murphy / T. Urban Lab PM: Schove, John R Phone: 716-903-1346 E-Mail: john.schove@testamericainc.com		Carrier Tracking No(s): COC No: 480-145747-13273.3 Page: 1 Page of: 1 Job #:	
<b>Analysis Requested</b> Due Date Requested: TAT Requested (days): Standard TAT PO #: 111666 Line 2 WO #: 60411174.11175616.00000 Project #: 48002609 SSOW#:					
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)					
480-169958 Chain of Custody 					
Total Number of Containers:					
Special Instructions/Note:					
Sample Identification					
GW-285	5/14/2020	0805	G	Water	6
GW-295	5/14/2020	0908	G	Water	6
TRIP BLANK TB-051420	5/14/2020	-	G	Water	1
TRIP BLANK TO, GW-305	5/14/2020	1000	G	Water	6
GW-315	5/14/2020	1112	G	Water	6
GW-325	5/14/2020	1207	G	Water	6
GW-335	5/14/2020	1250	G	Water	6
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:					
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by:					
Relinquished by:  Date: 5/14/20 1408 Relinquished by: Company: AECOM Relinquished by: Company: AECOM Relinquished by: Company: AECOM					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: Cooler Temperature(s) °C and Other Remarks: 10.6 # ICE					



## Case Narrative

Client: AECOM

Job ID: 480-169958-1

Project/Site: Pfohl Brothers Landfill GW Monitoring

**Job ID: 480-169958-1**

**Laboratory: Eurofins TestAmerica, Buffalo**

### Narrative

#### Job Narrative 480-169958-1

#### Receipt

The samples were received on 5/14/2020 2:00 PM; the samples arrived in good condition, properly preserved, and where required, on ice. The temperature of the cooler at receipt time was 10.6°C

#### GC/MS VOA

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

#### GC/MS Semi VOA

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

#### Metals

Method 6010C: The interference check standard solution (ICSA) associated with the following samples showed results for Barium at a level greater than 2 times the limit of detection (LOD). It is believed that the solution contains trace impurities of this element and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution. GW-28S (480-169958-1), GW-29S (480-169958-2), GW-30S (480-169958-4), GW-31S (480-169958-5), GW-32S (480-169958-6), GW-33S (480-169958-7), (LCS 480-531869/2-A) and (MB 480-531869/1-A)

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



**ATTACHMENT B**

**July 2020 – December 2020**

**Semi Annual Report**

**And**

**Data Applicability Report**

**SEMI ANNUAL REPORT  
OPERATION AND MAINTENANCE  
JULY 2020 TO DECEMBER 2020  
PFOHL BROTHERS LANDFILL  
CHEEKTOWAGA, NY**

**Submitted to:**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
270 MICHIGAN AVENUE  
BUFFALO, NEW YORK 14203**

**Prepared by:**

**URS CORPORATION  
257 WEST GENESEE STREET, SUITE 400  
BUFFALO, NEW YORK 14202-2657**

**Prepared for:**

**TOWN OF CHEEKTOWAGA  
ENGINEERING DEPARTMENT  
275 ALEXANDER AVE  
CHEEKTOWAGA, NEW YORK 14211**

**APRIL  
2021**

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## FIGURES

Figure 1-1	Site Location Map
Figure 3-1	Monitoring Locations

## APPENDICES

Appendix A	Example Daily Inspection Sheets
Appendix B	Monthly Flow Summaries (July 2020 – December 2020)
Appendix C	Hydraulic Monitoring Tables
Appendix D	Groundwater Purge and Sample Collection Logs
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Appendix F	BSA Permit 19-04-CH016
Appendix G	Discharge Report Summary Tables
Appendix H	Monitoring Well Inspection Logs

## **1.0 INTRODUCTION**

### **1.1 Background**

The Pfohl Brothers Landfill is located on Aero Drive in the Town of Cheektowaga, New York (Figure 1-1). The site is listed as Site No. 915043 on the New York State Department of Environmental Conservation's (NYSDEC's) Registry of Inactive Hazardous Waste Disposal Sites. A Consent Order between NYSDEC and potentially responsible parties (PRPs) for closure of the site was signed in 2001 and remedial construction commenced in 2001. The remedy included consolidation of waste material, capping of the waste disposal and consolidation areas, and encircling the landfill areas with a groundwater collection system to prevent off-site migration. The remedial action was completed in 2002.

Responsibility for implementing the remedy was divided between a "steering committee" of industrial PRPs and the Town of Cheektowaga. The steering committee responsibilities lay generally with the capital construction activities of the remedy including waste consolidation, cap and drainage system installation, etc. The Town of Cheektowaga, which was named as a PRP for disposal of municipal waste at the Pfohl Brothers Landfill when it was operating, is performing the operation and maintenance (O&M) activities at the landfill, pursuant to a settlement agreement between the Town and the steering committee.

### **1.2 Operation and Maintenance Activities**

While construction of the remedy was substantially complete by late 2002, the final O&M Plan which was issued as draft in 2002, was not approved by the NYSDEC until March 10, 2006. However, the Town of Cheektowaga and its consultant (URS Corporation – New York (URS)) assumed most of the operational responsibilities since 2002. This includes a variety of general maintenance activities as outlined in Section 2 and sampling and other monitoring activities outlined in Section 3.

Beginning in 2004, the Town and URS assumed all of the O&M activities described in the O&M Plan. This is the semi-annual report as called for by Section 3.6 of the O&M Plan.

## **2.0 GENERAL MAINTENANCE ACTIVITIES**

Since completion of construction activities in 2002, personnel from the Town of Cheektowaga Engineering Department have performed general activities to ensure the physical operation of the landfill as intended by the design. The various O&M activities performed by the Town from July through December 2020 included the following actions:

- Recorded the amount of groundwater discharged through the collection system daily. The flow rate displayed by each wet well pump at the time of daily inspection and the total cumulative volume of flow was recorded for each wet well on daily inspection sheets. A few examples of the daily inspection sheet for this reporting period are attached in Appendix A.
- Summarized total cumulative effluent flow rates and volumes on a monthly basis. The monthly totals for the period, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- Shut down the wet well pumps during wet weather flow conditions as necessary at various times throughout the year. Such actions were only taken upon request of the Buffalo Sewer Authority (BSA) during heavy storm events in order to reduce the hydraulic load on the BSA treatment system during such events. Shutdown events are recorded and included with the monthly flow data in Appendix B as previously requested by NYSDEC.
- Cleaned/replaced check valves as necessary at all six (6) wet wells (e.g., replaced a plugged check valve in wet well #5) and replaced surge suppressors and fuses as needed for pump station instrumentation equipment.
- Inspected wet wells for excessive corrosion to critical equipment.
- Cleaned upper level equipment and applied corrosion inhibitor fluid.
- Performed bimonthly site/security check, data retrieval, and analysis.
- Installed new air conditioner wall unit.
- Replaced the Control Cabinet Circulation Fan
- Replaced the desktop computer in the Control building with a new computer, updated software, and reconfigured SCADA monitoring system.

- Contractor mowed the entire cap and trimmed along the perimeter chain link fence.
- Plowed snow to access the Control Building when necessary.

### **3.0 MONITORING ACTIVITIES**

The Town of Cheektowaga retained URS to perform monitoring activities as outlined in Section 3.1 of the O&M Plan. During the period of January 2004 through the present, groundwater hydraulic monitoring (Section 3.1.1.2 of the O&M Plan) and effluent monitoring (Section 3.1.4 of the O&M Plan) was performed on a quarterly basis. Semi-annual groundwater quality monitoring (Section 3.1.1.3 of the O&M Plan) was performed during this period. A summary of the monitoring activities is presented in the following subsections. Hydraulic and groundwater sampling locations are shown on Figure 3-1.

#### **3.1 Groundwater Hydraulic Monitoring**

Groundwater and surface water elevations were monitored on a quarterly basis at all locations listed in Table 3.1 of the O&M Plan. The hydraulic monitoring data tables showing groundwater elevations are presented in Appendix C. In Appendix C, Table C-1 lists the measured elevations and Table C-2 provides a comparison of the measured levels in the wells and corresponding manholes/wet wells.

The data presented in Appendix C indicate that groundwater levels outside the collection system were higher than the levels measured in the corresponding wet well or manhole for each measurement date, with one exception. During the September 3, 2020 measurement event, the water level in GW-34S was lower (1.88') than the nearby wet well WW-06, however this is attributable an extended period of dry weather resulting in very low water table outside of the landfill. Therefore, these data demonstrate that the collection system is largely operating as designed.

#### **3.2 Groundwater Quality Monitoring**

This semi-annual round of groundwater sampling was conducted between November 23 and 25, 2020. Overburden and bedrock wells listed in Table 3.2 of the O&M Plan were purged and sampled using dedicated/disposable equipment. Figure 3-1 shows the well locations. Low flow sampling techniques were used with the exceptions noted below.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on September 4, 2020. The PDBs were removed from the

wells during the November 2020 sampling event, and the water poured into the appropriate sample containers for analysis of volatile organic compounds (VOCs). Following removal of the PDBs, the three wells were purged dry. Field water quality parameters (i.e., pH, specific conductivity, temperature, dissolved oxygen, oxidation reduction potential, and turbidity) were measured during the purging process. The other required analytical parameters (i.e., semivolatile organic compounds [SVOCs] and metals) were collected after water levels recovered (the next day for monitoring wells GW-07D and GW-07S and later the same day for monitoring well GW-04S). GW-03S was not sampled during this event because it was dry.

Purge logs and sampling summary sheets with water quality measurements are provided in Appendix D. Following collection, the samples were packed with ice in coolers and transported under chain-of-custody control to Eurofins TestAmerica Laboratories of Amherst, New York.

The groundwater samples were analyzed for the VOCs, SVOCs, and metals listed in Table 3.2 of the O&M Plan as revised in accordance with Table 3-6 in the Semi Annual Report dated September 2007 (January through June 2007) and as approved by the December 6, 2006 and November 29, 2007 correspondence from the NYSDEC authorizing a reduction in the parameters list (included as Table 3-1 in this report).

#### Laboratory Report

The groundwater analytical data package was prepared by Eurofins TestAmerica in accordance with NYSDEC Category A deliverable requirements. A limited data review was performed by a URS chemist in accordance with the following United States Environmental Protection Agency (USEPA) guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Rev. 4, October 2014;*
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D, SOP HW-22, Rev. 5, December 2010;*
- *ICP-AES Data Validation, SOP HW-3a, Rev. 1, September 2016; and*
- *Mercury and Cyanide Data Validation, SOP HW-3c, Rev. 1, September 2016.*



Qualifications applied to the data include “J” (estimated concentration) and “U” (not detected).

URS prepared a Data Applicability Report (DAR) following the guidelines provided in NYSDEC Division of Environmental Remediation (DER-10) *Technical Guidance for Site Investigation and Remediation, Appendix 2B*, dated May 2010. The DAR dated December 2020 is submitted separately from this report.

## Results

Table 3-2 of this report presents the groundwater sample results compared with NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Class GA water quality standards.

No VOCs were detected at concentrations above the Class GA water quality standards at any location. Only one SVOC, phenol, was detected at a concentration above its Class GA water quality standard. It was present in well GW-29S at an estimated concentration of 3.4 micrograms per liter ( $\mu\text{g/L}$ ), slightly exceeding its water quality standard of 1.0  $\mu\text{g/L}$ . Phenol was detected once before in GW-29S in November 2009, at an estimated concentration below its Class GA water quality standard.

The metals iron, magnesium, manganese, and sodium exceeded Class GA standards in most site wells. The sample from well GW-07D also had concentrations of chromium, lead, and nickel exceeding their respective Class GA standards.

## Comparison to Historical Results

### *Organics*

Results are consistent with historical results; there have been very few and infrequent detections of VOCs/SVOCs.

### *Metals*

No significant changes in metals concentrations were observed when compared to previous analytical results. The concentrations of iron, magnesium, manganese, and sodium in most site wells were similar to the concentrations found during previous sampling events.

Sodium concentrations were generally elevated in bedrock wells (GW-01D, GW-03D, GW-08D, and GW-26D) and shallow wells adjacent to roads (GW-01S). The sodium concentrations were also elevated in GW-03S and GW-08SR. The higher sodium concentrations in the bedrock wells may be attributed to the bedrock composition and the elevated concentrations in the shallow wells may be the result of seasonal road de-icing activities.

### Trend Analysis

#### *Organics*

There is an insufficient number and frequency of detections to define trends.

#### *Metals*

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented graphically in Figures E-1 through E-19 of Appendix E. A review of the trend analysis indicated that no significant changes or trends in concentrations of any of the parameters exceeding groundwater standards have occurred over the semi-annual sampling events. The Mann-Kendall Nonparametric Test for Trend was used to determine the trends summarized below (“--” indicates no discernable trend):

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-1	GW-01D	--	--	--	Upward
E-2	GW-01S	Downward	--	Upward	Downward
E-3	GW-03D	Downward	Downward	Downward	Downward
E-4	GW-03S	Downward	Upward	Downward	Upward
E-5	GW-04D	Downward	Upward	Downward	Upward
E-6	GW-04S	--	Upward	Downward	--
E-7	GW-07D	--	Upward	--	--
E-8	GW-07S	Downward	Upward	Downward	Upward
E-9	GW-08D	Downward	Downward	Downward	--
E-10	GW-08SR	--	Upward	--	--
E-11	GW-26D	Downward	Downward	Downward	Upward
E-12	GW-28S	Downward	Downward	Downward	Downward
E-13	GW-29S	--	--	--	Downward

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-14	GW-30S	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)
E-15	GW-31S	Upward	Downward	Downward	Downward
E-16	GW-32S	Downward	Downward	Upward	Downward (with seasonal variation)
E-17	GW-33S	Downward	Downward	Downward	Downward
E-18	GW-34S	Downward	Downward	Seasonal Variation	Downward
E-19	GW-35S	Downward	Downward	Downward	Downward

### 3.3 Groundwater Discharge Monitoring

Two quarterly sampling events (September 2020 and December 2020) of the groundwater collection system discharge were completed since the previous semi-annual report. The sampling was performed in accordance with the requirements of Discharge Permit No. 19-04-CH016 between the BSA and the Town of Cheektowaga. The permit requires quarterly sampling and analysis of metals (barium, cadmium, chromium, copper, lead, nickel, and zinc) and total suspended solids. A copy of the permit, which shows the monitoring parameters and associated discharge limits, is included as Appendix F.

During the sampling events in September 2020 and December 2020, each regulated parameter was below the limits set by the permits. Copies of the data summary tables that were included with the monitoring reports submitted to the BSA are included as Appendix G.

### 3.4 Monitoring Well Inspections

During the November 2020 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing minor damage to the risers on monitoring wells GW-07D, GW-01S, and GW-01D. The wells are still functional. The monitoring well inspection logs may be found in Appendix H.

#### **4.0 SUMMARY AND RECOMMENDATIONS**

**General Maintenance:** The Town of Cheektowaga will continue to maintain mechanical equipment at the landfill on an as-needed basis and operate the groundwater collection and discharge system as designed. The Town will also continue regular inspections, mow the cap once per year, and plow snow to access the Control Building, as necessary.

**Groundwater Hydraulic Monitoring:** Hydraulic monitoring has been performed on a quarterly basis in conjunction with the discharge monitoring. Water level measurement data demonstrates that the collection trench water levels are largely maintained at lower elevations than monitoring points outside the landfill system, as designed. Continued quarterly monitoring is recommended.

**Groundwater Quality Monitoring:** Groundwater sample results indicate that only low levels of SVOCs and metals are present. Similar concentrations of most parameters were found during previous sampling events. The next round of groundwater sampling will be conducted in May 2020. Low flow sampling techniques will be used. Passive diffusion bags will be used again for VOC analyses at the three wells (GW-04S, GW-07S, and GW-07D) that go dry when using low flow sampling.

**Groundwater Discharge Monitoring:** Groundwater discharges remain within permit limits. Continued quarterly monitoring is recommended.

## **TABLES**

**TABLE 3-1**

**APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN**

**GROUNDWATER SAMPLING SUMMARY  
OPERATION AND MAINTENANCE PLAN  
PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK**

**LOCATIONS**

GW-1D/1S  
GW- 3D/3S  
GW- 4D/4S  
GW- 7D/7S  
GW- 8D/8S(R)  
GW- 26D/35S  
GW- 28S  
GW- 29S  
GW- 30S  
GW- 31S  
GW- 32S  
GW- 33S  
GW- 34S

**FREQUENCY**

semi-annually for overburden and bedrock groundwater

**PARAMETERS**

<i>Field</i>	pH conductivity temperature turbidity
<i>VOCs</i>	Acetone Benzene 1,2-Dichloroethene (total) 1,1,2-Trichloroethane Vinyl chloride
<i>SVOCs</i>	Phenol 1,3-Dichlorobenzene 1,4-Dichlorobenzene bis(2-Ethylhexyl)phthalate

**TABLE 3-1 (continued)**

**APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN**

**GROUNDWATER SAMPLING SUMMARY  
OPERATION AND MAINTENANCE PLAN  
PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK**

**PARAMETERS (cont'd)**

<i>Metals</i>	Antimony
	Arsenic
	Barium
	Cadmium
	Chromium
	Copper
	Iron
	Lead
	Magnesium
	Manganese
	Mercury
	Nickel
	Silver
	Sodium
	Zinc

**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2020**

Location ID			GW-01D	GW-01S	GW-03D	GW-04D	GW-04S
Sample ID			GW-01D	GW-01S	GW-03D	GW-04D	GW-04S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/23/20	11/23/20	11/24/20	11/23/20	11/23/20
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5					
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3			1.8 J		NA
1,4-Dichlorobenzene	UG/L	3			2.6 J		NA
bis(2-Ethylhexyl)phthalate	UG/L	5					NA
Phenol	UG/L	1					NA
<b>Metals</b>							
Arsenic	MG/L	0.025					NA
Barium	MG/L	1	0.090 J	0.22 J	0.063 J	0.097 J	NA
Cadmium	MG/L	0.005				0.00056 J	NA
Chromium	MG/L	0.05	0.010	0.0021 J		0.0042	NA
Copper	MG/L	0.2		0.035			NA
Iron	MG/L	0.3	0.32	9.2	0.80	0.25	NA
Lead	MG/L	0.025					NA
Magnesium	MG/L	35	37.1	26.7	13.4	76.9	NA
Manganese	MG/L	0.3	0.021	1.2	0.18	0.021	NA
Nickel	MG/L	0.1	0.0027 J		0.0031 J	0.0022 J	NA
Sodium	MG/L	20	112	166	132	94.2	NA
Zinc	MG/L	2	0.017	0.016	0.0040 J	0.024	NA

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

J - The analyte was positively identified, the quantitation is an estimation. Empty cell - Not Detected.

NA - Not Analyzed

Only Detected Results Reported.



**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2020**

Location ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/23/20	11/23/20	11/24/20	11/23/20	11/24/20
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5	NA		NA		NA
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
bis(2-Ethylhexyl)phthalate	UG/L	5		NA	3.8 J	NA	5.0
Phenol	UG/L	1		NA		NA	
<b>Metals</b>							
Arsenic	MG/L	0.025		NA		NA	
Barium	MG/L	1	0.14 J	NA	0.099 J	NA	0.42 J
Cadmium	MG/L	0.005		NA	0.0015	NA	0.00070 J
Chromium	MG/L	0.05	0.0050	NA	0.53	NA	0.0036 J
Copper	MG/L	0.2	0.0022 J	NA	0.031	NA	
Iron	MG/L	0.3	1.5	NA	8.0	NA	0.23
Lead	MG/L	0.025		NA	0.11	NA	
Magnesium	MG/L	35	28.3	NA	36.4	NA	45.8
Manganese	MG/L	0.3	0.13	NA	0.12	NA	0.038
Nickel	MG/L	0.1	0.0045 J	NA	0.24	NA	0.014
Sodium	MG/L	20	27.4	NA	77.7	NA	61.9
Zinc	MG/L	2	0.0095 J	NA	0.054	NA	0.0045 J

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



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NA - Not Analyzed

Only Detected Results Reported.

**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2020**

Location ID			GW-08D	GW-08D	GW-08SR	GW-26D	GW-28S
Sample ID			FD-112420	GW-08D	GW-08SR	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/24/20	11/24/20	11/24/20	11/25/20	11/24/20
Parameter	Units	*	Field Duplicate (1-1)				
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5				0.88 J	
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Phenol	UG/L	1					
<b>Metals</b>							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.070 J	0.068 J	0.11 J	0.11 J	0.093 J
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.033	0.029		0.0011 J	
Copper	MG/L	0.2	0.0032 J	0.0021 J			
Iron	MG/L	0.3	0.36	0.29	5.9	2.2	0.42
Lead	MG/L	0.025					
Magnesium	MG/L	35	15.5	15.2	55.4	15.6	26.2
Manganese	MG/L	0.3	0.031	0.029	0.56	0.32	0.92
Nickel	MG/L	0.1	0.0065 J	0.0055 J		0.0018 J	0.0016 J
Sodium	MG/L	20	218	216	131	288	10.2
Zinc	MG/L	2	0.026	0.014			0.59

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

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NA - Not Analyzed

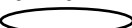
Only Detected Results Reported.

**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2020**

Location ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/24/20	11/25/20	11/25/20	11/25/20	11/25/20
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5					
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Phenol	UG/L	1	3.4 J				
<b>Metals</b>							
Arsenic	MG/L	0.025	0.023				
Barium	MG/L	1	0.20 J	0.33 J	0.12 J	0.057 J	0.070 J
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05					
Copper	MG/L	0.2					
Iron	MG/L	0.3	13.3	14.6	4.0		
Lead	MG/L	0.025	0.0030 J				
Magnesium	MG/L	35	62.7	43.3	33.7	28.4	32.7
Manganese	MG/L	0.3	0.67	2.5	0.76	0.31	0.0021 J
Nickel	MG/L	0.1			0.0029 J	0.0015 J	
Sodium	MG/L	20	9.5	562	5.7	4.5	2.3
Zinc	MG/L	2	0.26	0.77	0.0060 J	0.0017 J	0.0015 J

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.

 Concentration Exceeds

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NA - Not Analyzed

Only Detected Results Reported.

**TABLE 3-2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2020**

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			11/24/20	11/25/20
Parameter	Units	*		
<b>Volatile Organic Compounds</b>				
1,2-Dichloroethene (total)	UG/L	5		
<b>Semivolatile Organic Compounds</b>				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
bis(2-Ethylhexyl)phthalate	UG/L	5		
Phenol	UG/L	1		
<b>Metals</b>				
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.14 J	0.13 J
Cadmium	MG/L	0.005		
Chromium	MG/L	0.05	0.0059	
Copper	MG/L	0.2		
Iron	MG/L	0.3	0.029 J	0.020 J
Lead	MG/L	0.025		
Magnesium	MG/L	35	29.5	31.8
Manganese	MG/L	0.3	0.0059	0.074
Nickel	MG/L	0.1	0.0021 J	
Sodium	MG/L	20	13.1	3.3
Zinc	MG/L	2		0.0029 J

\*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes April 2000 and June 2004 Addenda). Class GA.

Flags assigned during chemistry validation are shown.



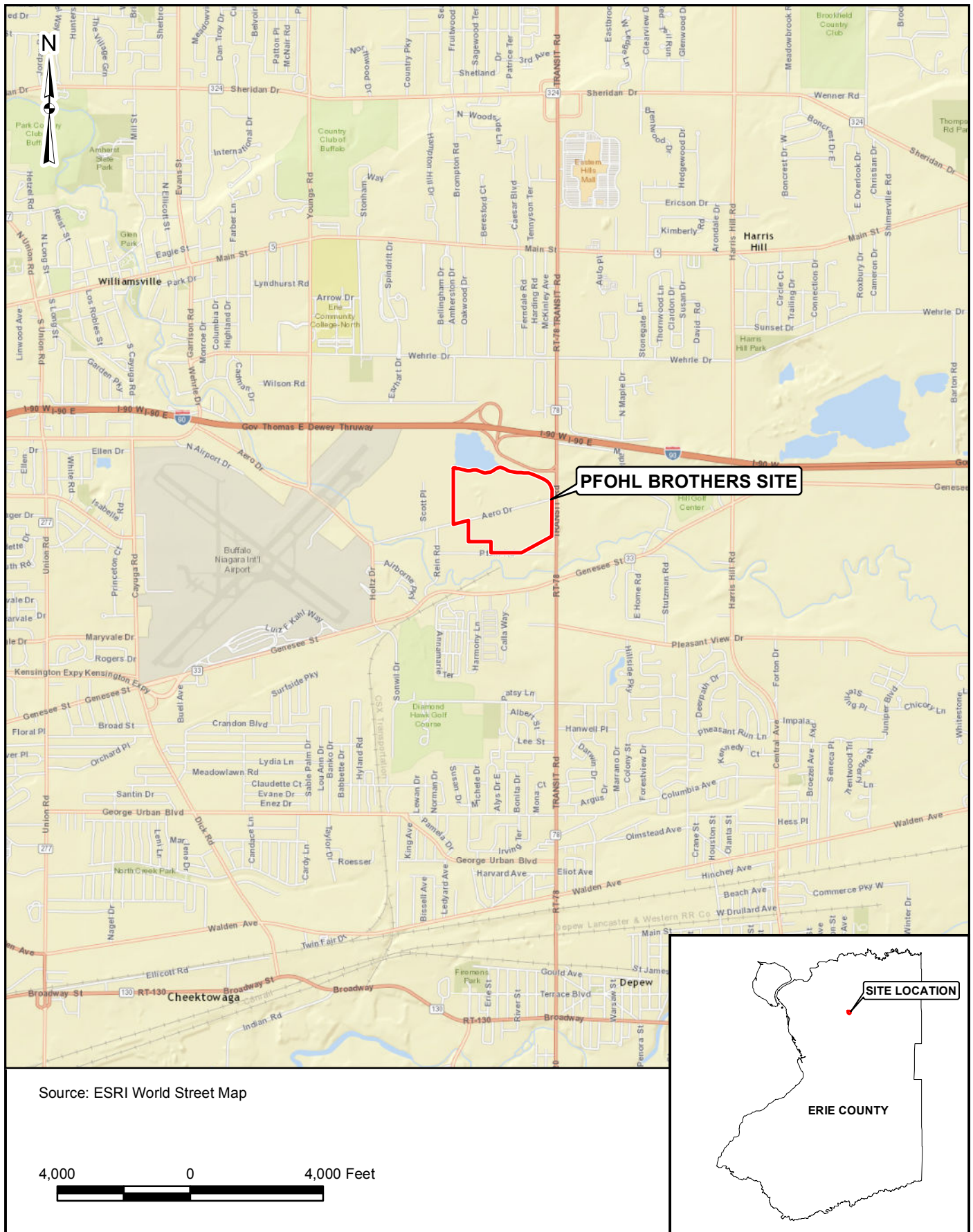
Concentration Exceeds

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NA - Not Analyzed

Only Detected Results Reported.

## **FIGURES**





J:\Projects\11172700.00000\GIS\ARCMAP\Site Plan.mxd 4/9/2020





**APPENDIX A**

**EXAMPLE DAILY INSPECTION SHEETS**



# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 7/23/20  
Time 11:24

Weather conditions Cldy / Humid  
Read by: JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0</u>	<u>0</u>	<u>0</u>	<u>2792</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>0</u>	<u>197</u>
WW-1	<u>4.7</u>	<u>0</u>	<u>18900</u>	<u>7826</u>
WW-6	<u>7.3</u>	<u>0</u>	<u>0</u>	<u>19029</u>
WW-4	<u>6.9</u>	<u>0</u>	<u>0</u>	<u>8875</u>
WW-5	<u>5.9</u>	<u>*15.4</u>	<u>4710</u>	<u>4710</u>

Flow Totalizer at Meter chamber

146621 / 165492

Heat Trace

Outside temp T = 86  
Current A = 0

Set point SP = 40

Surge Suppressor events

248

Motor Control Center

Volts 480 volts  
Amps 6 amps

Which WW was running?

1 2 3 4 5 6

Filter

Checked

Changed

Comments and/or Current Conditions

Adjusted Windows Clock

WW-5 Low gpm / Needs cleaning!

# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 9/3/2020  
Time 10:00

Weather conditions 70's partly sunny, calm  
Read by: T. U. (A&C.com)

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0.0	0	2792
WW-2	4.6	0.0	-748	197
WW-1	4.7	0.0	98874	7854
WW-6	7.4	0.0	118187	19058
WW-4	6.7	0.0	0	8875
WW-5	5.6	13.4	566149	5189

Flow Totalizer at Meter chamber

12.9 gpm 783070

Heat Trace

Outside temp T = 73°F  
Current A = 0.0

Set point SP = 40°F

Surge Suppressor events

264

Motor Control Center

Volts 480 volts  
Amps 7 amps

Which WW was running?

1 2 3 4 5 6

Filter

Checked

Changed

Comments and/or Current Conditions

Effluent setup

# Pfohl Brothers Landfill Site

Daily Logsheets

Town of Cheektowaga

Date 10/28/20  
Time 1256

Weather conditions Cldy  
Read by: JW

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	0	2792
WW-2	4.5	0	17361	208
WW-1	4.4	0	210717	7901
WW-6	7.3	0	576788	19175
WW-4	7.0	0	218924	8976
WW-5	6.7	0	861549	5600

Flow Totalizer at Meter chamber

Heat Trace

Outside temp T = 45  
Current A = 0

Set point SP = 40

Surge Suppressor events 272

Motor Control Center

Volts 480 volts  
Amps 4 amps

Which WW was running?

1 2 3 4 5 6

Filter ☒ Checked ☒ Changed

Comments and/or Current Conditions

Data - Site ✓

**APPENDIX B**

**MONTHLY FLOW SUMMARIES**  
**JULY 2020 – DECEMBER 2020**

# Direct Discharge Flow Data

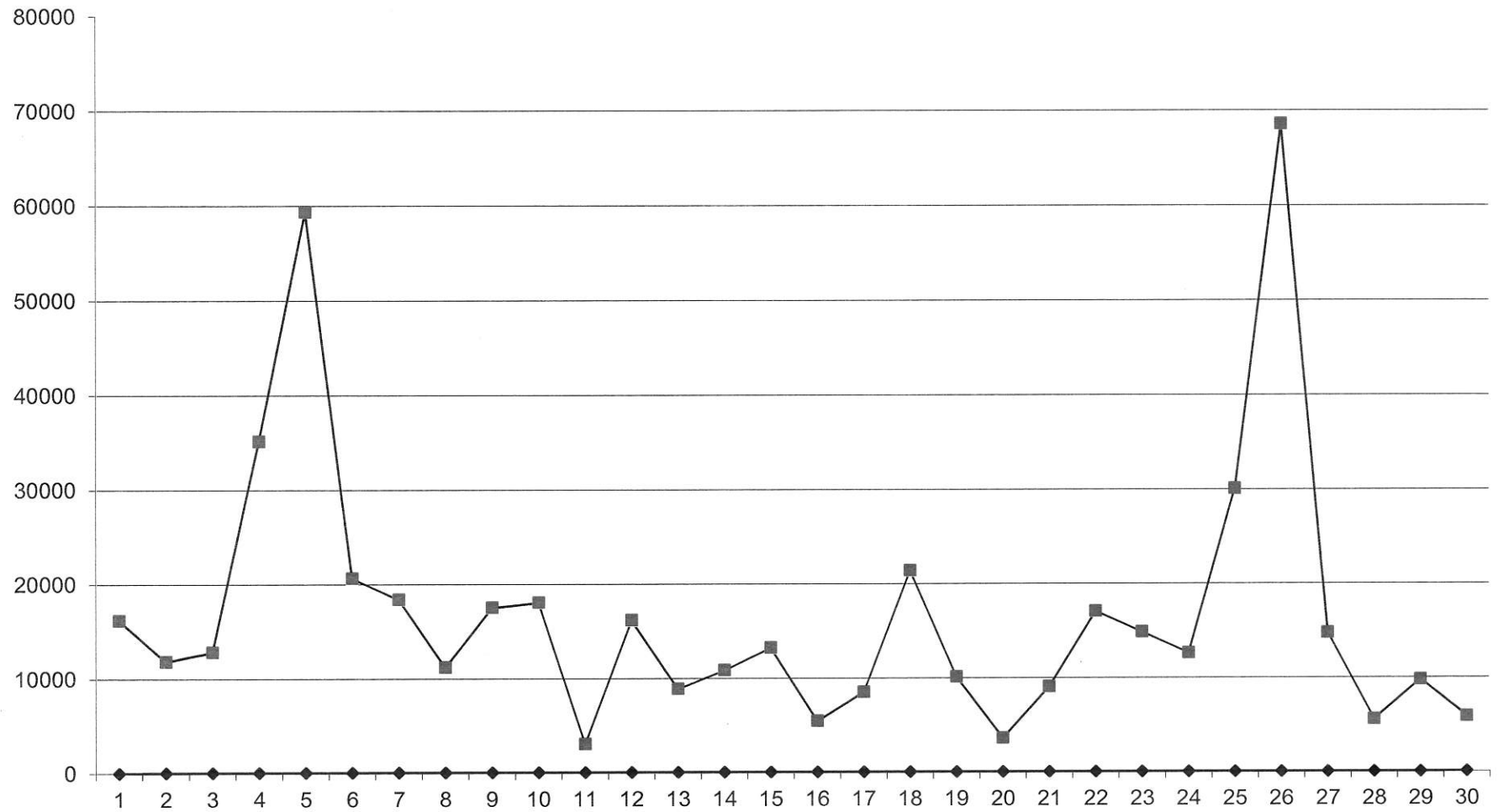
6/30/2020

11568842

28,800

<b>Jul-20</b>	<b>Time; 11:58pm unless otherwise stated</b>	<b>Totalizer Reading (Gallons)</b>	<b>Daily Total Discharge (Gallons)</b>	<b>Notes</b>
1		11,585,002	16,160	
2		11,596,818	11,816	
3		11,609,635	12,817	
4		11,644,770	35,135	
5		11,704,094	59,324	
6		11,724,712	20,618	
7		11,743,070	18,358	
8		11,754,233	11,163	
9		17,486	17,486	ANNUAL RESET
10		35,494	18,008	
11		38,528	3,034	
12		54,642	16,114	14:55 inhibit
13		63,505	8,862	08:36 enable
14		74,324	10,818	19:14 inhibit 09:24 enable
15		87,536	13,211	
16		92,953	5,416	11:30 inhibit
17		101,439	8,486	15:56 enable
18		122,820	21,380	
19		132,927	10,107	
20		136,526	3,598	
21		145,576	9,049	
22		162,593	17,017	09:21 inhibit 16:08 enable
23		177,425	14,831	02:45 inhibit 10:59 enable
24		190,018	12,593	
25		220,102	30,083	
26		288,668	68,566	
27		303,418	14,749	
28		308,973	5,555	
29		318,751	9,777	
30		324,637	5,886	
31		342,019	17,381	
		<b>527,410</b>	<b>527,398</b>	

July  
2020



# Direct Discharge Flow Data

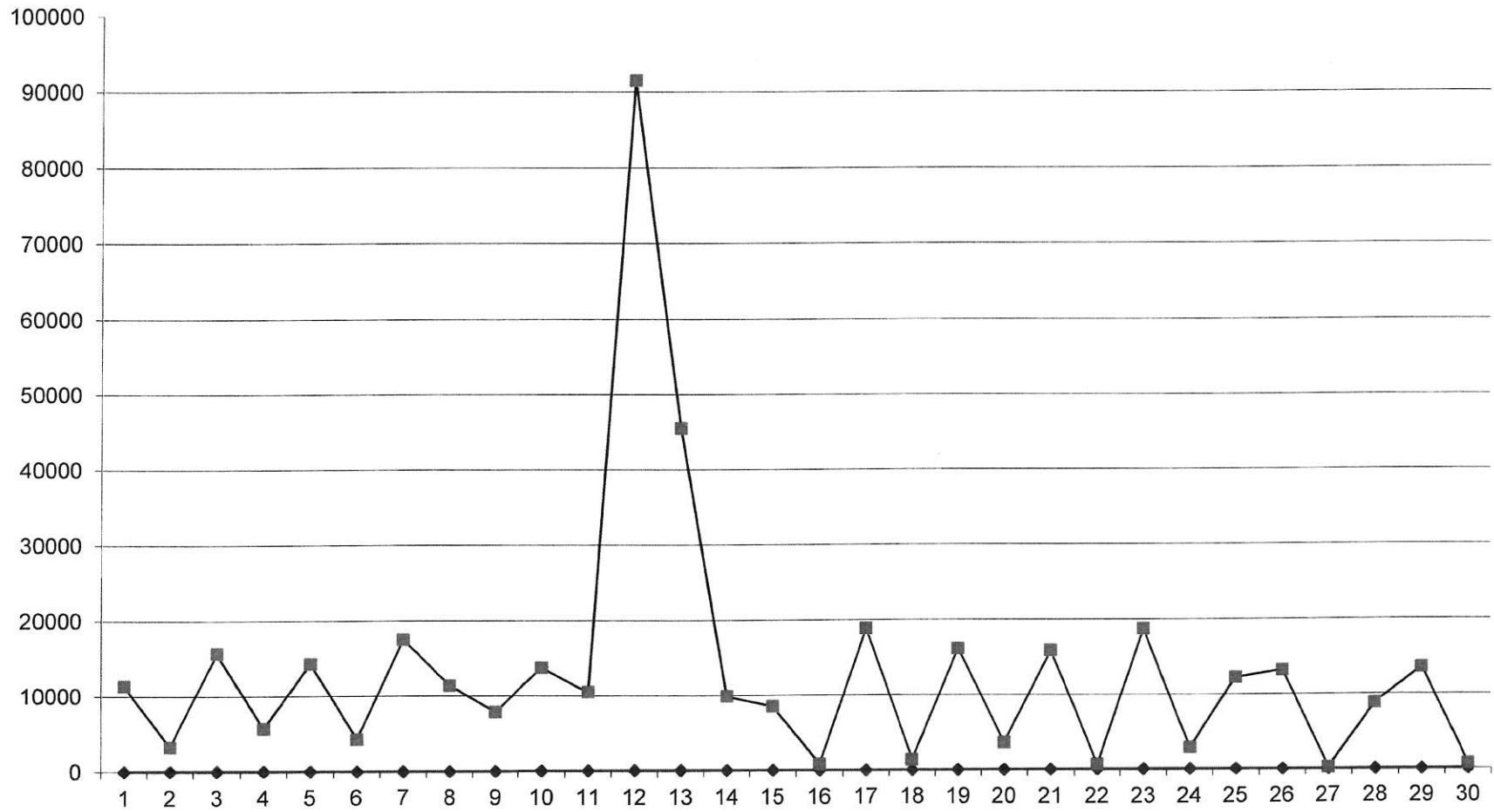
7/31/2020

342,019

17,381

Aug-20	Time; 11:58pm unless otherwise stated			Notes
		Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	
1		353,397	11,378	
2		356,628	3,231	
3		372,316	15,687	
4		377,958	5,641	23:26 inhibit
5		392,261	14,303	07:51 enable
6		396,507	4,245	
7		414,072	17,564	
8		425,477	11,405	
9		433,287	7,809	
10		447,049	13,761	
11		457,495	10,445	
12		548,955	91,460	
13		594,416	45,461	
14		604,266	9,849	
15		612,773	8,507	21:03 inhibit
16		613,570	796	15:32 enable
17		632,477	18,907	
18		633,856	1,378	
19		650,035	16,178	
20		653,604	3,569	
21		669,491	15,887	
22		670,102	610	
23		688,841	18,738	
24		691,695	2,854	
25		703,936	12,240	
26		717,202	13,265	
27		717,393	191	00:18 inhibit
28		726,237	8,843	13:25 enable
29		739,852	13,615	
30		740,498	645	
31		760,315	19,817	
		<b>418,296</b>	<b>418,279</b>	

August  
2020





# Direct Discharge Flow Data

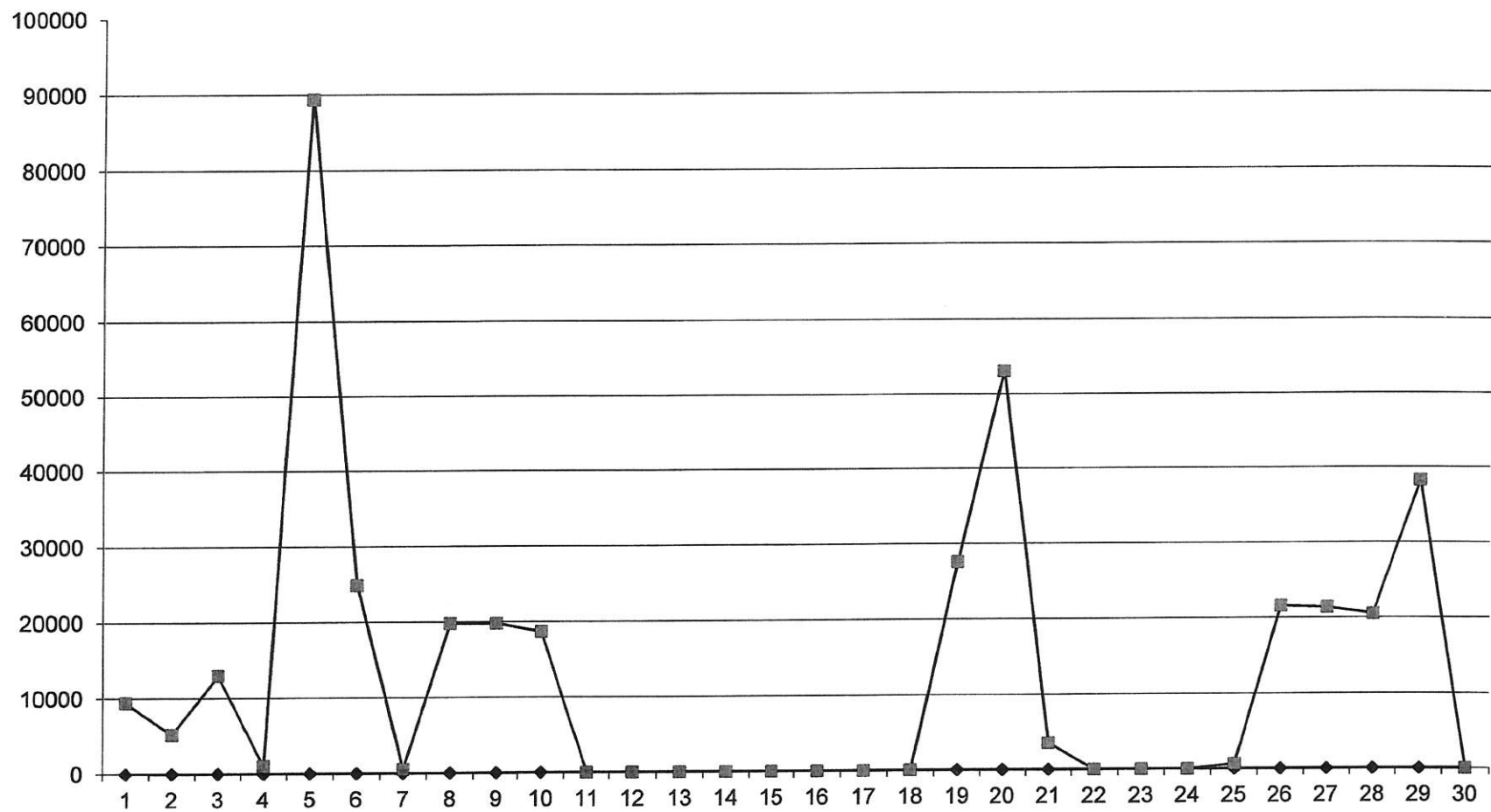
8/31/2020

760,315

19,817

Sep-20	Time; 11:58pm unless otherwise stated	760,315		Notes
		Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	
1		769,719	9,403	
2		774,890	5,171	
3		787,921	13,031	
4		788,922	1,000	
5		878,263	89,340	
6		903,113	24,850	
7		903,594	480	
8		923,401	19,807	
9		943,197	19,795	
10		961,898	18,701	
11		961,898	0	
12		961,898	0	
13		961,898	0	
14		961,898	0	
15		961,898	0	
16		961,898	0	
17		961,898	0	
18		961,925	27	
19		989,524	27,599	
20		1,042,553	53,028	
21		1,046,090	3,537	
22		1,046,090	0	
23		1,046,090	0	
24		1,046,090	0	
25		1,046,746	655	
26		1,068,314	21,568	
27		1,089,702	21,387	
28		1,110,200	20,498	
29		1,148,507	38,306	
30		1,148,507	0	
		388,192	388,183	

September  
2020



# Direct Discharge Flow Data

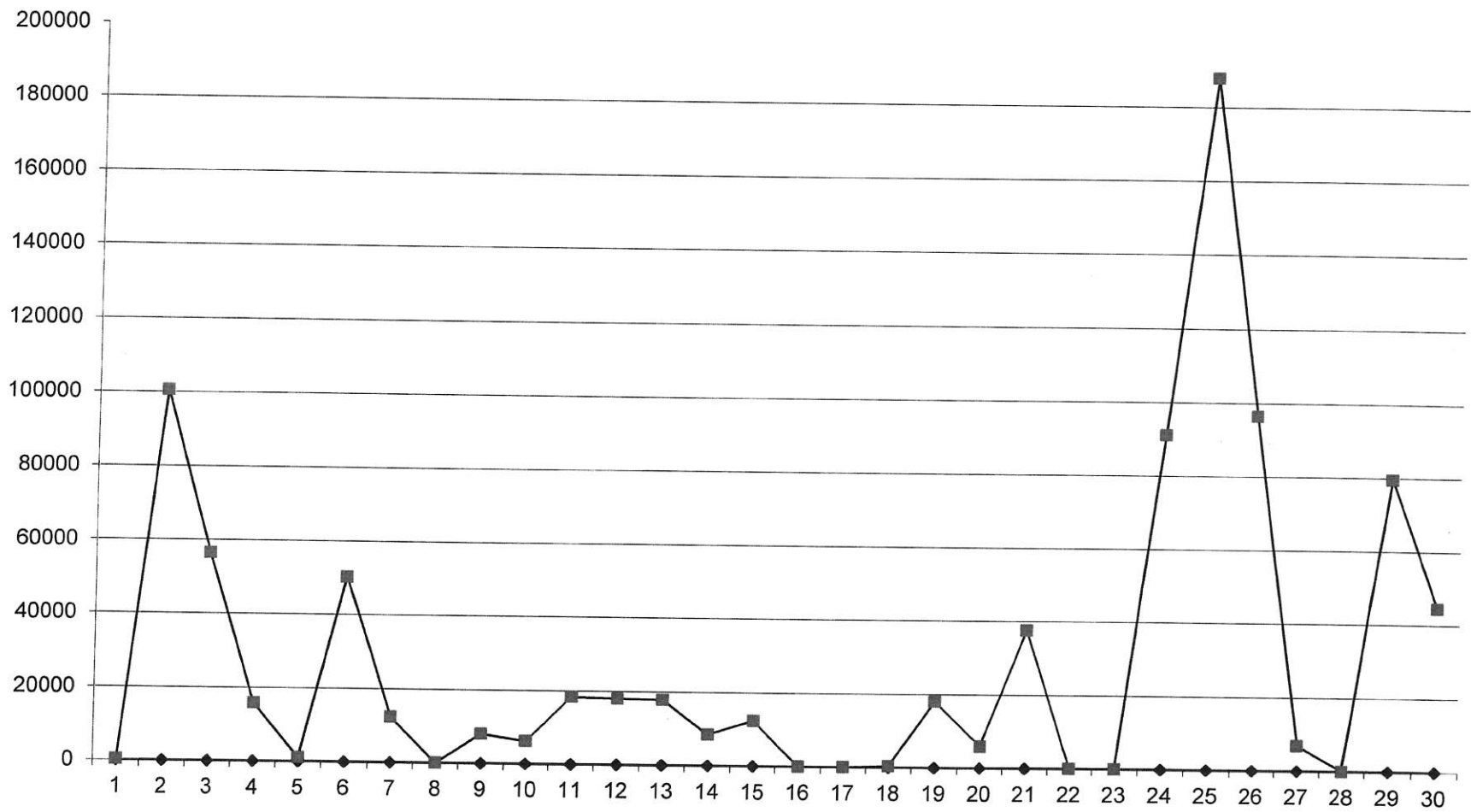
9/30/2020

1,148,507

0

Oct-20	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		1,148,785	278	23:54 enable
2		1,249,455	100,670	07:14 inhibit 10:11 enable
3		1,306,066	56,610	
4		1,321,929	15,863	
5		1,323,035	1,106	
6		1,373,282	50,246	
7		1,385,651	12,369	
8		1,385,651	0	
9		1,393,621	7,970	
10		1,399,744	6,122	
11		1,418,095	18,351	
12		1,436,095	18,000	
13		1,453,870	17,774	
14		1,462,326	8,456	
15		1,474,637	12,310	22:39 inhibit
16		1,474,637	0	
17		1,474,637	0	
18		1,475,042	405	22:17 enable
19		1,493,035	17,993	
20		1,498,903	5,868	01:20 inhibit 22:54 enable
21		1,536,418	37,514	07:53 inhibit
22		1,536,418	0	
23		1,536,418	0	
24		1,627,659	91,241	12:26 enable
25		1,815,557	187,898	
26		1,912,133	96,576	
27		1,919,048	6,914	
28		1,919,048	0	
29		1,998,685	79,636	
30		2,043,266	44,581	
		2,060,172	16,905	
		911,665	911,656	

October  
2020



# Direct Discharge Flow Data

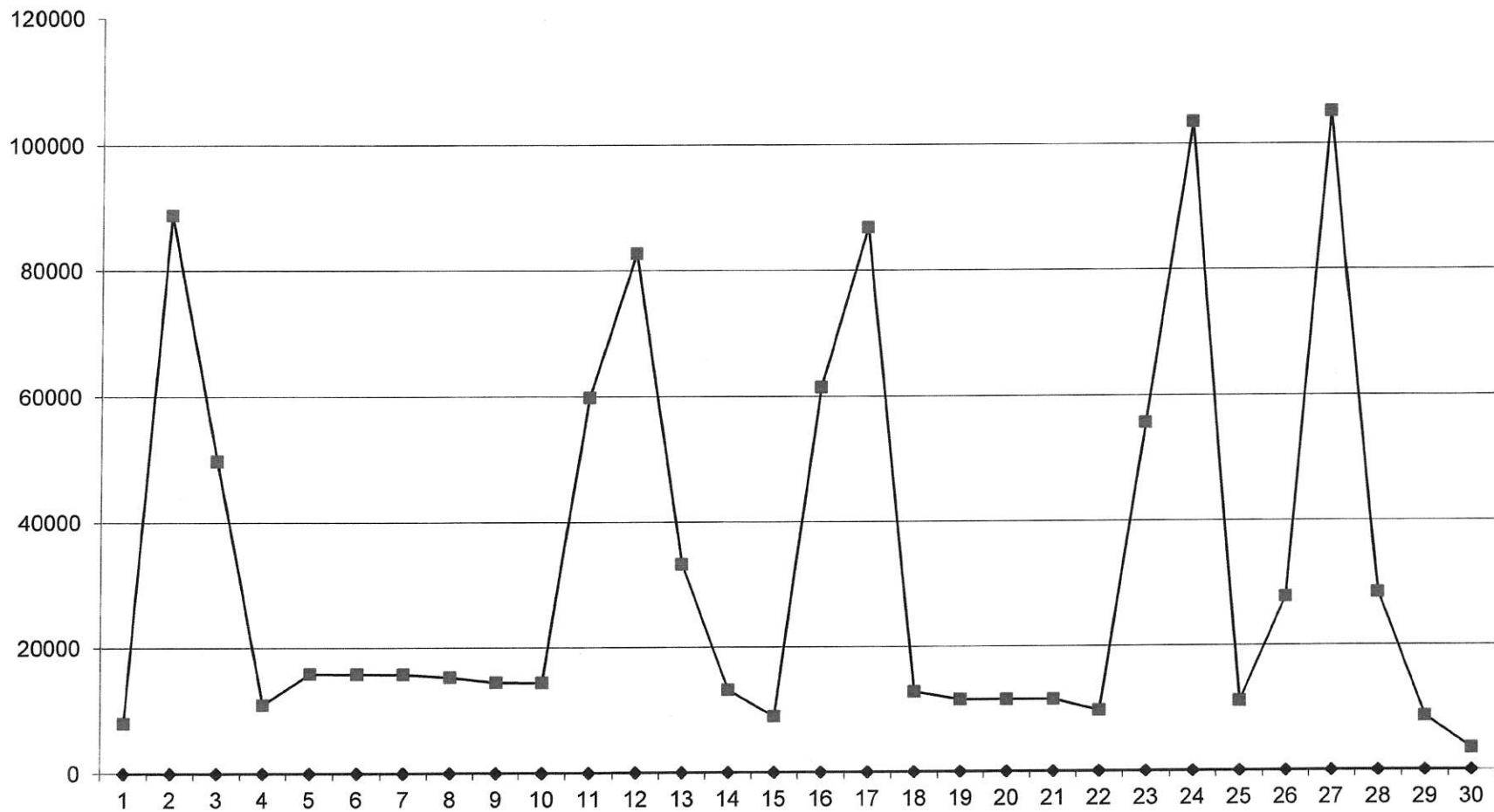
10/31/2020

2,060,172

16,905

Nov-20	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		2,068,141	7,969	10:30 inhibit
2		2,156,972	88,830	04:48 enable
3		2,206,735	49,762	
4		2,217,583	10,848	
5		2,233,421	15,838	
6		2,249,219	15,798	
7		22,664,958	15,738	
8		2,280,236	15,277	
9		2,294,690	14,454	
10		2,309,090	14,400	
11		2,368,920	59,830	05:36 inhibit 11:33 enable
12		2,451,553	82,632	
13		2,484,781	33,228	
14		2,497,954	13,173	
15		2,506,880	8,925	16:39 inhibit
16		2,568,303	61,423	10:03 enable
17		2,655,101	86,797	
18		2,667,916	12,814	
19		2,679,436	11,520	
20		2,690,956	11,520	
21		2,702,476	11,520	
22		2,712,199	9,722	20:20 inhibit
23		2,767,888	55,689	11:03 enable
24		2,871,361	103,473	
25		2,882,529	11,168	
26		2,910,287	27,758	
27		3,015,368	105,080	
28		3,043,747	28,379	
29		3,052,387	8,640	
30		3,055,856	3,469	09:36 inhibit
		995,684	995,674	

November  
2020



# Direct Discharge Flow Data

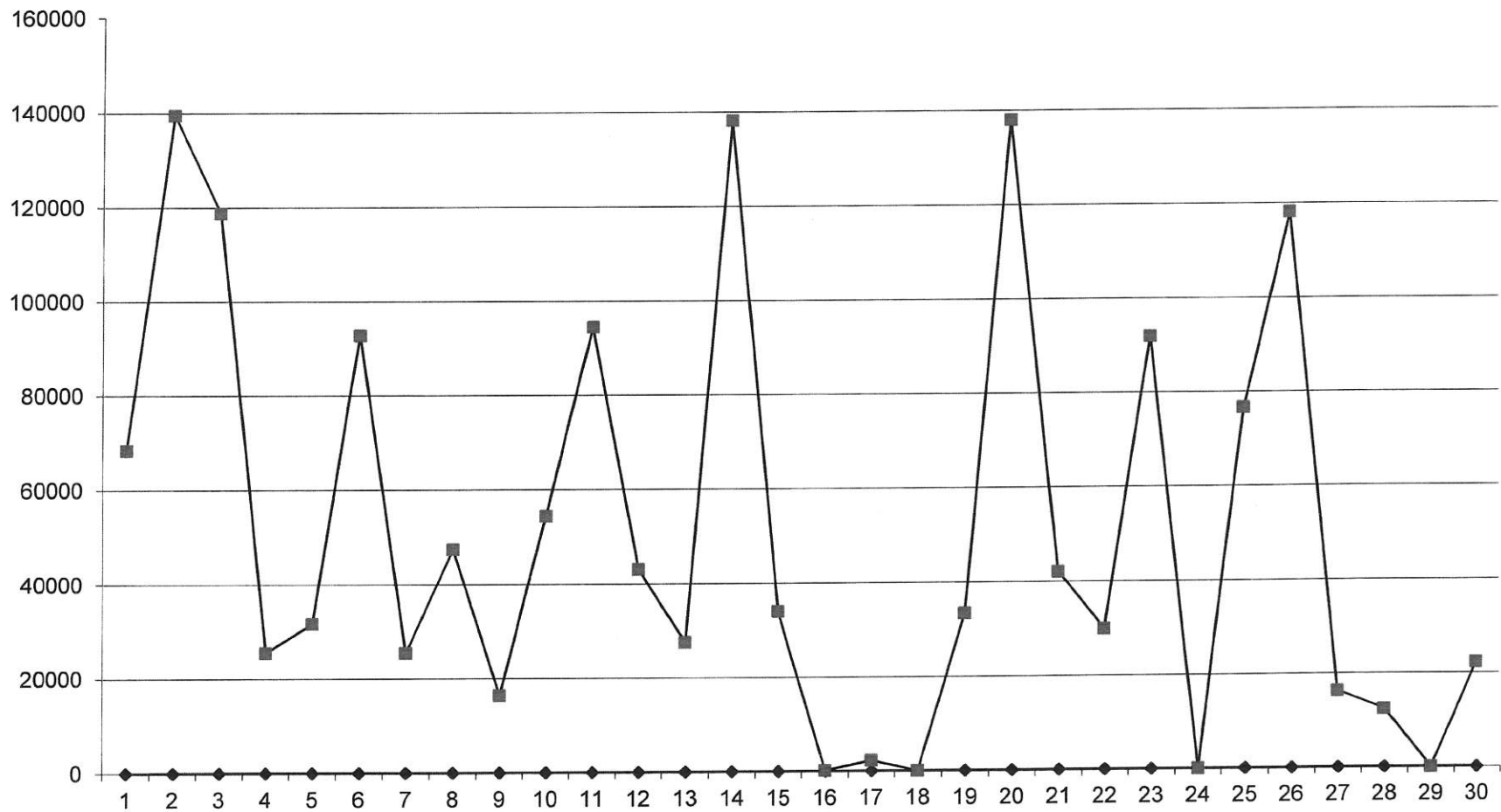
11/30/2020

3,055,856

3,469

Dec-20	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		3,124,345	68,489	11:88 enable
2		3,263,879	139,533	
3		3,382,628	118,749	
4		3,408,190	25,561	
5		3,439,845	31,655	
6		3,532,699	92,853	
7		3,558,189	25,490	
8		3,605,571	47,382	
9		3,622,005	16,434	13:58 inhibit
10		3,676,446	54,441	10:04 enable
11		3,770,956	94,510	
12		3,814,032	43,076	
13		3,841,589	27,557	
14		3,979,735	138,146	
15		4,013,698	33,963	
16		4,013,822	124	
17		4,016,035	2,212	
18		4,016,035	0	
19		4,049,429	33,394	
20		4,187,435	138,006	
21		4,229,509	42,073	
22		4,259,461	29,952	
23		4,351,429	91,968	
24		4,351,429	0	
25		4,428,156	76,726	
26		4,546,339	118,183	
27		4,562,634	16,295	
28		4,575,020	12,385	08:17 inhibit
29		4,575,020	0	
30		4,597,342	22,322	13:25 enable 16:41 inhibit
31		4,597,342	0	
		1,541,486	1,541,479	

December  
2020





# **APPENDIX C**

## **HYDRAULIC MONITORING TABLES**

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JULY - DECEMBER 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-01D</b>	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								9/3/2020 1257	4.40	691.72	0.00	691.72	
MNW								11/23/2020 1254	3.15	692.97	0.00	692.97	
MNW								12/17/2020 1150	3.03	693.09	0.00	693.09	
<b>GW-01S</b>	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								9/3/2020 1256	6.59	689.60	0.00	689.60	
MNW								11/23/2020 1206	3.61	692.58	0.00	692.58	
MNW								12/17/2020 1149	3.91	692.28	0.00	692.28	
<b>GW-03D</b>	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								9/3/2020 1140	2.18	691.70	0.00	691.70	
MNW								11/23/2020 0859	1.70	692.18	0.00	692.18	
MNW								12/17/2020 1039	1.86	692.02	0.00	692.02	
<b>GW-03S</b>	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								9/3/2020 1141	12.83	680.97	0.00	680.97	
MNW								11/23/2020 0900	NM	-	NM	-	Dry at 13.54'
MNW								12/17/2020 1038	NM	-	NM	-	Dry at 13.54
<b>GW-04D</b>	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								9/3/2020 1306	12.81	679.94	0.00	679.94	
MNW								11/23/2020 1456	12.84	679.91	0.00	679.91	
MNW								12/17/2020 1200	12.53	680.22	0.00	680.22	
<b>GW-04S</b>	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								9/3/2020 1305	6.64	686.08	0.00	686.08	
MNW								11/23/2020 1455	4.57	688.15	0.00	688.15	
MNW								12/17/2020 1159	4.32	688.40	0.00	688.40	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JULY - DECEMBER 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-07D</b>	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								9/3/2020 1250	48.51	651.43	0.00	651.43	
MNW								11/23/2020 1050	42.66	657.28	0.00	657.28	
MNW								12/17/2020 1143	57.81	642.13	0.00	642.13	
<b>GW-07S</b>	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								9/3/2020 1251	7.59	691.92	0.00	691.92	
MNW								11/23/2020 1050	6.10	693.41	0.00	693.41	
MNW								12/17/2020 1142	5.18	694.33	0.00	694.33	
<b>GW-08D</b>	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								9/3/2020 1153	6.22	691.57	0.00	691.57	
MNW								11/23/2020 0913	5.67	692.12	0.00	692.12	
MNW								12/17/2020 1054	5.80	691.99	0.00	691.99	
<b>GW-08SR</b>	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								9/3/2020 1153	7.23	690.27	0.00	690.27	
MNW								11/23/2020 0912	5.18	692.32	0.00	692.32	
MNW								12/17/2020 1053	5.31	692.19	0.00	692.19	
<b>GW-26D</b>	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								9/3/2020 1237	7.03	691.47	0.00	691.47	
MNW								11/23/2020 0952	6.53	691.97	0.00	691.97	
MNW								12/17/2020 1131	6.64	691.86	0.00	691.86	
<b>GW-28S</b>	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								9/3/2020 1203	11.11	689.84	0.00	689.84	
MNW								11/23/2020 0918	9.78	691.17	0.00	691.17	
MNW								12/17/2020 1102	8.61	692.34	0.00	692.34	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JULY - DECEMBER 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-29S</b>	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								9/3/2020 1222	10.36	689.27	0.00	689.27	
MNW								11/23/2020 0938	8.95	690.68	0.00	690.68	
MNW								12/17/2020 1116	7.11	692.52	0.00	692.52	
<b>GW-30S</b>	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								9/3/2020 1225	8.27	688.31	0.00	688.31	
MNW								11/23/2020 0941	7.91	688.67	0.00	688.67	
MNW								12/17/2020 1120	7.84	688.74	0.00	688.74	
<b>GW-31S</b>	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								9/3/2020 1227	7.92	690.70	0.00	690.70	
MNW								11/23/2020 0944	5.61	693.01	0.00	693.01	
MNW								12/17/2020 1123	2.69	695.93	0.00	695.93	
<b>GW-32S</b>	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								9/3/2020 1234	6.82	691.55	0.00	691.55	
MNW								11/23/2020 0947	3.75	694.62	0.00	694.62	
MNW								12/17/2020 1127	2.62	695.75	0.00	695.75	
<b>GW-33S</b>	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								9/3/2020 1241	NM	-	NM	-	Dry at 8.50'
MNW								11/23/2020 0955	3.33	694.91	0.00	694.91	
MNW								12/17/2020 1134	4.03	694.21	0.00	694.21	
<b>GW-34S</b>	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								9/3/2020 1130	7.36	687.41	0.00	687.41	
MNW								11/23/2020 0849	2.75	692.02	0.00	692.02	
MNW								12/17/2020 1030	2.64	692.13	0.00	692.13	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JULY - DECEMBER 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-35S</b>	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								9/3/2020 1239	6.65	690.74	0.00	690.74	
MNW								11/23/2020 0951	4.97	692.42	0.00	692.42	
MNW								12/17/2020 1130	3.31	694.08	0.00	694.08	
<b>MH-01</b>	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								9/3/2020 1135	9.67	688.95	0.00	688.95	
MH								11/23/2020 0855	9.54	689.08	0.00	689.08	
MH								12/17/2020 1034	10.44	688.18	0.00	688.18	
<b>MH-03</b>	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								9/3/2020 1147	10.53	688.87	0.00	688.87	
MH								11/23/2020 0906	10.45	688.95	0.00	688.95	
MH								12/17/2020 1044	11.26	688.14	0.00	688.14	
<b>MH-07</b>	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								9/3/2020 1149	8.73	688.09	0.00	688.09	
MH								11/23/2020 0908	8.66	688.16	0.00	688.16	
MH								12/17/2020 1047	9.47	687.35	0.00	687.35	
<b>MH-10</b>	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								9/3/2020 1201	14.50	688.51	0.00	688.51	
MH								11/23/2020 0916	15.04	687.97	0.00	687.97	
MH								12/17/2020 1057	14.92	688.09	0.00	688.09	
<b>MH-15</b>	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								9/3/2020 1219	14.90	684.12	0.00	684.12	
MH								11/23/2020 0937	14.56	684.46	0.00	684.46	
MH								12/17/2020 1114	14.66	684.36	0.00	684.36	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JULY - DECEMBER 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>MH-16</b> MH	1072133.714	1117748.238	698.57	NM	698.57	NA	1	9/3/2020 1223	14.60	683.97	0.00	683.97	
								11/23/2020 0940	14.15	684.42	0.00	684.42	
								12/17/2020 1119	14.18	684.39	0.00	684.39	
<b>MH-17</b> MH	1071813.137	1117180.019	702.16	NM	702.16	NA	1	9/3/2020 1228	18.21	683.95	0.00	683.95	
								11/23/2020 0943	17.76	684.40	0.00	684.40	
								12/17/2020 1122	17.80	684.36	0.00	684.36	
<b>MH-20</b> MH	1071756.395	1115997.024	706.20	NM	706.20	NA	1	9/3/2020 1236	19.74	686.46	0.00	686.46	
								11/23/2020 0949	19.76	686.44	0.00	686.44	
								12/17/2020 1132	19.77	686.43	0.00	686.43	
<b>MH-22</b> MH	1072158.023	1115589.309	698.05	NM	698.05	NA	1	9/3/2020 1243	9.01	689.04	0.00	689.04	
								11/23/2020 0954	8.95	689.10	0.00	689.10	
								12/17/2020 1135	9.00	689.05	0.00	689.05	
<b>MH-25</b> MH	1072483.928	1114820.313	698.17	NM	698.17	NA	1	9/3/2020 1126	9.26	688.91	0.00	688.91	
								11/23/2020 0837	9.12	689.05	0.00	689.05	
								12/17/2020 1024	10.03	688.14	0.00	688.14	
<b>SG-01</b> SG	1073882.887	1114813.101	NM	NM	690.00	NA	1	9/3/2020 1137	NM	-	NM	-	Dry at -0.78'
								11/23/2020 0856	-0.80	690.80	0.00	690.80	
								12/17/2020 1035	-0.76	690.76	0.00	690.76	frozen

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

**Type:**

MH Manhole Monitoring Point  
 MNW Monitoring Well  
 SG Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JULY - DECEMBER 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
SG-02 SG	1073738.27	1116805.85	NM	NM	690.00	NA	1	9/3/2020 1155	NM	-	NM	-	Dry at -3.10'
								11/23/2020 0914	-3.36	693.36	0.00	693.36	
								12/17/2020 1052	-3.25	693.25	0.00	693.25	
WW-01 MH	1073676.903	1115710.476	NM	NM	684.02	NA	1	9/3/2020 1000	-4.70	688.72	0.00	688.72	
								11/23/2020 0725	-4.80	688.82	0.00	688.82	
								12/17/2020 0920	-4.00	688.02	0.00	688.02	
WW-02 MH	1073684.724	1116792.311	NM	NM	684.18	NA	1	9/3/2020 1000	-4.60	688.78	0.00	688.78	
								11/23/2020 0725	-4.10	688.28	0.00	688.28	
								12/17/2020 0920	-4.20	688.38	0.00	688.38	
WW-03 MH	1073140.339	1117618.499	NM	NM	683.80	NA	1	9/3/2020 1205	-4.67	688.47	0.00	688.47	
								11/23/2020 0919	-4.75	688.55	0.00	688.55	
								12/17/2020 1100	-4.82	688.62	0.00	688.62	
WW-04 MH	1072057.563	1117610.508	NM	NM	676.62	NA	1	9/3/2020 1000	-6.70	683.32	0.00	683.32	
								11/23/2020 0725	-7.30	683.92	0.00	683.92	
								12/17/2020 0920	-7.20	683.82	0.00	683.82	
WW-05 MH	1071661.368	1116370.876	NM	NM	676.14	NA	1	9/3/2020 1000	-5.60	681.74	0.00	681.74	
								11/23/2020 0725	-6.90	683.04	0.00	683.04	
								12/17/2020 0920	-6.80	682.94	0.00	682.94	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

**TABLE C-1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JULY - DECEMBER 2020**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>WW-06</b>	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								9/3/2020 1000	-7.40	689.29	0.00	689.29	
MH								11/23/2020 0725	-7.80	689.69	0.00	689.69	
MH								12/17/2020 0920	-6.80	688.69	0.00	688.69	

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

**Type:**

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge



**TABLE C-2  
PFOHL BROTHERS LANDFILL SITE  
OVERBURDEN HYDRAULIC GRADIENT**

WELL PAIR:	WW-1	*	Level	WW-2	GW-8SR	Level	SG-02	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft)
9/3/2020	688.72	---	---	688.78	690.27	1.49	Dry	NA
11/23/2020	688.82	---	---	688.28	692.32	4.04	693.36	5.08
12/17/2020	688.02	---	---	688.38	692.19	3.81	693.25	4.87

WELL PAIR:	WW-3	GW-28S	Level	WW-4	*	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/3/2020	688.47	689.84	1.37	683.32	---	---
11/23/2020	688.55	691.17	2.62	683.92	---	---
12/17/2020	688.62	692.34	3.72	683.82	---	---

WELL PAIR:	WW-5	GW-32S	Level	WW-6	GW-34S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/3/2020	681.74	691.55	9.81	689.29	687.41	-1.88
11/23/2020	683.04	694.62	11.58	689.69	692.02	2.33
12/17/2020	682.94	695.75	12.81	688.69	692.13	3.44

WELL PAIR:	MH-1	SG-1	Level	MH-15	GW-29S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/3/2020	688.95	DRY	NA	684.12	689.27	5.15
11/23/2020	689.08	690.80	1.72	684.46	690.68	6.22
12/17/2020	688.18	690.76	2.58	684.36	692.52	8.16

WELL PAIR:	MH-16	GW-30S	Level	MH-17	GW-31S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/3/2020	683.97	688.31	4.34	683.95	690.70	6.75
11/23/2020	684.42	688.67	4.25	684.40	693.01	8.61
12/17/2020	684.39	688.74	4.35	684.36	695.93	11.57

WELL PAIR:	MH-20	GW-35S	Level	MH-22	GW-33S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/3/2020	686.46	690.74	4.28	689.04	Dry	NA
11/23/2020	686.44	692.42	5.98	689.10	694.91	5.81
12/17/2020	686.43	694.08	7.65	689.05	694.21	5.16

Notes:

\* = No corresponding monitoring well.  
NA = Not applicable

**APPENDIX D**

**GROUNDWATER PURGE AND SAMPLE COLLECTION  
LOGS**

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01S

Date: 11/23/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.61'	Depth to Well Bottom:	14.94'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.0	Estimated Purge Volume (liters):	8.2
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Sample ID:	GW-01S	Sample Time:	12:50	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Riser pipe is bulged inwards, could not remove stainless steel bailer from within well, sampled around it.

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01D

Date: 11/26/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.15'	Depth to Well Bottom:	39.65'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	90.2	Estimated Purge Volume (liters):	67.2
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Sample ID:	GW-01D	Sample Time:	14:25	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:05	7.46	9.90	1.35	3.20	67.2	-115	840	3.15
13:10	7.60	10.05	1.34	1.22	35.8	-145	840	3.20
13:15	7.71	10.19	1.34	0.57	10.6	-173	840	3.20
13:20	7.71	10.22	1.34	0.55	9.5	-175	840	3.20
13:25	7.70	10.26	1.34	0.53	8.3	-178	840	3.20
13:30	7.69	10.28	1.34	0.50	8.1	-178	840	3.20
13:35	7.68	10.29	1.34	0.49	7.0	-178	840	3.20
13:40	7.67	10.33	1.34	0.47	7.1	-178	840	3.20
13:45	7.66	10.36	1.34	0.46	6.9	-178	840	3.20
13:50	7.60	10.39	1.34	0.44	5.6	-174	840	3.20
13:55	7.49	10.39	1.34	0.44	4.9	-174	840	3.20
14:00	7.42	10.37	1.35	0.44	5.8	-187	840	3.20
14:05	7.38	10.41	1.36	0.44	6.8	-198	840	3.20
14:10	7.36	10.43	1.37	0.44	5.5	-206	840	3.20
14:15	7.35	10.44	1.47	0.41	5.7	-217	840	3.20
14:20	7.34	10.44	1.47	0.40	4.6	-220	840	3.20
14:25	7.33	10.39	1.47	0.40	4.7	-226	840	3.20
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03S

Date: 11/24/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	DRY	Depth to Well Bottom:	13.22'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	N/A	Estimated Purge Volume (liters):	N/A
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Sample ID:	GW-03S	Sample Time:	Not Sampled - Dry	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03D

Date: 11/24/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2				Tubing Type:	LDPE/Silicone		Pump/Tubing Inlet	Location:		Screen midpoint	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	1.81'		Depth to Well Bottom:	35.70'		Well Diameter:	4"		Screen Length:	
Casing Type:	Stainless Steel				Volume in 1 Well Casing (liters):	83.7		Estimated Purge Volume (liters):	49.2			

Sample ID: GW-03D      Sample Time: 11:05      QA/QC: MS/MSD

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

# LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04S

Date: 11/23/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2		Tubing Type:	LDPE/Silicone		Pump/Tubing Inlet Location:	Screen midpoint	
Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.57'	Depth to Well Bottom:	16.23'	Well Diameter:	2"	Screen Length:
Casing Type:	Stainless Steel		Volume in 1 Well Casing (liters):	7.2		Estimated Purge Volume (liters):	13.3	

Sample ID: GW-4S Sample Time: VOC's- 15:05/ SVOC's and Metals- 16:45 QA/QC: none

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 9/4/2020, sampled VOCs from PDB at 15:05 on 11/23/2020.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 16:45.

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:07	8.82	8.51	0.583	17.12	6.5	-171	initial	
15:09	8.90	9.31	0.566	8.30	13.5	-170	0.5 gallons	
15:11	8.92	9.44	0.561	7.85	17.6	-166	1.0 gallons	
15:12	8.86	9.79	0.561	12.70	74.7	-159	2.0 gallons	
15:14	8.75	9.97	0.550	13.22	115	-147	3.0 gallons	
15:16	8.56	10.06	0.555	13.26	640	-136.0	3.5 gallons	Dry
	Allow Recharge							
16:45	8.01	8.80	0.634	4.09	173	-218		13.18
Tolerance:		0.1	---	3%	10%	10%	+ or - 10	---

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04D

Date: 11/23/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2		Tubing Type:	LDPE/Silicone		Pump/Tubing Inlet Location:	Screen midpoint				
Measuring Point:	Below Top of Riser	Initial Depth to Water:	12.84'		Depth to Well Bottom:	45.57'		Well Diameter:	4"	Screen Length:	
Casing Type:	Stainless Steel		Volume in 1 Well Casing (liters):	80.8		Estimated Purge Volume (liters):	14.3				

Sample ID:	GW-4D	Sample Time:	16:35	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )



# WELL PURGING LOG

**URS Corporation**

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-07S
PROJECT NO.:	60411174		
STAFF:	Rob Murphy, Tom Urban		
DATE(S):	11/23/2020 & 11/24/2020		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	35.33	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.10	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	29.23	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	4.97	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	6.5	8"	2.60

$V=0.0408 \times (\text{CASING DIAMETER [INCHES]})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	1.5	3.0	4.5	6.0	6.5	Sample			
pH	8.10	8.09	8.11	8.05	8.02	7.99	6.86			
SPEC. COND. (mS/cm)	0.776	0.770	0.772	0.766	0.755	0.741	0.925			
DO (mg/l)	12.48	5.36	7.82	13.01	9.45	5.15	14.45			
TEMPERATURE (°C)	10.16	10.62	10.40	10.26	10.17	10.10	8.67			
TURBIDITY (NTU)	4.2	9.2	18.1	45.3	111	130	0.0			
ORP (millivolts)	-112	-101	-94	-75	-64	-62	136			
TIME	11:22	11:26	11:29	11:34	11:39	11:41	8:15 on 11/24/20			

COMMENTS: 10:20 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/4/2020.  
 11:22 - Begin hand bailing well.  
 11:41 - Well dry after removing 6.5 gallons.  
 11/24/2020 8:05 - Return to well, depth to water = 6.11 feet.  
 8:15 - Collect sample for SVOCs and Metals.

# WELL PURGING LOG

**URS Corporation**

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-07D
PROJECT NO.:	60411174		
STAFF:	Rob Murphy, Tom Urban		
DATE(S):	11/23/2020 & 11/24/2020		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	60.83	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	42.66	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	18.17	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.66	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	11.99	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	12.0	8"	2.60

$V=0.0408 \times (\text{CASING DIAMETER [INCHES]})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	3.0	6.0	9.0	12.0	Sample				
pH	7.85	7.77	7.76	7.84	7.98	7.59				
SPEC. COND. (mS/cm)	0.803	0.807	0.858	0.909	0.923	1.00				
DO (mg/l)	7.80	13.39	5.79	6.61	6.64	8.60				
TEMPERATURE (°C)	9.42	9.69	9.81	9.78	9.69	7.23				
TURBIDITY (NTU)	9.4	11.8	14.9	30.4	47.7	76.5				
ORP (millivolts)	135	14	-68	-102	-118	8				
TIME	10:35	10:45	10:55	11:05	11:13	8:25 on 11/24/20				

COMMENTS: 10:15 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/4/2020.  
 10:35 - Begin hand bailing well.  
 11:13 - Well dry after removing 12.0 gallons.  
 11/24/2020 8:04 - return to well, depth to water = 59.85 feet.  
 8:25 - Collect sample for SVOCs and Metals.  
  
 Strong Sulfur Odor

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08SR

Date: 11/24/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.24'	Depth to Well Bottom:	13.02'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.8	Estimated Purge Volume (liters):	9.4
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Sample ID:	GW-8SR	Sample Time:	13:43	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES—0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08D

Date: 11/24/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.77'	Depth to Well Bottom:	36.54'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	76.0	Estimated Purge Volume (liters):	55.3
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Sample ID:	GW-8D	Sample Time:	12:37	QA/QC:	Field Dup. FD-112420
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:32	7.16	10.08	2.83	2.77	36.4	-84	850	5.77
11:37	7.10	10.12	2.61	2.83	30.8	-81	850	5.77
11:42	7.06	10.24	2.48	2.88	17.6	-78	850	5.77
11:47	7.01	10.32	2.36	2.91	10.2	-77	850	5.77
11:52	7.02	10.36	2.24	2.50	9.4	-80	850	5.77
11:57	7.02	10.40	2.19	2.01	8.5	-81	850	5.77
12:02	7.08	10.40	2.03	1.72	6.1	-72	850	5.77
12:07	7.16	10.44	1.91	1.51	5.7	-64	850	5.77
12:12	7.15	10.44	1.91	1.36	4.2	-57	850	5.77
12:17	7.15	10.44	1.91	1.24	3.9	-50	850	5.77
12:22	7.17	10.47	1.91	1.01	5.0	-41	850	5.77
12:27	7.19	10.47	1.92	0.34	5.2	-36	850	5.77
12:32	7.17	10.45	1.92	0.34	4.3	-32	850	5.77
12:37	7.17	10.46	1.92	0.33	4.9	-30	850	5.77
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

**Information:** WATER VOLUMES—0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-26D

Date: 11/25/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.70'	Depth to Well Bottom:	40.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	84.0	Estimated Purge Volume (liters):	51.0
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Sample ID:	GW-26D	Sample Time:	12:55	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:55	7.12	10.25	2.45	3.78	7.0	-12	850	6.70
12:00	7.17	10.45	2.40	2.00	2.5	-40	850	6.67
12:05	7.15	10.62	2.34	0.92	2.4	-50	850	6.67
12:10	7.14	10.68	2.33	0.80	4.8	-52	850	6.67
12:15	7.14	10.73	2.33	0.64	5.3	-55	850	6.67
12:20	7.14	10.75	2.33	0.33	6.7	-56	850	6.67
12:25	7.13	10.80	2.32	0.35	7.4	-56	850	6.67
12:30	7.13	10.81	2.31	0.37	8.3	-57	850	6.67
12:35	7.14	10.86	2.30	0.35	7.5	-59	850	6.67
12:40	7.13	10.91	2.30	0.33	5.3	-60	850	6.67
12:45	7.13	10.95	2.28	0.33	6.1	-60	850	6.67
12:50	7.14	10.97	2.26	0.32	6.2	-61	850	6.67
12:55	7.13	10.87	2.27	0.31	5.6	-61	850	6.67
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-28S

Date: 11/24/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	9.78'	Depth to Well Bottom:	15.52'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.5	Estimated Purge Volume (liters):	4.2
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Sample ID:	GW-28S	Sample Time:	14:35	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
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 \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-29S

Date: 11/24/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	8.98'	Depth to Well Bottom:	20.04'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.8	Estimated Purge Volume (liters):	6.7
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Sample ID:	GW-29S	Sample Time:	15:37	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange particulates at start of purge.

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
15:02	7.25	9.46	1.29	1.98	>1000	-63	190	8.98
15:07	7.11	10.01	1.28	1.24	850	-81	190	10.02
15:12	6.97	10.25	1.27	0.70	67.7	-90	190	10.81
15:17	6.96	10.26	1.21	0.60	67.2	-95	190	11.11
15:22	6.96	10.24	1.19	0.56	51.3	-98	190	11.37
15:27	6.96	10.22	1.20	0.52	38.3	-101	190	11.61
15:32	6.96	10.19	1.22	0.51	30.1	-101	190	11.69
15:37	6.95	10.23	1.23	0.50	25.9	-102	190	11.77
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

**Information:** WATER VOLUMES—0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-30S

Date: 11/25/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	7.97'	Depth to Well Bottom:	17.97'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.2	Estimated Purge Volume (liters):	8.3
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Sample ID:	GW-30S	Sample Time:	8:35	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange particulates at start of purge.

Bypassed Horiba for first 2 minutes of flow.

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
8:05	6.52	11.11	4.57	1.43	255	13	275	7.97
8:10	6.77	11.39	4.40	1.10	89.0	-60	275	8.00
8:15	6.83	11.47	4.44	0.93	21.1	-85	275	8.00
8:20	6.86	11.52	4.45	0.81	10.9	-96	275	8.02
8:25	6.87	11.53	4.44	0.71	7.6	-96	275	8.03
8:30	6.88	11.51	4.46	0.65	5.6	-99	275	8.02
8:35	6.89	11.50	4.46	0.67	5.9	-101	275	8.02
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )



## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-31S

Date: 11/25/2020 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.54'	Depth to Well Bottom:	9.57'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.5	Estimated Purge Volume (liters):	7.2
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Sample ID:	GW-31S	Sample Time:	9:35	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
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## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $vol_{cyl} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-32S

Date: 11/25/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.74'	Depth to Well Bottom:	9.93'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.8	Estimated Purge Volume (liters):	10.5
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Sample ID:	GW-32S	Sample Time:	10:43	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
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## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES—0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-33S

Date: 11/25/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.85'	Depth to Well Bottom:	8.21'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.7	Estimated Purge Volume (liters):	5.6
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Sample ID:	GW-33S	Sample Time:	13:53	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES—0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-34S

Date: 11/24/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.50'	Depth to Well Bottom:	10.01'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.6	Estimated Purge Volume (liters):	5.3
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Sample ID:	GW-34S	Sample Time:	9:37	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-35S

Date: 11/25/2020      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.98'	Depth to Well Bottom:	7.46'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	1.5	Estimated Purge Volume (liters):	8.1
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Sample ID:	GW-35S	Sample Time:	11:45	QA/QC:	none
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
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## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES=0.75 inch diameter well = 87 ml/ft.; 1 inch diameter well = 154 ml/ft.; 2 inch diameter well = 617 ml/ft.; 4 inch diameter well = 2470 ml/ft. ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill

Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban

Supervisor: R. Murphy

Date of Sampling: November 23, 2020

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-07D	GW-07D	45.4	45.4	10:15	Groundwater	VOCs	Not Applicable
GW-07S	GW-07S	18.8	24.6	10:20	Groundwater		Not Applicable
GW-01S	GW-01S	7.0	8.2	12:50	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-01D	GW-01D	90.2	67.2	14:25	Groundwater		Not Applicable
GW-04S	GW-04S	7.2	13.3	15:05,16:45	Groundwater		Not Applicable
GW-04D	GW-04D	80.8	14.3	16:35	Groundwater		Not Applicable
							Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization with the exception of wells GW-04S, GW-07D, and GW-07S that were sampled for VOCs using passive diffusion bags (PDBs).  
GW-04S, GW-07D, and GW-07S were then purged dry. Remaining parameters were collected after recovery at GW-04S.

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill

Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban

Supervisor: R. Murphy

Date of Sampling: November 24, 2020

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-07S	GW-07S	18.8	24.6	8:15	Groundwater	SVOCs/Metals	Not Applicable
GW-07D	GW-07D	45.4	45.4	8:25	Groundwater		Not Applicable
GW-34S	GW-34S	4.6	5.3	9:37	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-03D	GW-03D	83.7	49.2	11:05	Groundwater		Not Applicable
GW-03D	GW-03D	83.7	49.2	11:05	Matrix Spike		Not Applicable
GW-03D	GW-03D	83.7	49.2	11:05	Matrix Spike Duplicate		Not Applicable
GW-08D	GW-08D	76.0	55.3	12:37	Groundwater		Not Applicable

Additional Comments: GW-07D and GW-07S were sampled for SVOCs and Metals after recharging overnight.  
All other wells were purged using low flow methods until parameter stabilization.  
 \_\_\_\_\_  
 \_\_\_\_\_

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill

Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban

Supervisor: R. Murphy

Date of Sampling: November 24, 2020

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
FD-112420	GW-08D	76.0	55.3	12:37	Field Duplicate	VOCs/SVOCs/ TAL Metals	Not Applicable
GW-08SR	GW-08SR	4.8	9.4	13:43	Groundwater		Not Applicable
GW-28S	GW-28S	3.5	4.2	14:35	Groundwater		Not Applicable
GW-29S	GW-29S	6.8	6.7	15:37	Groundwater		Not Applicable
TB-112320-112420	-	-	-	-	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.

\_\_\_\_\_

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## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill

Project Number: 60411174

Sampling Crew Members: R. Murphy, T. Urban

Supervisor: R. Murphy

Date of Sampling: November 25, 2020

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-30S	GW-30S	6.2	8.3	8:35	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-31S	GW-31S	2.5	7.2	9:35	Groundwater		Not Applicable
GW-32S	GW-32S	3.8	10.5	10:43	Groundwater		Not Applicable
GW-35S	GW-35S	1.5	8.1	11:45	Groundwater		Not Applicable
GW-26D	GW-26D	84.0	51.0	12:55	Groundwater		Not Applicable
GW-33S	GW-33S	2.7	5.6	13:53	Groundwater		Not Applicable
TB112520	-	-	-	-	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.

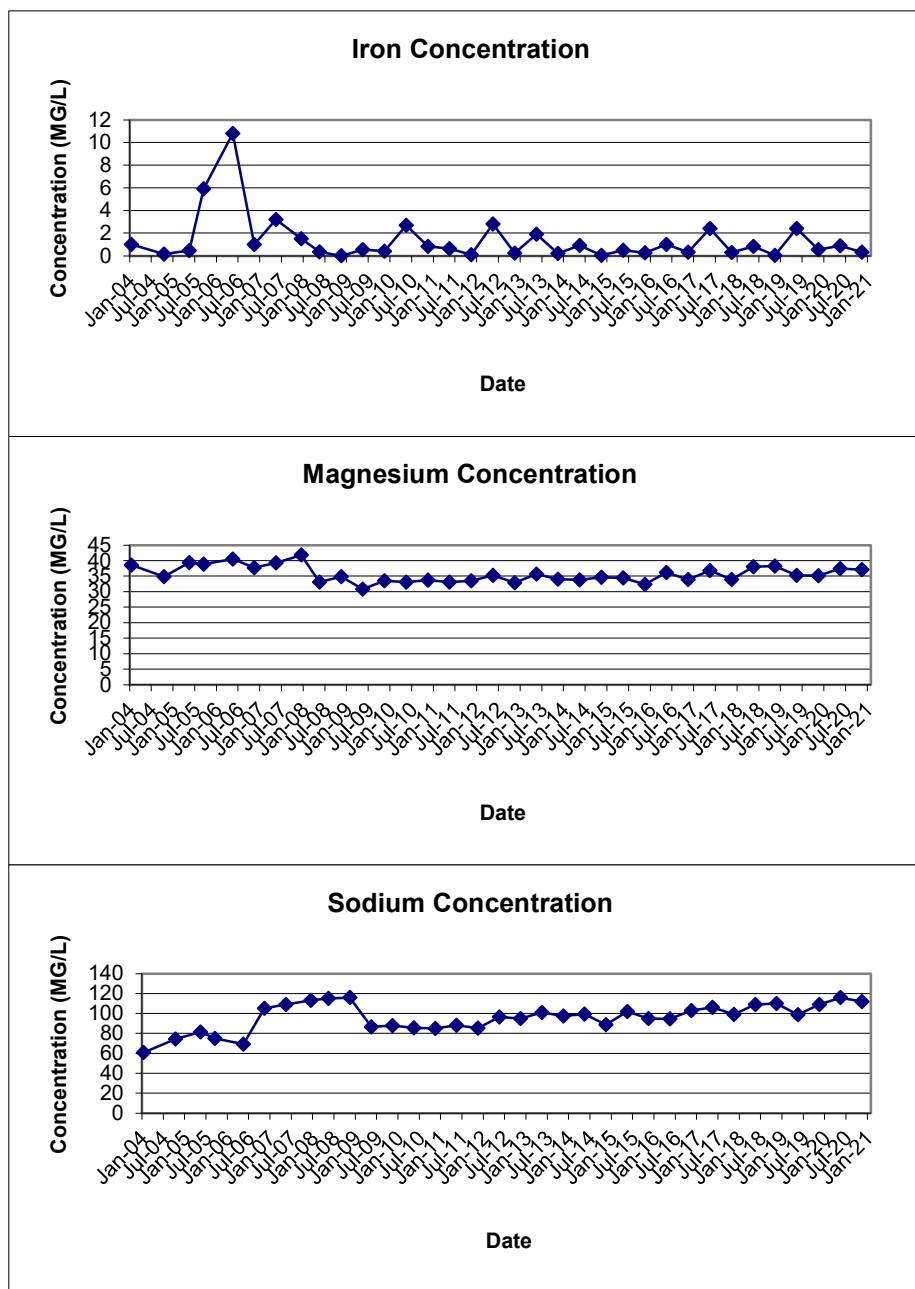
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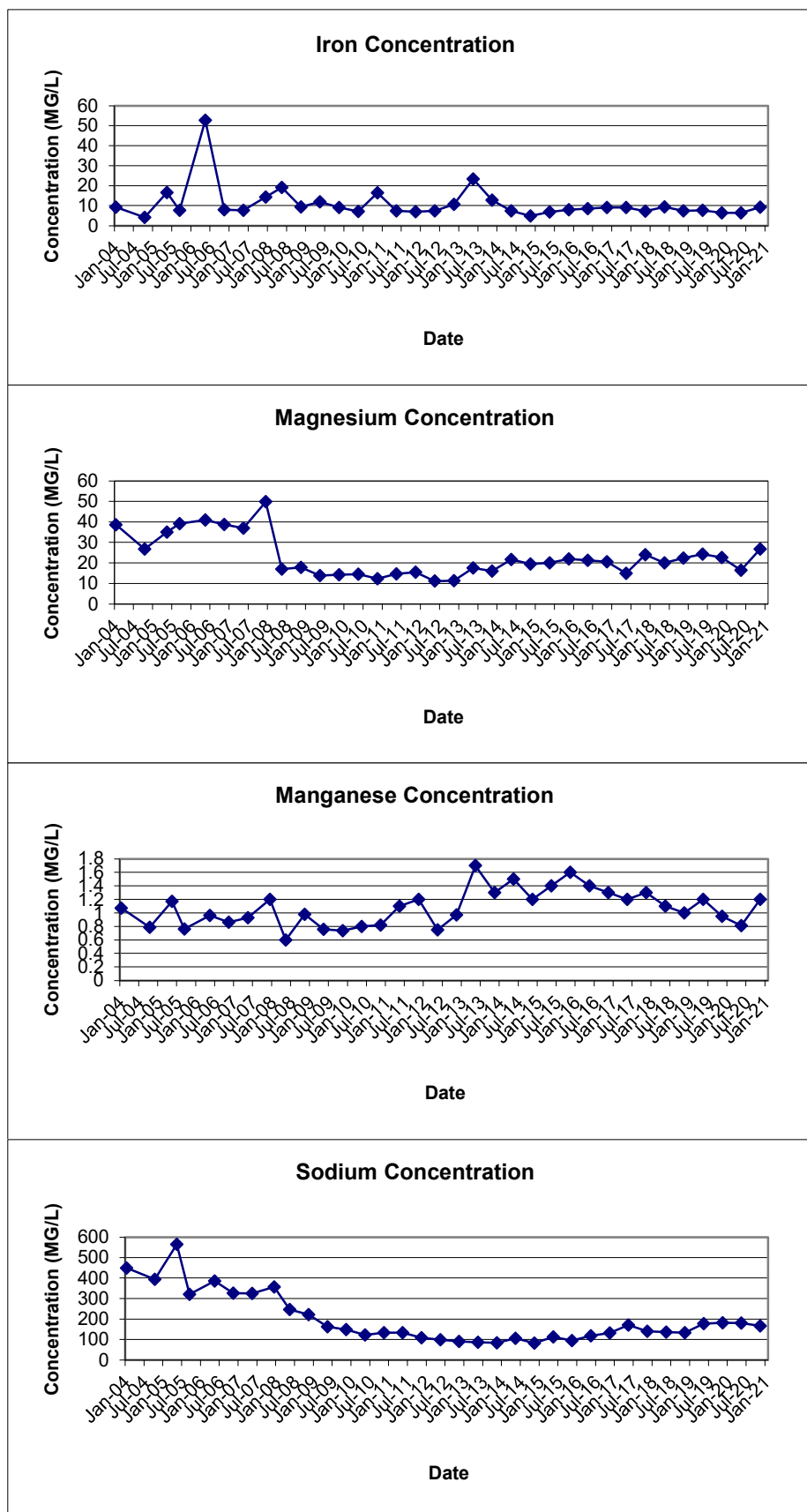
# **APPENDIX E**

## **GROUNDWATER TREND ANALYSIS**

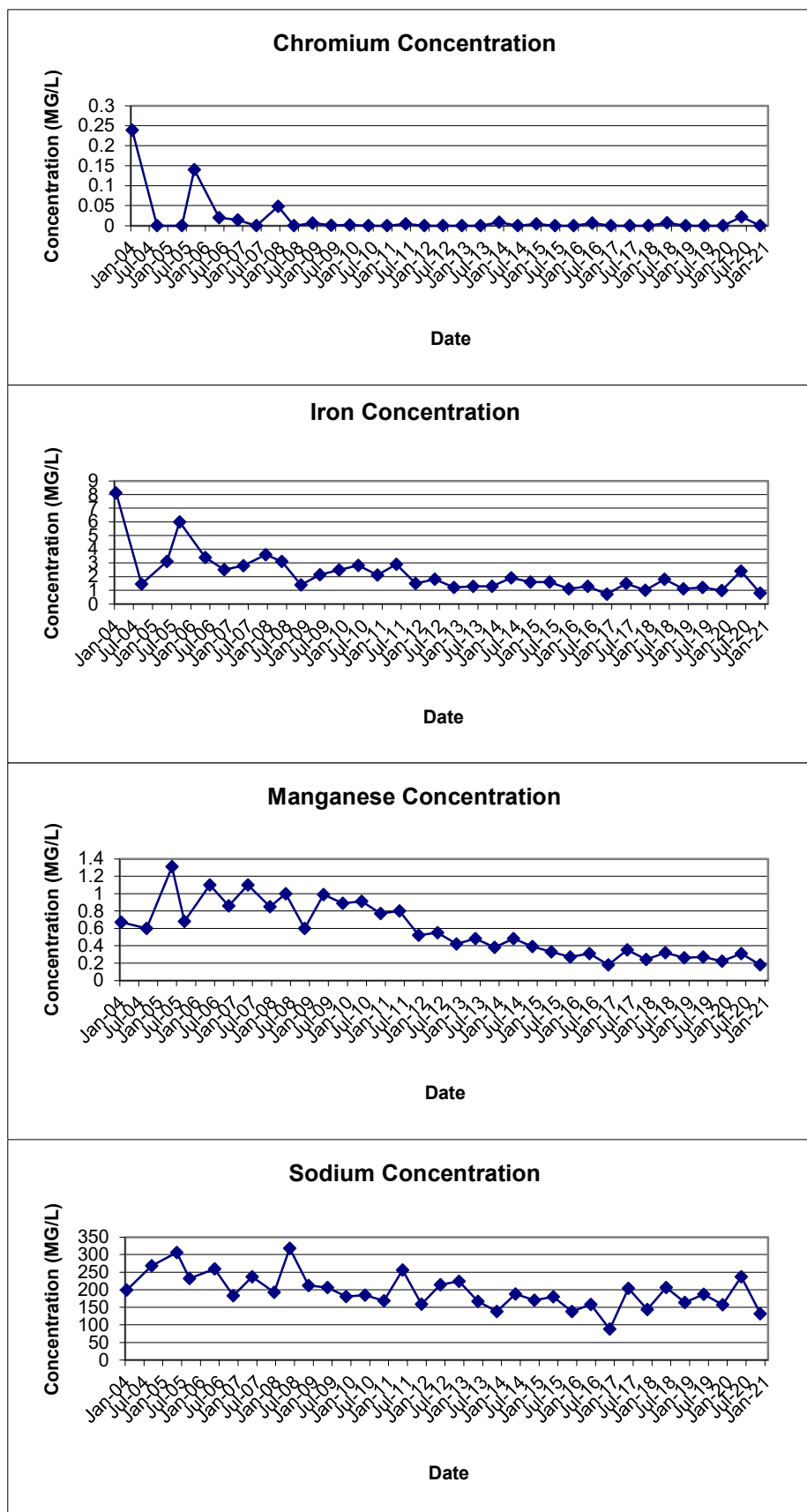
**FIGURE E-1**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-01D**



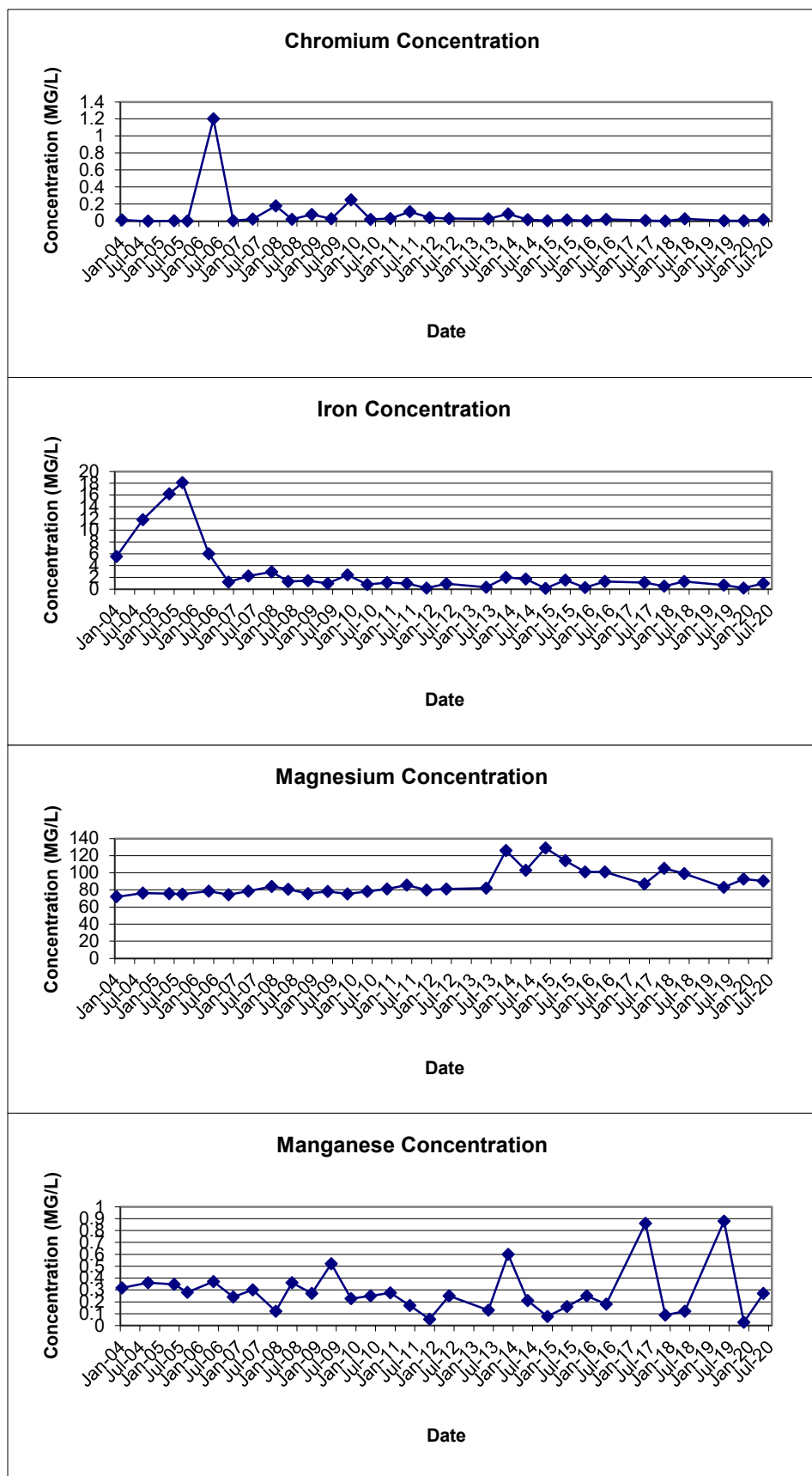
**FIGURE E-2**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-01S**



**FIGURE E-3**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-03D**

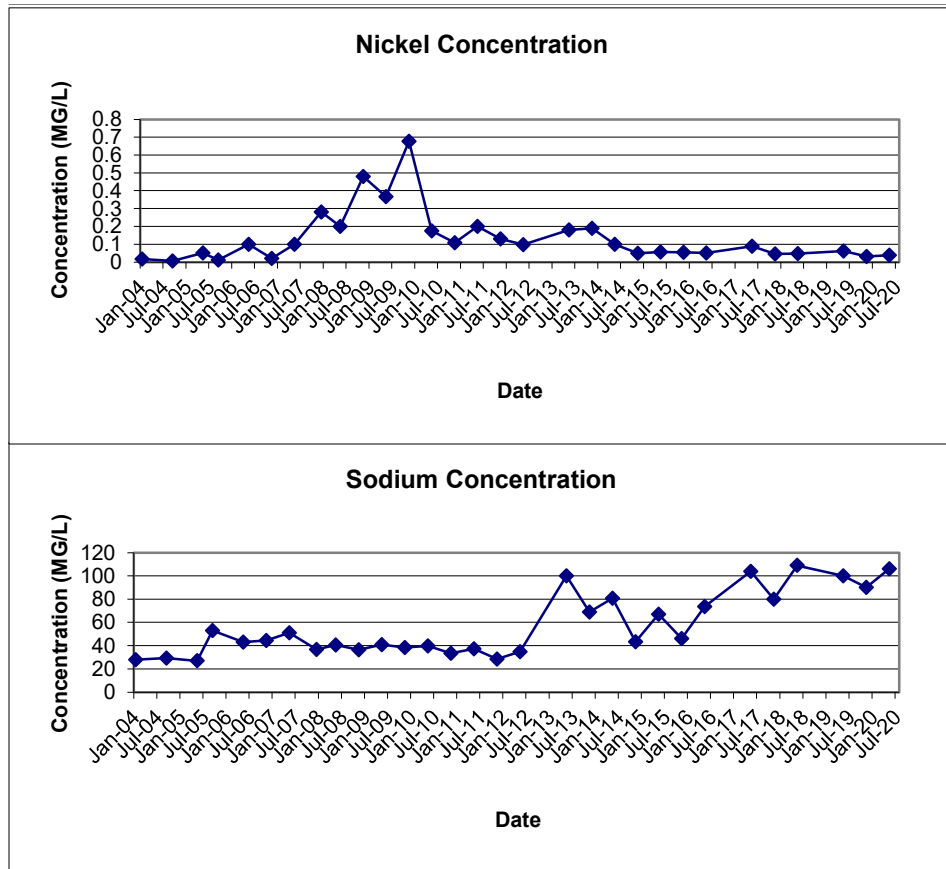


**FIGURE E-4**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-03S**



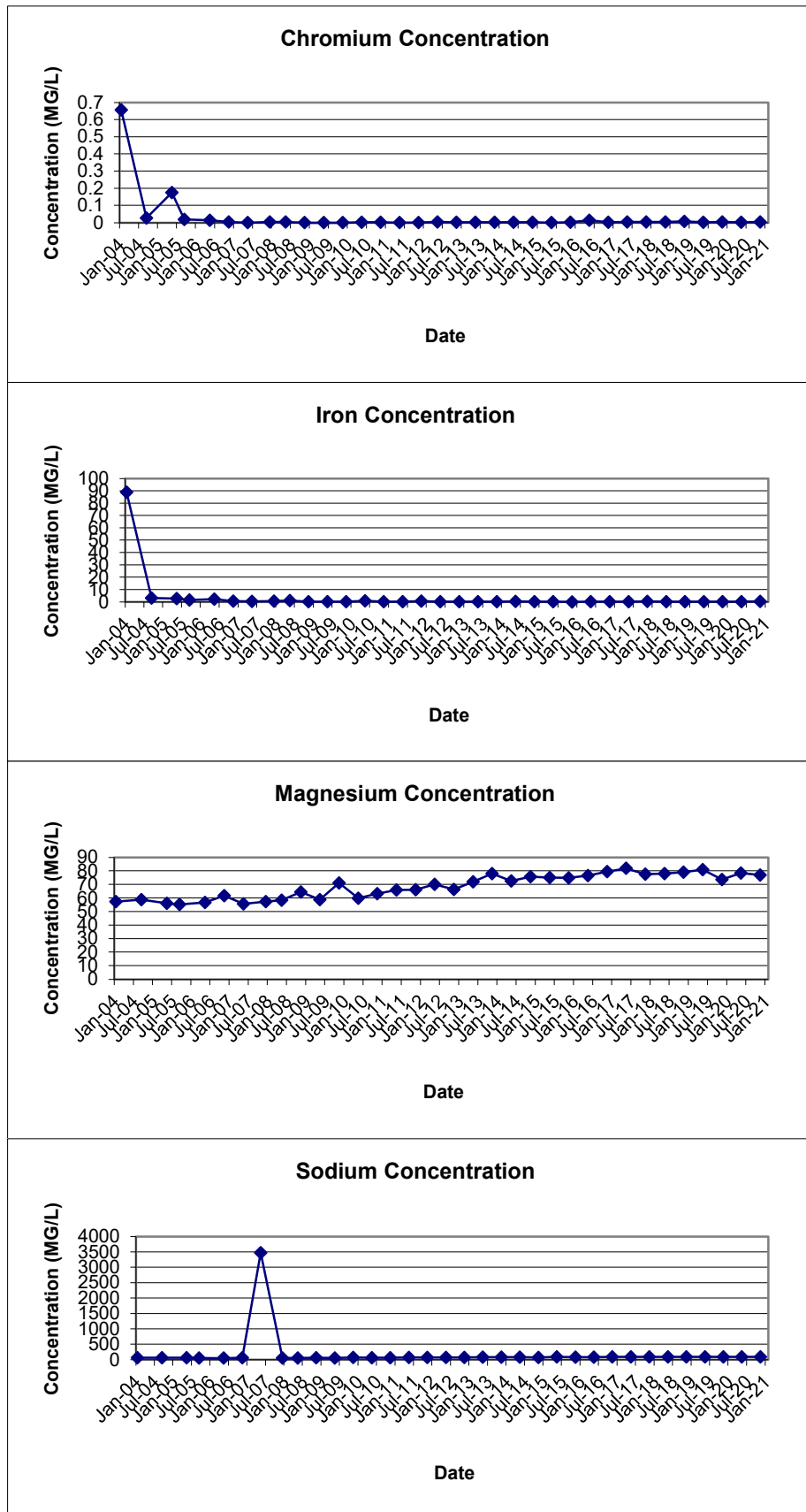
Well was dry and was not sampled in November 2016, 2018, and 2020

**FIGURE E-4**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-03S**



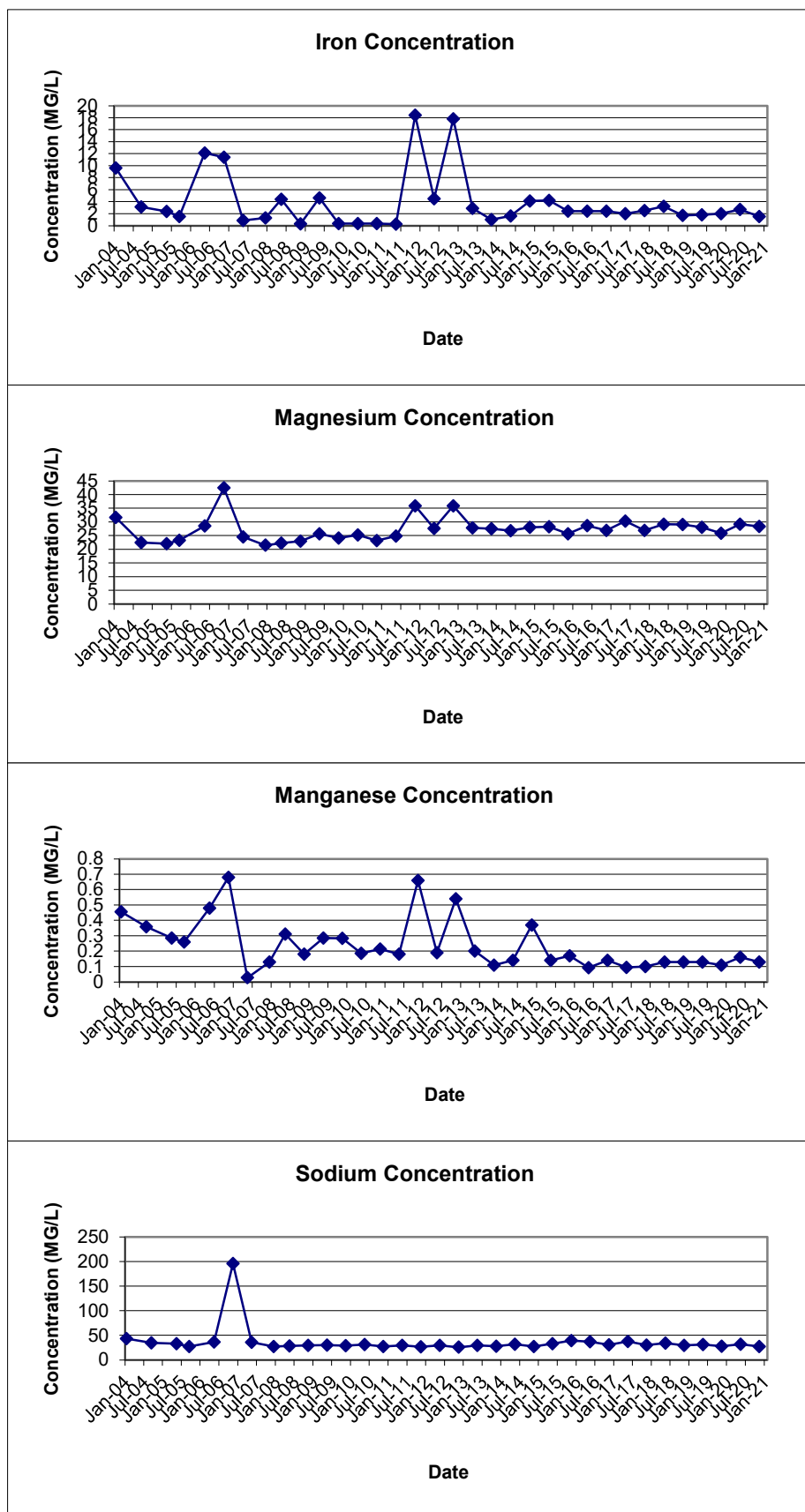
Well was dry and was not sampled in November 2016, 2018, and 2020

**FIGURE E-5**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-04D**

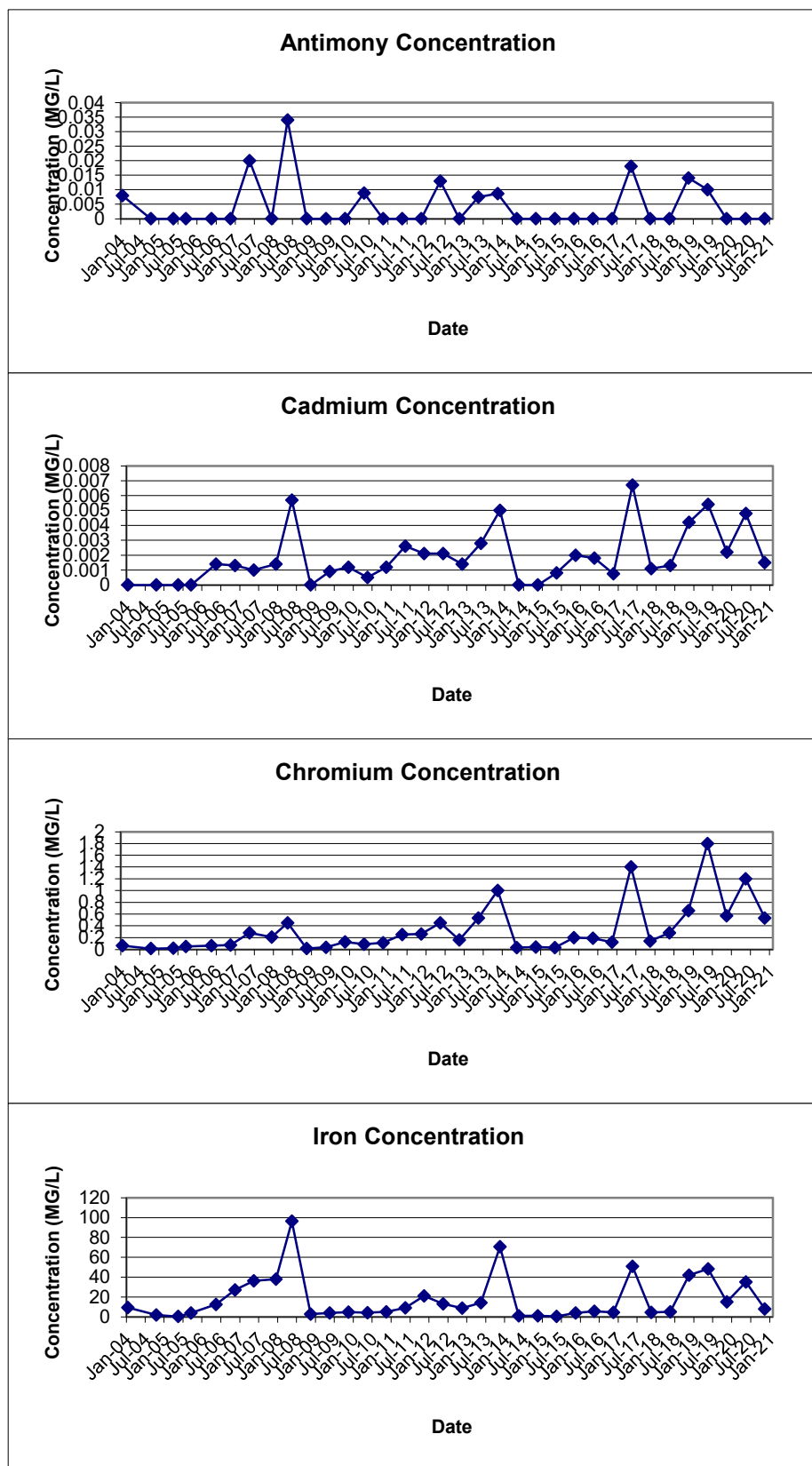




**FIGURE E-6**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-04S**



**FIGURE E-7**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-07D**



**FIGURE E-7**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-07D**

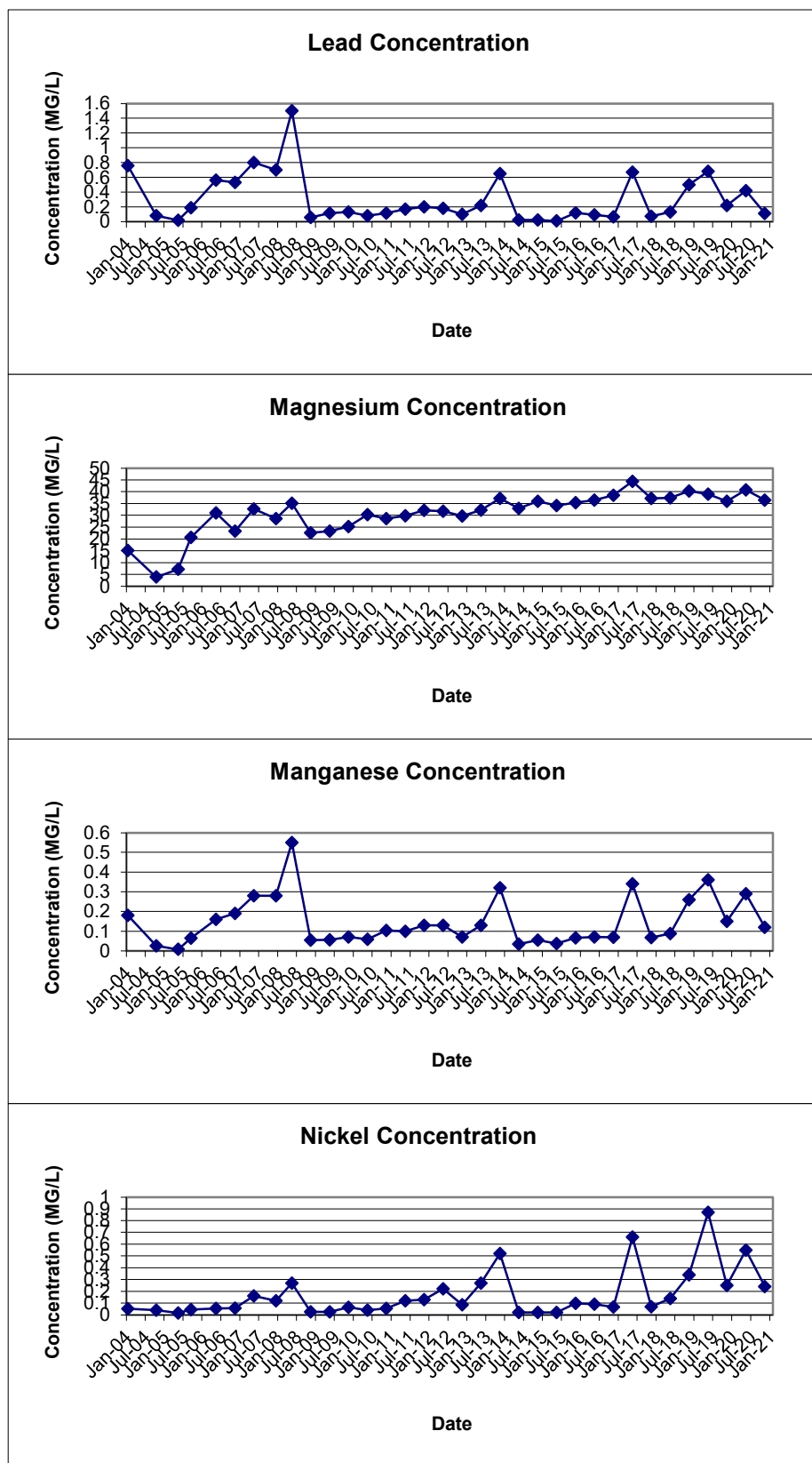
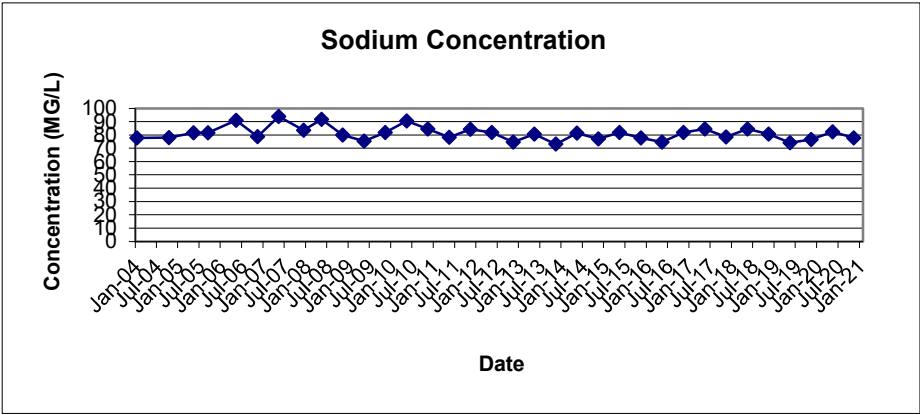
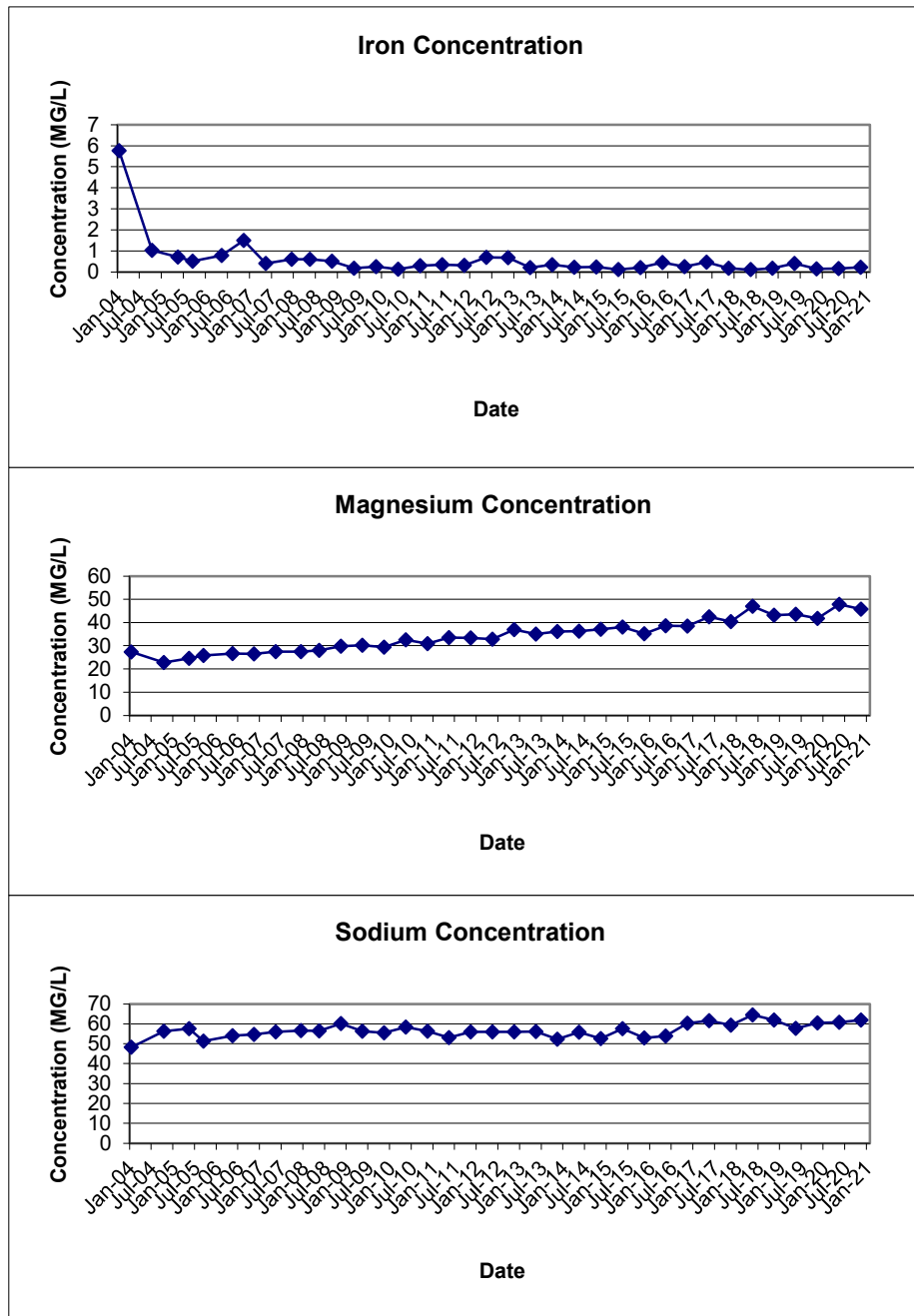


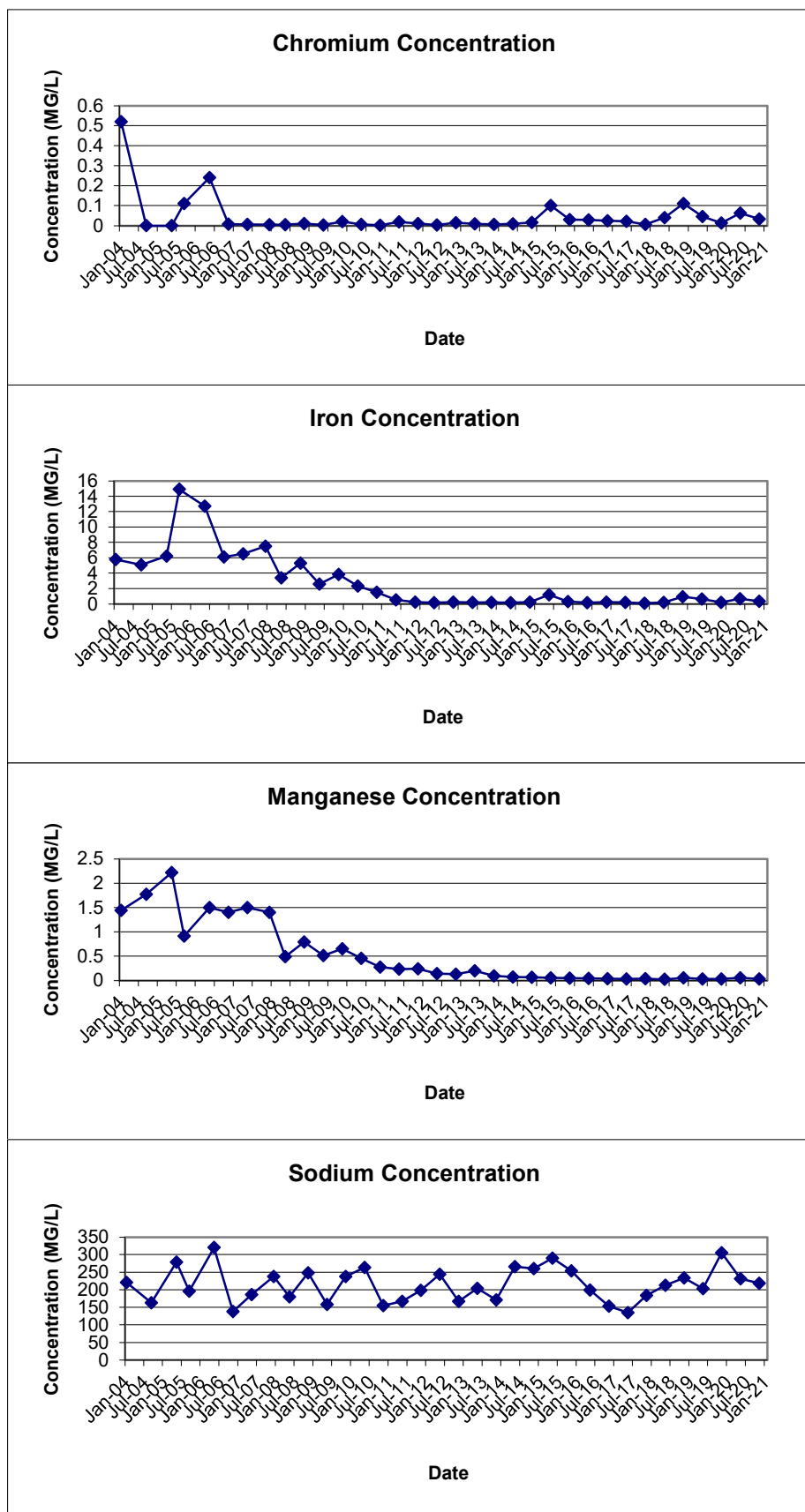
FIGURE E-7  
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS  
IN MONITORING WELL GW-07D



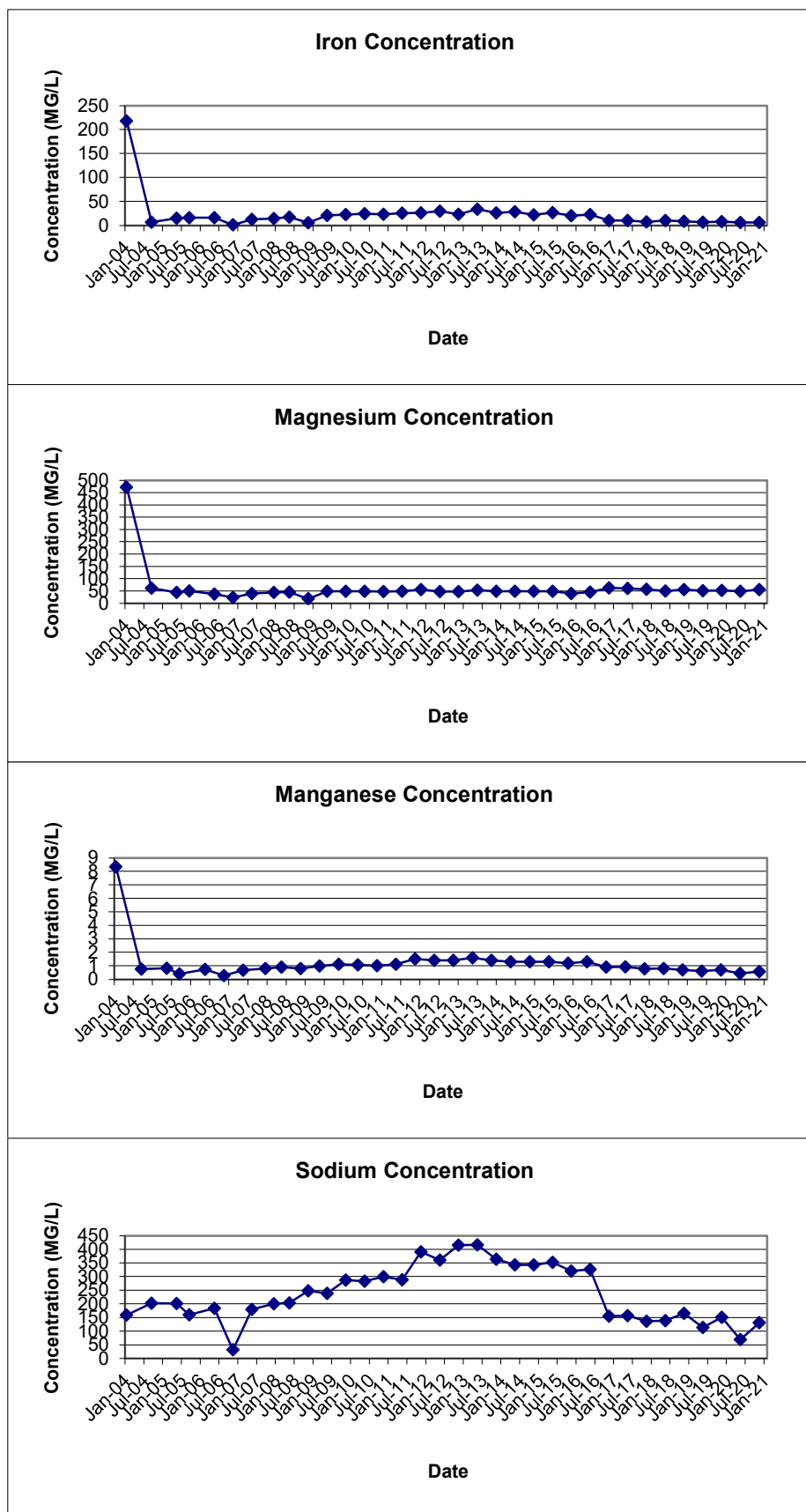
**FIGURE E-8**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-07S**



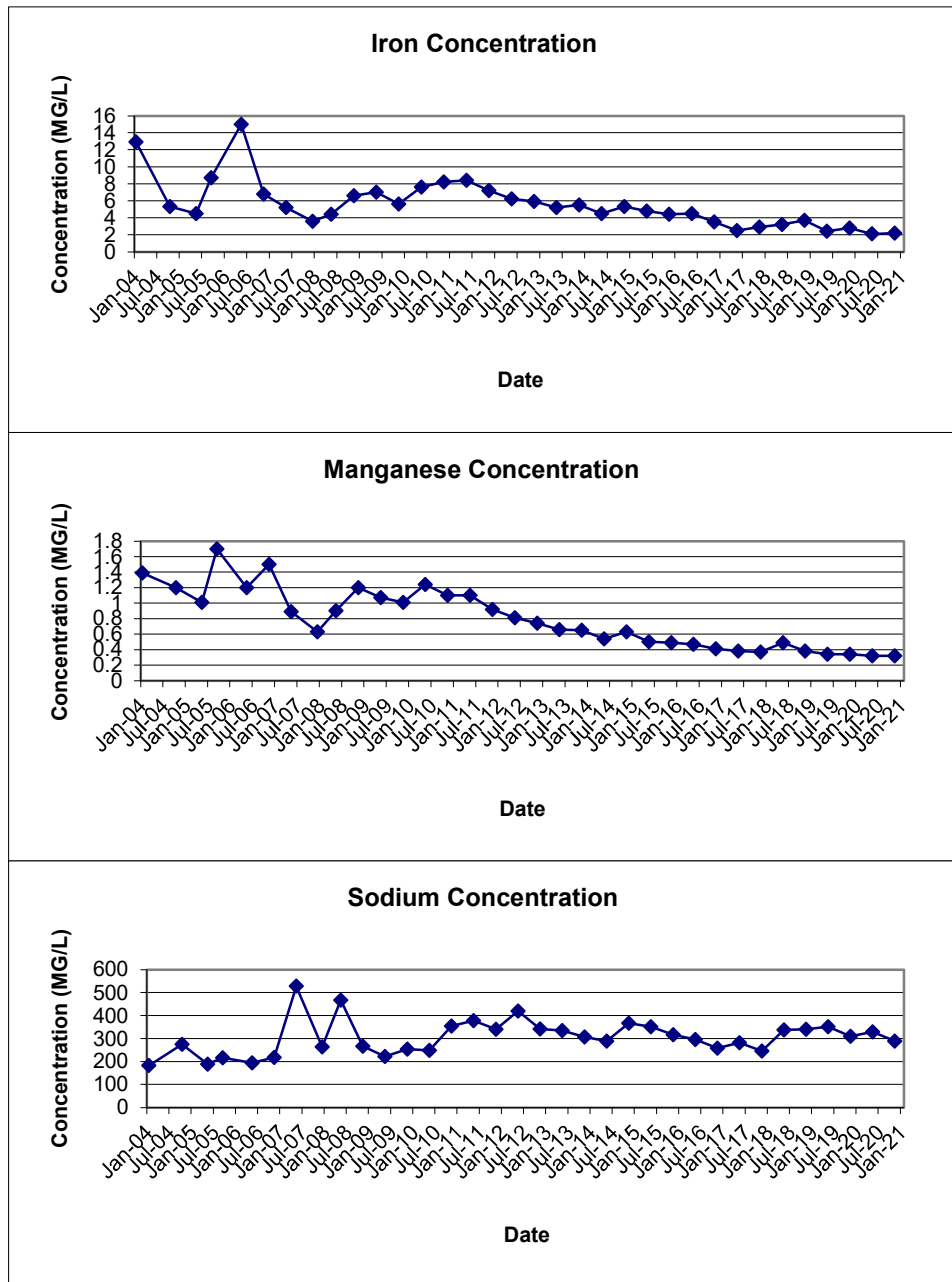
**FIGURE E-9**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-08D**



**FIGURE E-10**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-08SR**

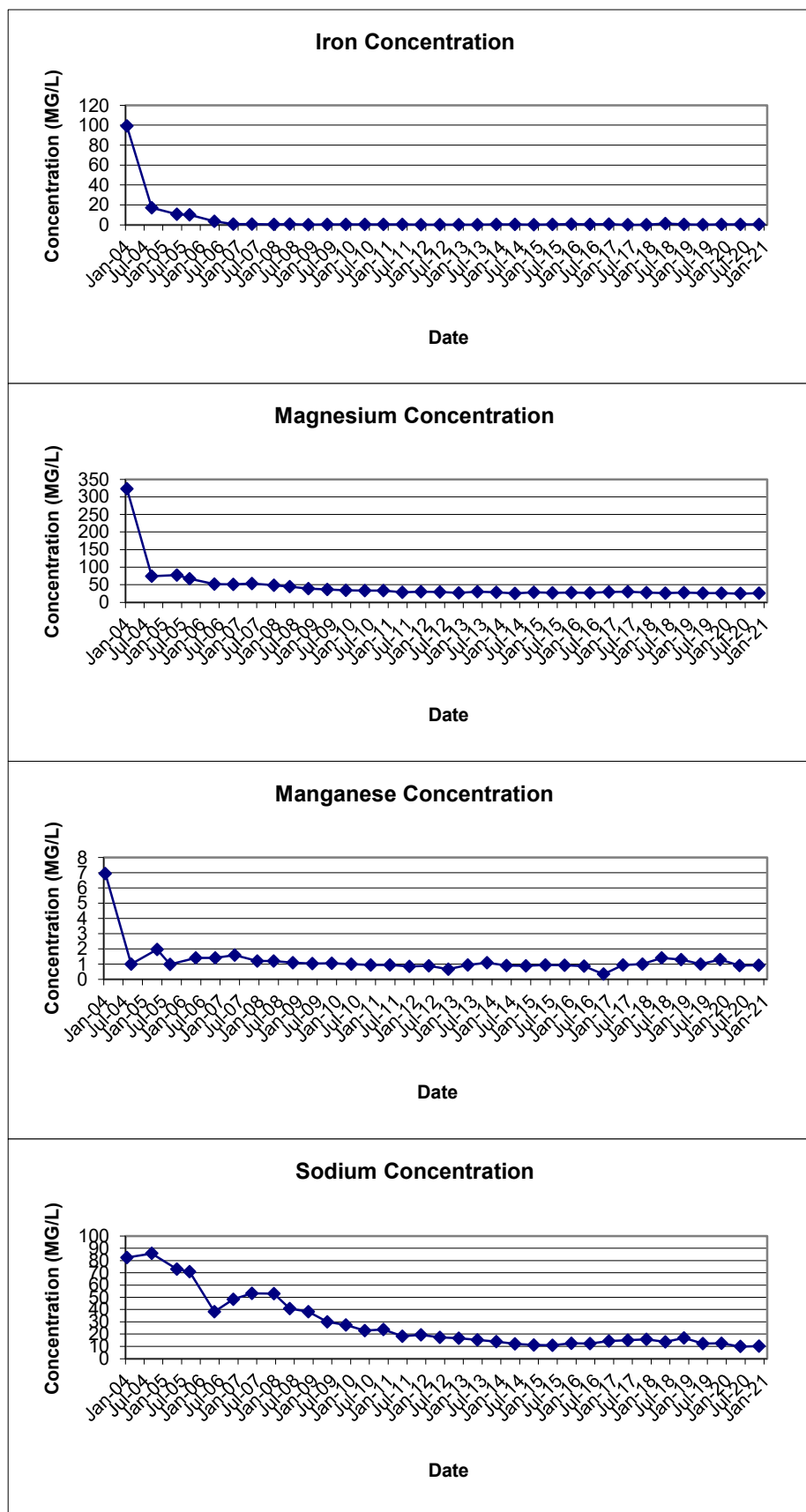


**FIGURE E-11**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-26D**





**FIGURE E-12**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-28S**



**FIGURE E-13**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-29S**

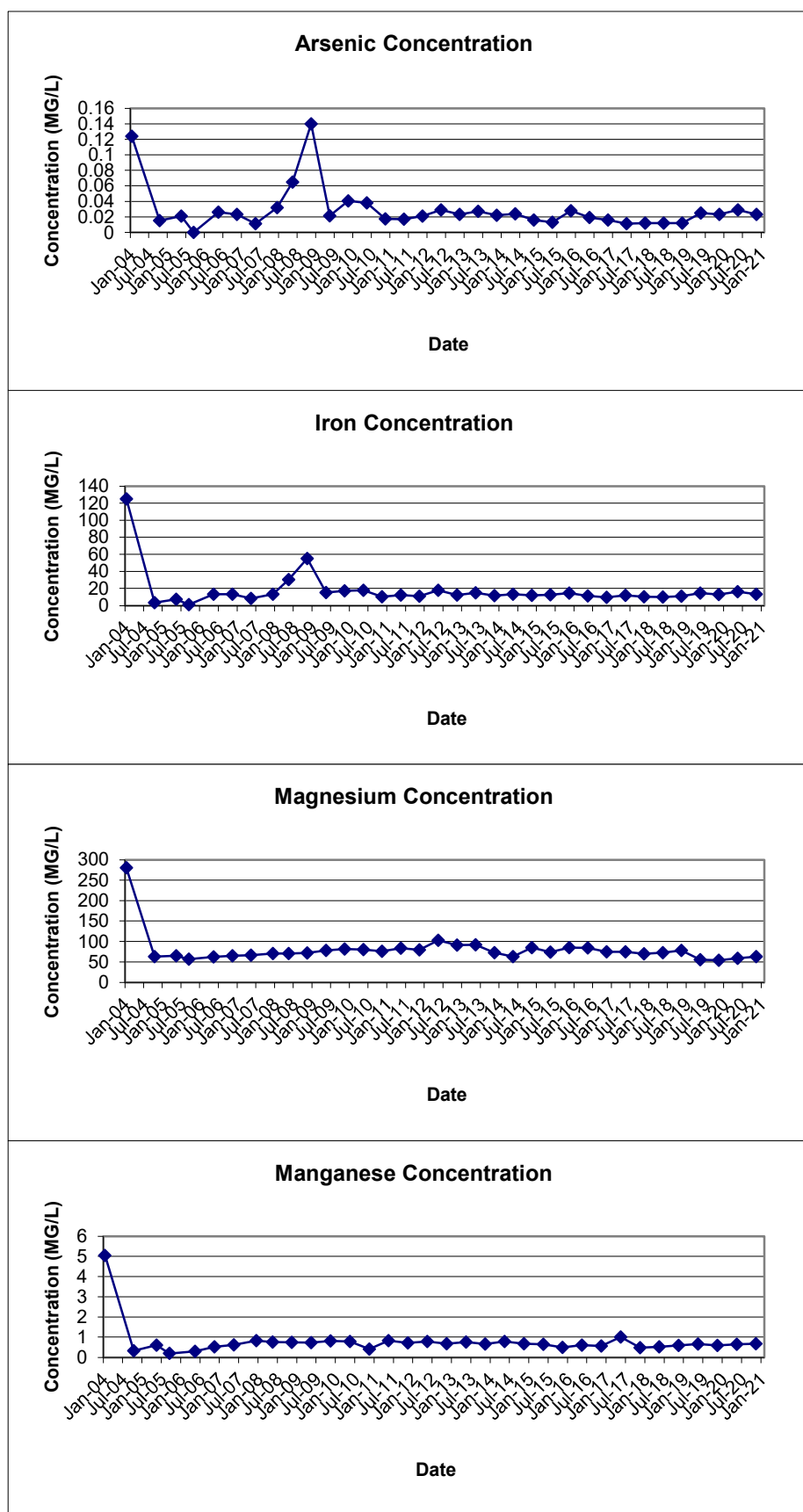
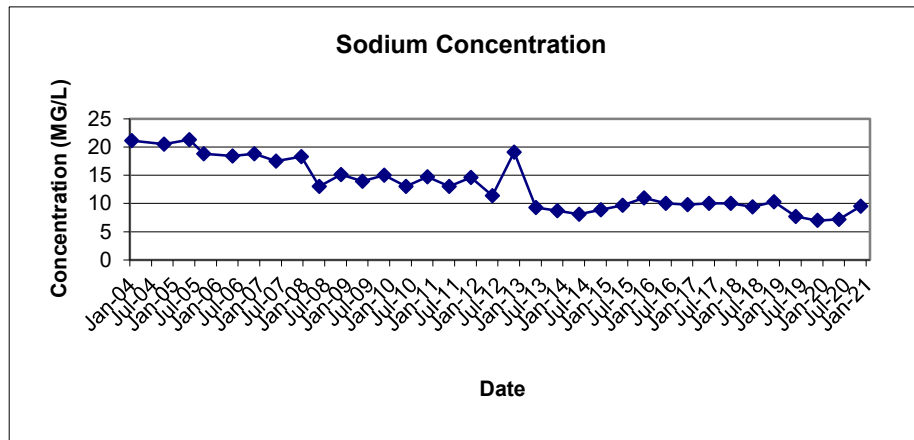
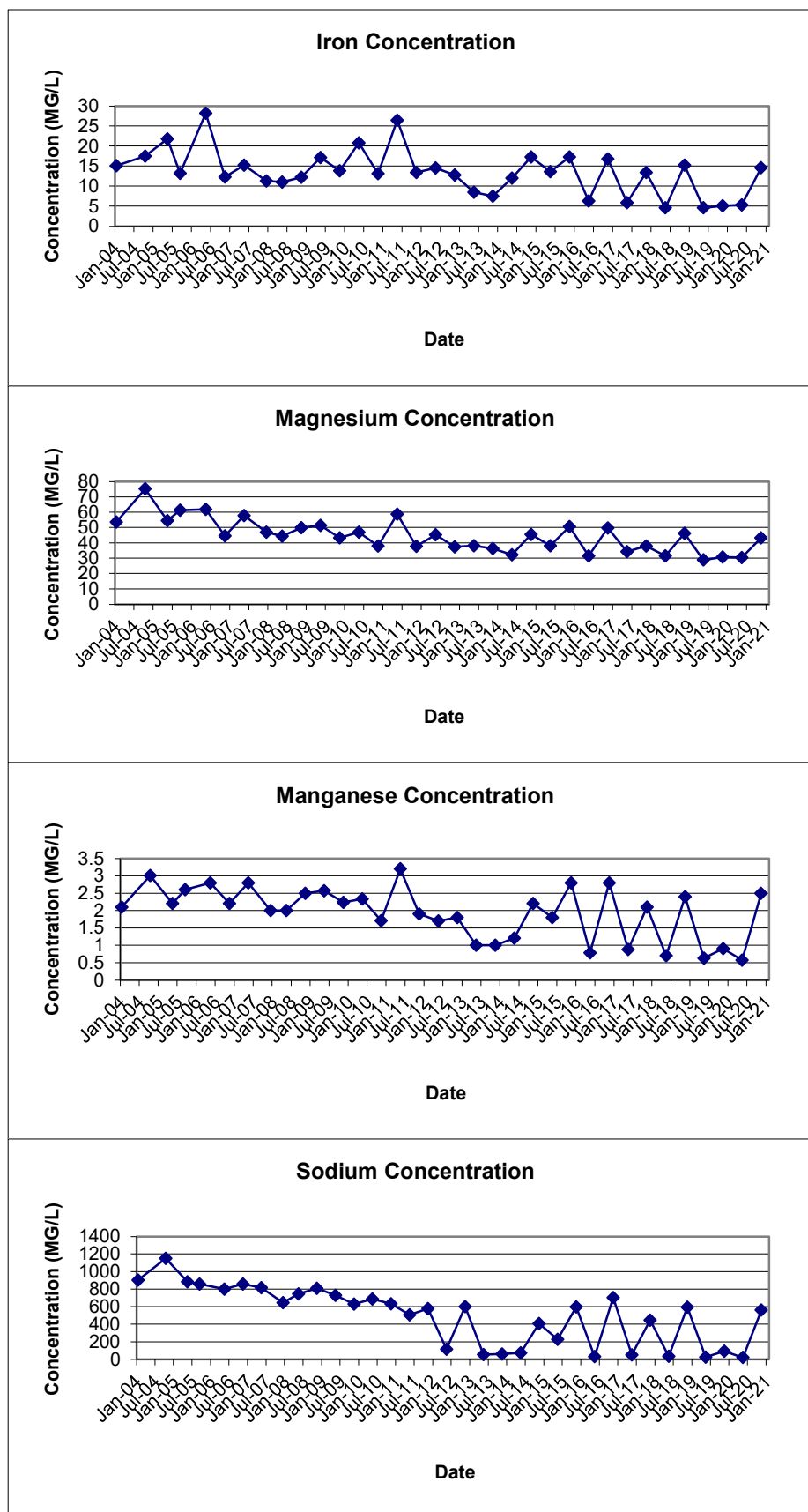


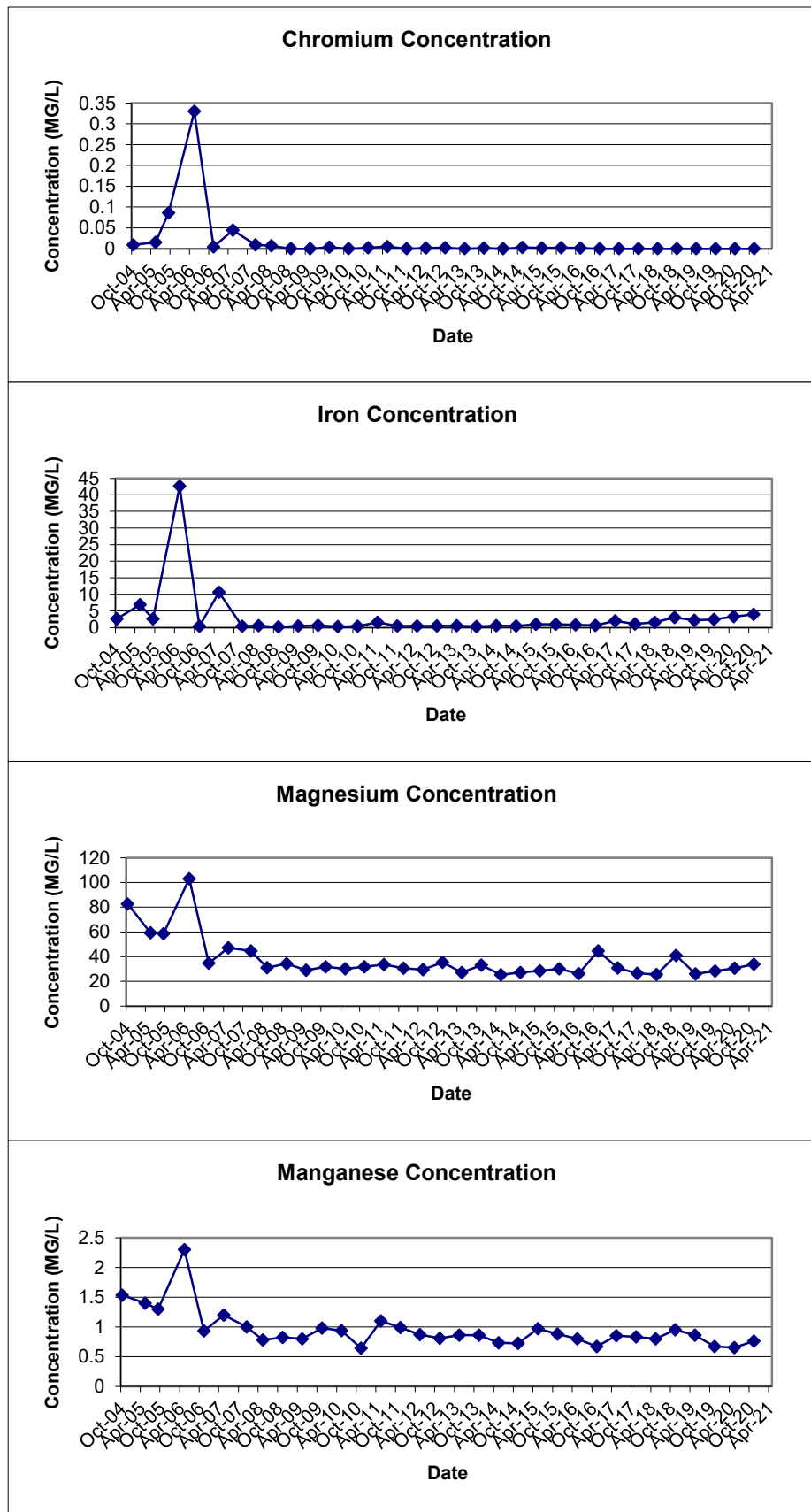
FIGURE E-13  
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS  
IN MONITORING WELL GW-29S



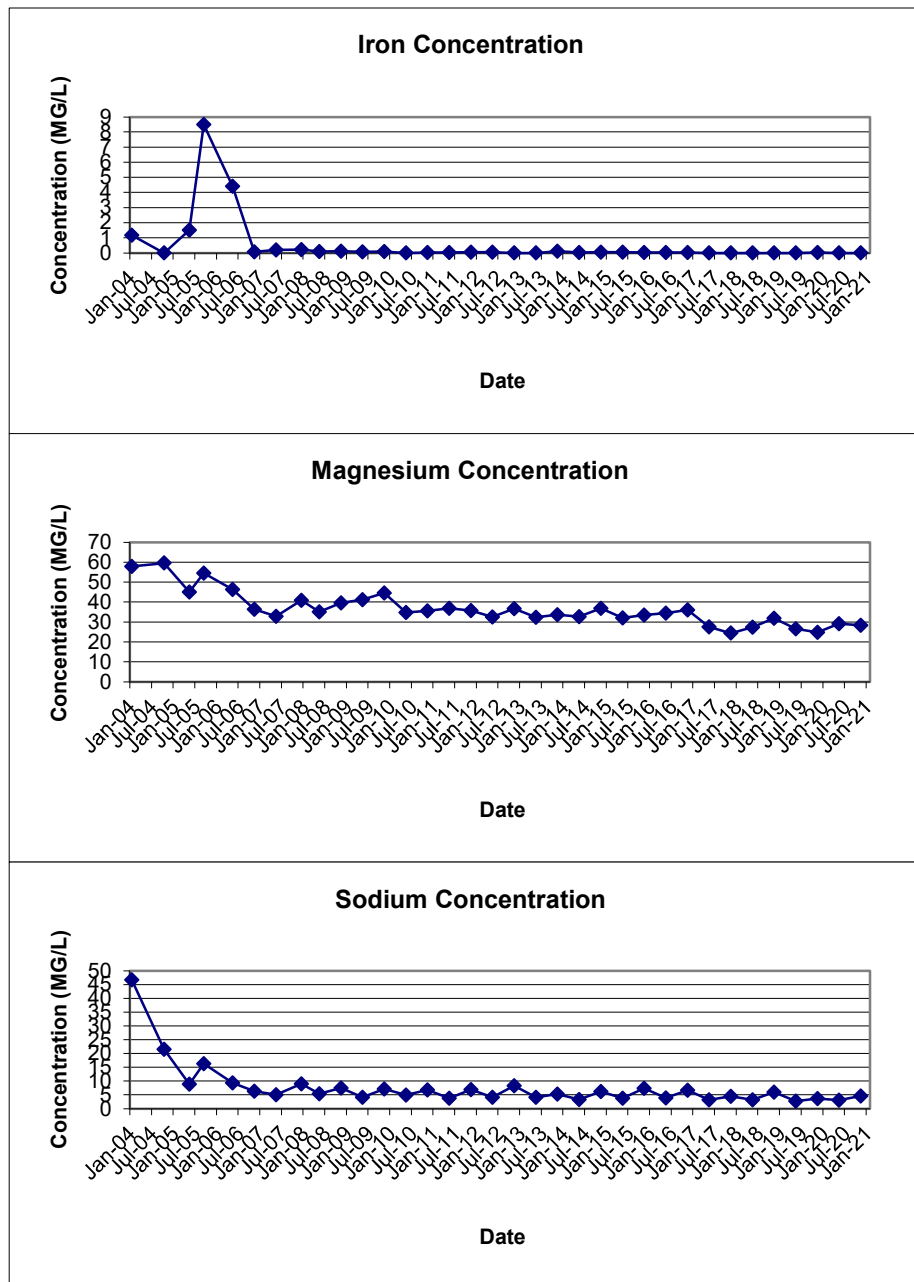
**FIGURE E-14**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-30S**



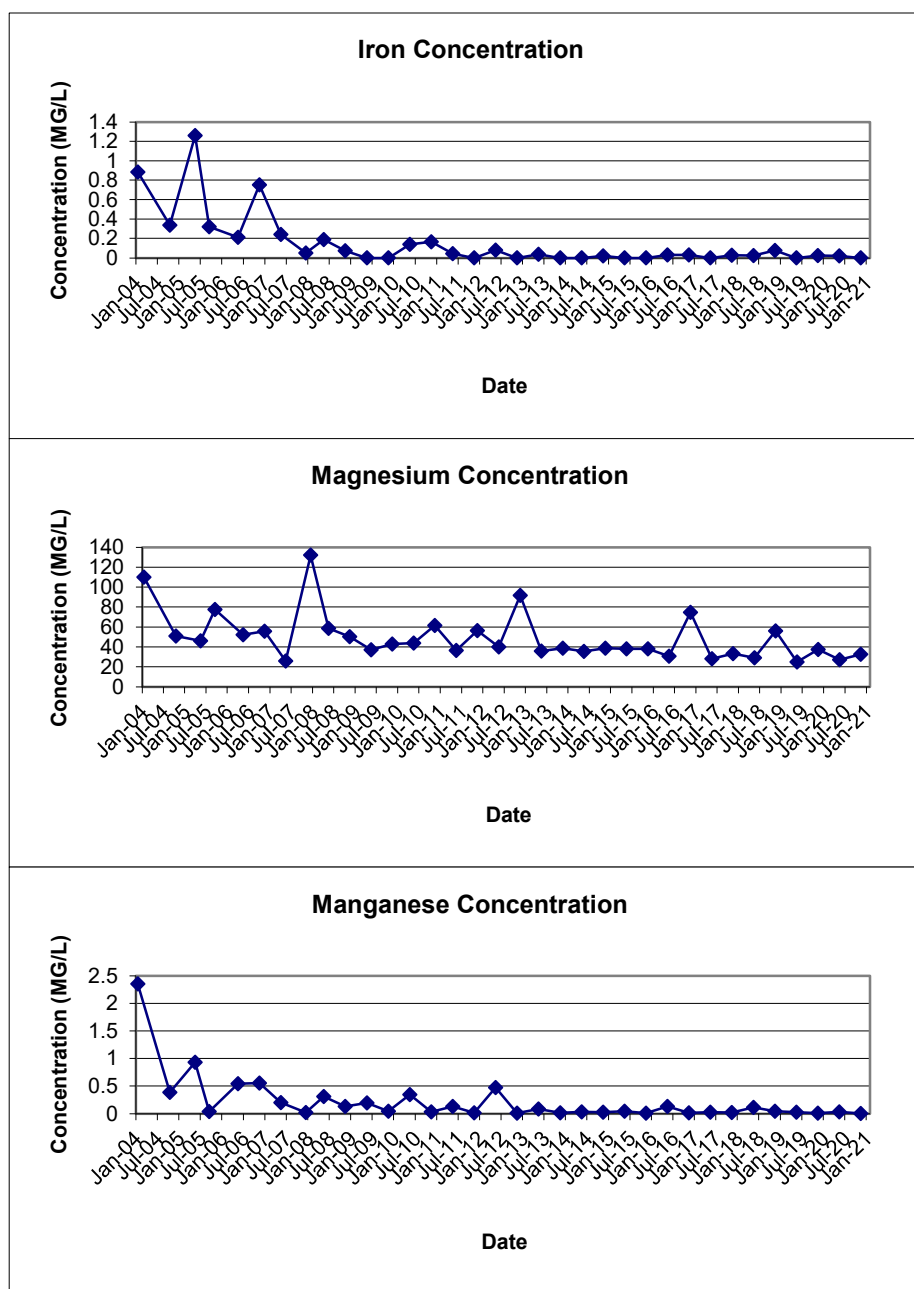
**FIGURE E-15**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-31S**



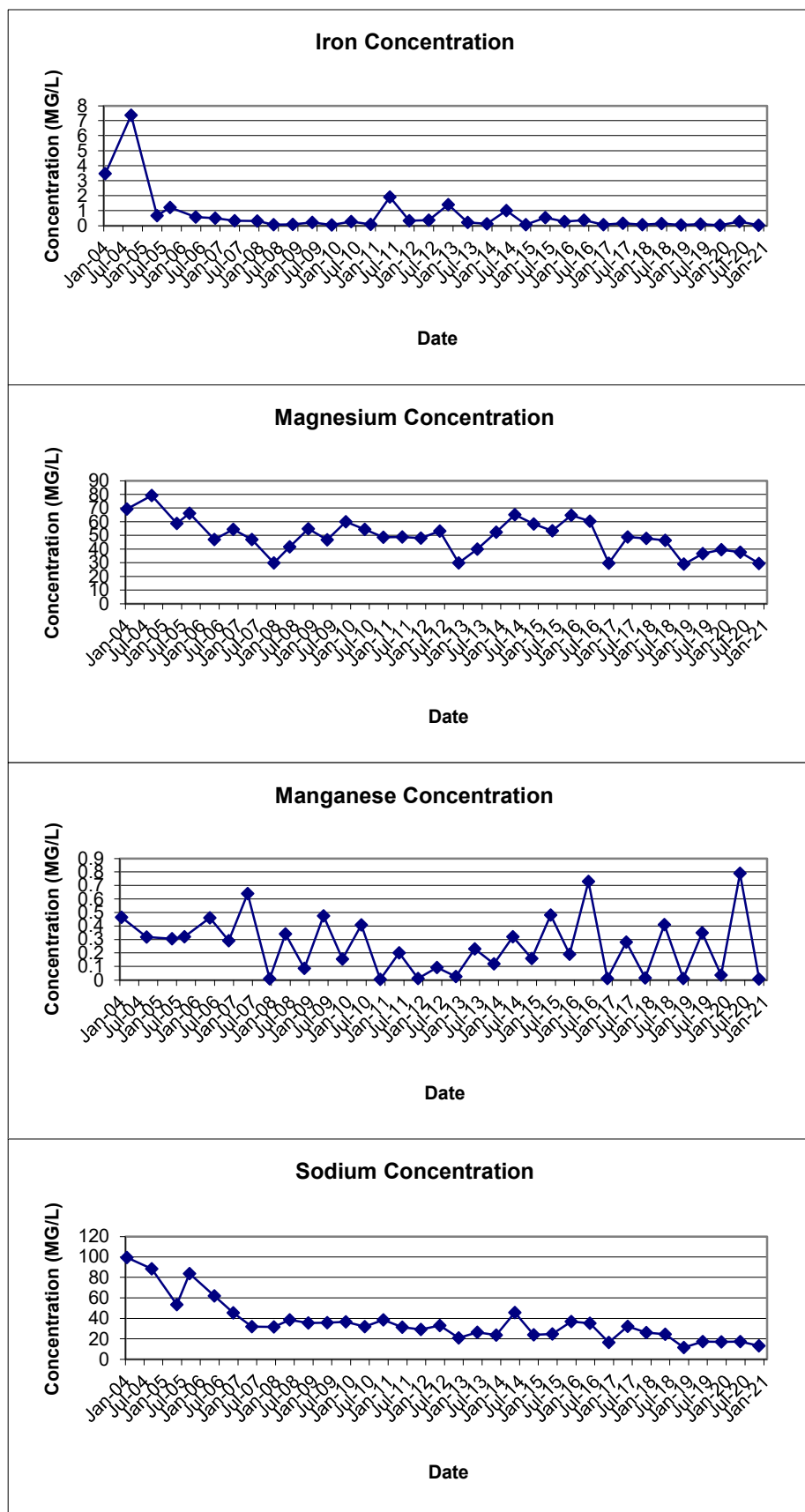
**FIGURE E-16**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-32S**



**FIGURE E-17**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-33S**

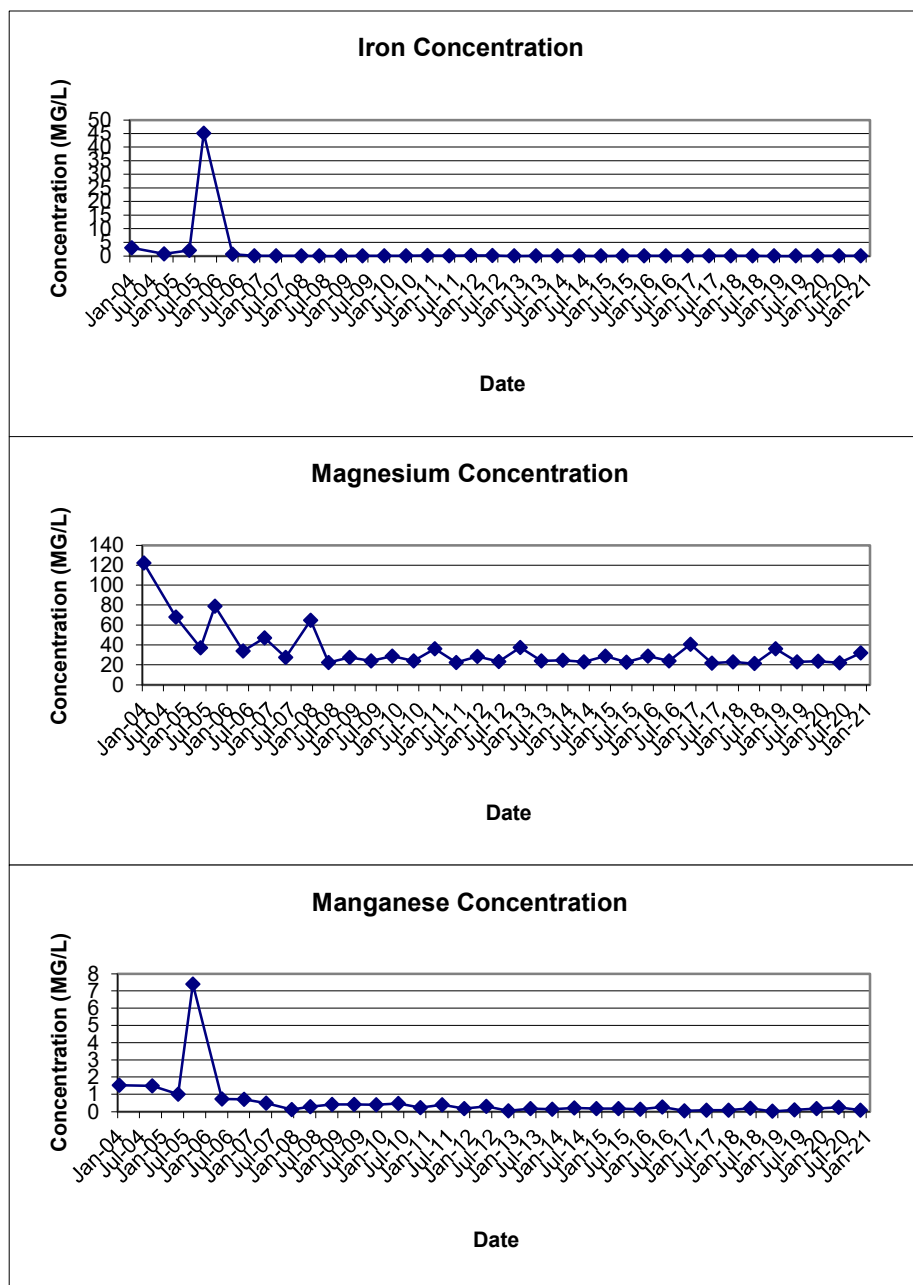


**FIGURE E-18**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-34S**





**FIGURE E-19**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-35S**



## **APPENDIX F**

### **BSA PERMIT 19-04-CH016**

**AUTHORIZATION TO DISCHARGE UNDER THE BUFFALO  
POLLUTANT DISCHARGE ELIMINATION SYSTEM**

**PERMIT NO. 19-04-CH016**

**USEPA Category 40 CFR Part 403**

In accordance with the provisions of the Federal Water Pollution Control Act, as amended, and the  
Sewer Regulations of the Buffalo Sewer Authority, authorization is hereby granted to:

**THE TOWN OF CHEEKTOWAGA**

to discharge wastewater from a facility located at:

**PFOHL BROTHERS LANDFILL REMEDIATION SITE**

**1000 AERO DRIVE**

**CHEEKTOWAGA, NEW YORK 14225**

The wastewater permitted herein shall be discharged to the Town of Cheektowaga sewer system,  
which is connected to the Buffalo Municipal Sewer System and Treatment facilities, and which  
wastewater will be treated at the Buffalo Sewer Authority's Treatment Plant.

Issuance of this permit is based upon a permit application filed on **February 19, 2019** analytical  
data. This permit is granted in accordance with discharge limitations, monitoring requirements and  
other conditions set forth in Parts I and II hereof.

**Effective this 1st<sup>day</sup> of April, 2019**

**To Expire the 31st day of March, 2022**

  
\_\_\_\_\_  
**General Manager**

Signed this 20<sup>th</sup> day of MARCH, 2019

**RECEIVED**

**MAR 27 2019**

**ENGINEERING DEPT.**

**PART I: SPECIFIC CONDITIONS****A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS**

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **quarterly** by the permittee as specified below.

Sample Point	Parameter	Discharge Limitations <sup>(1)</sup>	Sampling Requirements	
		Daily Max	Period	Type
001	pH	5.0 – 12.0 S.U.	1 day	Composite <sup>2</sup>
	Total Cadmium	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Chromium	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Copper	3.74 lbs.	1 day	Composite <sup>2</sup>
	Total Lead	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Nickel	3.27 lbs.	1 day	Composite <sup>2</sup>
	Total Zinc	5.84 lbs.	1 day	Composite <sup>2</sup>
	Total Barium	2.34 lbs.	1 day	Composite <sup>2</sup>
	Total Suspended Solids <sup>5</sup>	250 mg/l	1 day	Composite <sup>2</sup>
	Total Flow	140,100 gallons <sup>6</sup>	1 day	Discharge meter reading

Footnotes are explained on page 5.

**PART I: SPECIFIC CONDITIONS****A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS**

During the period beginning the effective date of this Permit and lasting until the expiration date, discharge from the permitted facility outfall (see attached map) shall be limited and monitored **once** by the permittee as specified below.

<b>Sample Point</b>	<b>Parameter</b>	<b>Discharge Limitations<sup>(1)</sup></b>	<b>Sampling Requirements</b>	
		<b>Daily Max</b>	<b>Period</b>	<b>Type</b>
001	Total Mercury USEPA Test Method 608 <sup>4</sup>	0.001 lbs.	1 day	Composite <sup>2</sup>
	USEPA Test Method 624 <sup>4</sup>	To be monitored	1 day	Grab <sup>3</sup>
	USEPA Test Method 624 <sup>4</sup>	To be monitored	1 day	Grab <sup>3</sup>
	USEPA Test Method 625 <sup>4</sup>	To be monitored	1 day	Grab <sup>3</sup>

Footnotes are explained on page 5.

## PART I: SPECIFIC CONDITIONS

**B. DISCHARGE MONITORING REPORTING REQUIREMENTS**

During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

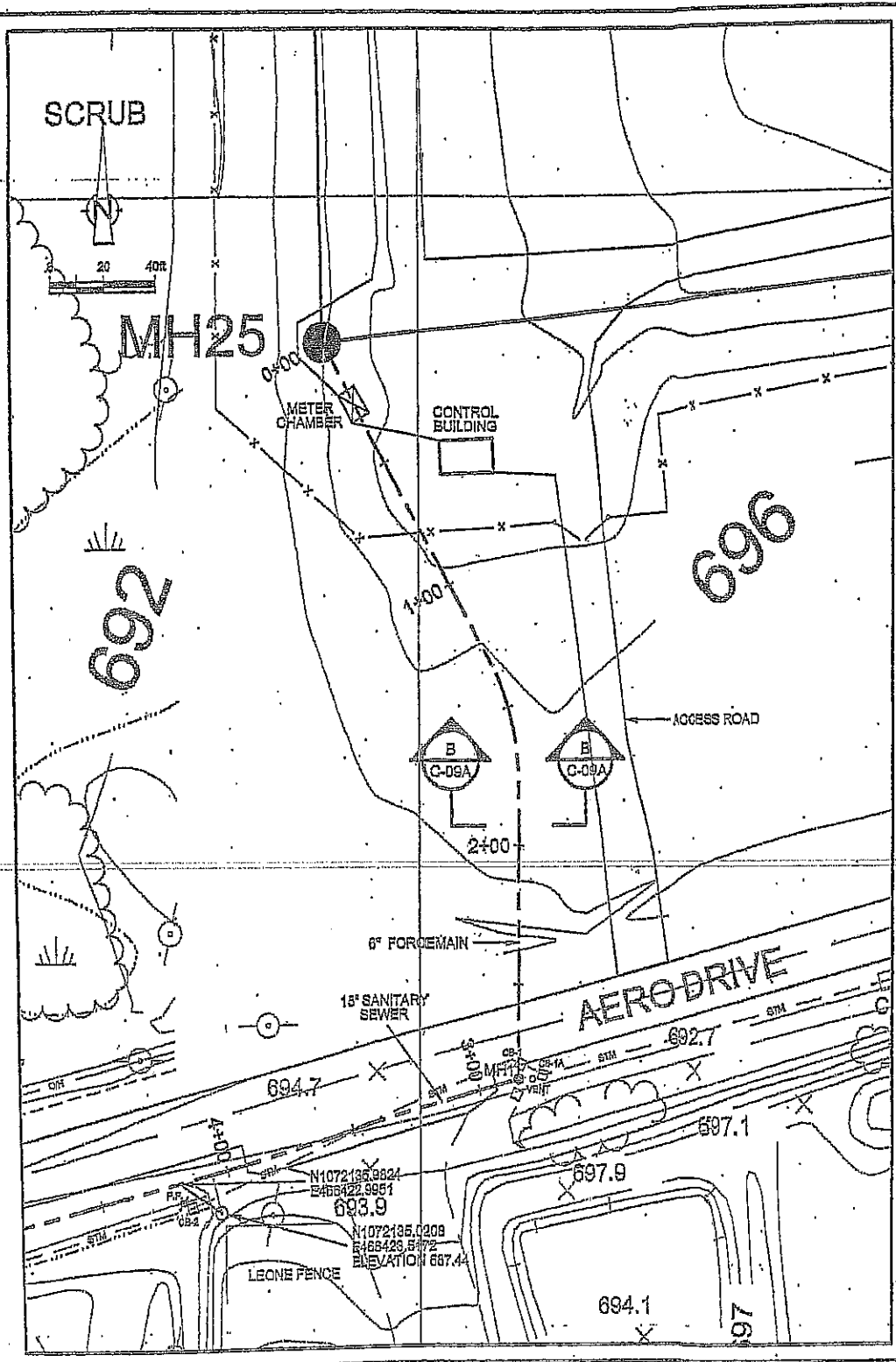
Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2019	Every March 31 <sup>st</sup> , June 30 <sup>th</sup> , September 30 <sup>th</sup> and December 31 <sup>st</sup>
	USEPA Test Methods 608, 624 and 625 & T Mercury	June 30, 2019	

\* Please submit new discharge permit application 6 months prior to the expiration of this permit\*

## **PART I: SPECIFIC CONDITIONS**

### **C. SPECIAL REQUIREMENTS**

1. Mass limits based on an average discharge of 140,100 gpd.
2. Composite samples may be time proportioned.
3. Four grab samples must be collected at equally spaced intervals throughout the sample day. The four (4) grab samples must be composited by a NYSDOH certified laboratory prior to analysis.
4. The permittee must report any compound whose concentration is equal to or greater than 0.01 mg/L. The permittee is not authorized to discharge any of the parameters evaluated by these test procedures which may cause or contribute to a violation of water quality standards or harm the sewerage system. Any parameter detected may, at the discretion of the BSA, be specifically limited and incorporated in this permit.
5. Surchargeable over 250 mg/L.
6. Flow is an action level only. If the permittee consistently exceeds this level, the BSA must be notified so that this permit can be modified.





**TOWN OF CHEEKTOWAGA/BUFFALO POLLUTANT DISCHARGE ELIMINATION SYSTEM  
PERMIT**

**PART II GENERAL CONDITIONS**

**A. MONITORING AND REPORTING**

**1. Local Limits**

Except as otherwise specified in this permit, the permit holder shall comply with all specific prohibitions, limits on pollutants or pollutant parameters set forth in the Buffalo Sewer Authority Sewer Use Regulations, as amended from time to time, and such prohibitions, limits and parameters shall be deemed pretreatment standards for purposes of the Clean Water Act

**2. Definitions**

Definitions of terms contained in this permit are as defined in the Town of Cheektowaga Local Law No. 2 and the Buffalo Sewer Authority Sewer Use Regulations.

**3. Discharge Sampling Analysis**

All Wastewater discharge samples and analyses and flow measurements shall be representative of the volume and character of the monitored discharge. Methods employed for flow measurements and sample collections and analyses shall conform to the Buffalo Sewer Authority "Sampling Measurement and Analytical Guidelines Sheet."

**4. Recording of Results**

For each measurement or sample taken pursuant to the requirements of the permit, the Permittee shall record the information as required in the "Sampling Measurement and Analytical Guidelines Sheet."

**5. Additional Monitoring by Permittee**

If the Permittee monitors any pollutants at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in 40 CFR Part 136 the results of such monitoring shall be included in the calculation and reporting of values required under Part I, B. Such increased frequency shall also be indicated.

**6. Reporting**

All reports prepared in accordance with this Permit shall be submitted to:

**Patrick Bowen, P.E.**  
**Town Engineer**  
**275 Alexander Ave.**  
**Cheektowaga, New York, 14211**

All self-monitoring reports shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines Sheet." These reporting requirements shall not relieve the Permittee of any other reports, which may be required by the

N.Y.S.D.E.C. or the U.S.E.P.A.

**B. PERMITTEE REQUIREMENTS**

**1. Change in Discharge**

All discharges authorized herein shall be consistent with the terms and conditions of this permit and with the information contained in the TC/BPDES Permit Application on which basis this permit is granted. In the event of any facility expansions, production increases, process modifications or the installation, modification or repair of any pretreatment equipment which may result in new, different or increased discharges of pollutants, a new TC/BPDES Permit Application must be submitted prior to any change. Following receipt of an amended application, the BSA may modify this permit to specify and limit any pollutants not previously limited. In the event that the proposed change will be covered under an applicable Categorical Standard, a Baseline Monitoring Report must be submitted at least ninety (90) days prior to any discharge.

**2. Records Retention**

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation shall be retained at this facility for a minimum of three (3) years, or longer if requested by the General Manager and/or Town Engineer.

**3. Notification of Slug, Accidental Discharge or Spill**

In the event that a slug, accidental discharge or any spill occurs at the facility for which this permit is issued, it is the responsibility of the Permittee to immediately notify the B.S.A. Treatment Plant at 883-1820 of the quantity and character of such discharge. If requested by the B.S.A., within five (5) days following all such discharges, the Permittee shall submit a report describing the character and duration of the discharge, the cause of the discharge, and measures taken or that will be taken to prevent a recurrence of such discharge.

**4. Noncompliance Notification**

If, for any reason, the Permittee does not comply with or will be unable to comply with any discharge limitation specified in this permit, the Permittee or their assigns must verbally notify the Industrial Waste Section at 883-1820 within twenty-four (24) hours of becoming aware of the violation. The Permittee shall provide the Industrial Waste Section with the following information, in writing, within five (5) days of becoming aware of such condition:

- a. a description of the discharge and cause of noncompliance and;
- b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

**5. Adverse Impact**

The Permittee shall take all reasonable steps to minimize any adverse impact to the Buffalo and Town Sewerage System resulting from noncompliance with any discharge limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

**6. Waste Residuals**

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters, shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the Buffalo or Town Sewer System.

**7. Power Failures**

In order to maintain compliance with the discharge limitations and prohibitions of this permit, the Permittee shall provide an alternative power source sufficient to operate the wastewater control facilities; or, if such alternative power source is not provided the Permittee shall halt, reduce or otherwise control production and/or controlled discharges upon the loss of power to the wastewater control facilities.

**8. Treatment Upsets**

- a. Any industrial user which experiences an upset in operations that places it in a temporary state of noncompliance, which is not the result of operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation, shall inform the Industrial Waste Section immediately upon becoming aware of the upset. Where such information is given verbally, a written report shall be filed by the user within five (5) days. The report shall contain:
  - (i) A description of the upset, its cause(s) and impact on the discharger's compliance status.
  - (ii) The duration of noncompliance, including exact dates and times of noncompliance, and if the noncompliance is continuing, the time by which compliance is reasonably expected to be restored
  - (iii) All steps taken or planned to reduce, eliminate, and prevent recurrence of such an upset.
- b. An industrial user which complies with the notification provisions of this Section in a timely manner shall have an affirmative defense to any enforcement action brought by the Industrial Waste Section/Town Engineer for any noncompliance of the limits in this permit, which arises out of violations attributable to and alleged to have occurred during the period of the documented and verified upset.

**9. Treatment Bypasses**

- a. A bypass of the treatment system is prohibited unless the following conditions are met:
  - (i) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; or
  - (ii) There was no feasible alternative to the bypass, including the use of auxiliary treatment or retention of the wastewater; and
  - (iii) The industrial user properly notified the Industrial Waste Section as described in paragraph b. below.
- b. Industrial users must provide immediate notice to the Industrial Waste Section upon delivery of an unanticipated bypass. If necessary, the Industrial Waste Section may require the industrial user to submit a written report explaining the cause(s), nature, and duration of the bypass, and the steps being taken to prevent its recurrence.
- c. An industrial user may allow a bypass to occur which does not cause pretreatment standards or requirements to be violated, but only if it is for essential maintenance to ensure efficient operation of the treatment system. Industrial users anticipating a bypass must submit notice to the Industrial Waste Section at least ten (10) days in advance. The Industrial Waste Section may only approve the anticipated bypass if the circumstances satisfy those set forth in paragraph a. above.

**C. PERMITTEE RESPONSIBILITIES**

**1. Permit Availability**

The originally signed permit must be available upon request at all times for review at the address stated on the first page of this permit.

**2. Inspections**

The Permittee shall allow the representatives of the Buffalo Sewer Authority or Town of Cheektowaga upon the presentation of credentials and during normal working hours or at any other reasonable times, to have access to and copy any records required in this permit; and to sample any discharge of pollutants.

**3. Transfer of Ownership or Control**

In the event of any change in control or ownership of facilities for which this permit has been issued the permit shall become null and void. The succeeding owner shall submit a completed Town of Cheektowaga/ Buffalo Sewer Authority permit application prior to discharge to the sewer system.

**D. PERMITTEE LIABILITIES**

**1. Permit Modification**

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to the following:

- a. Violation of any terms or conditions of this permit,
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts,
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

**2. Imminent Danger**

In the event there exists an imminent danger to health or property, the permitter reserves the right to take immediate action to halt the permitted discharge to the sewerage works.

**3. Civil and Criminal Liability**

Nothing in this permit shall relieve the Permittee from any requirements, liabilities, or penalties under provisions of the Town of Cheektowaga Local Law No. 2, the "Sewer Regulations of the Buffalo Sewer Authority" or any Federal, State and/or local laws or regulations.

**4. Penalties for Violations of Permit Conditions**

The "Sewer Regulations of the Buffalo Sewer Authority" and Town of Cheektowaga Local Law No. 2, provide that any person who violates a B.P.D.E.S. permit condition is liable to the Authority and/or the Town for a civil penalty of up to \$10,000 per day for each violation. Any person who willfully or negligently violates permit conditions will be referred to the New York State Attorney General.

**E. NATIONAL PRETREATMENT STANDARDS**

If a pretreatment standard or prohibition (including any Schedule of Compliance specified in such pretreatment standard or prohibition) is established under Section 307 (b) of the Act for a pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with such pretreatment standard or prohibition.

**F. PLANT CLOSURE**

In the event of plant closure, the Permittee is required to notify the Industrial Waste Section/Town Engineer in writing as soon as an anticipated closure date is determined, but in no case later than five (5) days of the actual closure.

**G. CONFIDENTIALITY**

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Buffalo Sewer Authority or Town Engineer of the Town of Cheektowaga. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

**H. SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

# **APPENDIX G**

## **DISCHARGE REPORT SUMMARY TABLES**

# SAMPLING FIELD SHEET



Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Patrick T. Bowen, P.E. Phone: 716-897-7288

**Installation:**

Sample Point: SP-001

Sample Location: Meter Chamber - ball valve on 6" HDPE forcemain

Date: 9/3/20 Crew: R. Murphy, T. Urban

Weather: 75° F, partly cloudy

Sampling Device: NA

Time of Installation: 11:15 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Well WW-05 running at the time of sample set-up.  
PLC display volumes: WW-01 (98,874 gals), WW-02 (-748 gals), WW-03 (0 gals),  
WW-04 (0 gals), WW-05 (566,149 gals), WW-06 (118,187 gals) & MH-25 (783,070 gals).

Date: 9/4/20 Crew: R. Murphy, T. Urban

Weather: 71° F, clear

Time of Collection: 11:15

**Field Measurements:**

11:15/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10  
(time/initial)

pH Measurement: 7.15

Temperature: 22.4°C

Identification: EFF-090420

Physical Observations: Light red tint, trace red particulates

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells running at the time of sample pick-up.  
PLC display volumes: WW-01 (98,874 gals), WW-02 (-748 gals), WW-03 (0 gals),  
WW-04 (0 gals), WW-05 (572,004 gals), WW-06 (118,187 gals) & MH-25 (788,922 gals).

Reviewed By: Robert J. Murphy Date: 9/04/20  
(Supervisor)



TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING  
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS  
SEPTEMBER 2020**

<b>Sample ID</b>	<b>EFF-090420</b>			
<b>Matrix</b>	<b>Effluent Water</b>			
<b>Date Sampled</b>	<b>9/4/2020</b>			
<b>Parameter</b>	<b>Result</b>	<b>Mass Loading</b>	<b>Discharge Limitation</b>	<b>Violations</b>
	<b>(mg/L)</b>	<b>(lbs/day)</b>	<b>(lbs/day)</b>	<b>(Y/N)</b>
Total Barium	0.30 ^	0.01	2.34	No
Total Cadmuim	< <sup>(1)</sup> 0.0005	< 0.00002	1.17	No
Total Chromium	< 0.0010	< 0.00005	1.17	No
Total Copper	< 0.0016	< 0.0001	3.74	No
Total Lead	< 0.0030	< 0.0001	1.17	No
Total Nickel	0.0038 J	0.0002	3.27	No
Total Zinc	0.0051 J	0.0002	5.84	No
Total Suspended Solids	7.6	NA <sup>(2)</sup>	250 <sup>(3)</sup>	No
pH <sup>(4)</sup>	7.15	NA	5.0 - 12.0	No
Total Flow <sup>(5)</sup>		5,852	140,100	No

**Notes:**

(1) < = Compound not detected, method detection limit shown

(2) NA = Not Applicable

(3) Discharge Limitation in units of mg/L

(4) pH measurement and Discharge Limitation in Standard Units

(5) Total Flow reported in gallons, sample was collected over a 24 hour period

^= The interference check standard solution (ICSA) associated with the following samples showed results for Barium at a level greater than 2 times the limit of detection (LOD). It is believed that the solution contains trace impurities of this element and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution.

J= Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

$$\text{Calculation: } \left( \frac{x \text{ mg}}{\text{L}} \right) \left( \frac{y \text{ gal}}{\text{day}} \right) \left( \frac{1 \text{ lb}}{453,600 \text{ mg}} \right) \left( \frac{3.785 \text{ L}}{\text{gal}} \right) = \frac{x \times y}{119,841} \frac{\text{lb}}{\text{day}}$$

# SAMPLING FIELD SHEET



Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Patrick T. Bowen, P.E. Phone: 716-897-7288

**Installation:**

Sample Point: SP-001

Sample Location: Meter Chamber - ball valve on 6" HDPE forcemain

Date: 12/16/20 Crew: R. Murphy, T. Urban

Weather: 24° F, cloudy

Sampling Device: NA

Time of Installation: 09:45 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells running at the time of sample set-up.  
PLC display volumes: WW-01 (211,161 gals), WW-02 (22,359 gals), WW-03 (-1 gals),  
WW-04 (494,124 gals), WW-05 (1,220,707 gals), WW-06 (1,998,890 gals) & MH-25 (4,013,699 gals).

Date: 12/17/20 Crew: R. Murphy, T. Urban

Weather: 20° F, cloudy

Time of Collection: 09:45

**Field Measurements:**

09:45/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10  
(time/initial)

pH Measurement: 7.65 Oakton pH Tester30, s/n T311487089

Temperature: 8.3°C

Identification: EFF-121720

Physical Observations: Light red tint

Laboratory: Eurofins TestAmerica, Buffalo, NY

Comments: No wells running. WW-05 has a leaky check valve allowing negative flow and needs to be fixed.  
PLC display volumes: WW-01 (211,161 gals), WW-02 (22,359 gals), WW-03 (-1 gals),  
WW-04 (494,836 gals), WW-05 (1,220,627 gals), WW-06 (2,000,543 gals) & MH-25 (4,016,035 gals).

Reviewed By: Robert J. Murphy Date: 12/17/20  
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING  
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS  
DECEMBER 2020**

<b>Sample ID</b>	<b>EFF-121720</b>			
<b>Matrix</b>	<b>Effluent Water</b>			
<b>Date Sampled</b>	<b>12/17/2020</b>			
<b>Parameter</b>	<b>Result</b>	<b>Mass Loading</b>	<b>Discharge Limitation</b>	<b>Violations</b>
	<b>(mg/L)</b>	<b>(lbs/day)</b>	<b>(lbs/day)</b>	<b>(Y/N)</b>
Total Barium	0.27 ^	0.01	2.34	No
Total Cadmuim	< <sup>(1)</sup> 0.0005	< 0.00001	1.17	No
Total Chromium	0.0014 J	0.00003	1.17	No
Total Copper	0.0021 J	0.00004	3.74	No
Total Lead	0.0039 J	0.0001	1.17	No
Total Nickel	0.0025 J	0.00005	3.27	No
Total Zinc	0.0058 J	0.0001	5.84	No
Total Suspended Solids	50.0	NA <sup>(2)</sup>	250 <sup>(3)</sup>	No
pH <sup>(4)</sup>	7.65	NA	5.0 - 12.0	No
Total Flow <sup>(5)</sup>		2,336	140,100	No

**Notes:**

- (1) < = Compound not detected, method detection limit shown  
 (2) NA = Not Applicable  
 (3) Discharge Limitation in units of mg/L  
 (4) pH measurement and Discharge Limitation in Standard Units  
 (5) Total Flow reported in gallons, sample was collected over a 24 hour period  
 ^= The interference check standard solution (ICSA) associated with the sample showed results for Barium at a level greater than 2 times the limit of detection. It is believed that the solution contains trace impurities of this element and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution.  
 J= Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

$$\text{Calculation: } \left( \frac{x \text{ mg}}{\text{L}} \right) \left( \frac{y \text{ gal}}{\text{day}} \right) \left( \frac{1 \text{ lb}}{453,600 \text{ mg}} \right) \left( \frac{3.785 \text{ L}}{\text{gal}} \right) = \frac{x \times y}{119,841} \frac{\text{lb}}{\text{day}}$$

# **APPENDIX H**

## **MONITORING WELL INSPECTION LOGS**

## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date(s) of Inspection: November 23, 2020

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-01S	OK	OK	OK	Bulged	3.61	14.94	
GW-01D	OK	OK	OK	Bulged	3.15	39.65	
GW-03S	OK	OK	OK	OK	Dry @ 13.54	13.22	
GW-03D	OK	OK	OK	OK	1.7	35.70	
GW-04S	OK	OK	OK	OK	4.57	16.23	
GW-04D	OK	OK	OK	OK	12.84	45.57	
GW-07S	OK	OK	OK	OK	6.10	35.33	
GW-07D	OK	OK	OK	Damaged	42.66	60.83	

Additional Comments:

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## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date(s) of Inspection: November 23, 2020

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-08SR	OK	OK	OK	OK	5.18	13.02	
GW-08D	OK	OK	OK	OK	5.67	36.54	
GW-26D	OK	OK	OK	OK	6.53	40.70	
GW-28S	OK	OK	OK	OK	9.78	15.52	
GW-29S	OK	OK	OK	OK	8.95	20.04	
GW-30S	OK	OK	OK	OK	7.91	17.97	
GW-31S	OK	OK	OK	OK	5.61	9.57	
GW-32S	OK	OK	OK	OK	3.75	9.93	

Additional Comments:

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## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 60411174

Inspection Crew Members: R. Murphy, T. Urban Supervisor: R. Murphy

Date(s) of Inspection: November 23, 2020

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-33S	OK	OK	OK	OK	3.33	8.21	
GW-34S	OK	OK	OK	OK	2.75	10.01	
GW-35S	OK	OK	OK	OK	4.97	7.46	

Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**DATA APPLICABILITY REPORT**

**SEMI-ANNUAL GROUNDWATER MONITORING**

**PFOHL BROTHERS LANDFILL SITE**

**Analyses Performed by:**

**EUROFINS TESTAMERICA, BUFFALO  
10 HAZELWOOD DRIVE  
AMHERST, NY**

**Prepared for:**

**TOWN OF CHEEKTOWAGA  
CHEEKTOWAGA, NY 14225**

**Prepared by:**

**AECOM  
257 WEST GENESEE STREET, SUITE 400  
BUFFALO, NY 14202-2657**

**DECEMBER 2020**



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## TABLES (Following Text)

Table 1	Validated Groundwater Sample Results
Table 2	Validated Field QC Sample Results

## APPENDICES

Appendix A – Validated Sample Reporting Forms
Appendix B – Support Documentation

## **I. INTRODUCTION**

This Data Applicability Report (DAR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B-Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, May 2010. This DAR discusses the usability of the analytical data for groundwater samples collected during the November 2020 semi-annual monitoring program at the Pfohl Brothers Landfill Site, located in Cheektowaga, NY.

## **II. ANALYTICAL METHODOLOGIES and DATA APPLICABILITY PROCEDURES**

The data being evaluated are from the November 23-25, 2020 sampling of eighteen (18) groundwater samples, one (1) field duplicate, one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair, and two (2) trip blanks. The analytical laboratory that performed the analyses was Eurofins TestAmerica, Buffalo located in Amherst, NY. The samples were analyzed for the following project specific parameters: Volatile Organic Compounds (VOCs) following United States Environmental Protection Agency (USEPA) Method 8260C, Semivolatile Organic Compounds (SVOCs) by USEPA Method 8270D, and metals by USEPA Methods 6010C/7470A. Not all samples were analyzed for all parameters.

A limited data review was performed in accordance with the following USEPA guidelines:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C, SOP HW-24, Rev. 4, October 2014;*
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D, SOP HW-22, Rev. 5, December 2010;*
- ICP-AES Data Validation, SOP HW-3a, Rev. 1, September 2016; and
- Mercury and Cyanide Data Validation, SOP HW-3c, Rev. 1, September 2016.

The data applicability evaluation included a review of completeness of all required deliverables; holding times; quality control (QC) results (blanks, matrix spike recoveries, duplicate analyses, and laboratory control sample recoveries) to determine if the data are within the protocol-required QC limits and specifications; a determination that all samples were analyzed using established and agreed upon analytical protocols; and a review of laboratory data qualifiers.

Definitions of USEPA data qualifiers are presented at the end of this text. The analytical results are presented on Table 1 (groundwater) and Table 2 (field QC). Copies of the laboratory results (i.e., sample reporting forms) are presented in Appendix A. Documentation supporting the qualification of data is presented in Appendix B. Only analytical deviations affecting data usability are discussed in this report.

### **III. DATA DELIVERABLE COMPLETENESS**

In accordance with the project requirements, limited deliverable data packages (level 2) were provided by the laboratory, which only consisted of analytical summaries, QC reporting forms and case narratives.

### **IV. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES**

All samples were received by the laboratory intact, properly preserved and under proper chain-of-custody (COC). All samples were analyzed within the required holding times (HT).

Due to the low recharge rates of monitoring wells GW-07D and GW-07S, the VOC aliquots were collected on 11/23/20, while the SVOC/metals aliquots were collected on 11/24/20. For the same reason sample GW-04S had the VOC aliquots collected at 1505 and the SVOC/metals aliquots collected at 1645 on 11/23/20.

### **V. NON-CONFORMANCES**

#### Interference Check Sample

The laboratory noted in the case narrative that the interference check sample recovered above the QC limit for Barium (Ba). They believe the cause to be impurities in the ICS standard. To be conservative, the detected results for Ba in all samples have been qualified 'J'.

## VI. SAMPLE RESULTS AND REPORTING

All RLs were reported in accordance with method requirements and were adjusted for sample size and dilution factors. Results for compounds/analytes detected below the RL are qualified 'J'.

Sample GW-30S was analyzed for VOCs utilizing a dilution of four due to foaming during sample purging. The detection limits for this sample have been elevated due to the dilution factor.

A field duplicate was collected at groundwater location GW-08D. The field duplicate results exhibited good field and analytical precision.

## VII. SUMMARY

All sample analyses were found to be compliant with the method criteria, except where previously noted. All results qualified 'J' are conditionally usable. All other sample results are usable as reported. AECOM does not recommend the recollection of any samples.

**Prepared By:** Ann Marie Kropovitch, Chemist



**Date:** 12/29/20

**Reviewed by:** George E. Kisluk, Senior Chemist



**Date:** 12/29/20

## **DEFINITIONS OF USEPA DATA QUALIFIERS**

- U – The analyte was analyzed for, but was not detected above the level of the sample reporting limit.
- J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ – The metal result is an estimated quantity, but the result may be biased high.
- J- – The metal result is an estimated quantity, but the result may be biased low.
- UJ – The analyte was analyzed for, but not detected. The reporting limit is approximate and may be inaccurate or imprecise.
- R – The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-01D	GW-01S	GW-03D	GW-04D	GW-04S
Sample ID		GW-01D	GW-01S	GW-03D	GW-04D	GW-04S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/23/20	11/23/20	11/24/20	11/23/20	11/23/20
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	10 U	10 U	1.8 J	10 U	NA
1,4-Dichlorobenzene	UG/L	10 U	10 U	2.6 J	10 U	NA
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.2 U	5.0 U	5.0 U	NA
Phenol	UG/L	5.0 U	5.2 U	5.0 U	5.0 U	NA
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	NA
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	NA
Barium	MG/L	0.090 J	0.22 J	0.063 J	0.097 J	NA
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.00056 J	NA
Chromium	MG/L	0.010	0.0021 J	0.0040 U	0.0042	NA
Copper	MG/L	0.010 U	0.035	0.010 U	0.010 U	NA
Iron	MG/L	0.32	9.2	0.80	0.25	NA
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	NA
Magnesium	MG/L	37.1	26.7	13.4	76.9	NA
Manganese	MG/L	0.021	1.2	0.18	0.021	NA
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	NA
Nickel	MG/L	0.0027 J	0.010 U	0.0031 J	0.0022 J	NA

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: GEK 12/23/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-01D	GW-01S	GW-03D	GW-04D	GW-04S
Sample ID		GW-01D	GW-01S	GW-03D	GW-04D	GW-04S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/23/20	11/23/20	11/24/20	11/23/20	11/23/20
Parameter	Units					
<b>Metals</b>						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	NA
Sodium	MG/L	112	166	132	94.2	NA
Zinc	MG/L	0.017	0.016	0.0040 J	0.024	NA

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: GEK 12/23/20

**Detection Limits shown are PQL**

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/23/20	11/23/20	11/24/20	11/23/20	11/24/20
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	NA	1.0 U	NA	1.0 U	NA
1,2-Dichloroethene (total)	UG/L	NA	2.0 U	NA	2.0 U	NA
Acetone	UG/L	NA	10 U	NA	10 U	NA
Benzene	UG/L	NA	1.0 U	NA	1.0 U	NA
Vinyl chloride	UG/L	NA	1.0 U	NA	1.0 U	NA
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	10 U	NA	10 U	NA	10 U
1,4-Dichlorobenzene	UG/L	10 U	NA	10 U	NA	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	NA	3.8 J	NA	5.0
Phenol	UG/L	5.0 U	NA	5.0 U	NA	5.0 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	NA	0.020 U	NA	0.020 U
Arsenic	MG/L	0.010 U	NA	0.010 U	NA	0.010 U
Barium	MG/L	0.14 J	NA	0.099 J	NA	0.42 J
Cadmium	MG/L	0.0010 U	NA	0.0015	NA	0.00070 J
Chromium	MG/L	0.0050	NA	0.53	NA	0.0036 J
Copper	MG/L	0.0022 J	NA	0.031	NA	0.010 U
Iron	MG/L	1.5	NA	8.0	NA	0.23
Lead	MG/L	0.0050 U	NA	0.11	NA	0.0050 U
Magnesium	MG/L	28.3	NA	36.4	NA	45.8
Manganese	MG/L	0.13	NA	0.12	NA	0.038
Mercury	MG/L	0.00020 U	NA	0.00020 U	NA	0.00020 U
Nickel	MG/L	0.0045 J	NA	0.24	NA	0.014

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: GEK 12/23/20

Detection Limits shown are PQL



**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/23/20	11/23/20	11/24/20	11/23/20	11/24/20
Parameter	Units					
<b>Metals</b>						
Silver	MG/L	0.0030 U	NA	0.0030 U	NA	0.0030 U
Sodium	MG/L	27.4	NA	77.7	NA	61.9
Zinc	MG/L	0.0095 J	NA	0.054	NA	0.0045 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: \_\_\_\_\_

**Detection Limits shown are PQL**

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-08D	GW-08D	GW-08SR	GW-26D	GW-28S
Sample ID		FD-112420	GW-08D	GW-08SR	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/24/20	11/24/20	11/24/20	11/25/20	11/24/20
Parameter	Units	Field Duplicate (1-1)				
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	0.88 J	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.070 J	0.068 J	0.11 J	0.11 J	0.093 J
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.033	0.029	0.0040 U	0.0011 J	0.0040 U
Copper	MG/L	0.0032 J	0.0021 J	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.36	0.29	5.9	2.2	0.42
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	15.5	15.2	55.4	15.6	26.2
Manganese	MG/L	0.031	0.029	0.56	0.32	0.92
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0065 J	0.0055 J	0.010 U	0.0018 J	0.0016 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: GEK 12/23/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-08D	GW-08D	GW-08SR	GW-26D	GW-28S
Sample ID		FD-112420	GW-08D	GW-08SR	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/24/20	11/24/20	11/24/20	11/25/20	11/24/20
Parameter	Units	Field Duplicate (1-1)				
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	218	216	131	288	10.2
Zinc	MG/L	0.026	0.014	0.010 U	0.010 U	0.59

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: GEK 12/23/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/24/20	11/25/20	11/25/20	11/25/20	11/25/20
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	8.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	40 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenol	UG/L	3.4 J	5.0 U	5.0 U	5.0 U	5.0 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.023	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.20 J	0.33 J	0.12 J	0.057 J	0.070 J
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0040 U	0.0040 U	0.0040 U	0.0040 U
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	13.3	14.6	4.0	0.050 U	0.050 U
Lead	MG/L	0.0030 J	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	62.7	43.3	33.7	28.4	32.7
Manganese	MG/L	0.67	2.5	0.76	0.31	0.0021 J
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.010 U	0.010 U	0.0029 J	0.0015 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: \_\_\_\_\_

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID		GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/24/20	11/25/20	11/25/20	11/25/20	11/25/20
Parameter	Units					
<b>Metals</b>						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	9.5	562	5.7	4.5	2.3
Zinc	MG/L	0.26	0.77	0.0060 J	0.0017 J	0.0015 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: GEK 12/23/20

**Detection Limits shown are PQL**

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-34S	GW-35S
Sample ID		GW-34S	GW-35S
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		11/24/20	11/25/20
Parameter	Units		
<b>Volatile Organic Compounds</b>			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>			
1,3-Dichlorobenzene	UG/L	10 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	5.0 U
Phenol	UG/L	5.0 U	5.0 U
<b>Metals</b>			
Antimony	MG/L	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U
Barium	MG/L	0.14 J	0.13 J
Cadmium	MG/L	0.0010 U	0.0010 U
Chromium	MG/L	0.0059	0.0040 U
Copper	MG/L	0.010 U	0.010 U
Iron	MG/L	0.029 J	0.020 J
Lead	MG/L	0.0050 U	0.0050 U
Magnesium	MG/L	29.5	31.8
Manganese	MG/L	0.0059	0.074
Mercury	MG/L	0.00020 U	0.00020 U
Nickel	MG/L	0.0021 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: GEK 12/23/20

Detection Limits shown are PQL

**TABLE 1**  
**VALIDATED GROUNDWATER SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		GW-34S	GW-35S
Sample ID		GW-34S	GW-35S
Matrix		Groundwater	Groundwater
Depth Interval (ft)		-	-
Date Sampled		11/24/20	11/25/20
Parameter	Units		
<b>Metals</b>			
Silver	MG/L	0.0030 U	0.0030 U
Sodium	MG/L	13.1	3.3
Zinc	MG/L	0.010 U	0.0029 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: \_\_\_\_\_

**Detection Limits shown are PQL**

**TABLE 2**  
**VALIDATED FIELD QC SAMPLE RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**

Location ID		FIELDQC	FIELDQC
Sample ID		TB-112320-112420	TB-112520
Matrix		Quality Control	Quality Control
Depth Interval (ft)		-	-
Date Sampled		11/24/20	11/25/20
Parameter	Units	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 12/18/20

CHECKED BY: GEK 12/23/20

Detection Limits shown are PQL



**APPENDIX A**

**VALIDATED SAMPLE REPORTING FORMS**

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-07S

Lab Sample ID: 480-178676-1

Date Collected: 11/23/20 10:20

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/20 15:22	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/20 15:22	1
Acetone	ND		10	3.0	ug/L			11/27/20 15:22	1
Benzene	ND		1.0	0.41	ug/L			11/27/20 15:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/20 15:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		77 - 120		11/27/20 15:22	1
Toluene-d8 (Surr)	105		80 - 120		11/27/20 15:22	1
4-Bromofluorobenzene (Surr)	107		73 - 120		11/27/20 15:22	1
Dibromofluoromethane (Surr)	116		75 - 123		11/27/20 15:22	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-07D

Lab Sample ID: 480-178676-2

Date Collected: 11/23/20 10:15

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/20 15:46	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/20 15:46	1
Acetone	ND		10	3.0	ug/L			11/27/20 15:46	1
Benzene	ND		1.0	0.41	ug/L			11/27/20 15:46	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/20 15:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		77 - 120		11/27/20 15:46	1
Toluene-d8 (Surr)	104		80 - 120		11/27/20 15:46	1
4-Bromofluorobenzene (Surr)	105		73 - 120		11/27/20 15:46	1
Dibromofluoromethane (Surr)	119		75 - 123		11/27/20 15:46	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-01S

Lab Sample ID: 480-178676-3

Date Collected: 11/23/20 12:50

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/20 16:10	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/20 16:10	1
Acetone	ND		10	3.0	ug/L			11/27/20 16:10	1
Benzene	ND		1.0	0.41	ug/L			11/27/20 16:10	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/20 16:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		77 - 120		11/27/20 16:10	1
Toluene-d8 (Surr)	102		80 - 120		11/27/20 16:10	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/27/20 16:10	1
Dibromofluoromethane (Surr)	113		75 - 123		11/27/20 16:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.50	ug/L		11/30/20 09:11	12/01/20 21:41	1
1,4-Dichlorobenzene	ND		10	0.48	ug/L		11/30/20 09:11	12/01/20 21:41	1
Bis(2-ethylhexyl) phthalate	ND		5.2	2.3	ug/L		11/30/20 09:11	12/01/20 21:41	1
Phenol	ND		5.2	0.41	ug/L		11/30/20 09:11	12/01/20 21:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	90		41 - 120	11/30/20 09:11	12/01/20 21:41	1
2-Fluorobiphenyl	97		48 - 120	11/30/20 09:11	12/01/20 21:41	1
2-Fluorophenol	72		35 - 120	11/30/20 09:11	12/01/20 21:41	1
Nitrobenzene-d5	91		46 - 120	11/30/20 09:11	12/01/20 21:41	1
Phenol-d5	53		22 - 120	11/30/20 09:11	12/01/20 21:41	1
p-Terphenyl-d14	99		60 - 148	11/30/20 09:11	12/01/20 21:41	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 01:31	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 01:31	1
Barium	0.22	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 01:31	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 01:31	1
Chromium	0.0021	J	0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 01:31	1
Copper	0.035		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 01:31	1
Iron	9.2		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 01:31	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 01:31	1
Magnesium	26.7		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 01:31	1
Manganese	1.2		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 01:31	1
Nickel	ND		0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 01:31	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 01:31	1
Sodium	166		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 01:31	1
Zinc	0.016		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 01:31	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:20	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-01D

Lab Sample ID: 480-178676-4

Date Collected: 11/23/20 14:25

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 05:45	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 05:45	1
Acetone	ND		10	3.0	ug/L			11/28/20 05:45	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 05:45	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 05:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		11/28/20 05:45	1
Toluene-d8 (Surr)	95		80 - 120		11/28/20 05:45	1
4-Bromofluorobenzene (Surr)	93		73 - 120		11/28/20 05:45	1
Dibromofluoromethane (Surr)	103		75 - 123		11/28/20 05:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/30/20 09:11	12/01/20 22:09	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/30/20 09:11	12/01/20 22:09	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/30/20 09:11	12/01/20 22:09	1
Phenol	ND		5.0	0.39	ug/L		11/30/20 09:11	12/01/20 22:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	80		41 - 120	11/30/20 09:11	12/01/20 22:09	1
2-Fluorobiphenyl	92		48 - 120	11/30/20 09:11	12/01/20 22:09	1
2-Fluorophenol	64		35 - 120	11/30/20 09:11	12/01/20 22:09	1
Nitrobenzene-d5	87		46 - 120	11/30/20 09:11	12/01/20 22:09	1
Phenol-d5	46		22 - 120	11/30/20 09:11	12/01/20 22:09	1
p-Terphenyl-d14	83		60 - 148	11/30/20 09:11	12/01/20 22:09	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 01:35	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 01:35	1
Barium	0.090	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 01:35	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 01:35	1
Chromium	0.010		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 01:35	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 01:35	1
Iron	0.32		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 01:35	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 01:35	1
Magnesium	37.1		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 01:35	1
Manganese	0.021		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 01:35	1
Nickel	0.0027	J	0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 01:35	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 01:35	1
Sodium	112		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 01:35	1
Zinc	0.017		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 01:35	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:21	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-04S

Lab Sample ID: 480-178676-5

Date Collected: 11/23/20 15:05

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 06:11	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 06:11	1
Acetone	ND		10	3.0	ug/L			11/28/20 06:11	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 06:11	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 06:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		77 - 120		11/28/20 06:11	1
Toluene-d8 (Surr)	96		80 - 120		11/28/20 06:11	1
4-Bromofluorobenzene (Surr)	93		73 - 120		11/28/20 06:11	1
Dibromofluoromethane (Surr)	102		75 - 123		11/28/20 06:11	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-04D

Lab Sample ID: 480-178676-6

Date Collected: 11/23/20 16:35

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 06:36	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 06:36	1
Acetone	ND		10	3.0	ug/L			11/28/20 06:36	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 06:36	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 06:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		77 - 120		11/28/20 06:36	1
Toluene-d8 (Surr)	94		80 - 120		11/28/20 06:36	1
4-Bromofluorobenzene (Surr)	92		73 - 120		11/28/20 06:36	1
Dibromofluoromethane (Surr)	101		75 - 123		11/28/20 06:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/30/20 09:11	12/01/20 22:37	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/30/20 09:11	12/01/20 22:37	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/30/20 09:11	12/01/20 22:37	1
Phenol	ND		5.0	0.39	ug/L		11/30/20 09:11	12/01/20 22:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	80		41 - 120	11/30/20 09:11	12/01/20 22:37	1
2-Fluorobiphenyl	89		48 - 120	11/30/20 09:11	12/01/20 22:37	1
2-Fluorophenol	64		35 - 120	11/30/20 09:11	12/01/20 22:37	1
Nitrobenzene-d5	84		46 - 120	11/30/20 09:11	12/01/20 22:37	1
Phenol-d5	48		22 - 120	11/30/20 09:11	12/01/20 22:37	1
p-Terphenyl-d14	88		60 - 148	11/30/20 09:11	12/01/20 22:37	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 01:50	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 01:50	1
Barium	0.097	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 01:50	1
Cadmium	0.00056	J	0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 01:50	1
Chromium	0.0042		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 01:50	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 01:50	1
Iron	0.25		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 01:50	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 01:50	1
Magnesium	76.9		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 01:50	1
Manganese	0.021		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 01:50	1
Nickel	0.0022	J	0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 01:50	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 01:50	1
Sodium	94.2		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 01:50	1
Zinc	0.024		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 01:50	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:23	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-04S

Lab Sample ID: 480-178676-7

Date Collected: 11/23/20 16:45

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/30/20 09:11	12/01/20 23:06	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/30/20 09:11	12/01/20 23:06	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		11/30/20 09:11	12/01/20 23:06	1
Phenol	ND		5.0	0.39	ug/L		11/30/20 09:11	12/01/20 23:06	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	85		41 - 120				11/30/20 09:11	12/01/20 23:06	1
2-Fluorobiphenyl	97		48 - 120				11/30/20 09:11	12/01/20 23:06	1
2-Fluorophenol	73		35 - 120				11/30/20 09:11	12/01/20 23:06	1
Nitrobenzene-d5	94		46 - 120				11/30/20 09:11	12/01/20 23:06	1
Phenol-d5	51		22 - 120				11/30/20 09:11	12/01/20 23:06	1
p-Terphenyl-d14	99		60 - 148				11/30/20 09:11	12/01/20 23:06	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 01:54	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 01:54	1
Barium	0.14	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 01:54	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 01:54	1
Chromium	0.0050		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 01:54	1
Copper	0.0022	J	0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 01:54	1
Iron	1.5		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 01:54	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 01:54	1
Magnesium	28.3		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 01:54	1
Manganese	0.13		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 01:54	1
Nickel	0.0045	J	0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 01:54	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 01:54	1
Sodium	27.4		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 01:54	1
Zinc	0.0095	J	0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 01:54	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:24	1



# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-07S

Lab Sample ID: 480-178676-8

Date Collected: 11/24/20 08:15

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/01/20 14:57	12/09/20 00:01	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/01/20 14:57	12/09/20 00:01	1
Bis(2-ethylhexyl) phthalate	5.0		5.0	2.2	ug/L		12/01/20 14:57	12/09/20 00:01	1
Phenol	ND		5.0	0.39	ug/L		12/01/20 14:57	12/09/20 00:01	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	67		41 - 120				12/01/20 14:57	12/09/20 00:01	1
2-Fluorobiphenyl	87		48 - 120				12/01/20 14:57	12/09/20 00:01	1
2-Fluorophenol	62		35 - 120				12/01/20 14:57	12/09/20 00:01	1
Nitrobenzene-d5	81		46 - 120				12/01/20 14:57	12/09/20 00:01	1
Phenol-d5	44		22 - 120				12/01/20 14:57	12/09/20 00:01	1
p-Terphenyl-d14	73		60 - 148				12/01/20 14:57	12/09/20 00:01	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 01:57	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 01:57	1
Barium	0.42	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 01:57	1
Cadmium	0.00070	J	0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 01:57	1
Chromium	0.0036	J	0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 01:57	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 01:57	1
Iron	0.23		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 01:57	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 01:57	1
Magnesium	45.8		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 01:57	1
Manganese	0.038		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 01:57	1
Nickel	0.014		0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 01:57	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 01:57	1
Sodium	61.9		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 01:57	1
Zinc	0.0045	J	0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 01:57	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:25	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-07D

Lab Sample ID: 480-178676-9

Date Collected: 11/24/20 08:25

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/01/20 14:57	12/09/20 00:29	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/01/20 14:57	12/09/20 00:29	1
Bis(2-ethylhexyl) phthalate	3.8	J	5.0	2.2	ug/L		12/01/20 14:57	12/09/20 00:29	1
Phenol	ND		5.0	0.39	ug/L		12/01/20 14:57	12/09/20 00:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	84		41 - 120	12/01/20 14:57	12/09/20 00:29	1
2-Fluorobiphenyl	98		48 - 120	12/01/20 14:57	12/09/20 00:29	1
2-Fluorophenol	74		35 - 120	12/01/20 14:57	12/09/20 00:29	1
Nitrobenzene-d5	91		46 - 120	12/01/20 14:57	12/09/20 00:29	1
Phenol-d5	55		22 - 120	12/01/20 14:57	12/09/20 00:29	1
p-Terphenyl-d14	80		60 - 148	12/01/20 14:57	12/09/20 00:29	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 02:01	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 02:01	1
Barium	0.099	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 02:01	1
Cadmium	0.0015		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 02:01	1
Chromium	0.53		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 02:01	1
Copper	0.031		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 02:01	1
Iron	8.0		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 02:01	1
Lead	0.11		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 02:01	1
Magnesium	36.4		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 02:01	1
Manganese	0.12		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 02:01	1
Nickel	0.24		0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 02:01	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 02:01	1
Sodium	77.7		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 02:01	1
Zinc	0.054		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 02:01	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:27	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-34S

Lab Sample ID: 480-178676-10

Date Collected: 11/24/20 09:37

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/20 23:17	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/20 23:17	1
Acetone	ND		10	3.0	ug/L			11/27/20 23:17	1
Benzene	ND		1.0	0.41	ug/L			11/27/20 23:17	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/20 23:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120		11/27/20 23:17	1
Toluene-d8 (Surr)	102		80 - 120		11/27/20 23:17	1
4-Bromofluorobenzene (Surr)	112		73 - 120		11/27/20 23:17	1
Dibromofluoromethane (Surr)	106		75 - 123		11/27/20 23:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/01/20 14:57	12/09/20 00:57	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/01/20 14:57	12/09/20 00:57	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/01/20 14:57	12/09/20 00:57	1
Phenol	ND		5.0	0.39	ug/L		12/01/20 14:57	12/09/20 00:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	78		41 - 120	12/01/20 14:57	12/09/20 00:57	1
2-Fluorobiphenyl	98		48 - 120	12/01/20 14:57	12/09/20 00:57	1
2-Fluorophenol	70		35 - 120	12/01/20 14:57	12/09/20 00:57	1
Nitrobenzene-d5	92		46 - 120	12/01/20 14:57	12/09/20 00:57	1
Phenol-d5	52		22 - 120	12/01/20 14:57	12/09/20 00:57	1
p-Terphenyl-d14	91		60 - 148	12/01/20 14:57	12/09/20 00:57	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 02:05	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 02:05	1
Barium	0.14	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 02:05	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 02:05	1
Chromium	0.0059		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 02:05	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 02:05	1
Iron	0.029	J	0.050	0.019	mg/L		12/04/20 10:53	12/05/20 02:05	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 02:05	1
Magnesium	29.5		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 02:05	1
Manganese	0.0059		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 02:05	1
Nickel	0.0021	J	0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 02:05	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 02:05	1
Sodium	13.1		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 02:05	1
Zinc	ND		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 02:05	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:28	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-03D

Lab Sample ID: 480-178676-11

Date Collected: 11/24/20 11:05

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/27/20 23:40	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/27/20 23:40	1
Acetone	ND		10	3.0	ug/L			11/27/20 23:40	1
Benzene	ND		1.0	0.41	ug/L			11/27/20 23:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/27/20 23:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		77 - 120		11/27/20 23:40	1
Toluene-d8 (Surr)	103		80 - 120		11/27/20 23:40	1
4-Bromofluorobenzene (Surr)	113		73 - 120		11/27/20 23:40	1
Dibromofluoromethane (Surr)	105		75 - 123		11/27/20 23:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	1.8	J	10	0.48	ug/L		12/01/20 14:57	12/08/20 22:59	1
1,4-Dichlorobenzene	2.6	J	10	0.46	ug/L		12/01/20 14:57	12/08/20 22:59	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/01/20 14:57	12/08/20 22:59	1
Phenol	ND		5.0	0.39	ug/L		12/01/20 14:57	12/08/20 22:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	71		41 - 120	12/01/20 14:57	12/08/20 22:59	1
2-Fluorobiphenyl	86		48 - 120	12/01/20 14:57	12/08/20 22:59	1
2-Fluorophenol	61		35 - 120	12/01/20 14:57	12/08/20 22:59	1
Nitrobenzene-d5	80		46 - 120	12/01/20 14:57	12/08/20 22:59	1
Phenol-d5	44		22 - 120	12/01/20 14:57	12/08/20 22:59	1
p-Terphenyl-d14	76		60 - 148	12/01/20 14:57	12/08/20 22:59	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 02:09	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 02:09	1
Barium	0.063	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 02:09	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 02:09	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 02:09	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 02:09	1
Iron	0.80		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 02:09	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 02:09	1
Magnesium	13.4		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 02:09	1
Manganese	0.18		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 02:09	1
Nickel	0.0031	J	0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 02:09	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 02:09	1
Sodium	132		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 02:09	1
Zinc	0.0040	J	0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 02:09	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:29	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-08D

Lab Sample ID: 480-178676-12

Date Collected: 11/24/20 12:37

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 00:04	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 00:04	1
Acetone	ND		10	3.0	ug/L			11/28/20 00:04	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 00:04	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 00:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		11/28/20 00:04	1
Toluene-d8 (Surr)	104		80 - 120		11/28/20 00:04	1
4-Bromofluorobenzene (Surr)	113		73 - 120		11/28/20 00:04	1
Dibromofluoromethane (Surr)	113		75 - 123		11/28/20 00:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/01/20 14:57	12/09/20 01:26	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/01/20 14:57	12/09/20 01:26	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/01/20 14:57	12/09/20 01:26	1
Phenol	ND		5.0	0.39	ug/L		12/01/20 14:57	12/09/20 01:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	78		41 - 120	12/01/20 14:57	12/09/20 01:26	1
2-Fluorobiphenyl	100		48 - 120	12/01/20 14:57	12/09/20 01:26	1
2-Fluorophenol	69		35 - 120	12/01/20 14:57	12/09/20 01:26	1
Nitrobenzene-d5	90		46 - 120	12/01/20 14:57	12/09/20 01:26	1
Phenol-d5	52		22 - 120	12/01/20 14:57	12/09/20 01:26	1
p-Terphenyl-d14	86		60 - 148	12/01/20 14:57	12/09/20 01:26	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 02:38	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 02:38	1
Barium	0.068	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 02:38	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 02:38	1
Chromium	0.029		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 02:38	1
Copper	0.0021	J	0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 02:38	1
Iron	0.29		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 02:38	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 02:38	1
Magnesium	15.2		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 02:38	1
Manganese	0.029		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 02:38	1
Nickel	0.0055	J	0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 02:38	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 02:38	1
Sodium	216		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 02:38	1
Zinc	0.014		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 02:38	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:37	1

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# Client Sample Results

fd of GW-08D

Client: AECOM

Job ID: 480-178676-1

Project/Site: Groundwater Monitoring

Client Sample ID: FD-112420

Lab Sample ID: 480-178676-13

Date Collected: 11/24/20 00:00

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 00:27	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 00:27	1
Acetone	ND		10	3.0	ug/L			11/28/20 00:27	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 00:27	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 00:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120		11/28/20 00:27	1
Toluene-d8 (Surr)	102		80 - 120		11/28/20 00:27	1
4-Bromofluorobenzene (Surr)	114		73 - 120		11/28/20 00:27	1
Dibromofluoromethane (Surr)	107		75 - 123		11/28/20 00:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/01/20 14:57	12/09/20 01:55	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/01/20 14:57	12/09/20 01:55	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/01/20 14:57	12/09/20 01:55	1
Phenol	ND		5.0	0.39	ug/L		12/01/20 14:57	12/09/20 01:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	82		41 - 120	12/01/20 14:57	12/09/20 01:55	1
2-Fluorobiphenyl	96		48 - 120	12/01/20 14:57	12/09/20 01:55	1
2-Fluorophenol	71		35 - 120	12/01/20 14:57	12/09/20 01:55	1
Nitrobenzene-d5	89		46 - 120	12/01/20 14:57	12/09/20 01:55	1
Phenol-d5	52		22 - 120	12/01/20 14:57	12/09/20 01:55	1
p-Terphenyl-d14	83		60 - 148	12/01/20 14:57	12/09/20 01:55	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 02:42	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 02:42	1
Barium	0.070	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 02:42	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 02:42	1
Chromium	0.033		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 02:42	1
Copper	0.0032	J	0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 02:42	1
Iron	0.36		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 02:42	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 02:42	1
Magnesium	15.5		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 02:42	1
Manganese	0.031		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 02:42	1
Nickel	0.0065	J	0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 02:42	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 02:42	1
Sodium	218		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 02:42	1
Zinc	0.026		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 02:42	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:38	1

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# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-08SR

Lab Sample ID: 480-178676-14

Date Collected: 11/24/20 13:43

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 00:50	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 00:50	1
Acetone	ND		10	3.0	ug/L			11/28/20 00:50	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 00:50	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 00:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		11/28/20 00:50	1
Toluene-d8 (Surr)	103		80 - 120		11/28/20 00:50	1
4-Bromofluorobenzene (Surr)	112		73 - 120		11/28/20 00:50	1
Dibromofluoromethane (Surr)	108		75 - 123		11/28/20 00:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/01/20 14:57	12/09/20 02:24	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/01/20 14:57	12/09/20 02:24	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/01/20 14:57	12/09/20 02:24	1
Phenol	ND		5.0	0.39	ug/L		12/01/20 14:57	12/09/20 02:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	80		41 - 120	12/01/20 14:57	12/09/20 02:24	1
2-Fluorobiphenyl	95		48 - 120	12/01/20 14:57	12/09/20 02:24	1
2-Fluorophenol	68		35 - 120	12/01/20 14:57	12/09/20 02:24	1
Nitrobenzene-d5	92		46 - 120	12/01/20 14:57	12/09/20 02:24	1
Phenol-d5	49		22 - 120	12/01/20 14:57	12/09/20 02:24	1
p-Terphenyl-d14	67		60 - 148	12/01/20 14:57	12/09/20 02:24	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 02:46	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 02:46	1
Barium	0.11	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 02:46	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 02:46	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 02:46	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 02:46	1
Iron	5.9		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 02:46	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 02:46	1
Magnesium	55.4		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 02:46	1
Manganese	0.56		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 02:46	1
Nickel	ND		0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 02:46	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 02:46	1
Sodium	131		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 02:46	1
Zinc	ND		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 02:46	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:40	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-28S

Lab Sample ID: 480-178676-15

Date Collected: 11/24/20 14:35

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 01:13	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 01:13	1
Acetone	ND		10	3.0	ug/L			11/28/20 01:13	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 01:13	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 01:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		11/28/20 01:13	1
Toluene-d8 (Surr)	102		80 - 120		11/28/20 01:13	1
4-Bromofluorobenzene (Surr)	112		73 - 120		11/28/20 01:13	1
Dibromofluoromethane (Surr)	106		75 - 123		11/28/20 01:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/01/20 14:57	12/09/20 02:53	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/01/20 14:57	12/09/20 02:53	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/01/20 14:57	12/09/20 02:53	1
Phenol	ND		5.0	0.39	ug/L		12/01/20 14:57	12/09/20 02:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	82		41 - 120	12/01/20 14:57	12/09/20 02:53	1
2-Fluorobiphenyl	100		48 - 120	12/01/20 14:57	12/09/20 02:53	1
2-Fluorophenol	73		35 - 120	12/01/20 14:57	12/09/20 02:53	1
Nitrobenzene-d5	93		46 - 120	12/01/20 14:57	12/09/20 02:53	1
Phenol-d5	55		22 - 120	12/01/20 14:57	12/09/20 02:53	1
p-Terphenyl-d14	83		60 - 148	12/01/20 14:57	12/09/20 02:53	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 02:50	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 02:50	1
Barium	0.093	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 02:50	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 02:50	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 02:50	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 02:50	1
Iron	0.42		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 02:50	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 02:50	1
Magnesium	26.2		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 02:50	1
Manganese	0.92		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 02:50	1
Nickel	0.0016	J	0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 02:50	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 02:50	1
Sodium	10.2		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 02:50	1
Zinc	0.59		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 02:50	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 16:41	1



# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: GW-29S

Lab Sample ID: 480-178676-16

Date Collected: 11/24/20 15:37

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 01:36	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 01:36	1
Acetone	ND		10	3.0	ug/L			11/28/20 01:36	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 01:36	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 01:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120		11/28/20 01:36	1
Toluene-d8 (Surr)	100		80 - 120		11/28/20 01:36	1
4-Bromofluorobenzene (Surr)	111		73 - 120		11/28/20 01:36	1
Dibromofluoromethane (Surr)	105		75 - 123		11/28/20 01:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/01/20 14:57	12/09/20 03:21	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/01/20 14:57	12/09/20 03:21	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/01/20 14:57	12/09/20 03:21	1
Phenol	3.4	J	5.0	0.39	ug/L		12/01/20 14:57	12/09/20 03:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	84		41 - 120	12/01/20 14:57	12/09/20 03:21	1
2-Fluorobiphenyl	99		48 - 120	12/01/20 14:57	12/09/20 03:21	1
2-Fluorophenol	69		35 - 120	12/01/20 14:57	12/09/20 03:21	1
Nitrobenzene-d5	89		46 - 120	12/01/20 14:57	12/09/20 03:21	1
Phenol-d5	51		22 - 120	12/01/20 14:57	12/09/20 03:21	1
p-Terphenyl-d14	78		60 - 148	12/01/20 14:57	12/09/20 03:21	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 10:53	12/05/20 02:53	1
Arsenic	0.023		0.010	0.0056	mg/L		12/04/20 10:53	12/05/20 02:53	1
Barium	0.20	J	0.0020	0.00070	mg/L		12/04/20 10:53	12/05/20 02:53	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 10:53	12/05/20 02:53	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 10:53	12/05/20 02:53	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 10:53	12/05/20 02:53	1
Iron	13.3		0.050	0.019	mg/L		12/04/20 10:53	12/05/20 02:53	1
Lead	0.0030	J	0.0050	0.0030	mg/L		12/04/20 10:53	12/05/20 02:53	1
Magnesium	62.7		0.20	0.043	mg/L		12/04/20 10:53	12/05/20 02:53	1
Manganese	0.67		0.0030	0.00040	mg/L		12/04/20 10:53	12/05/20 02:53	1
Nickel	ND		0.010	0.0013	mg/L		12/04/20 10:53	12/05/20 02:53	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 10:53	12/05/20 02:53	1
Sodium	9.5		1.0	0.32	mg/L		12/04/20 10:53	12/05/20 02:53	1
Zinc	0.26		0.010	0.0015	mg/L		12/04/20 10:53	12/05/20 02:53	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 17:11	1

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# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

Client Sample ID: TB-112320-112420

Lab Sample ID: 480-178676-17

Date Collected: 11/24/20 00:00

Matrix: Water

Date Received: 11/24/20 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/28/20 01:59	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/28/20 01:59	1
Acetone	ND		10	3.0	ug/L			11/28/20 01:59	1
Benzene	ND		1.0	0.41	ug/L			11/28/20 01:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/28/20 01:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		11/28/20 01:59	1
Toluene-d8 (Surr)	101		80 - 120		11/28/20 01:59	1
4-Bromofluorobenzene (Surr)	111		73 - 120		11/28/20 01:59	1
Dibromofluoromethane (Surr)	107		75 - 123		11/28/20 01:59	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178751-1

Client Sample ID: GW-30S

Lab Sample ID: 480-178751-1

Date Collected: 11/25/20 08:35

Matrix: Water

Date Received: 11/25/20 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		4.0	0.92	ug/L			11/30/20 16:32	4
1,2-Dichloroethene, Total	ND		8.0	3.2	ug/L			11/30/20 16:32	4
Acetone	ND		40	12	ug/L			11/30/20 16:32	4
Benzene	ND		4.0	1.6	ug/L			11/30/20 16:32	4
Vinyl chloride	ND		4.0	3.6	ug/L			11/30/20 16:32	4

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		77 - 120					11/30/20 16:32	4
Toluene-d8 (Surr)	90		80 - 120					11/30/20 16:32	4
4-Bromofluorobenzene (Surr)	97		73 - 120					11/30/20 16:32	4
Dibromofluoromethane (Surr)	100		75 - 123					11/30/20 16:32	4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/02/20 15:01	12/08/20 23:36	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/02/20 15:01	12/08/20 23:36	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/02/20 15:01	12/08/20 23:36	1
Phenol	ND		5.0	0.39	ug/L		12/02/20 15:01	12/08/20 23:36	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	92		41 - 120				12/02/20 15:01	12/08/20 23:36	1
2-Fluorobiphenyl	97		48 - 120				12/02/20 15:01	12/08/20 23:36	1
2-Fluorophenol	71		35 - 120				12/02/20 15:01	12/08/20 23:36	1
Nitrobenzene-d5	93		46 - 120				12/02/20 15:01	12/08/20 23:36	1
Phenol-d5	58		22 - 120				12/02/20 15:01	12/08/20 23:36	1
p-Terphenyl-d14	68		60 - 148				12/02/20 15:01	12/08/20 23:36	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 11:02	12/05/20 01:17	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 11:02	12/05/20 01:17	1
Barium	0.33	J	0.0020	0.00070	mg/L		12/04/20 11:02	12/05/20 01:17	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 11:02	12/05/20 01:17	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 11:02	12/05/20 01:17	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 11:02	12/05/20 01:17	1
Iron	14.6		0.050	0.019	mg/L		12/04/20 11:02	12/05/20 01:17	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 11:02	12/05/20 01:17	1
Magnesium	43.3		0.20	0.043	mg/L		12/04/20 11:02	12/05/20 01:17	1
Manganese	2.5		0.0030	0.00040	mg/L		12/04/20 11:02	12/05/20 01:17	1
Nickel	ND		0.010	0.0013	mg/L		12/04/20 11:02	12/05/20 01:17	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 11:02	12/05/20 01:17	1
Sodium	562		1.0	0.32	mg/L		12/04/20 11:02	12/05/20 01:17	1
Zinc	0.77		0.010	0.0015	mg/L		12/04/20 11:02	12/05/20 01:17	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 17:14	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178751-1

Client Sample ID: GW-31S

Lab Sample ID: 480-178751-2

Date Collected: 11/25/20 09:35

Matrix: Water

Date Received: 11/25/20 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/20 16:57	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/20 16:57	1
Acetone	ND		10	3.0	ug/L			11/30/20 16:57	1
Benzene	ND		1.0	0.41	ug/L			11/30/20 16:57	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/20 16:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		77 - 120		11/30/20 16:57	1
Toluene-d8 (Surr)	89		80 - 120		11/30/20 16:57	1
4-Bromofluorobenzene (Surr)	87		73 - 120		11/30/20 16:57	1
Dibromofluoromethane (Surr)	99		75 - 123		11/30/20 16:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/02/20 15:01	12/09/20 00:05	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/02/20 15:01	12/09/20 00:05	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/02/20 15:01	12/09/20 00:05	1
Phenol	ND		5.0	0.39	ug/L		12/02/20 15:01	12/09/20 00:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	94		41 - 120	12/02/20 15:01	12/09/20 00:05	1
2-Fluorobiphenyl	97		48 - 120	12/02/20 15:01	12/09/20 00:05	1
2-Fluorophenol	72		35 - 120	12/02/20 15:01	12/09/20 00:05	1
Nitrobenzene-d5	97		46 - 120	12/02/20 15:01	12/09/20 00:05	1
Phenol-d5	55		22 - 120	12/02/20 15:01	12/09/20 00:05	1
p-Terphenyl-d14	76		60 - 148	12/02/20 15:01	12/09/20 00:05	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 11:02	12/05/20 01:21	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 11:02	12/05/20 01:21	1
Barium	0.12	J	0.0020	0.00070	mg/L		12/04/20 11:02	12/05/20 01:21	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 11:02	12/05/20 01:21	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 11:02	12/05/20 01:21	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 11:02	12/05/20 01:21	1
Iron	4.0		0.050	0.019	mg/L		12/04/20 11:02	12/05/20 01:21	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 11:02	12/05/20 01:21	1
Magnesium	33.7		0.20	0.043	mg/L		12/04/20 11:02	12/05/20 01:21	1
Manganese	0.76		0.0030	0.00040	mg/L		12/04/20 11:02	12/05/20 01:21	1
Nickel	0.0029	J	0.010	0.0013	mg/L		12/04/20 11:02	12/05/20 01:21	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 11:02	12/05/20 01:21	1
Sodium	5.7		1.0	0.32	mg/L		12/04/20 11:02	12/05/20 01:21	1
Zinc	0.0060	J	0.010	0.0015	mg/L		12/04/20 11:02	12/05/20 01:21	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 17:15	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178751-1

**Client Sample ID: TB-112520**

**Lab Sample ID: 480-178751-3**

**Date Collected: 11/25/20 00:00**

**Matrix: Water**

**Date Received: 11/25/20 15:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/20 17:22	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/20 17:22	1
Acetone	ND		10	3.0	ug/L			11/30/20 17:22	1
Benzene	ND		1.0	0.41	ug/L			11/30/20 17:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/20 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		77 - 120		11/30/20 17:22	1
Toluene-d8 (Surr)	92		80 - 120		11/30/20 17:22	1
4-Bromofluorobenzene (Surr)	94		73 - 120		11/30/20 17:22	1
Dibromofluoromethane (Surr)	95		75 - 123		11/30/20 17:22	1

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178751-1

Client Sample ID: GW-32S

Lab Sample ID: 480-178751-4

Date Collected: 11/25/20 10:43

Matrix: Water

Date Received: 11/25/20 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/20 17:46	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/20 17:46	1
Acetone	ND		10	3.0	ug/L			11/30/20 17:46	1
Benzene	ND		1.0	0.41	ug/L			11/30/20 17:46	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/20 17:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		11/30/20 17:46	1
Toluene-d8 (Surr)	89		80 - 120		11/30/20 17:46	1
4-Bromofluorobenzene (Surr)	93		73 - 120		11/30/20 17:46	1
Dibromofluoromethane (Surr)	98		75 - 123		11/30/20 17:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/02/20 15:01	12/09/20 00:34	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/02/20 15:01	12/09/20 00:34	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/02/20 15:01	12/09/20 00:34	1
Phenol	ND		5.0	0.39	ug/L		12/02/20 15:01	12/09/20 00:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	86		41 - 120	12/02/20 15:01	12/09/20 00:34	1
2-Fluorobiphenyl	97		48 - 120	12/02/20 15:01	12/09/20 00:34	1
2-Fluorophenol	63		35 - 120	12/02/20 15:01	12/09/20 00:34	1
Nitrobenzene-d5	94		46 - 120	12/02/20 15:01	12/09/20 00:34	1
Phenol-d5	47		22 - 120	12/02/20 15:01	12/09/20 00:34	1
p-Terphenyl-d14	76		60 - 148	12/02/20 15:01	12/09/20 00:34	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 11:02	12/05/20 01:36	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 11:02	12/05/20 01:36	1
Barium	0.057	J	0.0020	0.00070	mg/L		12/04/20 11:02	12/05/20 01:36	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 11:02	12/05/20 01:36	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 11:02	12/05/20 01:36	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 11:02	12/05/20 01:36	1
Iron	ND		0.050	0.019	mg/L		12/04/20 11:02	12/05/20 01:36	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 11:02	12/05/20 01:36	1
Magnesium	28.4		0.20	0.043	mg/L		12/04/20 11:02	12/05/20 01:36	1
Manganese	0.31		0.0030	0.00040	mg/L		12/04/20 11:02	12/05/20 01:36	1
Nickel	0.0015	J	0.010	0.0013	mg/L		12/04/20 11:02	12/05/20 01:36	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 11:02	12/05/20 01:36	1
Sodium	4.5		1.0	0.32	mg/L		12/04/20 11:02	12/05/20 01:36	1
Zinc	0.0017	J	0.010	0.0015	mg/L		12/04/20 11:02	12/05/20 01:36	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 17:16	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178751-1

Client Sample ID: GW-35S

Lab Sample ID: 480-178751-5

Date Collected: 11/25/20 11:45

Matrix: Water

Date Received: 11/25/20 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/20 18:11	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/20 18:11	1
Acetone	ND		10	3.0	ug/L			11/30/20 18:11	1
Benzene	ND		1.0	0.41	ug/L			11/30/20 18:11	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/20 18:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		77 - 120		11/30/20 18:11	1
Toluene-d8 (Surr)	92		80 - 120		11/30/20 18:11	1
4-Bromofluorobenzene (Surr)	93		73 - 120		11/30/20 18:11	1
Dibromofluoromethane (Surr)	94		75 - 123		11/30/20 18:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/02/20 15:01	12/09/20 01:03	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/02/20 15:01	12/09/20 01:03	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/02/20 15:01	12/09/20 01:03	1
Phenol	ND		5.0	0.39	ug/L		12/02/20 15:01	12/09/20 01:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	78		41 - 120	12/02/20 15:01	12/09/20 01:03	1
2-Fluorobiphenyl	95		48 - 120	12/02/20 15:01	12/09/20 01:03	1
2-Fluorophenol	64		35 - 120	12/02/20 15:01	12/09/20 01:03	1
Nitrobenzene-d5	94		46 - 120	12/02/20 15:01	12/09/20 01:03	1
Phenol-d5	49		22 - 120	12/02/20 15:01	12/09/20 01:03	1
p-Terphenyl-d14	77		60 - 148	12/02/20 15:01	12/09/20 01:03	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 11:02	12/05/20 01:40	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 11:02	12/05/20 01:40	1
Barium	0.13	J	0.0020	0.00070	mg/L		12/04/20 11:02	12/05/20 01:40	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 11:02	12/05/20 01:40	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 11:02	12/05/20 01:40	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 11:02	12/05/20 01:40	1
Iron	0.020	J	0.050	0.019	mg/L		12/04/20 11:02	12/05/20 01:40	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 11:02	12/05/20 01:40	1
Magnesium	31.8		0.20	0.043	mg/L		12/04/20 11:02	12/05/20 01:40	1
Manganese	0.074		0.0030	0.00040	mg/L		12/04/20 11:02	12/05/20 01:40	1
Nickel	ND		0.010	0.0013	mg/L		12/04/20 11:02	12/05/20 01:40	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 11:02	12/05/20 01:40	1
Sodium	3.3		1.0	0.32	mg/L		12/04/20 11:02	12/05/20 01:40	1
Zinc	0.0029	J	0.010	0.0015	mg/L		12/04/20 11:02	12/05/20 01:40	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 17:17	1

Eurofins TestAmerica, Buffalo

# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178751-1

Client Sample ID: GW-26D

Lab Sample ID: 480-178751-6

Date Collected: 11/25/20 12:55

Matrix: Water

Date Received: 11/25/20 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/20 18:36	1
<b>1,2-Dichloroethene, Total</b>	<b>0.88</b>	<b>J</b>	2.0	0.81	ug/L			11/30/20 18:36	1
Acetone	ND		10	3.0	ug/L			11/30/20 18:36	1
Benzene	ND		1.0	0.41	ug/L			11/30/20 18:36	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/20 18:36	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		77 - 120					11/30/20 18:36	1
Toluene-d8 (Surr)	85		80 - 120					11/30/20 18:36	1
4-Bromofluorobenzene (Surr)	87		73 - 120					11/30/20 18:36	1
Dibromofluoromethane (Surr)	96		75 - 123					11/30/20 18:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/02/20 15:01	12/09/20 01:32	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/02/20 15:01	12/09/20 01:32	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/02/20 15:01	12/09/20 01:32	1
Phenol	ND		5.0	0.39	ug/L		12/02/20 15:01	12/09/20 01:32	1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	82		41 - 120				12/02/20 15:01	12/09/20 01:32	1
2-Fluorobiphenyl	96		48 - 120				12/02/20 15:01	12/09/20 01:32	1
2-Fluorophenol	69		35 - 120				12/02/20 15:01	12/09/20 01:32	1
Nitrobenzene-d5	91		46 - 120				12/02/20 15:01	12/09/20 01:32	1
Phenol-d5	52		22 - 120				12/02/20 15:01	12/09/20 01:32	1
p-Terphenyl-d14	77		60 - 148				12/02/20 15:01	12/09/20 01:32	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 11:02	12/05/20 01:44	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 11:02	12/05/20 01:44	1
<b>Barium</b>	<b>0.11</b>	<b>J</b>	0.0020	0.00070	mg/L		12/04/20 11:02	12/05/20 01:44	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 11:02	12/05/20 01:44	1
<b>Chromium</b>	<b>0.0011</b>	<b>J</b>	0.0040	0.0010	mg/L		12/04/20 11:02	12/05/20 01:44	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 11:02	12/05/20 01:44	1
<b>Iron</b>	<b>2.2</b>		0.050	0.019	mg/L		12/04/20 11:02	12/05/20 01:44	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 11:02	12/05/20 01:44	1
<b>Magnesium</b>	<b>15.6</b>		0.20	0.043	mg/L		12/04/20 11:02	12/05/20 01:44	1
<b>Manganese</b>	<b>0.32</b>		0.0030	0.00040	mg/L		12/04/20 11:02	12/05/20 01:44	1
<b>Nickel</b>	<b>0.0018</b>	<b>J</b>	0.010	0.0013	mg/L		12/04/20 11:02	12/05/20 01:44	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 11:02	12/05/20 01:44	1
<b>Sodium</b>	<b>288</b>		1.0	0.32	mg/L		12/04/20 11:02	12/05/20 01:44	1
Zinc	ND		0.010	0.0015	mg/L		12/04/20 11:02	12/05/20 01:44	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 17:19	1

Eurofins TestAmerica, Buffalo



# Client Sample Results

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178751-1

Client Sample ID: GW-33S

Lab Sample ID: 480-178751-7

Date Collected: 11/25/20 13:53

Matrix: Water

Date Received: 11/25/20 15:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/30/20 19:01	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/30/20 19:01	1
Acetone	ND		10	3.0	ug/L			11/30/20 19:01	1
Benzene	ND		1.0	0.41	ug/L			11/30/20 19:01	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/30/20 19:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		77 - 120		11/30/20 19:01	1
Toluene-d8 (Surr)	91		80 - 120		11/30/20 19:01	1
4-Bromofluorobenzene (Surr)	97		73 - 120		11/30/20 19:01	1
Dibromofluoromethane (Surr)	101		75 - 123		11/30/20 19:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		12/02/20 15:01	12/09/20 02:01	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		12/02/20 15:01	12/09/20 02:01	1
Bis(2-ethylhexyl) phthalate	ND		5.0	2.2	ug/L		12/02/20 15:01	12/09/20 02:01	1
Phenol	ND		5.0	0.39	ug/L		12/02/20 15:01	12/09/20 02:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	84		41 - 120	12/02/20 15:01	12/09/20 02:01	1
2-Fluorobiphenyl	101		48 - 120	12/02/20 15:01	12/09/20 02:01	1
2-Fluorophenol	71		35 - 120	12/02/20 15:01	12/09/20 02:01	1
Nitrobenzene-d5	99		46 - 120	12/02/20 15:01	12/09/20 02:01	1
Phenol-d5	55		22 - 120	12/02/20 15:01	12/09/20 02:01	1
p-Terphenyl-d14	80		60 - 148	12/02/20 15:01	12/09/20 02:01	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		12/04/20 11:02	12/05/20 01:48	1
Arsenic	ND		0.010	0.0056	mg/L		12/04/20 11:02	12/05/20 01:48	1
Barium	0.070	J	0.0020	0.00070	mg/L		12/04/20 11:02	12/05/20 01:48	1
Cadmium	ND		0.0010	0.00050	mg/L		12/04/20 11:02	12/05/20 01:48	1
Chromium	ND		0.0040	0.0010	mg/L		12/04/20 11:02	12/05/20 01:48	1
Copper	ND		0.010	0.0016	mg/L		12/04/20 11:02	12/05/20 01:48	1
Iron	ND		0.050	0.019	mg/L		12/04/20 11:02	12/05/20 01:48	1
Lead	ND		0.0050	0.0030	mg/L		12/04/20 11:02	12/05/20 01:48	1
Magnesium	32.7		0.20	0.043	mg/L		12/04/20 11:02	12/05/20 01:48	1
Manganese	0.0021	J	0.0030	0.00040	mg/L		12/04/20 11:02	12/05/20 01:48	1
Nickel	ND		0.010	0.0013	mg/L		12/04/20 11:02	12/05/20 01:48	1
Silver	ND		0.0030	0.0017	mg/L		12/04/20 11:02	12/05/20 01:48	1
Sodium	2.3		1.0	0.32	mg/L		12/04/20 11:02	12/05/20 01:48	1
Zinc	0.0015	J	0.010	0.0015	mg/L		12/04/20 11:02	12/05/20 01:48	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		12/04/20 12:58	12/04/20 17:25	1

Eurofins TestAmerica, Buffalo

**APPENDIX B**

**SUPPORT DOCUMENTATION**

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

## Chain of Custody Record

**eurofins** Environment Testing  
 America

<b>Client Information</b>		Sampler: <u>TU/RM</u>		Lab PM: <u>Schove, John R</u>	Carrier Tracking No(s):	COC No: <u>480-153495-13273.1</u>					
Client Contact: <u>Ms. Ann Marie Kropovitch</u>		Phone: <u>716-856-5636</u>		E-Mail: <u>John.Schove@Eurofinset.com</u>	State of Origin: <u>NY</u>	Page: <u>1 of 2</u>					
Company: <u>AECOM</u>		PWSD:		Job #:							
Address: <u>257 West Genesee Street Suite 400</u>		Analysis Requested									
City: <u>Buffalo</u>		Due Date Requested:									
State, Zip: <u>NY, 14202-2657</u>		TAT Requested (days): <u>Standard</u>									
Phone: <u></u>		Compliance Project: <u>Yes</u> <u>No</u>									
Email: <u>ann.marie.kropovitch@aecom.com</u>		PO #: <u>111666 Line 2</u>									
Project Name: <u>Pohl Brothers Landfill GW Monitoring</u>		WO #: <u>60411174.11175616.00000</u>									
Site: <u></u>		Project #: <u>48002609</u>									
		SSOW#: <u></u>									
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010C, 7470A	8270D - Semivolatiles - Pfohl List	8260C - Volatiles - Pfohl List	Total Number of Containers	Special Instructions/Note:
<u>GW-075</u>	<u>11/23/20</u>	<u>1020</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>	
<u>GW-07D</u>	<u>11/23/20</u>	<u>1015</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>	
<u>GW-015</u>	<u>11/23/20</u>	<u>1250</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>6</u>	
<u>GW-01D</u>	<u>11/23/20</u>	<u>1425</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>6</u>	
<u>GW-045</u>	<u>11/23/20</u>	<u>1505</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>	
<u>GW-04D</u>	<u>11/23/20</u>	<u>1635</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>6</u>	
<u>GW-045</u>	<u>11/23/20</u>	<u>1645</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>	
<u>GW-075</u>	<u>11/24/20</u>	<u>0815</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>	
<u>GW-07D</u>	<u>11/24/20</u>	<u>0825</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>3</u>	
<u>GW-345</u>	<u>11/24/20</u>	<u>0937</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>6</u>	
<u>GW-03D</u>	<u>11/24/20</u>	<u>1105</u>	<u>G</u>	<u>Water</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>6</u>	
<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)											
<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months											
Special Instructions/OC Requirements:											
Empty Kit Relinquished by: <u>[Signature]</u>		Date: <u>11/24/20</u>		Time: <u>1630</u>		Company: <u>AECOM</u>		Received by: <u>[Signature]</u>		Date/Time: <u>11/24/20 1630</u>	
Relinquished by: <u>[Signature]</u>		Date/Time: <u>11/24/20</u>		Time: <u>1630</u>		Company: <u>AECOM</u>		Received by: <u>[Signature]</u>		Date/Time: <u>11/24/20 1630</u>	
Relinquished by: <u>[Signature]</u>		Date/Time: <u>11/24/20</u>		Time: <u>1630</u>		Company: <u>AECOM</u>		Received by: <u>[Signature]</u>		Date/Time: <u>11/24/20 1630</u>	
Custody Seals Intact: <u>Yes</u> <u>No</u>		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <u>3.3, 2.0, 2.2 #1 Jk</u>							



Ver: 11/01/2020

# Case Narrative

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178676-1

## Job ID: 480-178676-1

### Laboratory: Eurofins TestAmerica, Buffalo

#### Narrative

#### Job Narrative 480-178676-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/24/2020 4:30 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.2° C, 2.6° C and 3.3° C.

#### GC/MS VOA

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

#### GC/MS Semi VOA

Method 8270D: The continuing calibration verification (CCV) analyzed in batch 480-562406 was outside the method criteria for the following analyte(s): 2,4,6-Tribromophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

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

#### Metals

Method 6010C: The interference check standard solution (ICSA) associated with the following samples showed results for Barium at a level greater than 2 times the limit of detection (LOD). It is believed that the solution contains trace impurities of this element and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution. GW-01S (480-178676-3), GW-01D (480-178676-4), GW-04D (480-178676-6), GW-04S (480-178676-7), GW-07S (480-178676-8), GW-07D (480-178676-9), GW-34S (480-178676-10), GW-03D (480-178676-11), GW-03D (480-178676-11[MS]), GW-03D (480-178676-11[MSD]), GW-08D (480-178676-12), FD-112420 (480-178676-13), GW-08SR (480-178676-14), GW-28S (480-178676-15), GW-29S (480-178676-16), (LCS 480-561863/2-A), (MB 480-561863/1-A), (480-178676-C-11-A PDS) and (480-178676-C-11-A SD ^5)

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

#### Organic Prep

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



## Chain of Custody Record



Client Information		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact: Ms. Ann Marie Kropovitch Company: AECOM		Tom Urban/Rob Murphy Phone: 716-850-5636		John Schove, John R E-Mail: John.Schove@Eurofins.com		State of Origin: NY		480-153495-13273.3	
Address: 257 West Genesee Street Suite 400 City: Buffalo State, Zip: NY, 14202-2657 Phone: 111666 Line 2 Email: ann.marie.kropovitch@aecom.com Project Name: Pohl Brothers Landfill GW Monitoring Site:		Due Date Requested: TAT Requested (days): Standard Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: 111666 Line 2 WO #: 60411174.11175616.00000 Project #: 48002609 SSOW#:		Analysis Requested		State of Origin: NY		Page: 1 of 1	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by: Relinquished by: Relinquished by: Relinquished by:		Date: 11/25/20 11/25/20 11/25/20 11/25/20		Time: 1500 1500 1500 1500		Company: AECOM AECOM AECOM AECOM	
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=other, A=air)	
GW-303		11/25/20		0835		G		Water	
GW-313		11/25/20		0435		G		Water	
TRIP BLANK TB-112520		11/25/20		-		G		Water	
TRIP BLANK T.V.		11/25/20		-		G		Water	
GW-325		11/25/20		1043		G		water	
GW-355		11/25/20		1145		G		water	
GW-260		11/25/20		1255		G		water	
GW-335		11/25/20		1353		G		water	
Special Instructions/Note:		Total Number of		Special Instructions/Note:		Total Number of		Special Instructions/Note:	
GW-303		11/25/20		0835		G		Water	
GW-313		11/25/20		0435		G		Water	
TRIP BLANK TB-112520		11/25/20		-		G		Water	
TRIP BLANK T.V.		11/25/20		-		G		Water	
GW-325		11/25/20		1043		G		water	
GW-355		11/25/20		1145		G		water	
GW-260		11/25/20		1255		G		water	
GW-335		11/25/20		1353		G		water	

# Case Narrative

Client: AECOM  
Project/Site: Groundwater Monitoring

Job ID: 480-178751-1

## Job ID: 480-178751-1

Laboratory: Eurofins TestAmerica, Buffalo

### Narrative

#### Job Narrative 480-178751-1

### Comments

No additional comments.

### Receipt

The samples were received on 11/25/2020 3:00 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.9° C.

### GC/MS VOA

Method 8260C: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: GW-30S (480-178751-1). Elevated reporting limits (RLs) are provided.

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

### GC/MS Semi VOA

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

### Metals

Method 6010C: The interference check standard solution (ICSA) associated with the following samples showed results for Barium at a level greater than 2 times the limit of detection (LOD). It is believed that the solution contains trace impurities of this element / these elements and the results are not due to matrix interference. These results are consistent with those found by the manufacturer of the ICSA solution. GW-30S (480-178751-1), GW-31S (480-178751-2), GW-32S (480-178751-4), GW-35S (480-178751-5), GW-26D (480-178751-6), GW-33S (480-178751-7), (LCS 480-561887/2-A), (LCSD 480-561887/3-A) and (MB 480-561887/1-A)

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

### Organic Prep

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

**ATTACHMENT C**

**IC/EC CERTIFICATION**





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.	915043		
Site Name <b>Pfohl Brothers Landfill</b>			
Site Address: Aero Drive and Transit Road      Zip Code: 14225			
City/Town: Cheektowaga			
County: Erie			
Site Acreage: 94.000			
Reporting Period: February 12, 2020 to February 12, 2021			
		YES	NO
1.	Is the information above correct?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.</b>			
5.	Is the site currently undergoing development?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Box 2	
		YES	NO
6.	Is the current site use consistent with the use(s) listed below? Closed Landfill	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7.	Are all ICs in place and functioning as designed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**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
---	------

## Description of Institutional Controls

<u>Parcel</u>	<u>Owner</u>	<u>Institutional Control</u>
81.04-1-26	William A. Pfohl	Ground Water Use Restriction Soil Management Plan Landuse Restriction Building Use Restriction Surface Water Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

81.04-1-27	Paul Pfohl
------------	------------

Ground Water Use Restriction  
Landuse Restriction

Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

81.04-1-28.1	Paul Pfohl
--------------	------------

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

- A. Entire Site: i) Groundwater use prohibition, ii) Surface water use prohibition.
- B. Capped Area: i) Fencing, ii) No Excavation, iii) Planting trees/shrubs prohibited.
- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

81.04-2-10.1	Paul Pfohl
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Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**81.04-2-11**

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**81.04-2-9.1**

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**82.03-4-10**

Elizabeth L. McBride

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**82.03-4-11**

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**82.03-4-5**

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**82.03-4-6**

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**82.03-4-8**

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**82.03-4-9.11**

Aero Land, Inc. c/o Jerome Hirsh

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

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- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

**82.03-4-9.12**

Stuart Jenkins

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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**82.03-4-9.2**

Aero Land, Inc. c/o Jerome Hirsh

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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- C. Cleared Portion within the Perimeter Barrier System: i) Only Commercial/Industrial Development is allowed. Construction restrictions.

**Box 4**

**Description of Engineering Controls**

Parcel

Engineering Control

**81.04-1-26**

Vapor Mitigation  
Fencing/Access Control  
Cover System  
Leachate Collection

**81.04-1-27**

Cover System  
Leachate Collection  
Fencing/Access Control  
Vapor Mitigation

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**81.04-1-28.1**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

Parcel

Engineering Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**81.04-2-10.1**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**81.04-2-11**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**81.04-2-9.1**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**82.03-4-10**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

**82.03-4-11**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**82.03-4-5**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**82.03-4-6**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**82.03-4-8**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**82.03-4-9.11**

Vapor Mitigation  
Cover System

Parcel

Engineering Control

Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**82.03-4-9.12**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**82.03-4-9.2**

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

**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 complete.

YES NO

☒ ☐

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

☒ ☐

**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. 915043

Box 6

O & M MANAGER  
**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 Patrick T. Bowen, P.E. at Town of Cheektowaga  
275 Alexander Ave, Cheektowaga, NY 14211  
print name print business address

am certifying as Site O & M Manager (Owner or Remedial Party)

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

Patrick T. Bowen  
Signature of Owner, Remedial Party, or Designated Representative  
Rendering Certification Site O & M Provider/Manager

3/18/21  
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 Patrick T. Bowen, P.E. at Town of Cheektowaga  
print name 275 Alexander Ave, Cheektowaga, NY 14211  
print business address

am certifying as a Professional Engineer for the Town of Cheektowaga  
(~~Owner or Remedial Party~~) (Site O & M Provider/Manager)

Patrick T. Bowen

Signature of Professional Engineer, for the ~~Owner or Remedial Party~~  
Site O & M Provider/Manager



3/18/21

Date