

PERIODIC REVIEW REPORT 2015

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

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Prepared for:

TOWN OF CHEEKTOWAGA

ENGINEERING DEPARTMENT

275 ALEXANDER AVE

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MAY 2016

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FIGURES

Figure 2-1 Site Plan

ATTACHMENTS

Attachment A January 2015 – June 2015 Semi Annual Report and Data Applicability Report
Attachment B July 2015 – December 2015 Semi Annual Report and Data Applicability Report
Attachment C IC/EC Certification

1.0 INTRODUCTION

1.1 Background

This Pfohl Brothers Landfill Site (No. 915043) is a 130 acre landfill located on the north and south sides of Aero Drive in the Town of Cheektowaga, 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 materials 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 and Semi-Volatile Organic Compounds, and metals at various concentrations. 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 removed 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 commenced 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, Maintenance and Monitoring (OM&M) Plan was approved in March 2006 and is being implemented by the Town of Cheektowaga.

1.2 Effectiveness of Remedial Program

During 2015, the capping and remedial action remedy continued to successfully prevent exposure of buried waste to human 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 OM&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 intersection of Interstate 90 and 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 comprising 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 wetwells. Leachate and groundwater collected in the wetwells is pumped via submersible pumps in the wetwells to a fifteen-inch sanitary sewer line on the south side of Aero Drive. This sanitary sewer, installed as part of the remedy, connects to the existing fifteen-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 (BSA).

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.

OM&M commenced in 2002 upon completion of construction. These efforts are performed in accordance with the OM&M plan issued as draft in 2002 and approved as final in 2006. Based upon the results of the first three years of surface water, sediment and monitoring results, 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 and SVOC parameters and metals) and 2007 (discontinuing dioxin and radionuclide analyses).

3.0 REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

The principal elements of the OM&M are:

- ▶ Groundwater Monitoring

- ▶ Surface Water/Sediment Sampling
- ▶ Effluent Monitoring
- ▶ Hydraulic Monitoring
- ▶ Wetlands Monitoring
- ▶ General physical and mechanical maintenance.

The Town of Cheektowaga submits OM&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 2015 are attached to this Periodic Review Report. A summary of the findings of performance, effectiveness, and protectiveness for 2015 is presented in the sections below.

3.1 Groundwater Monitoring

As the OM&M contractor for the Town of Cheektowaga, URS Corporation (URS) has performed twenty-four rounds of semi-annual groundwater sampling. The most recent sampling was conducted in May and November 2015. Results of this sampling continue to show no impacts to groundwater from the landfill. In brief, no VOCs were detected above Class GA water quality standards. No SVOCs were detected at concentrations above the Class GA water quality standards at any location during the May 2015 sampling event. However, bis(2-ethylhexyl)phthalate (a known laboratory contaminant) was detected slightly above Class GA water quality standards at one well location in November 2015 (GW-34S)

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. The only other metals detected above Class GA standards in 2015 were chromium in May 2015 and arsenic and chromium in November 2015. No significant changes in metals concentrations were observed when compared to previous sampling event analytical results and were within the historical range of concentrations observed for these metals. The attached semi-annual reports present the 2015 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 approved OM&M plan and as approved by NYSDEC.

3.3 Effluent Monitoring

URS performed effluent monitoring on a quarterly basis during 2015. The results of the sampling are reported in the attached semi-annual reports. The parameter values in the effluent have always been well below the discharge criteria for all quarterly sampling events conducted since the start of the OM&M.

3.4 Hydraulic Monitoring

URS performed hydraulic monitoring on a quarterly basis during 2015. Hydraulic monitoring is performed through measuring the water elevation in each of the six wetwells 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 wetwell or manhole. Hydraulic control is demonstrated by an inward hydraulic gradient from the monitoring wells to the collection system. The hydraulic gradient has been towards the groundwater collection system for every quarterly measurement taken during 2015. Therefore, these data demonstrate that the collection system is operating as designed.

3.5 Wetlands Monitoring

The monitoring of wetlands mitigation has not gone as originally planned in the OM&M manual. 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 wetland.

3.6 General Physical and Mechanical Maintenance

The Town of Cheektowaga performs the necessary general physical and mechanical maintenance 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 2015 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 institutional and engineering controls in place and they are functioning as intended. These are discussed below.

4.1 Institutional Controls

Institutional controls (ICs) consist of restrictions on land use for the various parcels that comprise this site. The parcels subject and their restrictions are listed on the attached Site Management Periodic Review Report Notice Institutional and Engineering Controls Certification Form. 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

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. These ECs remain in effect, as certified in Attachment C.

5.0 OPERATION & MAINTENANCE AND MONITORING PLAN COMPLIANCE

The components of the OM&M Plan are discussed above in Section 3.0. Summaries of OM&M activities performed during 2015 are provided in the attached semi-annual reports. The

OM&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. Sampling 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. No changes to the OM&M for this site are recommended.

6.0 CONCLUSIONS AND RECOMMENDATIONS

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

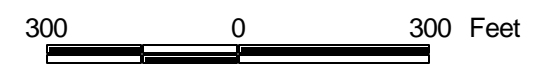
FIGURES




N:\1172700\000000\GIS\ArcView\pfohl.apr SITE BOUNDARY & WELL LOCATIONS
2/1/2010

Legend

-  Monitoring Well Location
-  Staff Gauge Location
-  Manhole Location
-  Wet Well Location
-  Site Boundary



PFOHL BROTHERS LANDFILL SITE BOUNDARY AND MONITORING LOCATIONS	
	FIGURE 2-1

ATTACHMENTS

ATTACHMENT A

January 2015 – June 2015

Semi Annual Report

And

Data Applicability Report

**SEMI ANNUAL REPORT
OPERATION AND MAINTENANCE
JANUARY 2015 TO JUNE 2015
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
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Prepared for:

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

**NOVEMBER
2015**



November 18, 2015

Mr. Jaspal Singh Walia, P.E.
New York State Department of Environmental Conservation
270 Michigan Ave.
Buffalo, NY 14203

**Re: Semi-Annual Report January 2015 – June 2015
Pfohl Brothers Landfill, Town of Cheektowaga, New York**

Dear Mr. Walia:

Enclosed is one copy of the twenty-third Semi-Annual Report for the Pfohl Brothers Landfill in Cheektowaga, New York. A copy has also been sent to Ms. Pamela Tames, P.E. of the United States Environmental Protection Agency. Also enclosed is the Data Applicability Report for laboratory analyses associated with the Semi-Annual Report. PDF copies of the reports are also enclosed.

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

Sincerely,

URS CORPORATION

A handwritten signature in black ink, appearing to read "Jon Sundquist".

Jon Sundquist, Ph.D.
Project Manager

Enclosures

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

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Table 3-2	Approved Revision of Table 3.2 from the O&M Plan

FIGURES

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

APPENDICES

Appendix A	Example Daily Inspection Sheets
Appendix B	Monthly Flow Summaries (January 2015 – June 2015)
Appendix C	Hydraulic Monitoring Tables
Appendix D	Groundwater Purge and Sample Collection Logs
Appendix E	Groundwater Trend Analysis
Appendix F	BSA Permit No. 13-04-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 manual was not approved by the NYSDEC until March 10, 2006. However, the Town of Cheektowaga and its consultant (URS Corporation – New York) 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 report is the twenty-third 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 2015 through June 2015 include the following actions.

- The amount of groundwater discharged through the collection system was recorded on a daily basis. 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. Examples of the daily inspection sheet are attached in Appendix A.
- Total cumulative effluent flow rates and volumes were summarized on a monthly basis starting in February 2015. The monthly totals for the period of January 2015 through June 2015, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shut down during wet weather flow conditions as necessary at various times throughout the year to reduce hydraulic loading to the sewer. 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 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.
- Replaced surge suppressors and fuses as needed for pump station instrumentation equipment.

3.0 MONITORING ACTIVITIES

The Town of Cheektowaga retained URS Corporation to perform monitoring activities as outlined in Section 3.1 of the O&M plan. During the period of January 2004 through the present, URS performed 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) on a quarterly basis. URS also performed the twenty-third semi-annual groundwater quality monitoring event (Section 3.1.1.3 of the O&M plan). 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. Table 1 of that appendix lists the measured elevations. Table 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

The twenty-third semi-annual round of groundwater sampling was conducted between May 6, 2015 and May 8, 2015. All 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 at most monitoring well locations.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on March 27, 2015. The PDBs were removed from the wells during the sampling event and their contents were analyzed for VOCs. Following removal of the PDBs the three wells were purged dry. These wells were sampled for the other required parameters after their water levels recovered.

Purge logs and sampling summary sheets are provided in Appendix D. Measurements of pH, specific conductivity, temperature, dissolved oxygen, oxidation reduction potential, and turbidity taken during purging are provided in Appendix D. The samples were packed with ice in coolers and transported under chain-of-custody (CoC) control to Test America Laboratories of Amherst, New York.

Table 3-1 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. Groundwater samples were analyzed for the parameters 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 (that table is included in this report as Table 3-2).

Results

No VOCs or SVOCs were detected at concentrations above the Class GA water quality standards at any location.

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. In addition, chromium was detected at a concentration exceeding its Class GA standard in well GW-08D.

Comparison to Historical Results

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

Sodium concentrations were generally higher in bedrock wells (GW-01D, GW-03D, GW-08D and GW-26D) and shallow wells adjacent to roads (GW-01S and GW-30S). The sodium concentration was also elevated in GW-08SR. The higher sodium concentrations in the bedrock wells may be attributed to the local bedrock composition and the elevated concentration in the shallow wells may be the result of seasonal road de-icing activities.

Trend Analysis

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented 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 twenty-three semi-annual sampling events except as described below. Figure E-2 for GW-01S, indicates a recent upward trend in manganese concentrations, and a downward trend in sodium concentration over the twenty-three sampling events. Figure E-3 for GW-03D indicates a downward trend for manganese. Figure E-4 indicates upward trends for magnesium and sodium in GW-03S since monitoring began. Figure E-5 for GW-04D, indicates a slight increasing trend for magnesium. Figure E-7 for GW-07D shows concentrations for chromium, iron, and lead were significantly lower the last three events after increasing steadily for the previous eleven events. Figure E-9 for GW-08D shows a decreasing trend for both iron and manganese since monitoring began. Figure E-10 for GW-08SR shows an upward trend in sodium concentrations since monitoring began. Figure E-11 for GW-26D indicates downward trends for iron and manganese and an upward trend for sodium. Figures E-12 and E-13 for GW-28S and GW-29S, respectively, indicate a decreasing trend for sodium since monitoring began. Figure E-14 for GW-30S indicates a downward trend for magnesium and sodium. Figure E-16 shows there is a seasonal variation in sodium concentration in monitoring well GW-32S. Figure E-18 for GW-34S indicates a seasonal fluctuation in manganese concentration.

Laboratory Report

The groundwater analytical data package was prepared by Test America in accordance with NYSDEC Category A deliverable requirements. It was reviewed for compliance with analytical method requirements and the following guidelines: *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014; and *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-13-001, August 2014. Qualifications applied to the data include “J/UJ” (estimated concentration/estimated quantitation limit), “J+” (estimated concentration with possible high bias), “J-” (estimated concentration with possible low bias), and “U” (not detected).

A Data Applicability Report (DAR) was prepared 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 2015 is submitted separately from this report.

3.3 Groundwater Discharge Monitoring

URS completed two quarterly sampling events (March 2015 and June 2015) of the groundwater collection system discharge since the previous semi-annual report. The sampling was performed in accordance with the requirements of Discharge Permit No. 13-04-CH016 between the Buffalo Sewer Authority and the Town of Cheektowaga. A copy of Permit No. 13-04-CH016 is included as Appendix F.

During the sampling events in March 2015 and June 2015, each regulated parameter was below the limits set by the permit. Copies of the data summary tables that were included with the monitoring reports are included as Appendix G.

3.4 Monitoring Well Inspections

During the May 2015 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing damage to the risers on GW-07D, GW-01S, and GW-01D. The monitoring well inspection logs may be found in Appendix H.

4.0 SUMMARY AND RECOMMENDATIONS

General Maintenance: The Town 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 access to the control building during winter months 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 hydraulic gradient is from outside the landfill towards the collection trench. Continued quarterly monitoring is recommended.

Groundwater Quality Monitoring: Groundwater sample results indicate that only low levels of organic compounds and metals are present. Similar concentrations of most parameters were found during previous sampling events. The twenty-fourth round of groundwater sampling will be conducted in November 2015. 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 even using low flow sampling techniques.

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


TABLES

TABLE 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2015

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			05/08/15	05/08/15	05/06/15	05/06/15	05/07/15
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			1.5 J		
1,4-Dichlorobenzene	UG/L	3			2.1 J		
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.072	0.16	0.072	0.098	0.085
Cadmium	MG/L	0.005		0.0013		0.0015	
Chromium	MG/L	0.05	0.0053			0.013	
Copper	MG/L	0.2				0.0019 J	
Iron	MG/L	0.3	0.48	6.8	1.6	1.5	0.029 J
Lead	MG/L	0.025					
Magnesium	MG/L	35	34.4	20.0	14.6	114	75.0
Manganese	MG/L	0.3	0.019	1.4	0.33	0.16	0.020
Nickel	MG/L	0.1			0.0025 J	0.057	
Sodium	MG/L	20	102	113	180	67.1	92.6
Zinc	MG/L	2		0.0041 J		0.017	

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2015

Location ID			GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Sample ID			GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/07/15	05/07/15	05/06/15	05/07/15	05/06/15
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5		NA		NA	
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3	NA		NA		NA
1,4-Dichlorobenzene	UG/L	3	NA		NA		NA
Metals							
Arsenic	MG/L	0.025	NA		NA		NA
Barium	MG/L	1	NA	0.12	NA	0.068	NA
Cadmium	MG/L	0.005	NA	0.00053 J	NA	0.00081 J	NA
Chromium	MG/L	0.05	NA	0.0075	NA	0.028	NA
Copper	MG/L	0.2	NA	0.0058 J	NA	0.0038 J	NA
Iron	MG/L	0.3	NA	4.2	NA	0.54	NA
Lead	MG/L	0.025	NA		NA	0.011	NA
Magnesium	MG/L	35	NA	28.2	NA	34.1	NA
Manganese	MG/L	0.3	NA	0.14	NA	0.037	NA
Nickel	MG/L	0.1	NA	0.0076 J	NA	0.022	NA
Sodium	MG/L	20	NA	32.8	NA	81.8	NA
Zinc	MG/L	2	NA	0.019	NA	0.011	NA

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2015

Location ID			GW-07S	GW-08D	GW-08SR	GW-26D	GW-26D
Sample ID			GW-07S	GW-08D	GW-08SR	FD-050715	GW-26D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/07/15	05/06/15	05/06/15	05/07/15	05/07/15
Parameter	Units	*				Field Duplicate (1-1)	
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5	NA			1.2 J	1.2 J
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
Metals							
Arsenic	MG/L	0.025			0.0058 J		
Barium	MG/L	1	0.31	0.11	0.34	0.14	0.14
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.0028 J	0.10	0.0041		
Copper	MG/L	0.2		0.0018 J		0.0017 J	
Iron	MG/L	0.3	0.12	1.2	26.4	4.8	4.7
Lead	MG/L	0.025					
Magnesium	MG/L	35	38.0	22.0	48.5	19.0	18.7
Manganese	MG/L	0.3	0.067	0.053	1.3	0.50	0.49
Nickel	MG/L	0.1	0.061	0.019	0.0038 J	0.0018 J	0.0019 J
Sodium	MG/L	20	57.5	290	352	351	341
Zinc	MG/L	2		0.0086 J	0.0045 J	0.014 J	

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2015**

Location ID			GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Sample ID			GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/07/15	05/08/15	05/08/15	05/08/15	05/08/15
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
Metals							
Arsenic	MG/L	0.025		0.013			
Barium	MG/L	1	0.076	0.20	0.18	0.087	0.054
Cadmium	MG/L	0.005	0.0014				
Chromium	MG/L	0.05				0.0011 J	
Copper	MG/L	0.2					
Iron	MG/L	0.3	0.39	12.7	13.6	1.0	0.043 J
Lead	MG/L	0.025					
Magnesium	MG/L	35	27.0	74.2	38.1	28.5	32.0
Manganese	MG/L	0.3	0.94	0.64	1.8	0.97	0.48
Nickel	MG/L	0.1	0.0024 J			0.0031 J	0.0015 J
Sodium	MG/L	20	10.9	9.7	228	4.8	3.7
Zinc	MG/L	2				0.012	0.0043 J

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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 3-1
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2015

Location ID			GW-33S	GW-34S	GW-35S
Sample ID			GW-33S	GW-34S	GW-35S
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			05/07/15	05/07/15	05/07/15
Parameter	Units	*			
Volatile Organic Compounds					
1,2-Dichloroethene (total)	UG/L	5			
Semivolatile Organic Compounds					
1,3-Dichlorobenzene	UG/L	3			
1,4-Dichlorobenzene	UG/L	3			
Metals					
Arsenic	MG/L	0.025			
Barium	MG/L	1	0.031	0.13	0.084
Cadmium	MG/L	0.005			
Chromium	MG/L	0.05	0.0012 J	0.0023 J	
Copper	MG/L	0.2	0.0022 J	0.0030 J	
Iron	MG/L	0.3		0.53	0.058
Lead	MG/L	0.025			
Magnesium	MG/L	35	38.1	53.3	22.7
Manganese	MG/L	0.3	0.041	0.48	0.17
Nickel	MG/L	0.1	0.0016 J	0.0058 J	0.0015 J
Sodium	MG/L	20	3.3	24.8	2.5
Zinc	MG/L	2			

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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

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 3-2 (continued)

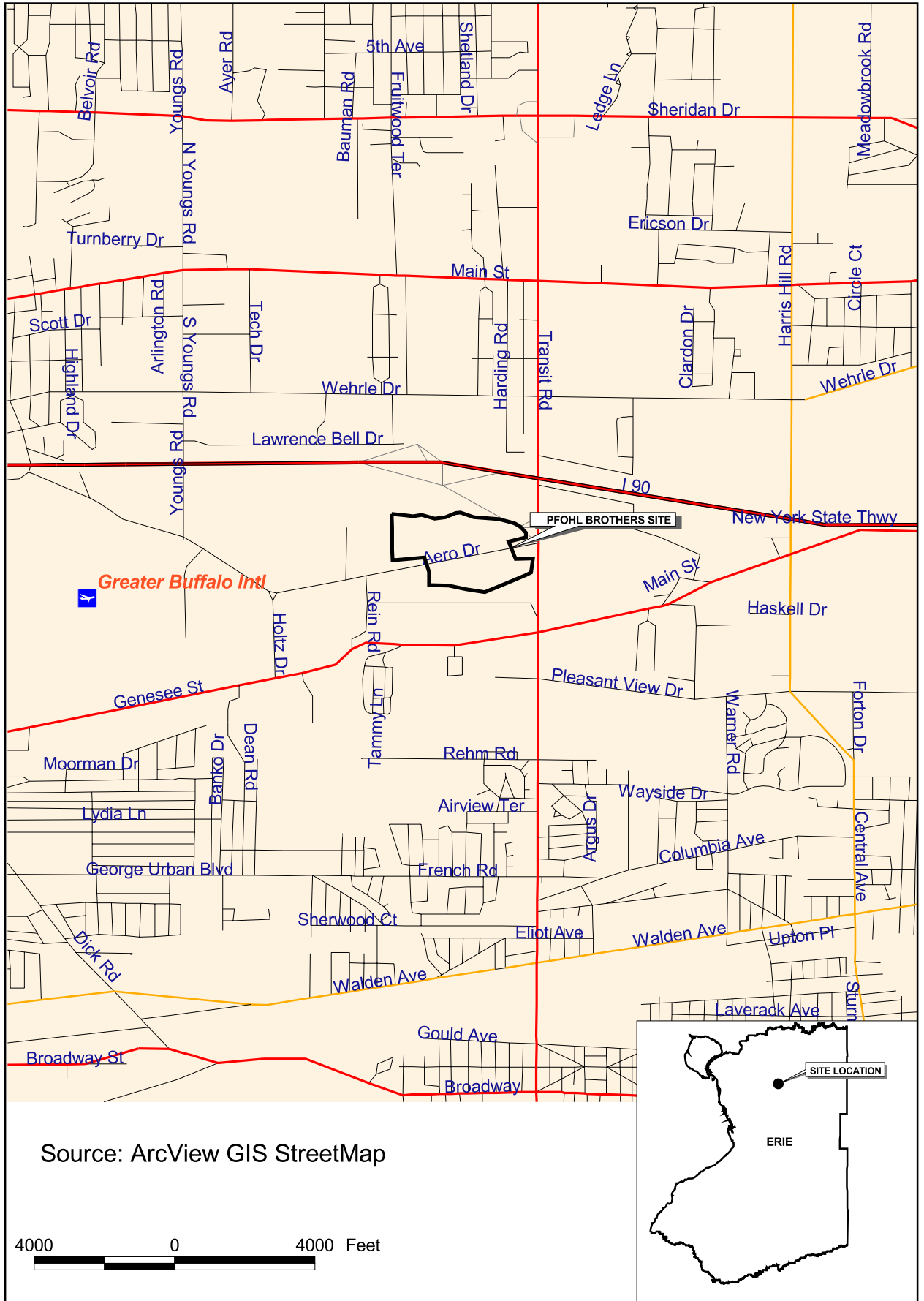
APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

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

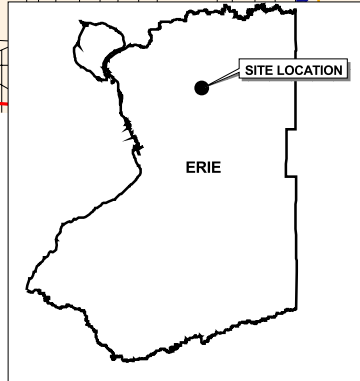
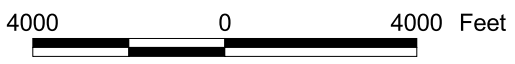
PARAMETERS (cont'd)

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

FIGURES



Source: ArcView GIS StreetMap



n:\1172700.0000\gis\arcview\pfohl_site\location.apr Pfohl Bros Location Map 12/15/2005







PFOHL BROTHERS LANDFILL SITE LOCATION MAP

FIGURE 1-1



Legend

-  Monitoring Well Location
-  Staff Gauge Location
-  Manhole Location
-  Wet Well Location



PFOHL BROTHERS LANDFILL
MONITORING LOCATIONS



FIGURE 3-1

APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

2/7/15

Weather conditions

Clear

Time

12:41

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>183</u>	<u>2758</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>77</u>	<u>144</u>
WW-1	<u>4.7</u>	<u>0</u>	<u>953541</u>	<u>4361</u>
WW-6	<u>7.5</u>	<u>62</u>	<u>2685157</u>	<u>11780</u>
WW-4	<u>7.0</u>	<u>0</u>	<u>1166700</u>	<u>6591</u>
WW-5	<u>7.5</u>	<u>0</u>	<u>3054343</u>	<u>13793</u>

Flow Totalizer at Meter chamber

6966548

Heat Trace

Outside temp T = 33
Current A = 2.2

Set point SP = 40

Surge Suppressor events

415924

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

Data —
Flow

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 3/14/15

Weather conditions Cloudy

Time 11:33

Read by: JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	183	2758
WW-2	4.7	0	77	144
WW-1	5.3	0	1138418	4442
WW-6	8.3	0	286991	11834
WW-4	7.5	0	166700	6591
WW-5	8.0	0	3498007	13971

Flow Totalizer at Meter chamber _____

Heat Trace

Outside temp T = 43
 Current A = 12

Set point SP = 40

Surge Suppressor events

415963

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

Remote Trip bit ON JWN

Pfohl Brothers Landfill Site

Daily Logsheets

Town of Cheektowaga

Date 6/5/16

Weather conditions SUNNY 80°

Time 2:45 PM

Read by: P. BOWEN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>99.0 (ALARM)</u>	<u>0.0</u>	<u>183</u>	<u>2758</u>
WW-2	<u>4.7</u>	<u>0.0</u>	<u>21744</u>	<u>161</u>
WW-1	<u>3.5</u>	<u>0.0</u>	<u>1448989</u>	<u>4606</u>
WW-6	<u>5.7</u>	<u>0.0</u>	<u>4186038</u>	<u>12217</u>
WW-4	<u>6.2</u>	<u>0.0</u>	<u>620375</u>	<u>6866</u>
WW-5	<u>6.6</u>	<u>0.0</u>	<u>4507255</u>	<u>14473</u>

Flow Totalizer at Meter chamber 0.0 / 10975331

Heat Trace

Outside temp T = 85°

Set point SP = 40

Current A = 0.0

Surge Suppressor events 415926

Motor Control Center

Volts 490 volts

Which WW was running?

Amps 3 amps

1 2 3 4 5 6

Filter Checked Changed

Comments and/or Current Conditions

WW-3 ALARM

APPENDIX B

MONTHLY FLOW SUMMARIES JANUARY 2015 – JUNE 2015

The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

February 10, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

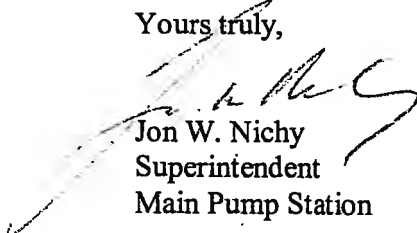
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the January 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

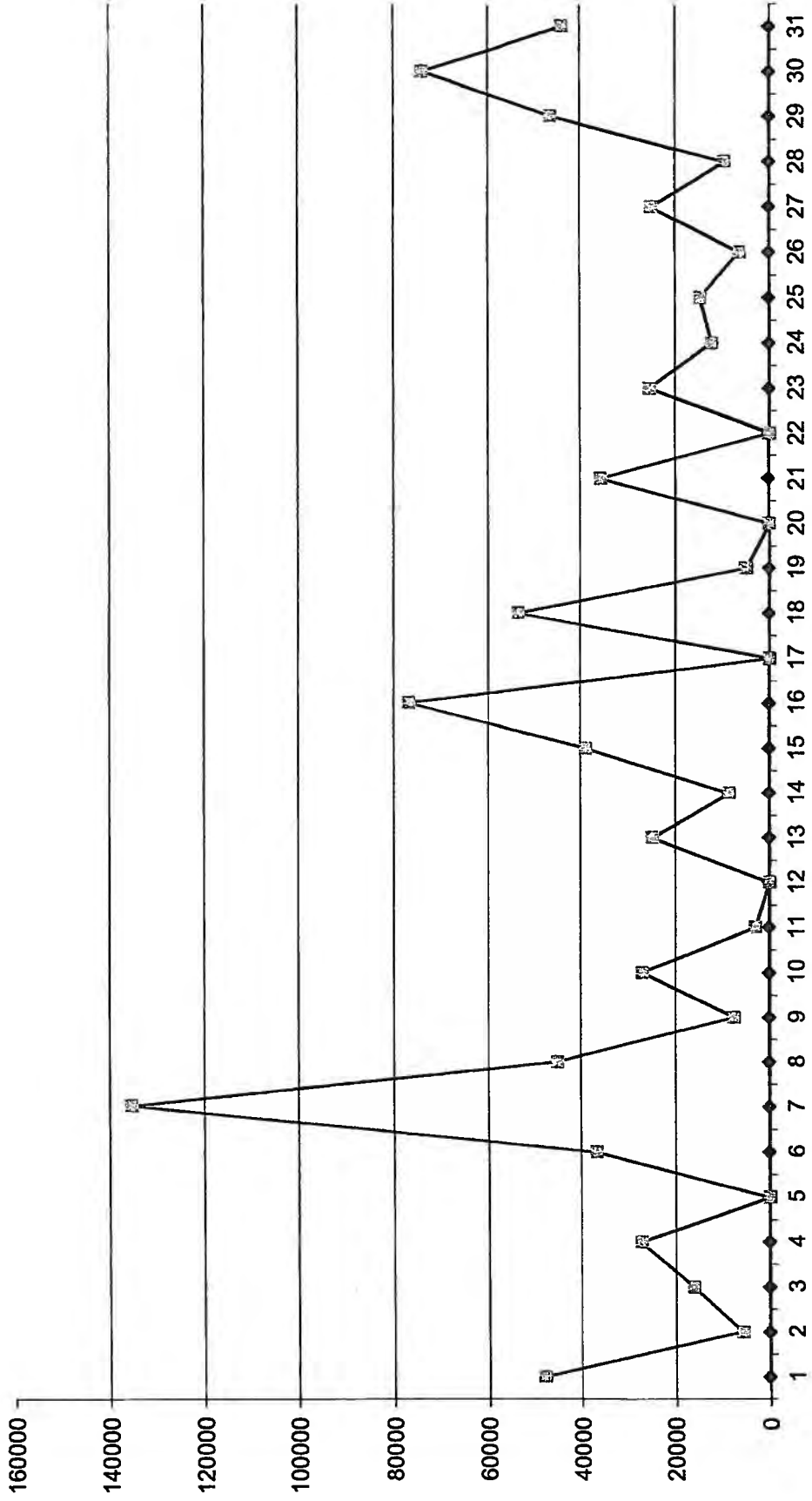

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

12/31/2014

		6035494	89,635		
Jan-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		6083366	47,872		
2		6089175	5,809		
3		6105361	16,186		15:26 inhibit
4		6132590	27,229		
5		6132590	0		17:49 enable
6		6169282	36,693		
7		6304762	135,480		
8		6349832	45,070		
9		6357399	7,568		
10		6384374	26,975		
11		6387418	3,042		
12		6387418	0		
13		6412234	24,817		
14		6420825	8,591		
15		6459704	38,879		
16		6536433	76,729		
17		6536433	0		
18		6589689	53,257		
19		6494715	5,026		
20		6594715	0		
21		6630403	35,688		
22		6630403	0		
23		6655742	25,339		
24		6668010	12,269		
25		6682710	14,700		
26		6689178	6,468		
27		6714181	25,004		
28		6723763	9,582		
29		6770150	46387		
30		6844132	73982		
31		6887969	43837		
		852,475	852,479		

January 2015



The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

March 14, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

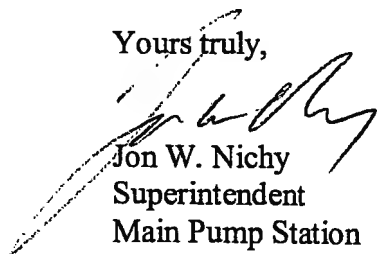
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the February 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

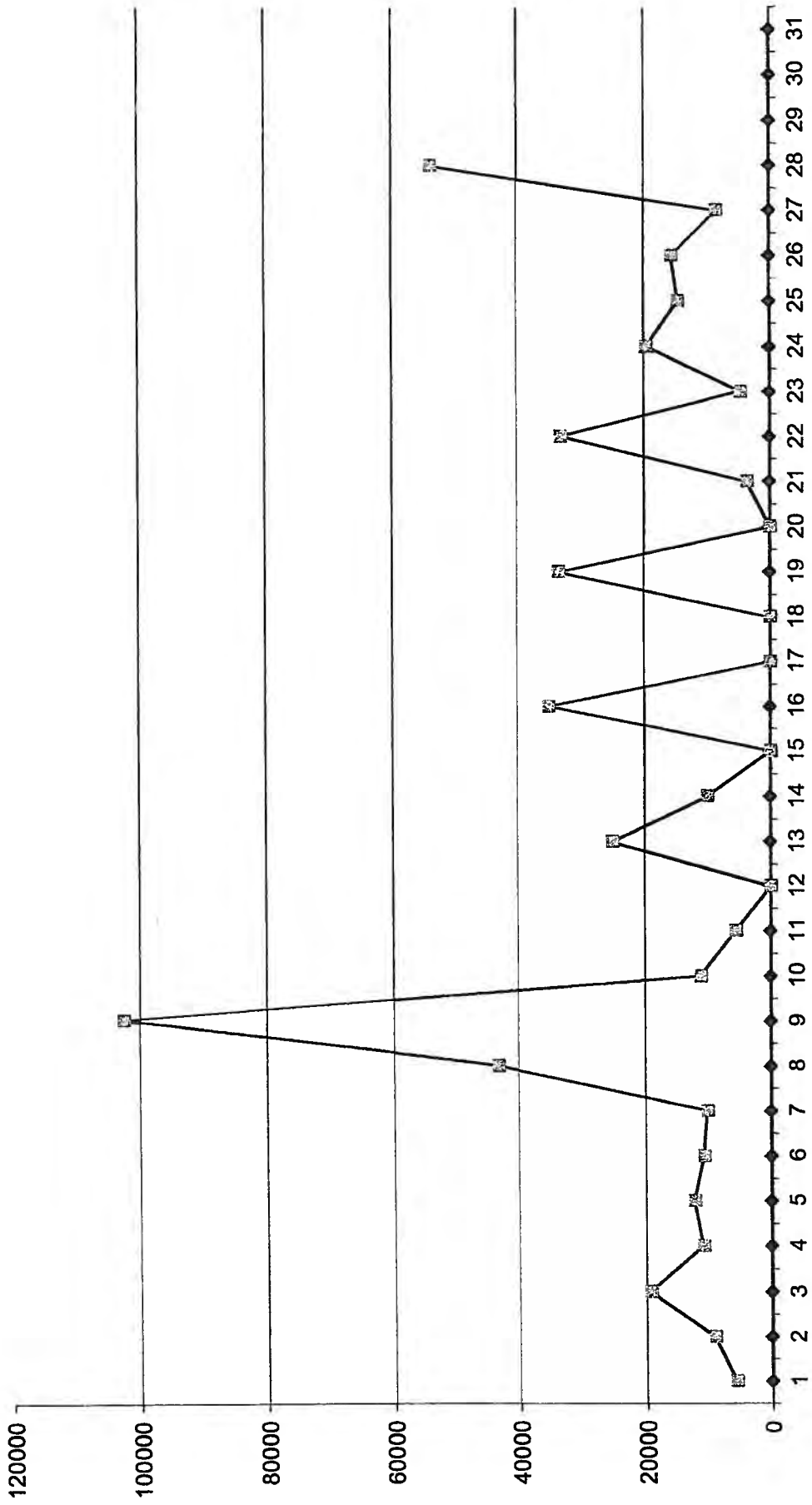

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

1/31/2015

		6887969	43,837		
Feb-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		6893720	5,751		
2		6902882	9,162		
3		6922186	19,304		
4		6933120	10,934		
5		6945426	12,306		
6		6956200	10,775		
7		6966396	10,196		
8		7009741	43,345		
9		7112226	102,485		
10		7123451	11,225		
11		7129058	5,607		
12		7129058	0		
13		7154219	25,161		
14		7164236	10,017		
15		7164236	0		
16		7199256	35,020		
17		7199278	22		
18		7199278	0		
19		7232734	33,456		
20		7232734	0		
21		7236509	3,776		
22		7269469	32,960		
23		7274258	4,790		
24		7293880	19,622		
25		7308495	14,616		
26		7324141	15,646		
27		7332691	8,551		
28		7386561	53,870		
29					
30					
31					
		498,592	498,597		

February 2015



The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

April 11, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

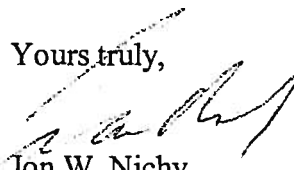
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the March 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

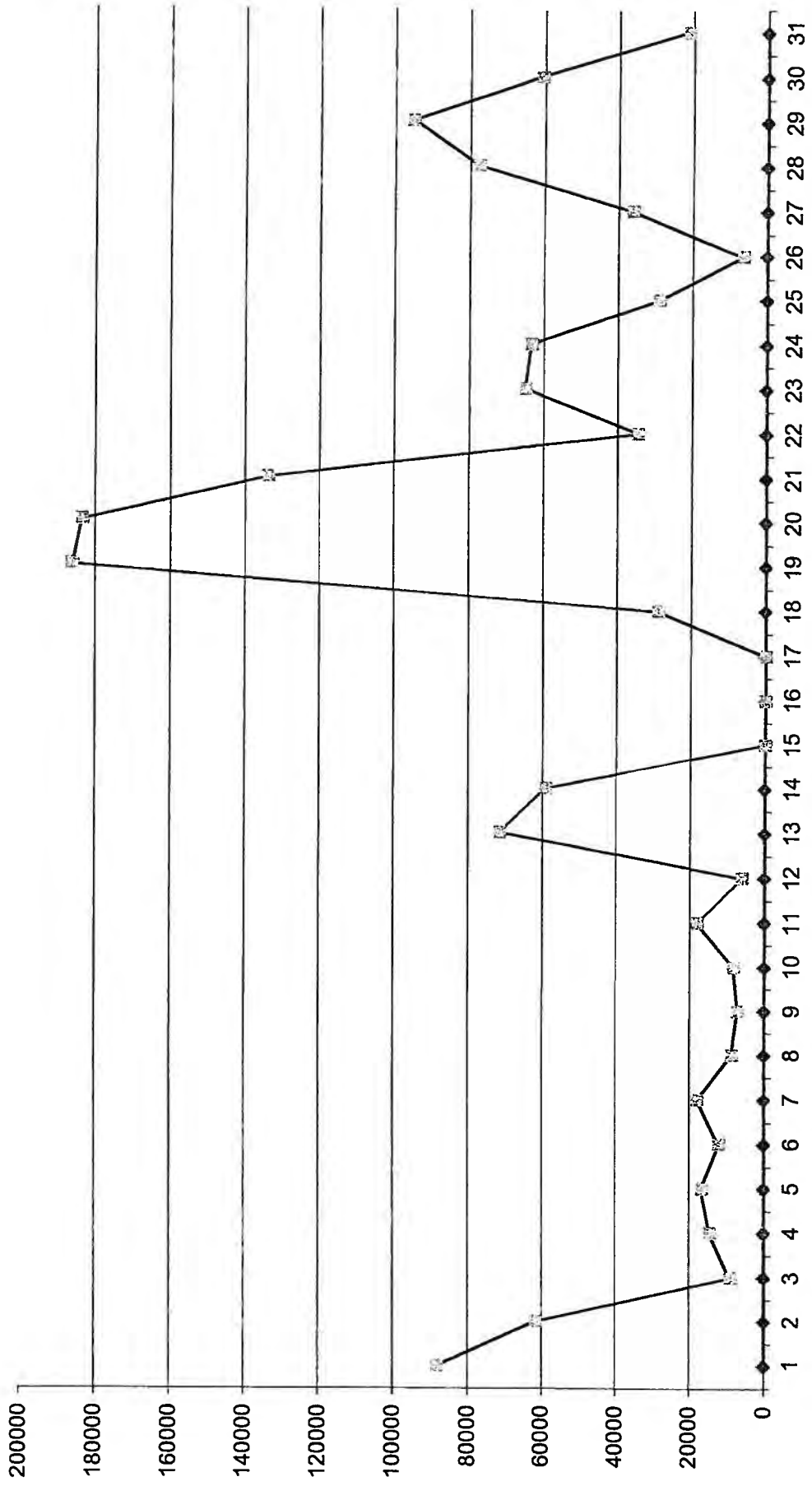

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

2/28/2015

		7386561	53,870		
Mar-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		7474861	88,300		
2		7536519	61,658		
3		7545585	9,067		
4		7560124	14,539		
5		7576858	16,734		
6		7589002	12,144		
7		7606876	17,874		
8		7615619	8,743		
9		7622820	7,201		
10		7631146	8,327		16:02 inhibit
11		7649215	18,069		
12		7655285	6,070		21:48 enable
13		7726817	71,532		18:48 inhibit
14		7785924	59,108		
15		7785924	0		
16		7785924	0		
17		7785924	0		20:54 enable
18		7814879	28,955		
19		8000883	186,005		
20		8184414	183,531		
21		8318241	133,827		
22		8352665	34,425		
23		8417561	64,896		
24		8480881	63,320		
25		8510010	29,128		
26		8516573	6,564		16:11 inhibit
27		8552822	36,249		10:55 enable
28		8630355	77,533		
29		8725517	95,162		
30		8786162	60,645		18:19inhibit 21:20enable
31		8807530	21,368		
		1,420,969	1,420,974		

March 2015



The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

May 6, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

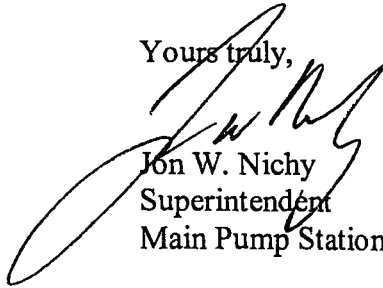
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the April 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

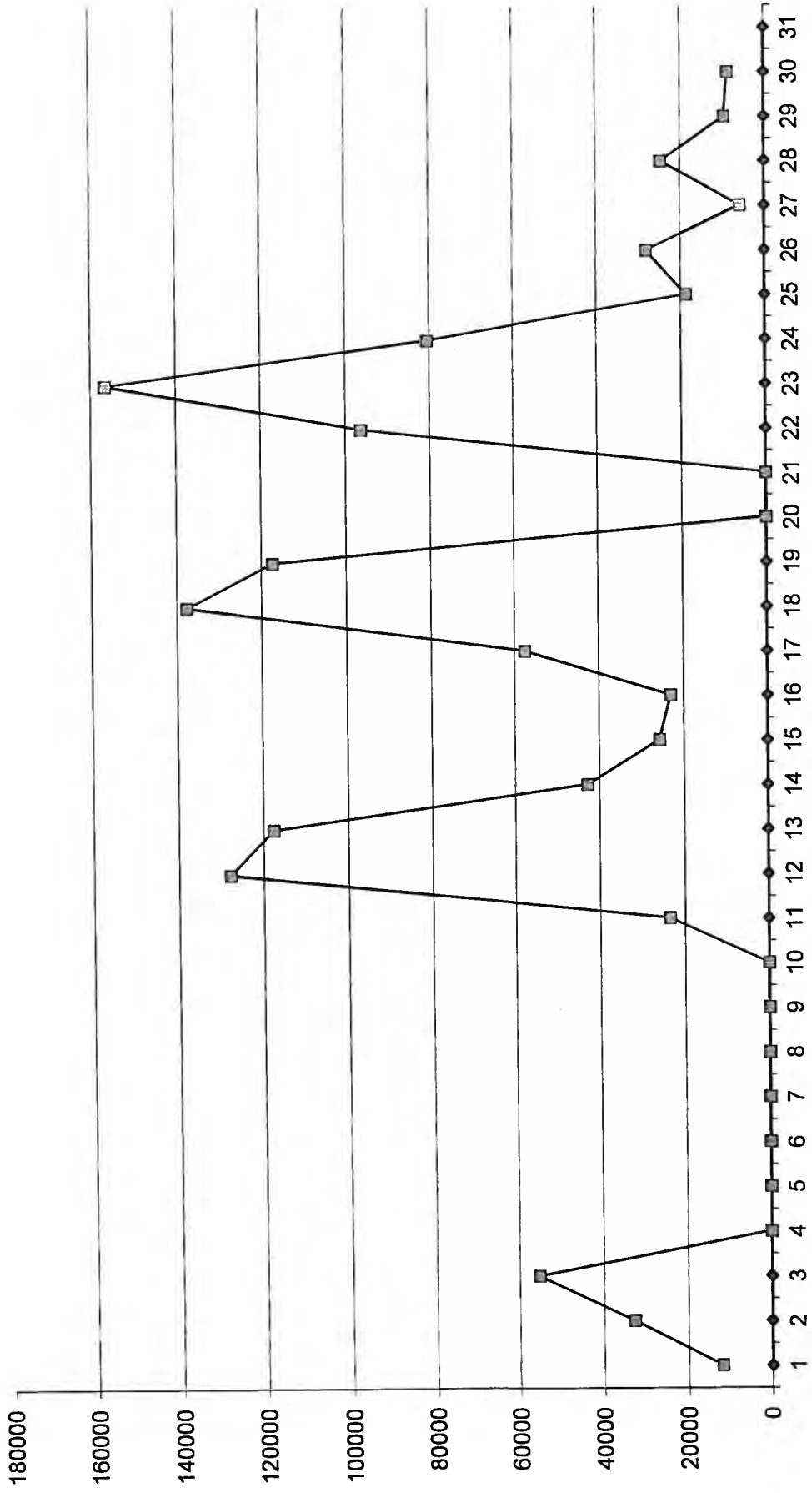

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

3/31/2015

8807530		53,870			
Apr-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		8819397	11,867		
2		8852160	32,763		22:56 inhibit
3		8907538	55,378		
4		8907538	0		
5		8907538	0		
6		8907538	0		
7		8907538	0		
8		8907538	0		
9		8907538	0		
10		8907538	0		21:15 enable
11		8931132	23,594		
12		9059078	127,946		
13		9176757	117,679		21:04 inhibit
14		9219560	42,803		00:33 enable
15		9245327	25,767		
16		9268424	23,097		
17		9326024	57,600		
18		9463809	137,785		18:02 inhibit
19		9581272	117,463		
20		9581272	0		
21		9581272	0		10:43 enable
22		9677658	96,386		
23		9834313	156,655		
24		9914953	80,640		
25		9933773	18,820		
26		9961958	28,185		
27		9967823	5,865		
28		9992509	24,686		
29		10002035	9526		
30		10010777	8742		
31					
		1,203,247	1,203,247		

April 2015



The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

June 10, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

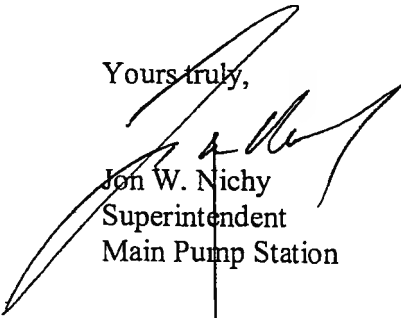
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the May 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

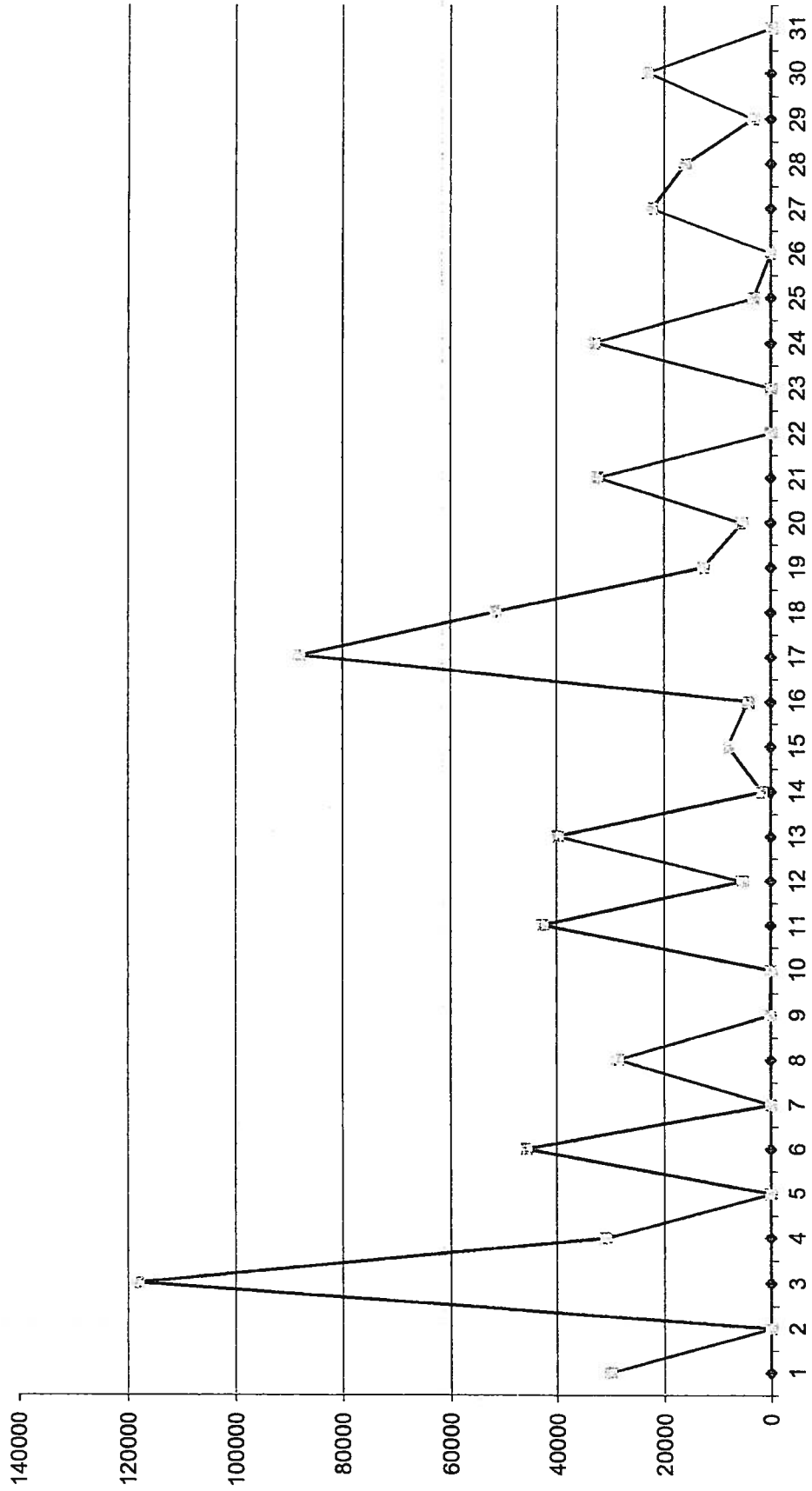

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

4/30/2015

		10010777	8,742		
May-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		10040763	29,986		
2		10040763	0		
3		10158845	118,082		
4		10189714	30,869		
5		10189714	0		
6		10235419	45,705		
7		10235419	0		
8		10264066	28,647		
9		10264264	198		22:26 inhibit
10		10264264	0		09:20 enable
11		10306951	42,687		
12		10312290	5,339		
13		10352090	39,800		
14		1035381	1,720		
15		10361886	8,076		
16		10366187	4,301		
17		10454105	87,918		
18		10505619	51,514		
19		10518324	12,705		
20		10523775	5,451		
21		10556143	32,368		
22		10556143	0		
23		10556143	0		
24		10589119	32,976		
25		10592430	3,311		
26		10592430	0		
27		10614679	22,249		
28		10630695	16,016		
29		10634126	3431		
30		10657215	23089		
31		10657215	0		00:10 inhibit
		646,438	646,438		

May
2015



The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

July 8, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the June 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

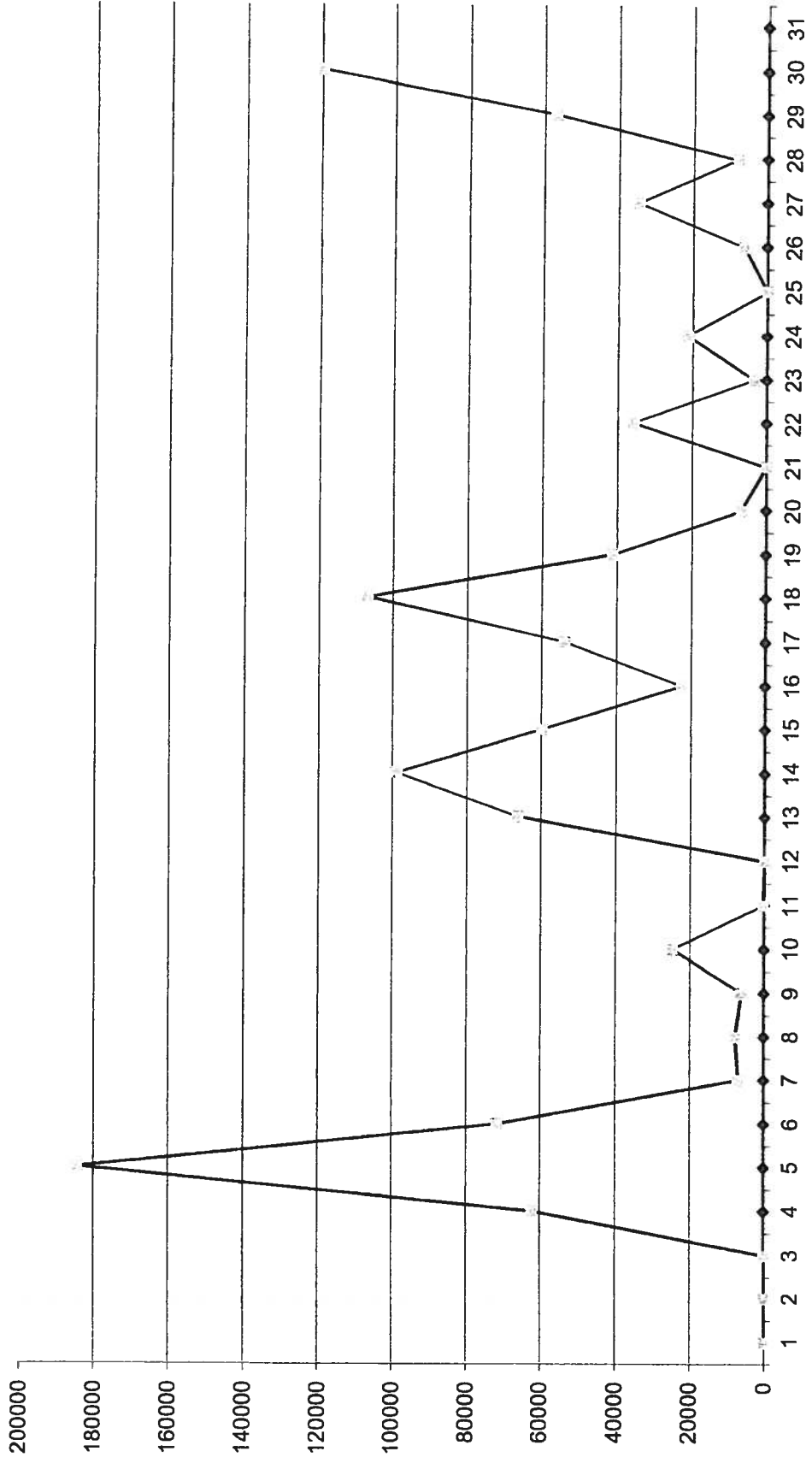
A handwritten signature in black ink, appearing to read "Jon W. Nichy".

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

5/31/2015		10657215	0		
Jun-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		10657215	0		
2		10657215	0		
3		10657215	0		16:36 enable
4		10719360	62,145		
5		10903680	184,320		
6		10975331	71,651		
7		10982413	7,082		22:39 inhibit
8		10264066	7,821		22:22 enable
9		10996443	6,209		14:16inhibit 23:23enable
10		11021138	24,695		
11		11021510	372		
12		11021510	0		16:25 inhibit
13		11087824	66,314		08:02 enable
14		11186688	98,864		16:34 inhibit
15		11246441	59,753		16:13enable 22:29inhibit
16		11268923	22,482		14:56 enable
17		11322815	53,892		
18		11429669	106,854		23:49 inhibit
19		11470820	41,151		10:52 enable
20		11477691	6,871		
21		11477691	0		
22		11513283	35,592		23:13inhibit 07:13enable
23		11516759	3,476		
24		11538005	21,246		
25		11538010	0		
26		11544224	6,214		
27		11578700	34,476		14:05 inhibit
28		11586840	8,140		12:11 enable
29		11643710	56870		17:49 inhibit
30		11763594	119844		06:32 enable
31					
		1,106,379	1,106,334		

June
2015



APPENDIX C

HYDRAULIC MONITORING TABLES

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2015

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
GW-01D	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								3/27/2015 1345	NM	-	NM	-	Lock corroded shut.
MNW								5/6/2015 1638	3.19	692.93	0.00	692.93	
MNW								6/19/2015 1206	2.95	693.17	0.00	693.17	
GW-01S	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								3/27/2015 1345	NM	-	NM	-	Lock corroded shut.
MNW								5/6/2015 1638	4.43	691.76	0.00	691.76	
MNW								6/19/2015 1206	4.04	692.15	0.00	692.15	
GW-03D	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								3/27/2015 1216	1.51	692.37	0.00	692.37	
MNW								5/6/2015 0825	2.19	691.69	0.00	691.69	
MNW								6/19/2015 1121	2.05	691.83	0.00	691.83	
GW-03S	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								3/27/2015 1215	1.92	691.88	0.00	691.88	
MNW								5/6/2015 0825	3.05	690.75	0.00	690.75	
MNW								6/19/2015 1120	2.68	691.12	0.00	691.12	
GW-04D	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								3/27/2015 1402	12.78	679.97	0.00	679.97	
MNW								5/6/2015 0932	13.10	679.65	0.00	679.65	
MNW								6/19/2015 1227	13.18	679.57	0.00	679.57	
GW-04S	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								3/27/2015 1403	3.82	688.90	0.00	688.90	
MNW								5/6/2015 0931	4.71	688.01	0.00	688.01	
MNW								6/19/2015 1228	4.13	688.59	0.00	688.59	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2015**

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
GW-07D	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								3/27/2015 1331	49.43	650.51	0.00	650.51	
MNW								5/6/2015 1515	46.65	653.29	0.00	653.29	
MNW								6/19/2015 1200	56.04	643.90	0.00	643.90	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								3/27/2015 1332	3.80	695.71	0.00	695.71	
MNW								5/6/2015 1600	5.00	694.51	0.00	694.51	
MNW								6/19/2015 1200	4.82	694.69	0.00	694.69	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								3/27/2015 1233	5.40	692.39	0.00	692.39	
MNW								5/6/2015 0848	6.16	691.63	0.00	691.63	
MNW								6/19/2015 1128	6.03	691.76	0.00	691.76	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								3/27/2015 1233	5.02	692.48	0.00	692.48	
MNW								5/6/2015 0848	5.31	692.19	0.00	692.19	
MNW								6/19/2015 1127	5.27	692.23	0.00	692.23	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								3/27/2015 1316	6.28	692.22	0.00	692.22	
MNW								5/6/2015 0922	6.99	691.51	0.00	691.51	
MNW								6/19/2015 1222	6.88	691.62	0.00	691.62	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								3/27/2015 1244	8.05	692.90	0.00	692.90	
MNW								5/6/2015 0855	9.51	691.44	0.00	691.44	
MNW								6/19/2015 1132	9.27	691.68	0.00	691.68	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2015

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
GW-29S	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								3/27/2015 1300	5.66	693.97	0.00	693.97	
MNW								5/6/2015 0906	8.86	690.77	0.00	690.77	
MNW								6/19/2015 1213	8.24	691.39	0.00	691.39	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								3/27/2015 1303	6.48	690.10	0.00	690.10	
MNW								5/6/2015 0909	8.11	688.47	0.00	688.47	
MNW								6/19/2015 1215	7.99	688.59	0.00	688.59	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								3/27/2015 1307	2.86	695.76	0.00	695.76	
MNW								5/6/2015 0914	3.62	695.00	0.00	695.00	
MNW								6/19/2015 1218	3.20	695.42	0.00	695.42	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								3/27/2015 1312	2.06	696.31	0.00	696.31	
MNW								5/6/2015 0917	3.82	694.55	0.00	694.55	
MNW								6/19/2015 1220	3.43	694.94	0.00	694.94	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								3/27/2015 1323	2.95	695.29	0.00	695.29	
MNW								5/6/2015 0926	5.27	692.97	0.00	692.97	
MNW								6/19/2015 1224	4.54	693.70	0.00	693.70	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								3/27/2015 1206	2.50	692.27	0.00	692.27	
MNW								5/6/2015 0824	2.77	692.00	0.00	692.00	
MNW								6/19/2015 1114	2.99	691.78	0.00	691.78	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2015

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
GW-35S	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								3/27/2015 1317	2.88	694.51	0.00	694.51	
MNW								5/6/2015 0922	3.82	693.57	0.00	693.57	
MNW								6/19/2015 1223	4.36	693.03	0.00	693.03	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								3/27/2015 1211	9.73	688.89	0.00	688.89	
MH								5/6/2015 0840	10.58	688.04	0.00	688.04	
MH								6/19/2015 1122	11.07	687.55	0.00	687.55	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								3/27/2015 1222	10.61	688.79	0.00	688.79	
MH								5/6/2015 0839	11.23	688.17	0.00	688.17	
MH								6/19/2015 1123	11.27	688.13	0.00	688.13	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								3/27/2015 1229	8.82	688.00	0.00	688.00	
MH								5/6/2015 0844	9.46	687.36	0.00	687.36	
MH								6/19/2015 1125	9.52	687.30	0.00	687.30	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								3/27/2015 1239	14.47	688.54	0.00	688.54	
MH								5/6/2015 0952	14.43	688.58	0.00	688.58	
MH								6/19/2015 1130	14.49	688.52	0.00	688.52	
MH-15	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								3/27/2015 1259	13.89	685.13	0.00	685.13	
MH								5/6/2015 0906	14.39	684.63	0.00	684.63	
MH								6/19/2015 1213	14.94	684.08	0.00	684.08	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2015

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
MH-16 MH	1072133.714	1117748.238	698.57	NM	698.57	NA	1	3/27/2015 1303	14.44	684.13	0.00	684.13	
								5/6/2015 0909	14.51	684.06	0.00	684.06	
								6/19/2015 1215	14.67	683.90	0.00	683.90	
MH-17 MH	1071813.137	1117180.019	702.16	NM	702.16	NA	1	3/27/2015 1308	18.09	684.07	0.00	684.07	
								5/6/2015 0913	18.14	684.02	0.00	684.02	
								6/19/2015 1217	18.28	683.88	0.00	683.88	
MH-20 MH	1071756.395	1115997.024	706.20	NM	706.20	NA	1	3/27/2015 1315	19.75	686.45	0.00	686.45	
								5/6/2015 0921	19.75	686.45	0.00	686.45	
								6/19/2015 1222	19.75	686.45	0.00	686.45	
MH-22 MH	1072158.023	1115589.309	698.05	NM	698.05	NA	1	3/27/2015 1322	8.82	689.23	0.00	689.23	
								5/6/2015 0925	9.00	689.05	0.00	689.05	
								6/19/2015 1224	9.01	689.04	0.00	689.04	
MH-25 MH	1072483.928	1114820.313	698.17	NM	698.17	NA	1	3/27/2015 1159	9.12	689.05	0.00	689.05	
								5/6/2015 0819	10.16	688.01	0.00	688.01	
								6/19/2015 1110	10.56	687.61	0.00	687.61	
SG-01 SG	1073882.887	1114813.101	NM	NM	690.00	NA	1	3/27/2015 1212	-1.10	691.10	0.00	691.10	
								5/6/2015 0827	-0.60	690.60	0.00	690.60	
								6/19/2015 1119	-0.60	690.60	0.00	690.60	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2015

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	3/27/2015 1236	-3.36	693.36	0.00	693.36	
								5/6/2015 0848	-3.00	693.00	0.00	693.00	
								6/19/2015 1128	-3.10	693.10	0.00	693.10	
WW-01 MH	1073676.903	1115710.476	NM	NM	684.02	NA	1	3/27/2015 1105	-4.7	688.72	0.00	688.72	
								5/6/2015 0730	-3.9	687.92	0.00	687.92	
								6/19/2015 1045	-3.9	687.92	0.00	687.92	
WW-02 MH	1073684.724	1116792.311	NM	NM	684.18	NA	1	3/27/2015 1105	-4.7	688.88	0.00	688.88	
								5/6/2015 0730	-4.7	688.88	0.00	688.88	
								6/19/2015 1045	-4.7	688.88	0.00	688.88	
WW-03 MH	1073140.339	1117618.499	NM	NM	683.80	NA	1	3/27/2015 1105	-4.82	688.62	0.00	688.62	
								5/6/2015 0730	-4.75	688.55	0.00	688.55	
								6/19/2015 1045	-4.80	688.60	0.00	688.60	
WW-04 MH	1072057.563	1117610.508	NM	NM	676.62	NA	1	3/27/2015 1105	-7.0	683.62	0.00	683.62	
								5/6/2015 0730	-6.9	683.52	0.00	683.52	
								6/19/2015 1045	-6.8	683.42	0.00	683.42	
WW-05 MH	1071661.368	1116370.876	NM	NM	676.14	NA	1	3/27/2015 1105	-6.8	682.94	0.00	682.94	
								5/6/2015 0730	-7.0	683.14	0.00	683.14	
								6/19/2015 1045	-6.8	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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2015**

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
WW-06	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								3/27/2015 1105	-7.7	689.59	0.00	689.59	
MH								5/6/2015 0730	-6.6	688.49	0.00	688.49	
MH								6/19/2015 1045	-6.0	687.89	0.00	687.89	

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 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)
3/27/2015	688.72	---	---	688.88	692.48	3.60	693.36	4.48
5/6/2015	687.92	---	---	688.88	692.19	3.31	693.00	4.12
6/19/2015	687.92	---	---	688.88	692.23	3.35	693.10	4.22

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)
3/27/2015	688.62	692.90	4.28	683.62	---	---
5/6/2015	688.55	691.44	2.89	683.52	---	---
6/19/2015	688.60	691.68	3.08	683.42	---	---

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)
3/27/2015	682.94	696.31	13.37	689.59	692.27	2.68
5/6/2015	683.14	694.55	11.41	688.49	692.00	3.51
6/19/2015	682.94	694.94	12.00	687.89	691.78	3.89

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)
3/27/2015	688.89	691.10	2.21	685.13	693.97	8.84
5/6/2015	688.04	690.60	2.56	684.63	690.77	6.14
6/19/2015	687.55	690.60	3.05	684.08	691.39	7.31

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)
3/27/2015	684.13	690.10	5.97	684.07	695.76	11.69
5/6/2015	684.06	688.47	4.41	684.02	695.00	10.98
6/19/2015	683.90	688.59	4.69	683.88	695.42	11.54

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)
3/27/2015	686.45	694.51	8.06	689.23	695.29	6.06
5/6/2015	686.45	693.57	7.12	689.05	692.97	3.92
6/19/2015	686.45	693.03	6.58	689.04	693.70	4.66

Notes:

* = No corresponding monitoring well.
NA = Not applicable

APPENDIX D

GROUNDWATER PURGE AND SAMPLE COLLECTION LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-1S

Date: 5/8/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer Company: URS Corporation

Purging/ Sampling Device:	<u>Geopump 2</u>	Tubing Type:	<u>LDPE/Silicone</u>	Pump/Tubing Inlet Location:	<u>Screen midpoint</u>
Measuring Point:	<u>Below Top of Riser</u>	Initial Depth to Water:	<u>4.56'</u>	Depth to Well Bottom:	<u>14.94'</u>
		Well Diameter:	<u>2"</u>	Screen Length:	<u> </u>
Casing Type:	<u>Stainless Steel</u>	Volume in 1 Well Casing (liters):	<u>6.4</u>	Estimated Purge Volume (liters):	<u>10.7</u>

Sample ID: GW-1S Sample Time: 14:00 QA/QC: None

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.
Orange stain in water initially.

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:20	7.20	11.81	0.869	4.32	190	-137	325	4.56
13:25	7.13	10.40	0.831	3.73	172	-120	260	4.68
13:30	7.06	10.43	0.907	3.32	94.3	-106	260	4.69
13:35	7.01	10.40	0.988	2.92	57.4	-105	260	5.76
13:40	7.01	10.28	0.974	2.91	64.3	-105	260	5.92
13:45	7.02	10.34	0.977	2.97	69.9	-103	260	5.99
13:50	7.00	10.37	1.01	2.83	37.7	-101	260	6.05
13:55	6.99	10.11	1.02	2.77	21.8	-101	260	6.09
14:00	6.99	10.18	1.02	2.72	16.8	-102	260	6.10
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 (vq_h = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-1D

Date: 5/8/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer 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: 3.31' Depth to Well Bottom: 39.65' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 89.8 Estimated Purge Volume (liters): 56.4

Sample ID: GW-1D Sample Time: 13:10 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: Sulfur odor

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:10	7.53	11.37	1.07	3.70	0.0	-122	940	3.31
12:15	7.46	9.89	1.08	4.08	0.0	-121	940	3.31
12:20	7.46	9.63	1.08	3.49	0.0	-121	940	3.31
12:25	7.46	9.52	1.07	3.20	0.0	-122	940	3.31
12:30	7.45	9.46	1.07	3.08	0.0	-128	940	3.31
12:35	7.43	9.45	1.07	3.00	0.0	-145	940	3.31
12:40	7.40	9.42	1.06	3.28	0.0	-171	940	3.31
12:45	7.39	9.46	1.06	2.99	0.0	-185	940	3.31
12:50	7.38	9.39	1.06	2.96	0.0	-197	940	3.31
12:55	7.37	9.40	1.06	2.96	0.0	-207	940	3.31
13:00	7.36	9.39	1.06	2.95	0.0	-218	940	3.31
13:05	7.35	9.31	1.05	2.97	0.0	-224	940	3.31
13:10	7.35	9.34	1.05	2.96	0.0	-232	940	3.31
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 (vq_d = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-3S

Date: 5/6/2015 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/
Sampling
Device: Geopump 2 Tubing Type: LDPE/Silicone Pump/Tubing
Inlet
Location: Screen midpoint

Measuring Below Top of Initial Depth Depth to Well Diameter: Screen
Point: Riser to Water: 2.97' Well Bottom: 13.22' Diameter: 2" Length:

Casing Volume in 1 Estimated
Type: Stainless Steel Well Casing (liters): 6.3 Purge Volume (liters): 7.7

Sample ID: GW-3S Sample Time: 12:20 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:40	6.79	9.57	1.43	7.06	26.7	13	300	2.97
11:45	6.86	8.23	1.39	5.37	7.4	42	300	5.45
11:50	6.89	9.47	1.38	5.19	3.1	54	160	6.06
11:55	6.90	9.87	1.37	5.00	3.9	62	160	6.52
12:00	6.93	9.71	1.37	5.21	6.2	69	160	7.02
12:05	6.95	9.74	1.37	5.36	7.1	74	160	7.55
12:10	6.95	10.17	1.37	5.22	5.5	76	150	7.78
12:15	6.94	10.52	1.36	5.00	4.4	78	150	8.03
12:20	6.94	10.48	1.35	4.87	2.9	80	150	8.31
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 (vq_d = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-3D

Date: 5/6/2015 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	<u>Geopump 2</u>		Tubing Type:	<u>LDPE/Silicone</u>		Pump/Tubing Inlet Location:	<u>Screen midpoint</u>		
Measuring Point:	<u>Below Top of Riser</u>	Initial Depth to Water:	<u>2.19'</u>	Depth to Well Bottom:	<u>35.70'</u>	Well Diameter:	<u>4"</u>	Screen Length:	<u> </u>
Casing Type:	<u>Stainless Steel</u>		Volume in 1 Well Casing (liters):	<u>82.8</u>		Estimated Purge Volume (liters):	<u>60.0</u>		

Sample ID: GW-3D Sample Time: 11:20 QA/QC: MS/MSD

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:20	6.64	8.95	1.10	5.40	0.0	79	1000	2.19
10:25	6.92	8.36	1.10	7.15	0.7	6	1000	2.19
10:30	7.02	8.32	1.10	5.97	4.1	-26	1000	2.19
10:35	7.05	8.28	1.10	5.43	0.0	-42	1000	2.19
10:40	7.05	8.26	1.10	5.19	0.0	-50	1000	2.19
10:45	7.05	8.26	1.10	5.03	0.0	-56	1000	2.19
10:50	7.04	8.21	1.10	4.92	0.0	-59	1000	2.19
10:55	7.03	8.21	1.10	4.81	0.0	-63	1000	2.19
11:00	7.02	8.21	1.10	4.71	0.0	-66	1000	2.19
11:05	7.02	8.20	1.10	4.63	0.0	-67	1000	2.19
11:10	7.01	8.22	1.10	4.51	0.0	-69	1000	2.19
11:15	7.01	8.26	1.10	4.45	0.0	-70	1000	2.19
11:20	7.01	8.23	1.10	4.39	0.0	-70	1000	2.19
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 (v_q_i = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-4S

Date: 5/7/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer 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: 4.68' Depth to Well Bottom: 16.23' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 7.1 Estimated Purge Volume (liters): 11.4

Sample ID: GW-4S Sample Time: 10:15 VOCs/ 11:55 SVOCs & Metals QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 3/27/15, sampled VOCs from PDB at 10:15 on 5/7/15.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 11:55.

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:26	8.46	16.89	0.409	5.72	2.2	92	Initial	4.68
10:28	8.50	11.41	0.428	13.87	10.7	99	1 Gal. Purged	-
10:29	8.33	10.37	0.439	13.22	118	92	2 Gal. Purged	-
10:32	8.30	10.11	0.429	11.99	609	43	3 Gal. Purged	Dry
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 ($vq_d = \pi r^2 h$)

WELL PURGING LOG

URS Corporation

SITE NAME: Pfohl Brothers Landfill WELL NO.: GW-7S
 PROJECT NO.: 11175616.00000
 STAFF: Rob Murphy, Tim Ifkovich, Ernie Thalhamer
 DATE(S): 5/6/15, 5/7/15

		WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	= <u>35.04</u>	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	= <u>5.00</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	= <u>30.04</u>	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	= <u>0.17</u>	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	= <u>5.11</u>	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	= <u> </u>	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	= <u>7.0</u>	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	2	4	7						
pH	8.22	8.26	8.27	8.11						
SPEC. COND. (mS/cm)	0.548	0.540	0.537	0.535						
DO (mg/l)	4.34	11.30	4.61	5.79						
TEMPERATURE (°C)	13.53	11.24	11.57	12.57						
TURBIDITY (NTU)	0.0	6.5	1.1	54.5						
ORP (millivolts)	-88	-65	-46	7						
TIME	16:08	16:10	16:12	16:18						

COMMENTS: 16:00 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/27/15
 16:08 - Begin hand bailing well.
 16:18 - Well dry after removing 7 gallons.
 5/7/2015 12:28 - Return to well, depth to water = 5.19 feet.
 12:30 - Collect sample for SVOCs and Metals.

WELL PURGING LOG

URS Corporation

SITE NAME: Pfohl Brothers Landfill WELL NO.: GW-7D
 PROJECT NO.: 11175616.00000
 STAFF: Rob Murphy, Tim Ifkovich, Ernie Thalhamer
 DATE(S): 5/6/15, 5/7/15

		WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	= <u>60.45</u>	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	= <u>46.65</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	= <u>13.80</u>	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	= <u>0.66</u>	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	= <u>9.11</u>	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	= <u> </u>	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	= <u>9.1</u>	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Init	3	6	9.1						
pH	7.79	7.82	7.80	8.02						
SPEC. COND. (mS/cm)	0.598	0.632	0.726	0.723						
DO (mg/l)	10.01	4.56	4.03	5.81						
TEMPERATURE (°C)	17.59	15.81	15.29	14.74						
TURBIDITY (NTU)	2.6	3.5	0.6	20.1						
ORP (millivolts)	-21	-87	-131	-97						
TIME	15:25	15:38	15:46	15:55						

COMMENTS: 15:15 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/27/15
 15:20 - Begin hand bailing well.
 15:55 - Well dry after removing 9.1 gallons
 5/7/2014 12:18 - return to well, depth to water = 59.05 feet.
 12:20 - Collect sample for SVOCs and Metals.

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-8SR
 Date: 5/6/2015 Sampling Personnel: Rob Murphy, Tim Ifkovich 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: 5.30' Depth to Well Bottom: 13.02' Well Diameter: 2" Screen Length:
 Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.8 Estimated Purge Volume (liters): 5.7

Sample ID: GW-8SR Sample Time: 14:35 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:55	6.52	10.57	2.10	3.63	308	-53	220	5.30
14:00	6.48	10.89	2.12	3.14	241	-60	130	6.24
14:05	6.48	10.87	2.12	3.02	150	-65	130	6.80
14:10	6.49	10.81	2.12	2.95	126	-67	130	6.99
14:15	6.49	10.74	2.12	2.92	89.1	-70	130	7.16
14:20	6.49	10.83	2.11	2.88	57.2	-71	130	7.24
14:25	6.51	10.59	2.11	2.91	44.2	-73	130	7.30
14:30	6.51	10.27	2.11	2.97	42.7	-73	130	7.38
14:35	6.52	10.05	2.11	2.97	34.4	-74	130	7.44
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 ($vq_d = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-8D
 Date: 5/6/2015 Sampling Personnel: Rob Murphy, Tim Ifkovich 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: 6.16' Depth to Well Bottom: 36.54' Well Diameter: 4" Screen Length:
 Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 75.0 Estimated Purge Volume (liters): 60.0

Sample ID: GW-8D Sample Time: 13:45 QA/QC: None
 Sample Parameters: VOCs, SVOCs, and TAL Metals
 Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:45	7.08	9.68	1.74	2.89	3.1	36	1000	6.16
12:50	7.01	9.18	1.74	3.74	2.2	45	1000	6.16
12:55	7.00	9.10	1.74	3.51	5.8	42	1000	6.16
13:00	7.00	9.06	1.74	3.44	8.7	39	1000	6.16
13:05	6.99	9.01	1.74	3.33	12.1	32	1000	6.16
13:10	6.98	8.95	1.74	3.36	9.3	37	1000	6.16
13:15	6.98	8.90	1.74	3.39	5.7	42	1000	6.16
13:20	6.97	8.86	1.73	3.41	2.5	45	1000	6.16
13:25	6.96	8.92	1.73	3.40	0.2	48	1000	6.16
13:30	6.96	8.90	1.73	3.40	0.0	51	1000	6.16
13:35	6.96	8.89	1.73	3.40	0.0	52	1000	6.16
13:40	6.95	8.92	1.73	3.38	0.0	51	1000	6.16
13:45	6.95	8.87	1.73	3.37	0.0	54	1000	6.16
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 ($vq_{d1} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-26D

Date: 5/7/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer 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: 7.04' Depth to Well Bottom: 40.70' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 83.1 Estimated Purge Volume (liters): 49.8

Sample ID: GW-26D Sample Time: 14:55 QA/QC: Duplicate (FD-050715)

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:55	6.97	12.26	1.91	2.51	76.4	-110	830	7.04
14:00	6.91	11.05	1.93	2.79	0.0	-97	830	7.03
14:05	6.91	11.08	1.93	2.64	0.0	-96	830	7.04
14:10	6.90	10.91	1.93	2.62	0.0	-96	830	7.04
14:15	6.90	10.95	1.93	2.62	0.0	-96	830	7.04
14:20	6.90	10.97	1.92	2.64	0.0	-96	830	7.04
14:25	6.90	11.01	1.92	2.65	0.0	-96	830	7.04
14:30	6.90	10.99	1.92	2.66	0.0	-96	830	7.04
14:35	6.90	10.91	1.92	2.68	0.0	-96	830	7.04
14:40	6.90	10.94	1.92	2.68	0.0	-96	830	7.04
14:45	6.89	10.99	1.92	2.66	0.0	-96	830	7.04
14:50	6.89	10.99	1.92	2.65	0.0	-96	830	7.04
14:55	6.89	11.05	1.92	2.64	0.0	-96	830	7.04
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 ($vq_i = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-28S

Date: 5/7/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer Company: URS Corporation

Purging/
Sampling
Device: Geopump 2 Tubing Type: LDPE/Silicone Pump/Tubing
Inlet
Location: Screen midpoint

Measuring Below Top of Initial Depth Depth to Well Well Screen
Point: Riser to Water: 9.51' Well Bottom: 15.52' Diameter: 2" Length: _____

Casing Volume in 1 Estimated
Type: Stainless Steel Well Casing Purge
(liters): 3.7 Volume
(liters): 4.2

Sample ID: GW-28S Sample Time: 9:45 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:15	7.34	10.17	0.547	4.15	19.1	79	215	9.51
9:20	7.18	9.44	0.539	4.17	12.3	27	125	10.65
9:25	7.17	9.21	0.537	3.85	7.7	17	125	10.75
9:30	7.17	9.40	0.532	3.70	3.4	15	125	10.76
9:35	7.17	9.66	0.534	3.59	4.5	15	125	10.78
9:40	7.17	9.89	0.534	3.53	3.2	16	125	10.79
9:45	7.17	9.94	0.534	3.49	0.0	18	125	10.76
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 (vq_d = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-29S

Date: 5/8/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer 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: 8.95' Depth to Well Bottom: 20.04' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 6.8 Estimated Purge Volume (liters): 7.5

Sample ID: GW-29S Sample Time: 8:50 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Orange iron particulates at start of purge

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:00	7.01	14.97	0.932	3.97	246	-77	230	8.95
8:05	6.98	14.22	0.948	5.23	157	-104	140	10.75
8:10	7.03	13.65	0.940	4.22	54.9	-105	140	10.96
8:15	7.02	13.65	0.952	3.75	35.6	-105	140	11.03
8:20	7.01	13.66	0.964	3.50	29.7	-105	140	11.12
8:25	6.99	13.78	0.967	3.30	22.2	-107	140	11.24
8:30	6.97	14.05	0.972	3.08	14.2	-108	140	11.35
8:35	6.96	14.13	0.978	2.97	13.3	-108	140	11.38
8:40	6.95	14.35	0.982	2.96	9.2	-109	140	11.47
8:45	6.94	14.55	0.981	2.83	6.7	-109	140	11.57
8:50	6.94	14.64	0.979	2.76	3.3	-109	140	11.58
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 (vq_h = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-30S

Date: 5/8/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer 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: 8.13' Depth to Well Bottom: 17.97' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 6.1 Estimated Purge Volume (liters): 12.9

Sample ID: GW-30S Sample Time: 9:50 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange tint to water, occasional orange particulates

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:20	6.83	10.82	2.50	6.09	130	-97	430	8.13
9:25	6.81	8.61	1.70	5.71	6.8	-97	430	8.23
9:30	6.81	8.49	1.68	4.83	0.0	-100	430	8.23
9:35	6.81	8.50	1.66	4.42	0.0	-102	430	8.23
9:40	6.80	8.49	1.66	4.21	0.0	-104	430	8.23
9:45	6.80	8.40	1.66	4.10	0.0	-105	430	8.23
9:50	6.80	8.53	1.66	3.99	0.0	-106	430	8.20
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 ($vq_d = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-31S

Date: 5/8/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer 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: 4.00' Depth to Well Bottom: 9.57' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 3.4 Estimated Purge Volume (liters): 7.2

Sample ID: GW-31S Sample Time: 10:40 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
 Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:05	7.18	10.79	0.638	3.55	255.0	-20	385	4.00
10:10	7.15	10.23	0.577	3.51	438.0	-5	175	6.35
10:15	7.13	11.03	0.585	3.43	379.0	-1	175	6.55
10:20	7.11	11.64	0.595	3.19	188.0	-3	175	6.56
10:25	7.10	12.82	0.612	2.88	85.0	-8	175	6.56
10:30	7.09	12.95	0.626	2.69	55.3	-13	175	6.52
10:35	7.09	12.85	0.620	2.61	39.5	-15	175	6.56
10:40	7.08	12.99	0.623	2.72	23.2	-17	175	6.61
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 (vq_d = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-32S
 Date: 5/8/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer 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: 4.10' Depth to Well Bottom: 9.93' Well Diameter: 2" Screen Length: _____
 Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 3.6 Estimated Purge Volume (liters): 9.0

Sample ID: GW-32S Sample Time: 11:30 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
 Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:00	7.43	11.17	0.480	3.79	0.0	39	300	4.10
11:05	7.38	9.84	0.515	3.77	0.0	36	300	4.96
11:10	7.37	9.72	0.529	3.64	0.0	32	300	5.02
11:15	7.36	9.55	0.532	3.02	0.0	27	300	5.05
11:20	7.37	9.41	0.533	2.96	0.0	26	300	5.08
11:25	7.36	9.43	0.535	2.88	0.0	24	300	5.11
11:30	7.36	9.61	0.535	2.84	0.0	22	300	5.12
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 (vq_h = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-34S

Date: 5/7/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer 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: 2.89' Depth to Well Bottom: 10.01' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.4 Estimated Purge Volume (liters): 5.2

Sample ID: GW-34S Sample Time: 8:35 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:05	7.01	13.74	0.930	5.41	46.2	-3	240	2.89
8:10	6.90	9.16	1.00	7.81	30.5	-8	160	3.69
8:15	6.88	8.92	1.04	6.59	21.0	1	160	3.69
8:20	6.86	8.50	1.06	6.49	17.7	2	160	3.69
8:25	6.85	7.84	1.08	6.30	15.1	4	160	3.72
8:30	6.84	7.88	1.06	6.10	8.9	5	160	3.73
8:35	6.82	8.14	1.02	6.05	2.9	7	160	3.76
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 ($vq_t = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-35S

Date: 5/7/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer Company: URS Corporation

Purging/
Sampling
Device: Geopump 2 Tubing Type: LDPE/Silicone Pump/Tubing
Inlet
Location: Screen midpoint

Measuring Below Top of Initial Depth Depth to Well Well Screen
Point: Riser to Water: 4.41' Well Bottom: 7.46' Diameter: 2" Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 1.9 Estimated Purge Volume (liters): 10.1

Sample ID: GW-35S Sample Time: 15:40 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:05	7.35	12.64	0.449	3.37	0.0	-45	290	4.41
15:10	7.26	11.10	0.436	3.00	0.0	-34	290	4.44
15:15	7.24	11.33	0.446	2.72	0.0	-32	290	4.45
15:20	7.23	11.95	0.453	2.48	0.0	-32	290	4.28
15:25	7.22	11.63	0.444	2.49	0.0	-32	290	4.81
15:30	7.23	10.70	0.450	2.64	0.0	-31	280	4.58
15:35	7.22	10.82	0.452	2.62	0.0	-33	280	4.59
15:40	7.22	11.03	0.453	2.54	0.0	-33	280	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 ($vq_{jt} = \pi r^2 h$)

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date of Sampling: May 6, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-03D	GW-03D	82.8	60.0	11:20	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-03D-MS	GW-03D	82.8	60.0	11:20	Matrix Spike		Not Applicable
GW-03D-MSD	GW-03D	82.8	60.0	11:20	Matrix Spike Duplicate		Not Applicable
GW-03S	GW-03S	6.3	7.7	12:20	Matrix Spike Duplicate		Not Applicable
GW-08D	GW-08D	75.0	60.0	13:45	Groundwater		Not Applicable
GW-08SR	GW-08SR	4.8	5.7	14:35	Groundwater		Not Applicable
TB	---	---	---	---	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: 11175616.00000
 Sampling Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist
 Date of Sampling: May 6, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-07D	GW-07D	34.4	PDB	15:15	Groundwater	VOCs	Not Applicable
GW-07S	GW-07S	19.3	PDB	16:00	Groundwater		Not Applicable

Additional Comments: GW-7D and GW-7S were sampled for VOCs using passive diffusion bags (PDBs).
GW-7D and GW-7S were then purged dry, and remaining parameters were collected May 7, 2015.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Sampling Crew Members: T. Ifkovich, E. Thalhamer Supervisor: J. Sundquist

Date of Sampling: May 7, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-34S	GW-34S	4.4	5.2	8:35	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-28S	GW-28S	3.7	4.2	9:45	Groundwater		Not Applicable
GW-04S	GW-04S	7.1	11.4	10:15 & 11:55	Groundwater		Not Applicable
GW-04D	GW-04D	80.4	10.2	11:45	Groundwater		Not Applicable
GW-07D	GW-07D	34.4	34.4	12:20	Groundwater	SVOCs/Metals	Not Applicable
GW-07S	GW-07S	19.3	26.5	12:30	Groundwater		Not Applicable
GW-33S	GW-33S	1.7	2.8	13:25	Groundwater	VOCs/SVOCs/ Metals	Not Applicable

Additional Comments: GW-4S was sampled for VOCs using a passive diffusion bag and then purged dry/allowed to recharge for collection of other parameters. GW-7D and GW-7S 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: 11175616.00000

Sampling Crew Members: T. Ifkovich, E. Thalhamer Supervisor: J. Sundquist

Date of Sampling: May 7, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-26D	GW-26D	83.1	49.8	14:55	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
FD-050715	GW-26D	83.1	49.8	14:55	Groundwater		Not Applicable
GW-35S	GW-35S	1.9	10.1	15:40	Groundwater		Not Applicable
TB-050715	---	---	---	---	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: 11175616.00000

Sampling Crew Members: T. Ifkovich, E. Thalhamer Supervisor: J. Sundquist

Date of Sampling: May 8, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-29S	GW-29S	6.8	7.5	8:50	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-30S	GW-30S	6.1	12.9	9:50	Groundwater		Not Applicable
GW-31S	GW-31S	3.4	7.2	10:40	Groundwater		Not Applicable
GW-32S	GW-32S	3.6	9.0	11:30	Groundwater		Not Applicable
GW-01D	GW-01D	89.8	56.4	13:10	Groundwater		Not Applicable
GW-01S	GW-01S	6.4	10.7	14:00	Groundwater		Not Applicable
TB-050815	---	---	---	---	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-1D

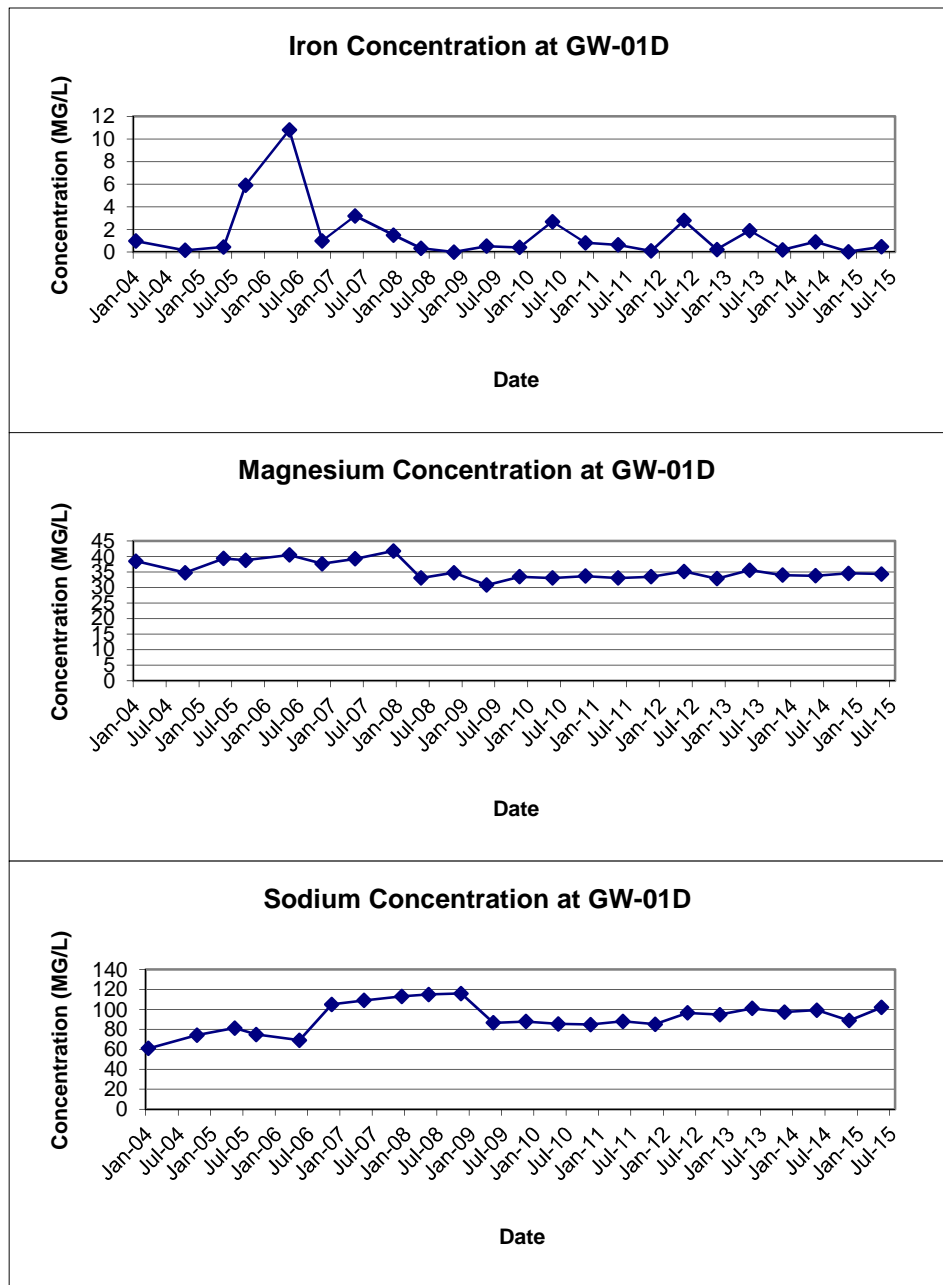


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-1S

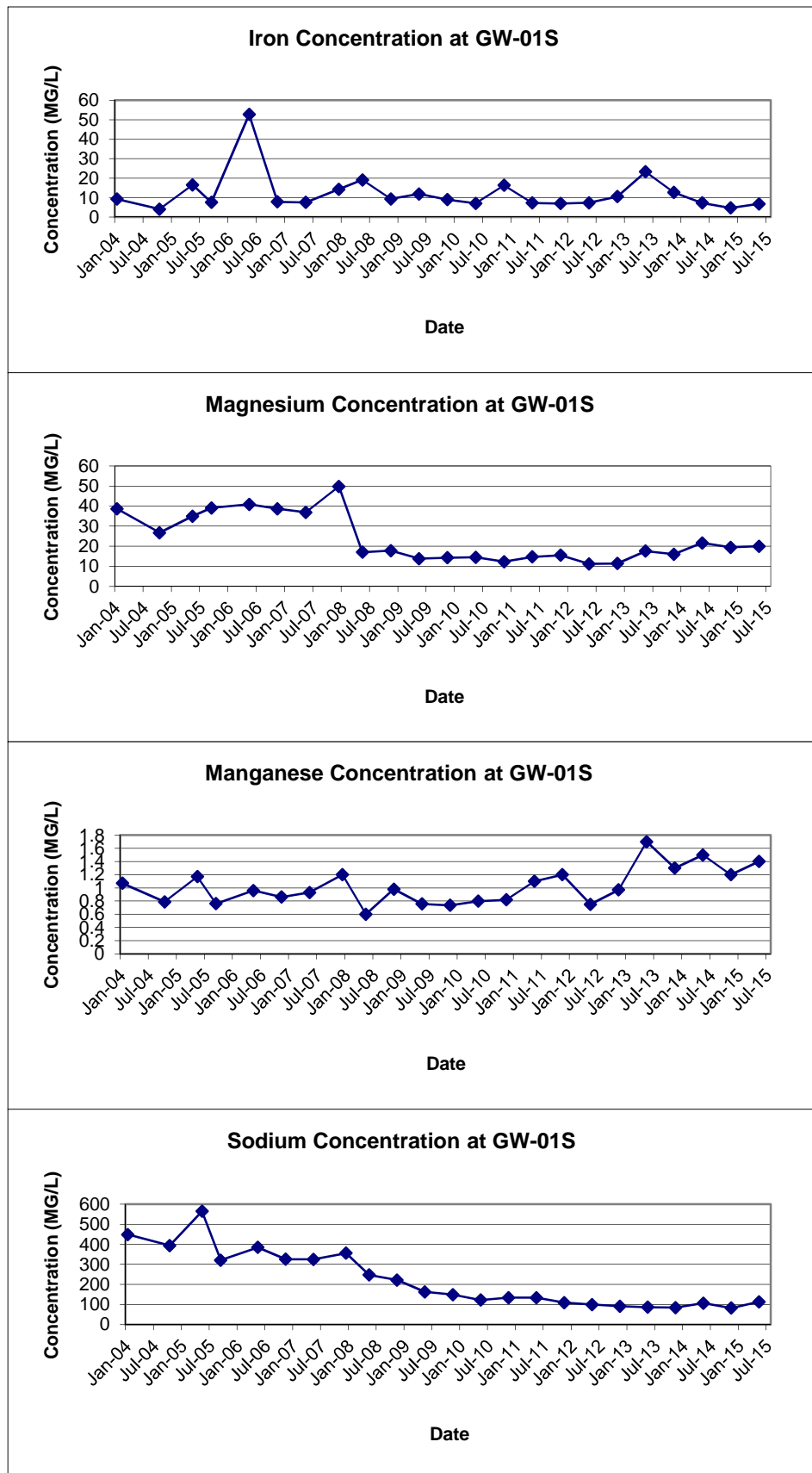


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3D

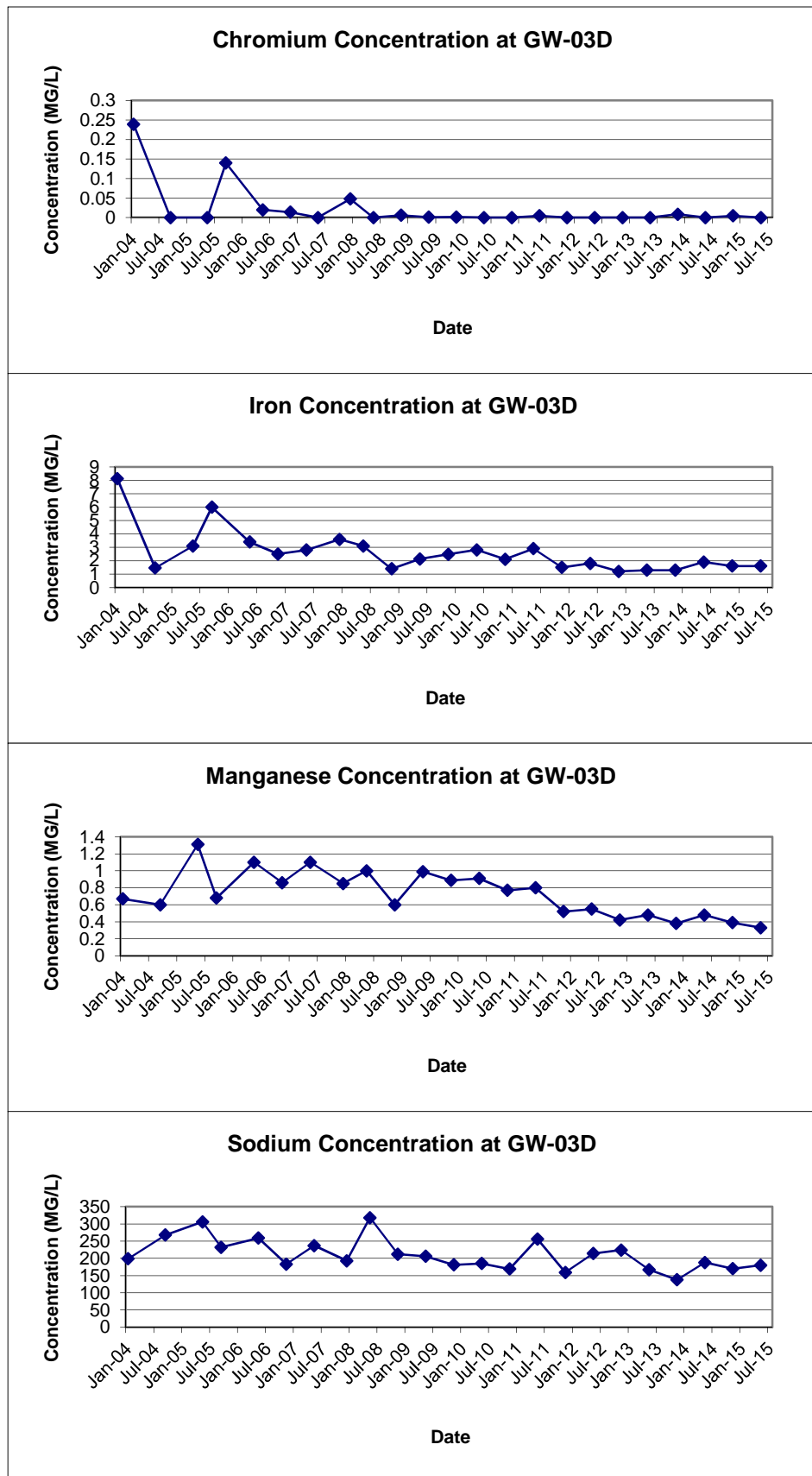


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

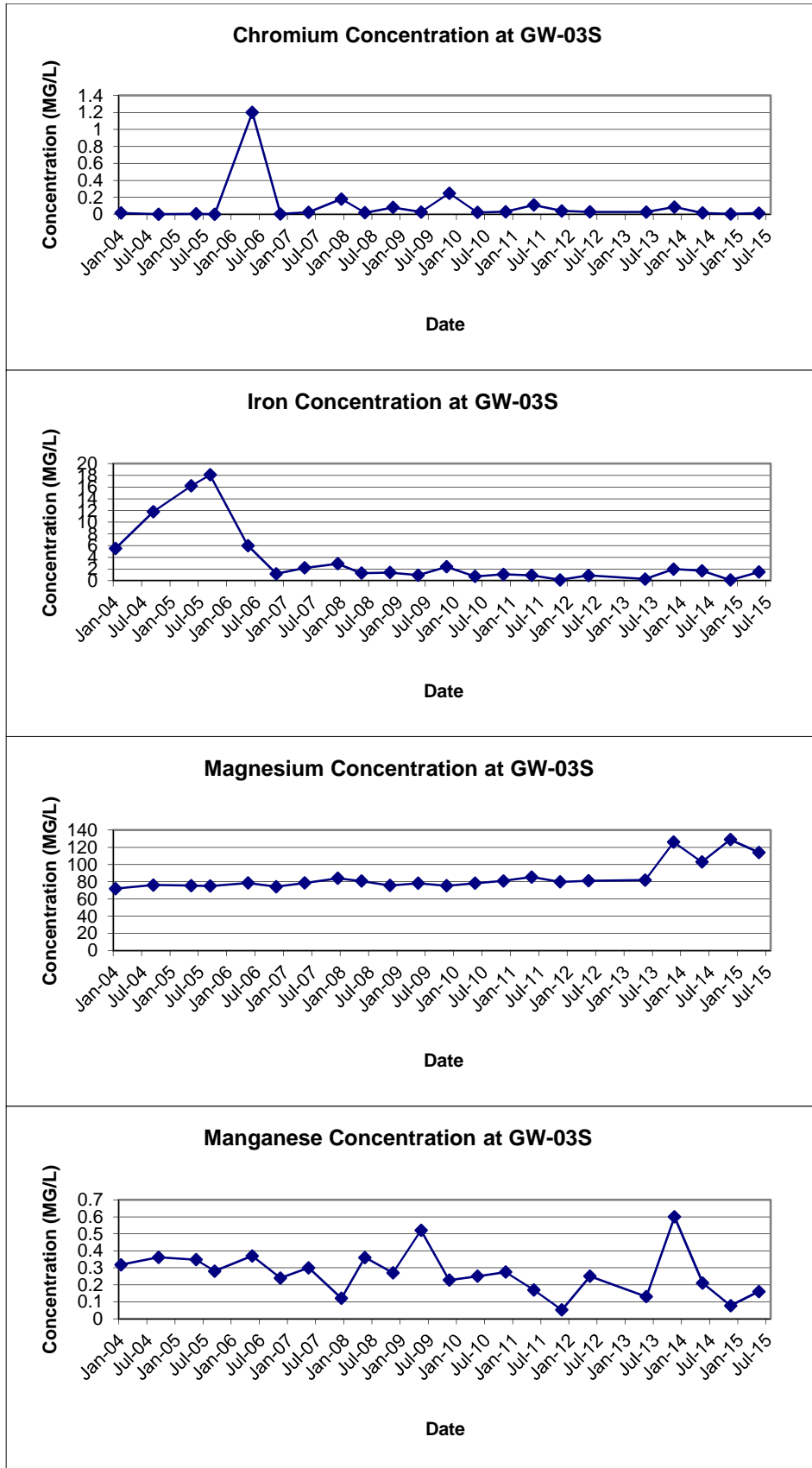


FIGURE E-4
 TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
 IN MONITORING WELL GW-3S

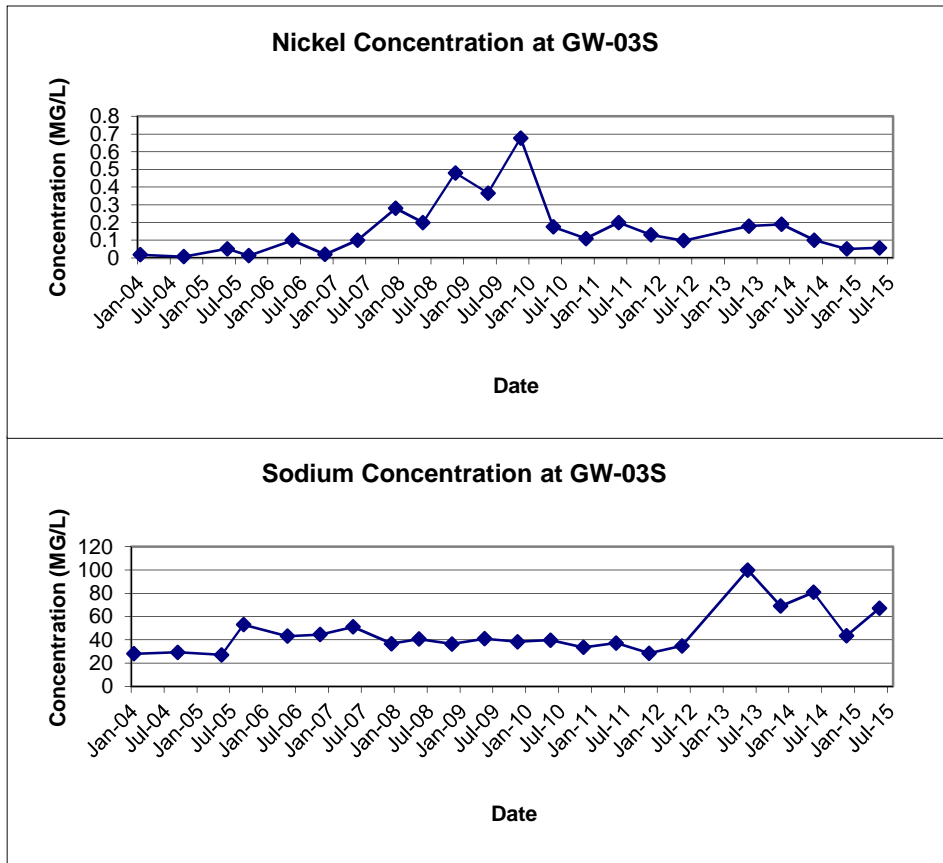


FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04D

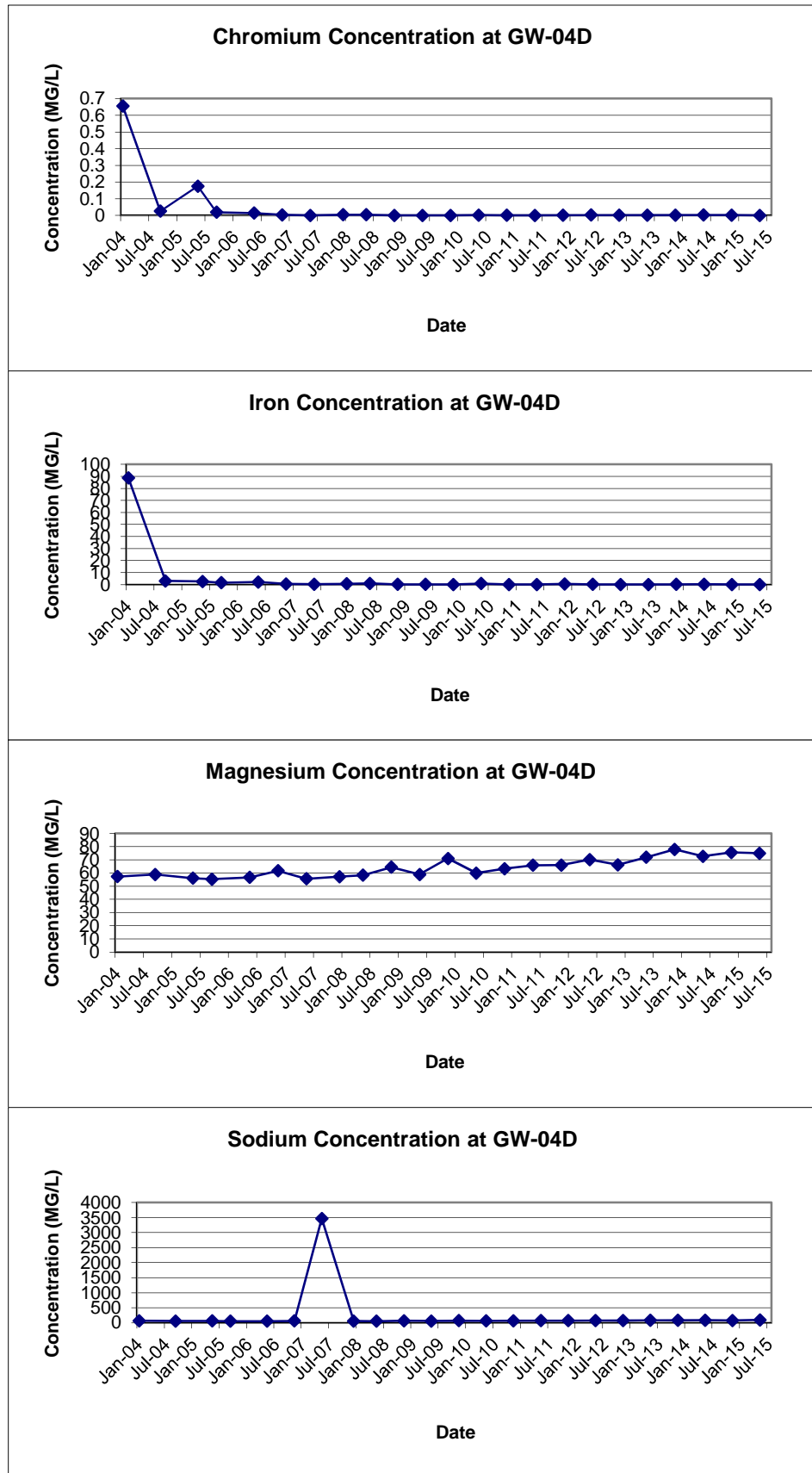


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04S

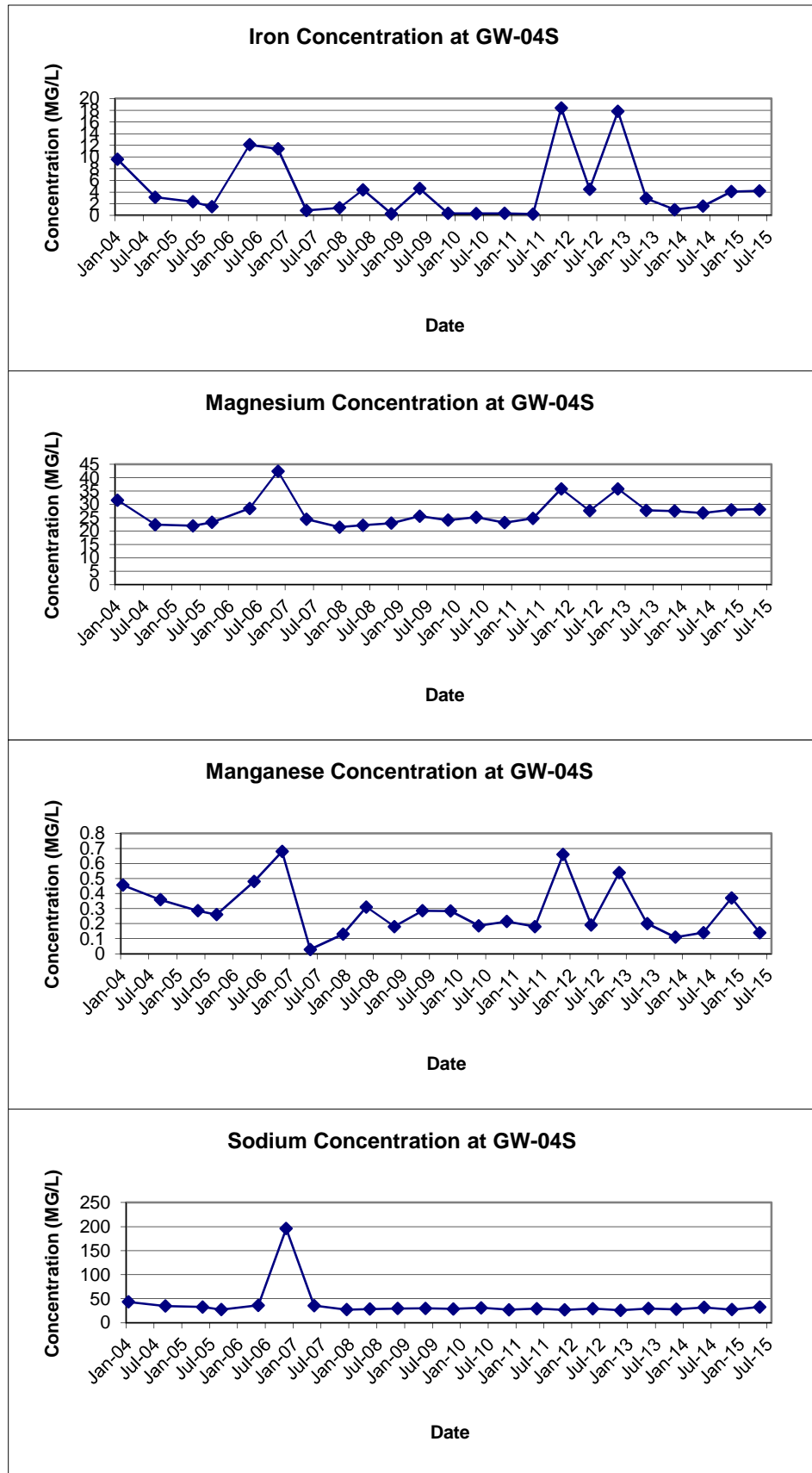


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7D

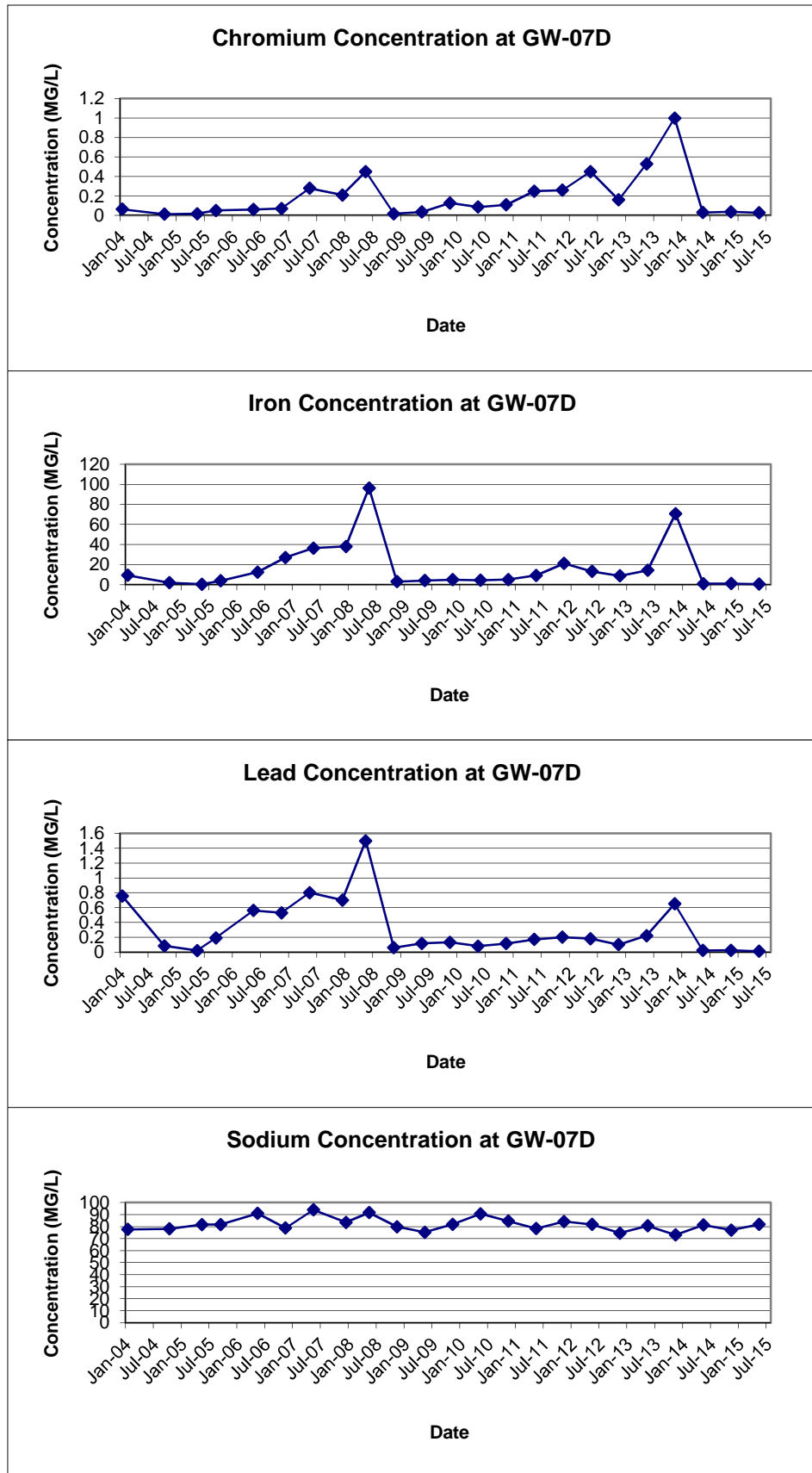


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7S

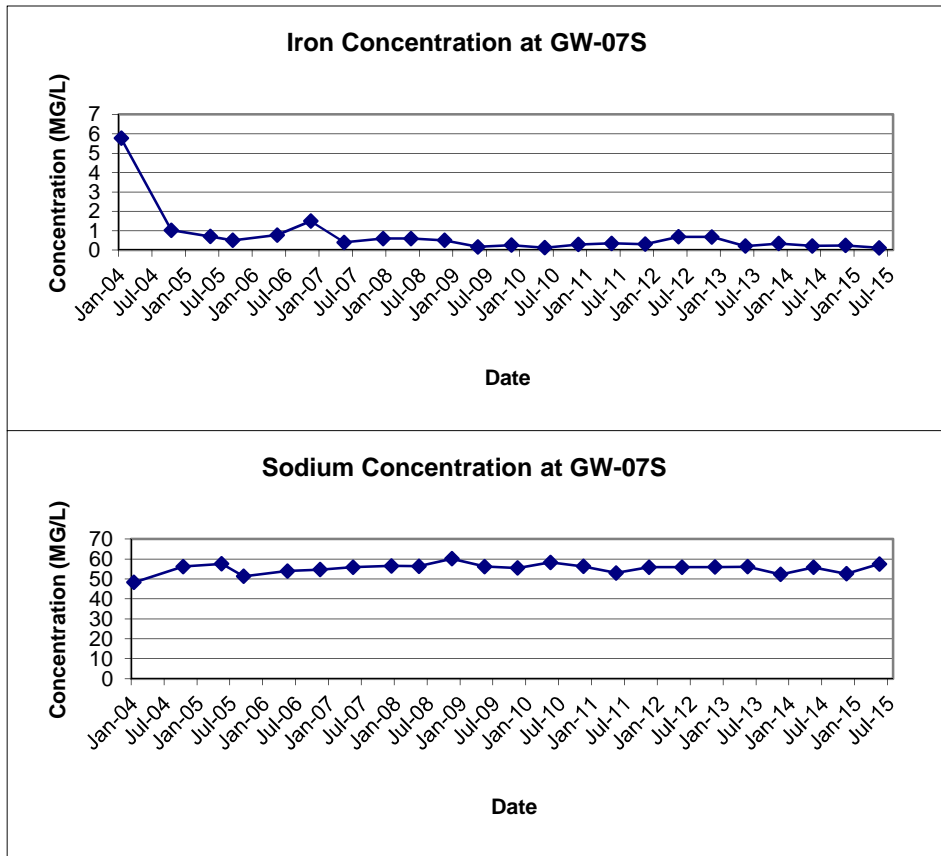


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8D

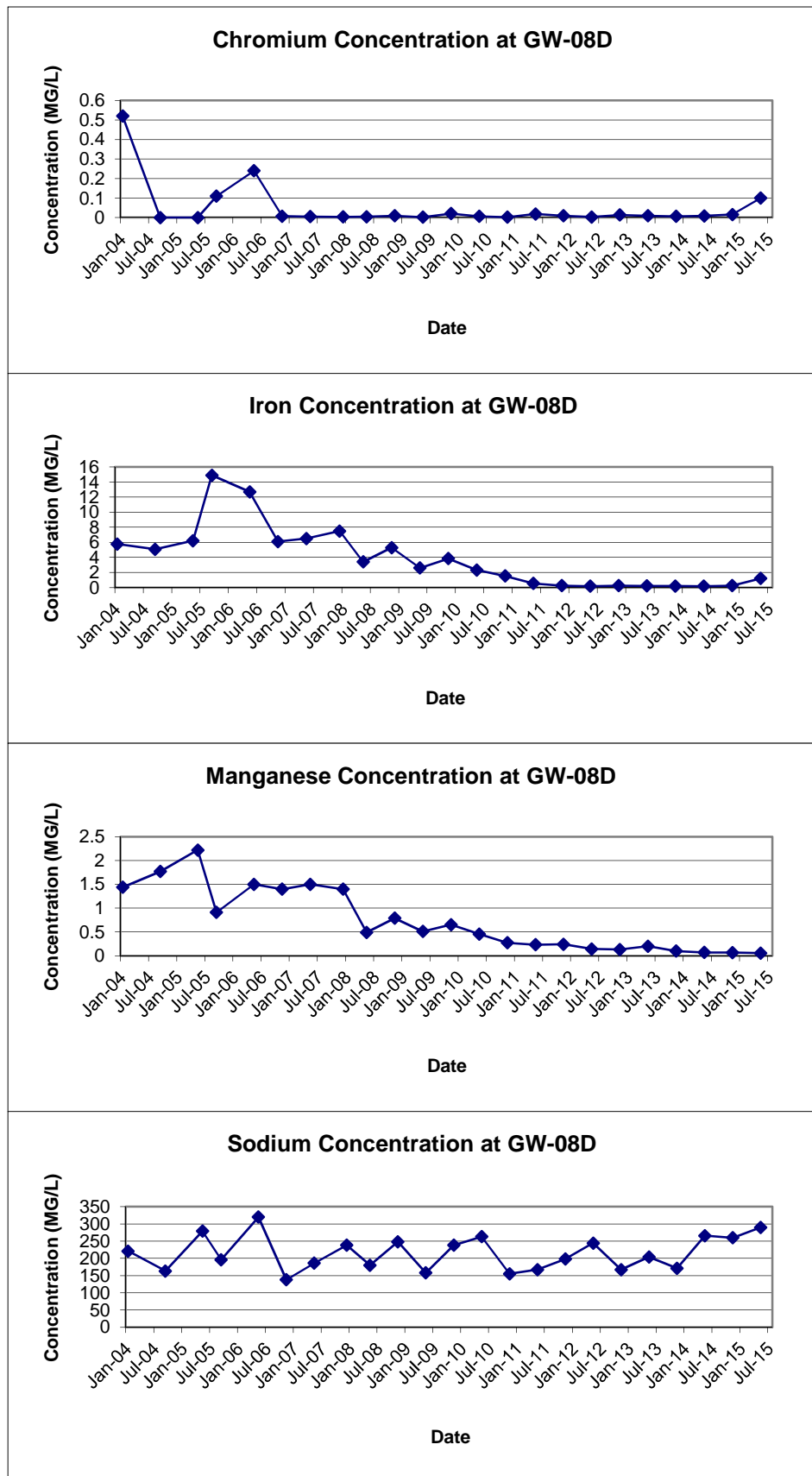


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8SR

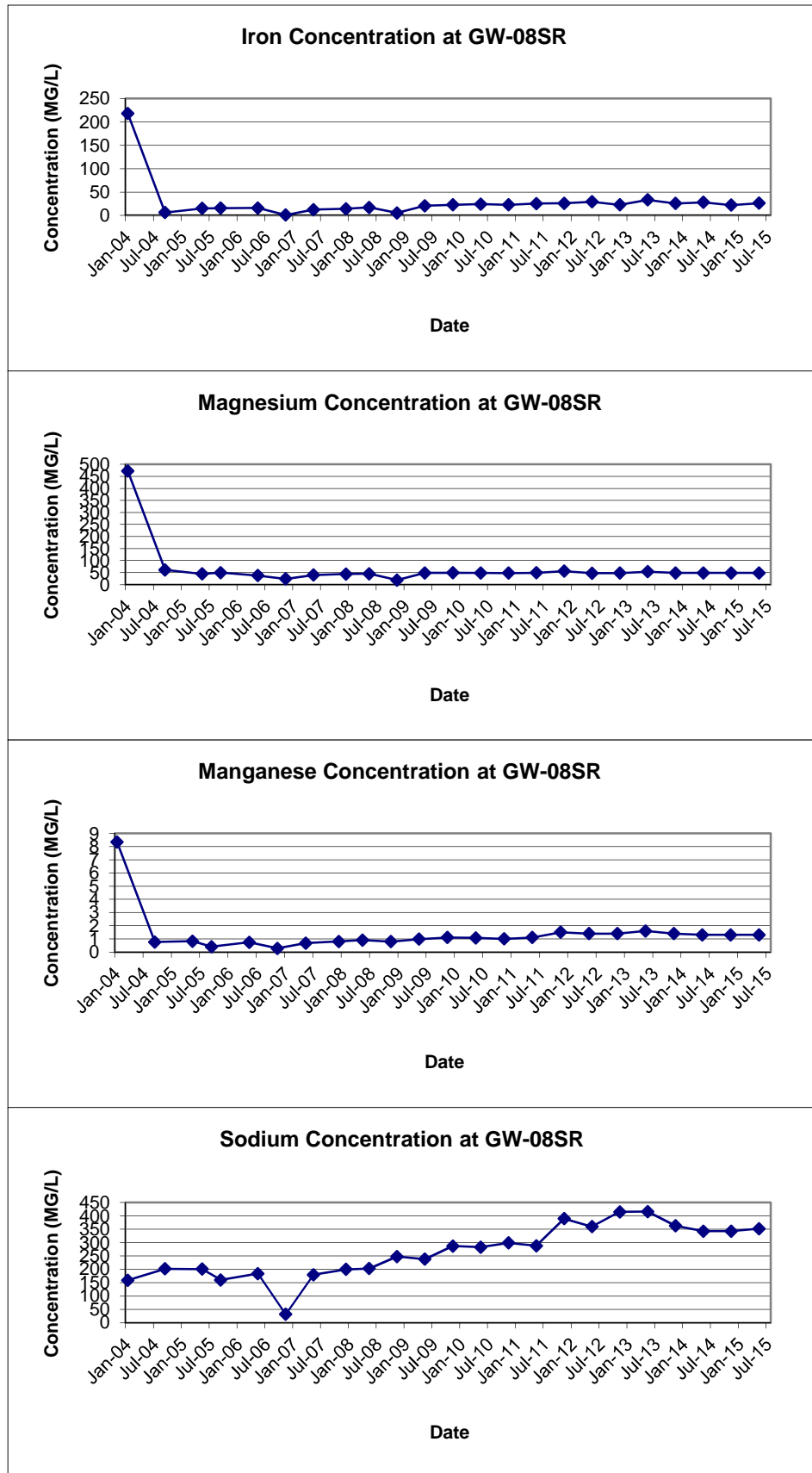


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

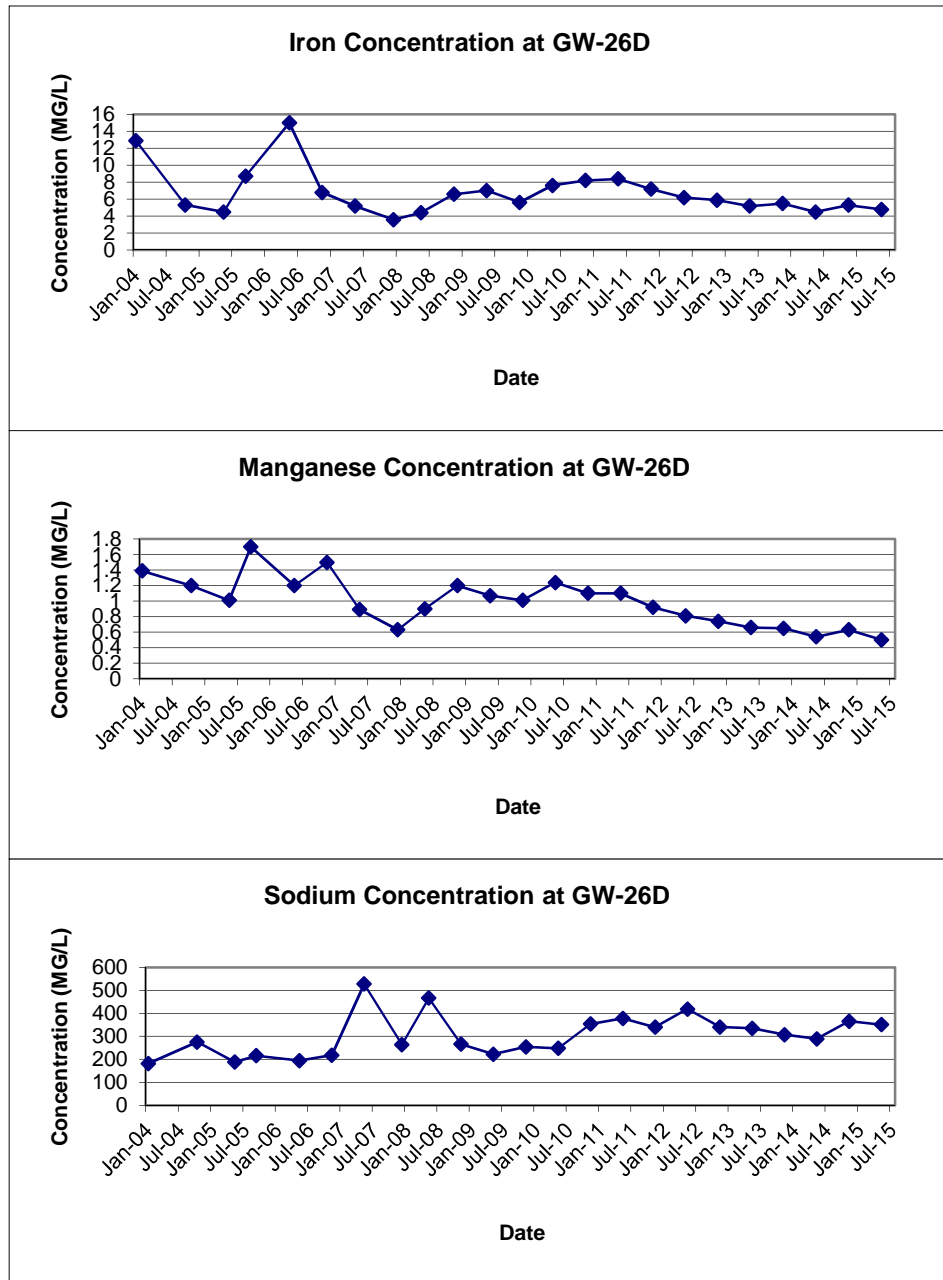


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

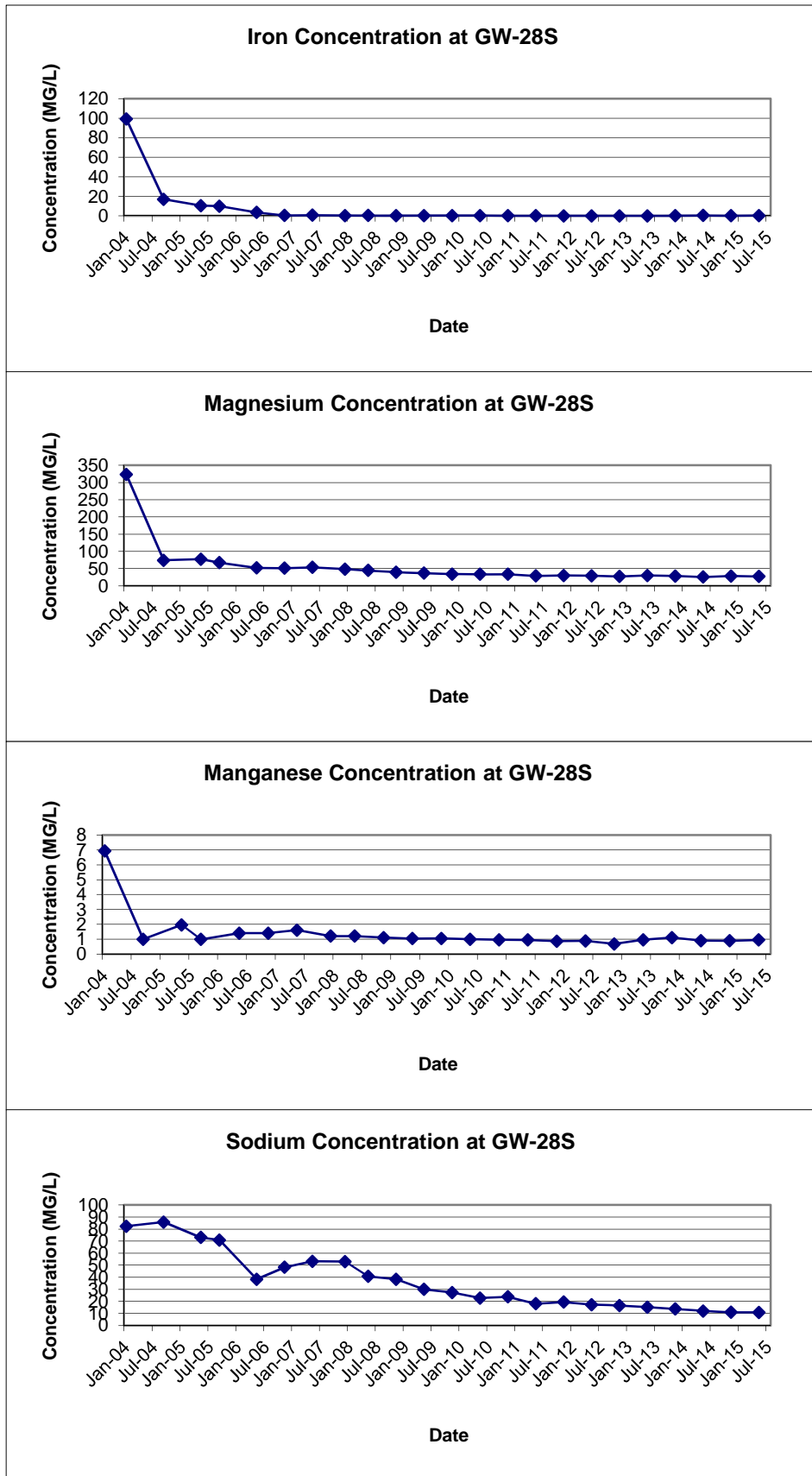


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

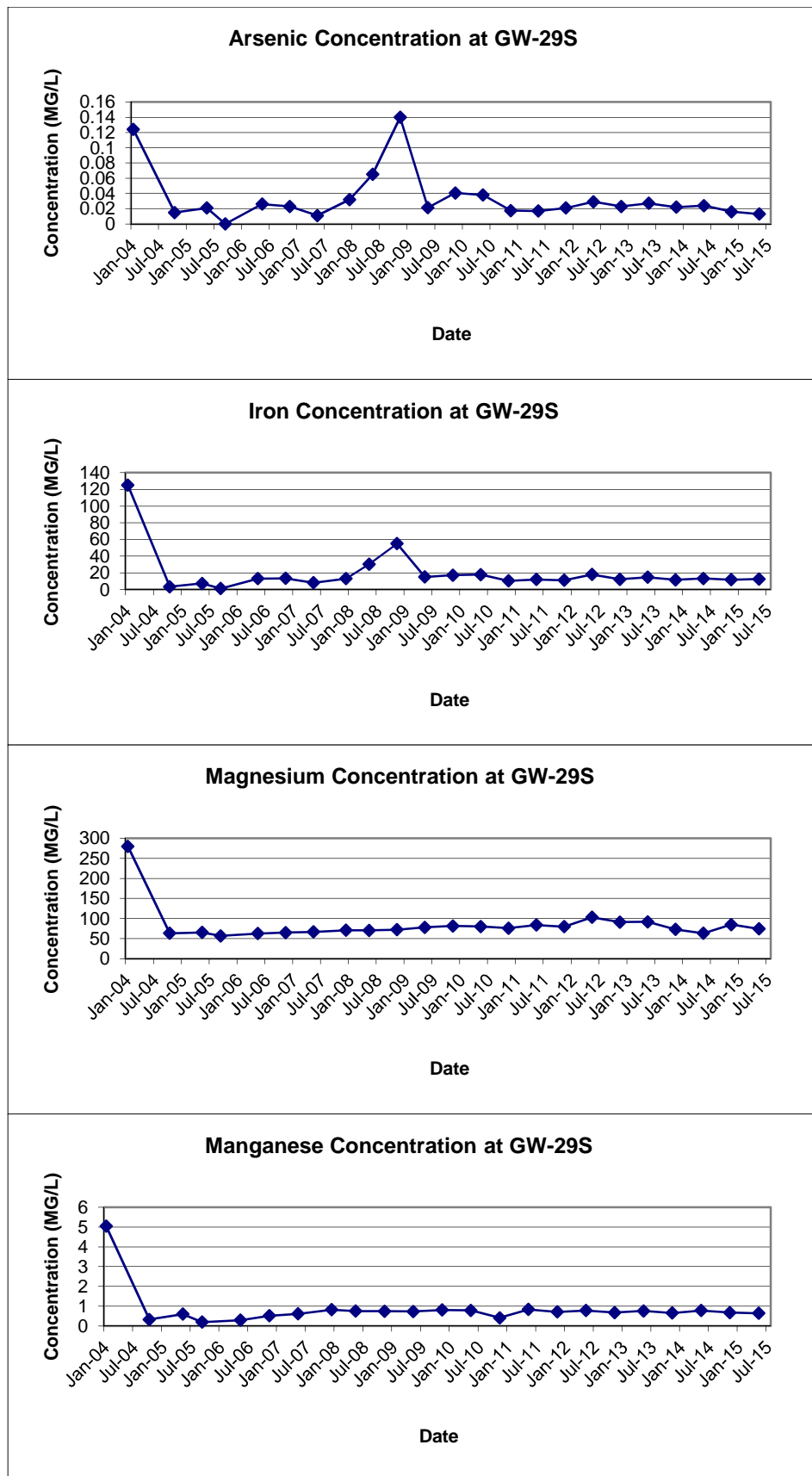


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

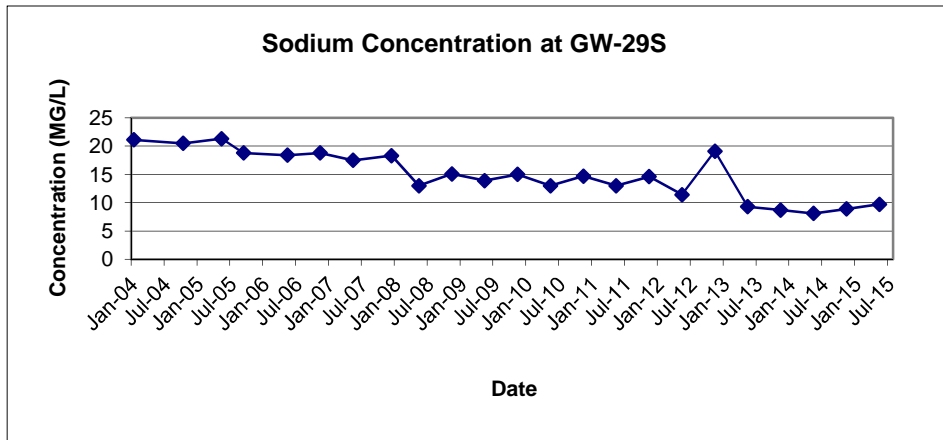


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

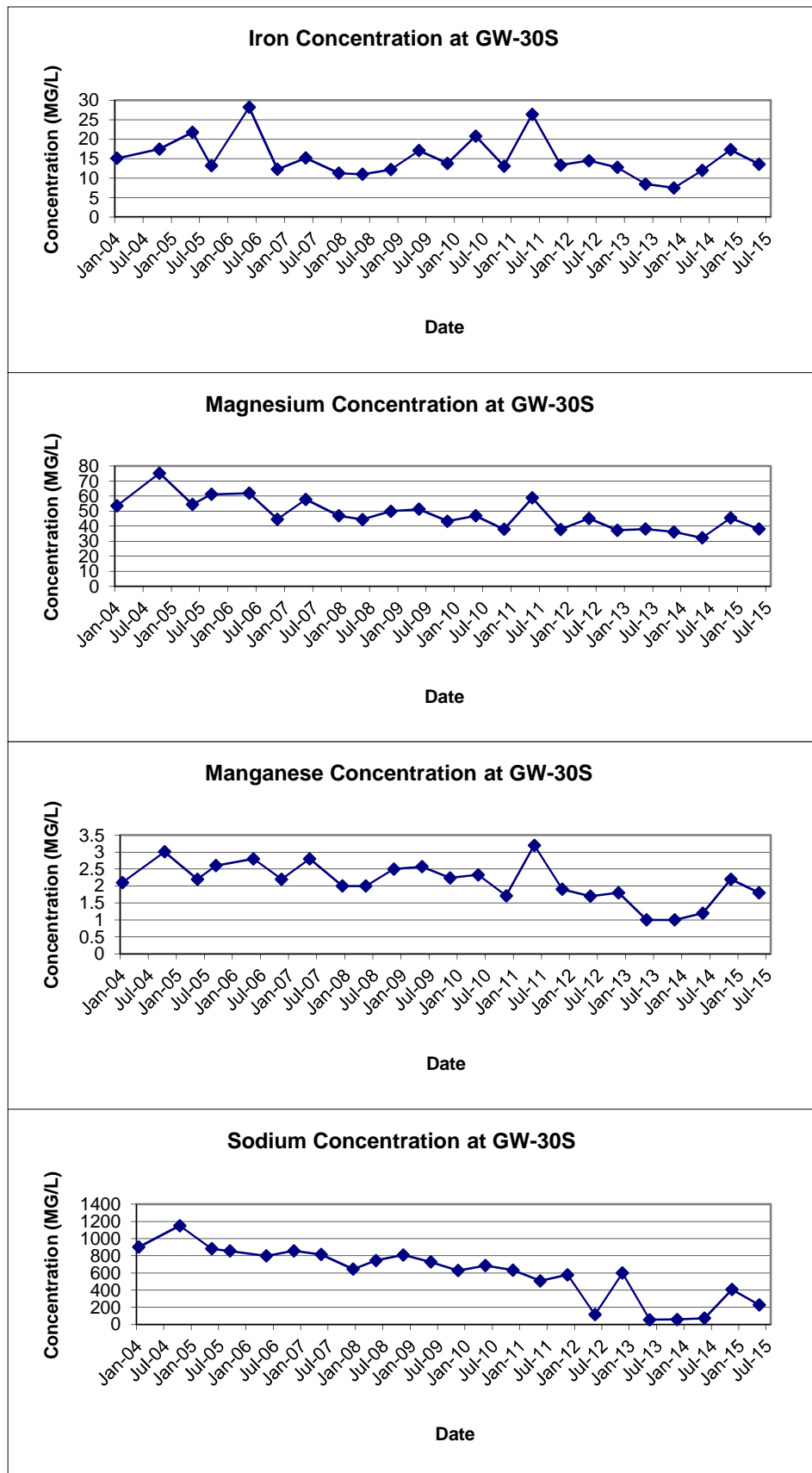


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

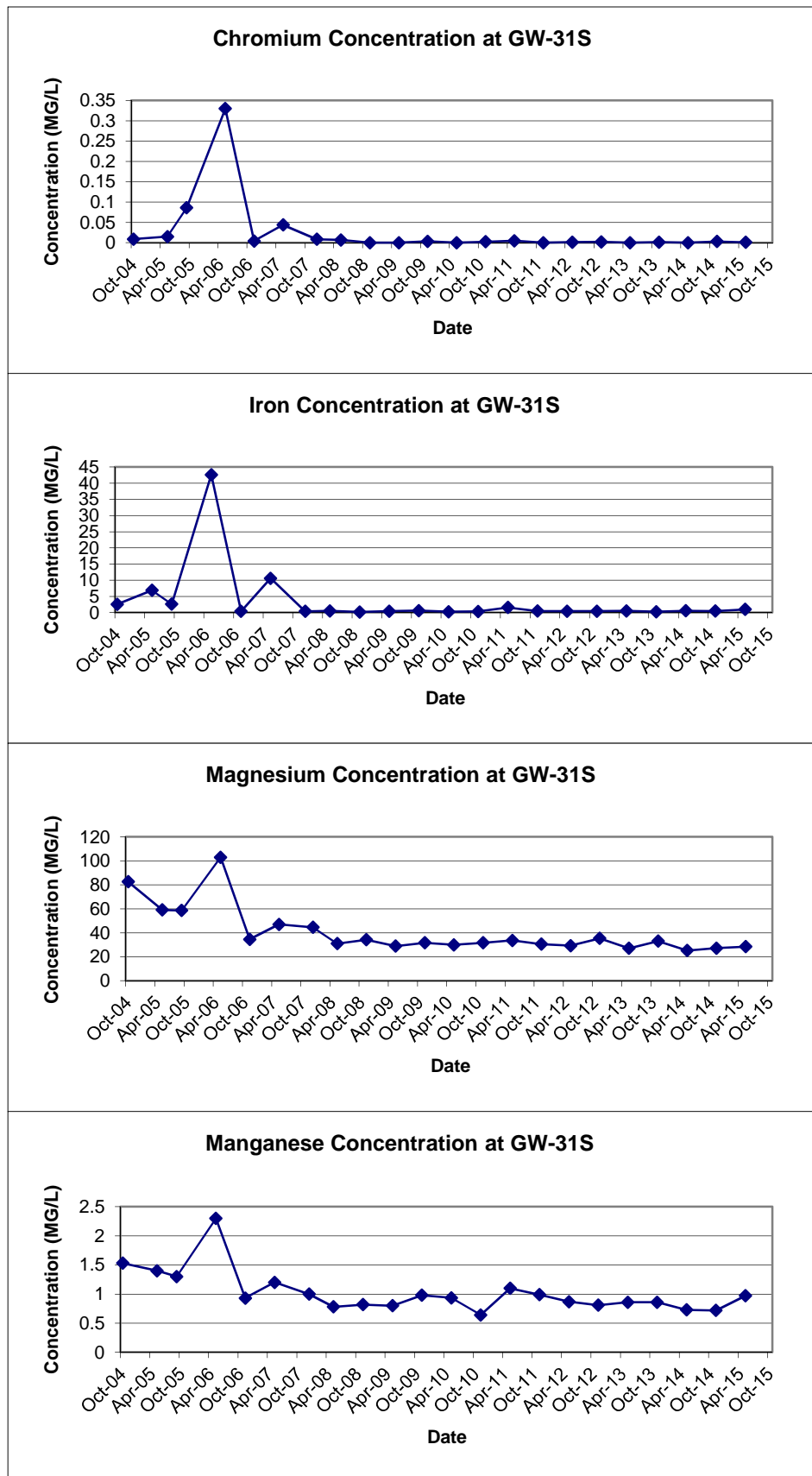


FIGURE E-16
 TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
 IN MONITORING WELL GW-32S

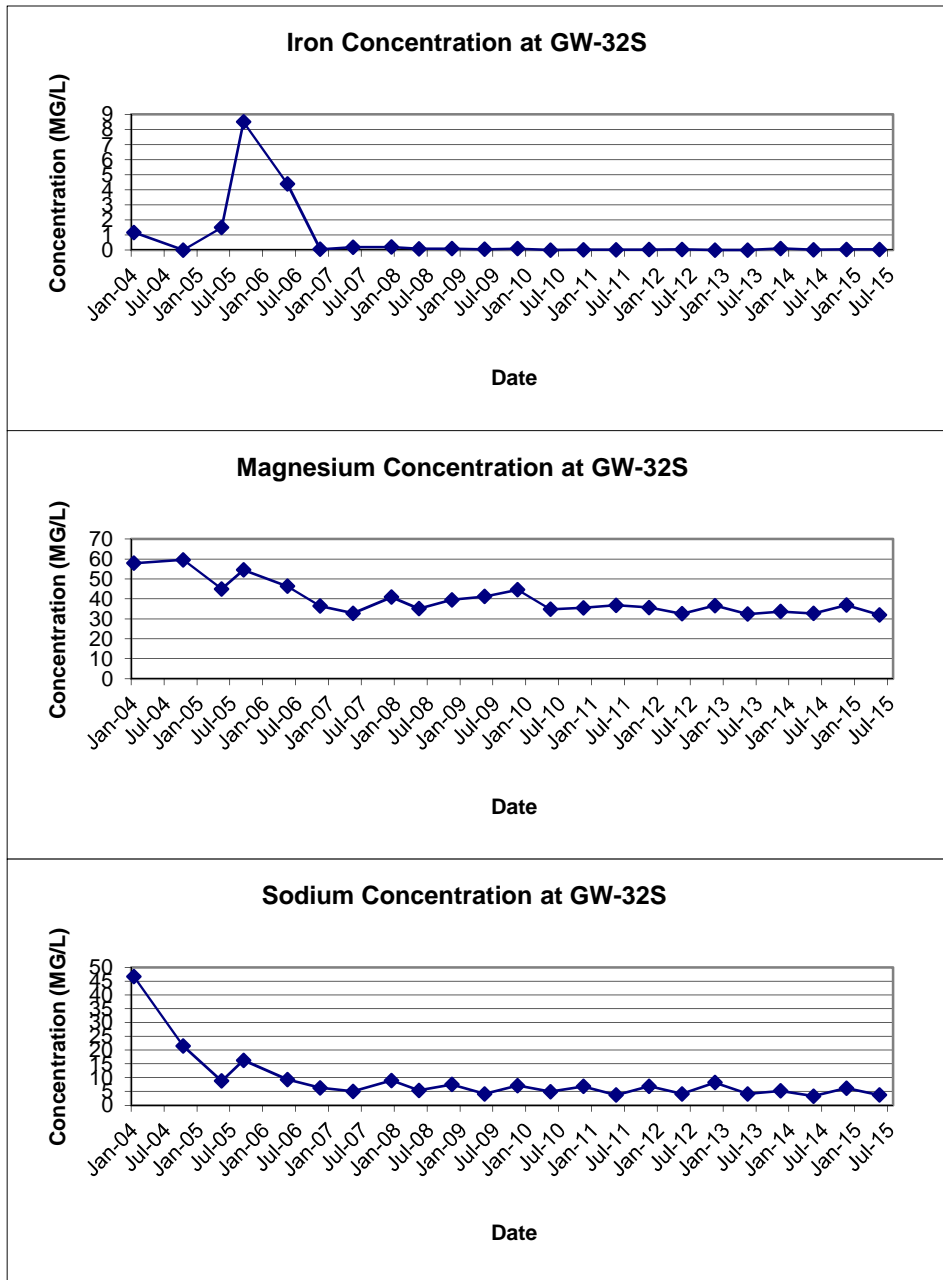


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

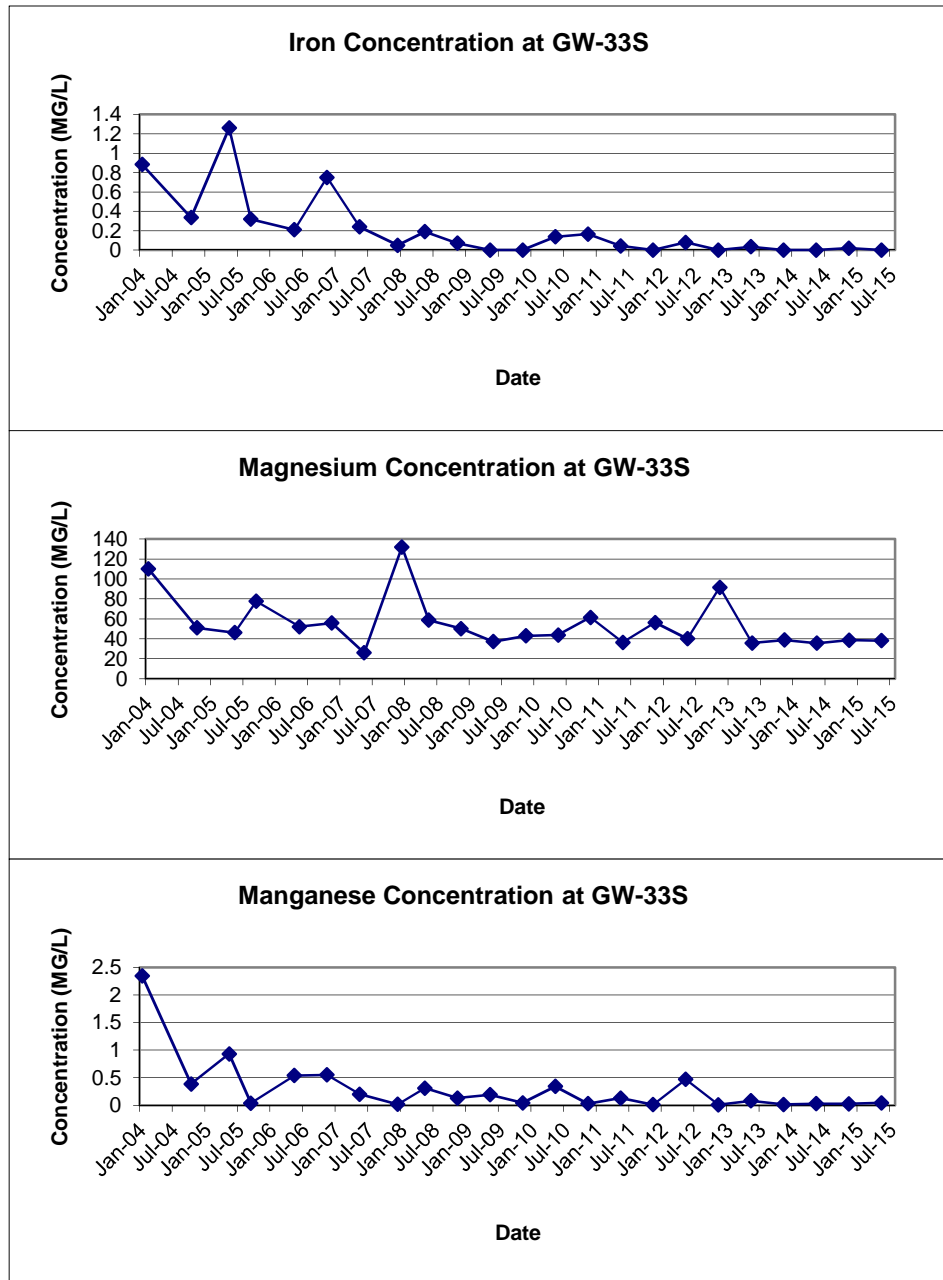


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

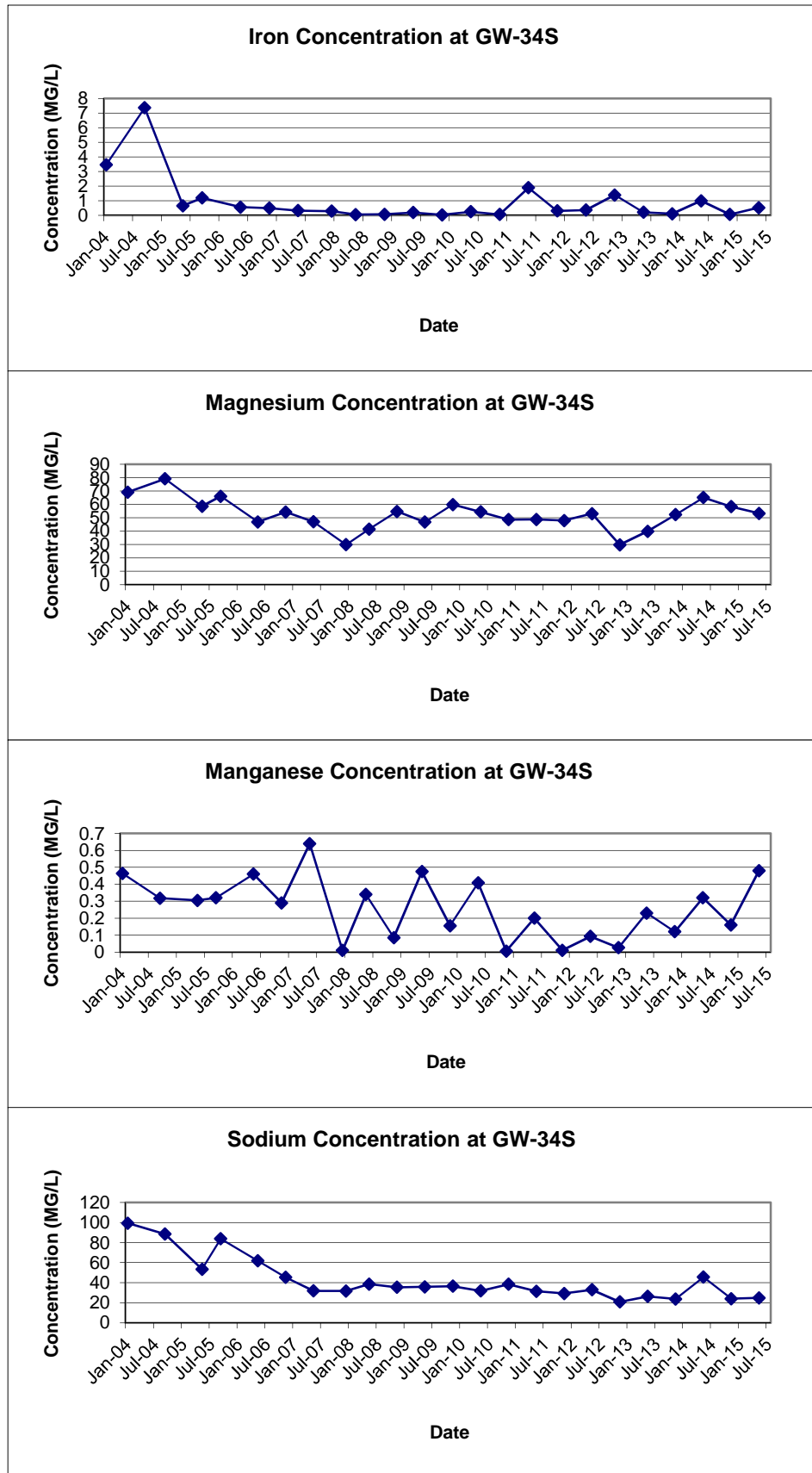
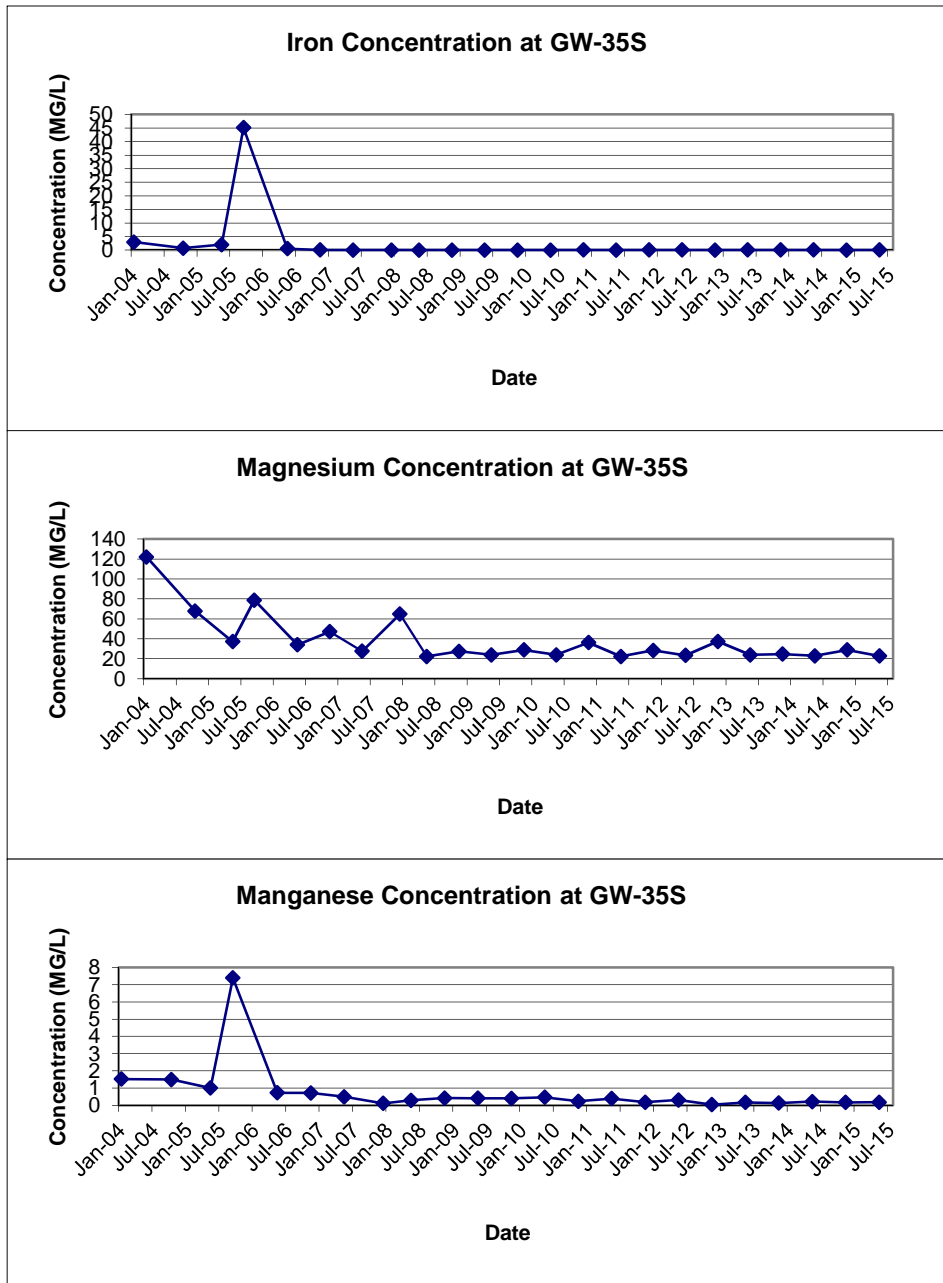


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT NO. 13-04-CH016

The Town of Cheektowaga
275 Alexander Street
Cheektowaga NY 14211



Engineering Department
Office: 716-897-7288
Fax: 716-897-7299

WILLIAM R. PUGH, P.E.
TOWN ENGINEER

October 8, 2013

Mr. Jon Sundquist, PhD
Project Manager
URS Corporation
77 Goodell Street
Buffalo, New York 14203

Re: Pfohl Bros. Landfill
Site Discharge Permit

Dear Mr. Sundquist:

Enclosed please find a copy of the Buffalo Sewer Authority Discharge Permit, BPDES 13-04-0CH16, for your file for the referenced site which was renewed earlier this year having an expiration date of March 31, 2016. All discharge limitations and sampling requirements remain the same as the most recent expired permit.

Should you have any questions, please contact this office at 897-7288.

Very truly yours,

TOWN OF CHEEKTOWAGA

A handwritten signature in black ink, appearing to read "W. R. Pugh".

William R. Pugh, P.E.
Town Engineer

WRP/mj

enc.

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

**PERMIT NO. 13-04-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 11, 2013** 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^{day} of April, 2013

To Expire the 31st day of March, 2016



General Manager

Signed this 12th day of March, 2013

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 ⁽¹⁾		Sampling Requirements	
			Daily Max	Period	Type
001	pH	5.0 – 12.0	S.U.	1 day	Composite ²
	Total Cadmium	1.17	lbs.	1 day	Composite ²
	Total Chromium	1.17	lbs.	1 day	Composite ²
	Total Copper	3.74	lbs.	1 day	Composite ²
	Total Lead	1.17	lbs.	1 day	Composite ²
	Total Nickel	3.27	lbs.	1 day	Composite ²
	Total Zinc	5.84	lbs.	1 day	Composite ²
	Total Barium	2.34	lbs.	1 day	Composite ²
	Total Suspended Solids ⁵	250	mg/l	1 day	Composite ²
	Total Flow	140,100	gallons ⁶	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 ⁽¹⁾	Sampling Requirements	
		Daily Max	Period	Type
001	Total Mercury	0.001 lbs.	1 day	Composite ²
	USEPA Test Method 608 ⁴	To be monitored	1 day	Grab ³
	USEPA Test Method 624 ⁴	To be monitored	1 day	Grab ³
	USEPA Test Method 625 ⁴	To be monitored	1 day	Grab ³

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

B. DISCHARGE MONITORING REPORTING REQUIREMENTS

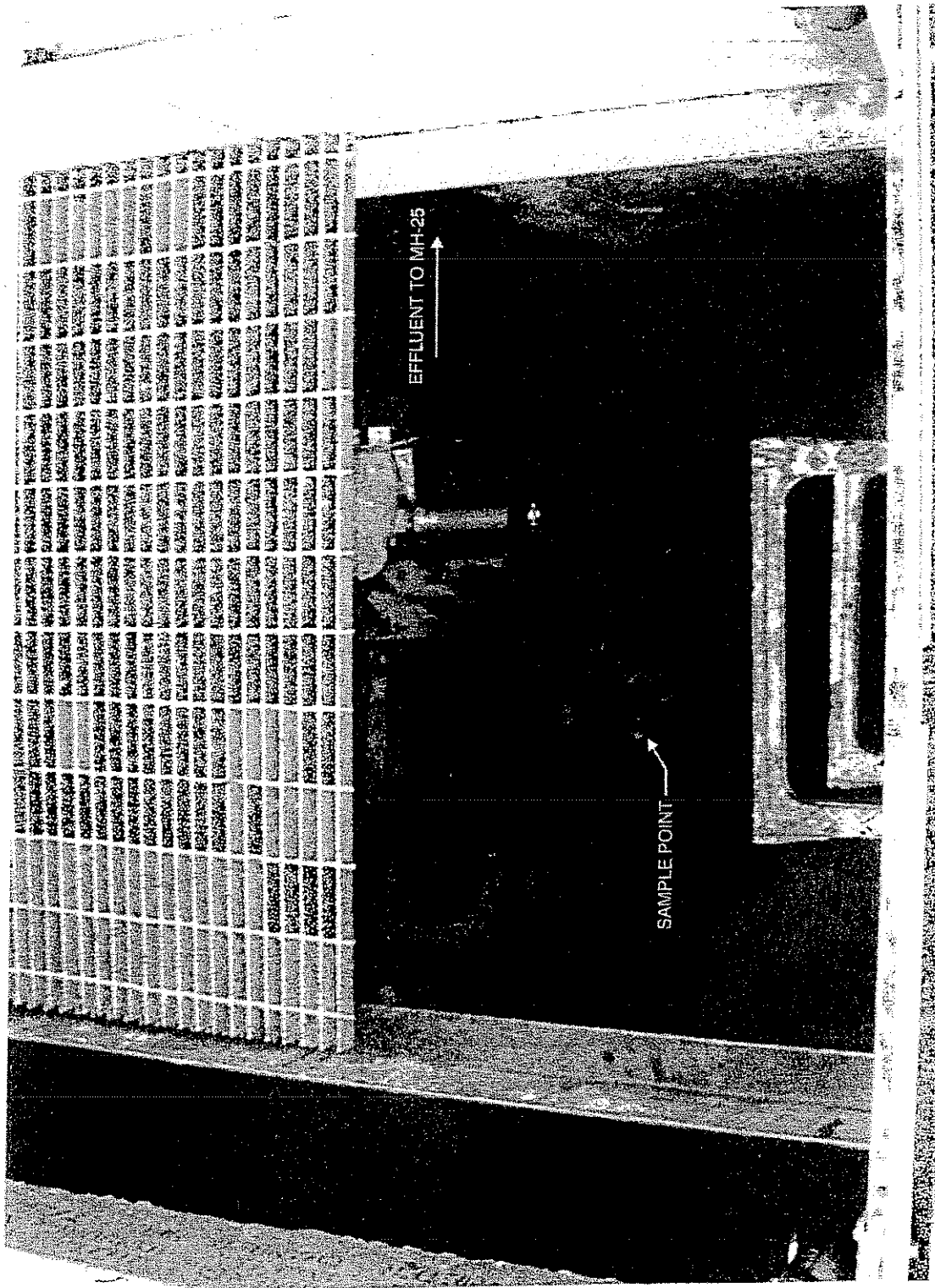
During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	March 31, 2011	Every March 31 st , June 30 th , September 30 th and December 31 st
	USEPA Test Methods 608, 624 and 625 & T Mercury	March 31, 2011	

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.



URS

PFOHL BROTHERS LANDFILL
EFFLUENT SAMPLE POINT

FIGURE 1

**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:

**Mr. William Pugh, 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: 3/26/15 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 36° F, Rain/Snow Mix

Sampling Device: NA

Time of Installation: 11:20 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: WW-6 was running at the time of sample set-up.
PLC display volumes: WW-01 (1,230,272 gals), WW-02 (77 gals), WW-03 (183 gals),
WW-04 (293,576 gals), WW-05 (3,711,712 gals), WW-06 (3,185,276 gals) & MH-25 (8,532,684 gals).

Date: 3/27/15 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 33° F, Light Snow

Time of Collection: 11:20

Field Measurements:

11:20/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 8.29

Temperature: 4.9°C

Identification: EFF-032715

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: WW-5 and WW-6 were running at the time of sample collection.
PLC display volumes: WW-01 (1,230,272 gals), WW-02 (77 gals), WW-03 (183 gals),
WW-04 (293,576 gals), WW-05 (3,712,239 gals), WW-06 (3,205,984 gals) & MH-25 (8,554,223 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
MARCH 2015**

Sample ID	EFF-032715			
Matrix	Effluent Water			
Date Sampled	3/27/2015			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.05	0.01	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.0001	1.17	No
Total Chromium	< 0.0010	< 0.0002	1.17	No
Total Copper	0.0052	0.001	3.74	No
Total Lead	< 0.0030	< 0.001	1.17	No
Total Nickel	0.0013	0.0002	3.27	No
Total Zinc	0.027	0.005	5.84	No
Total Suspended Solids	< 4.0	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	8.29	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		21,539	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

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

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: 6/18/15 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 86° F, Sunny

Sampling Device: NA

Time of Installation: 11:40 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells were running at the time of sample set-up.
PLC display volumes: WW-01 (1,448,989 gals), WW-02 (37,744 gals), WW-03 (46,641 gals),
WW-04 (620,375 gals), WW-05 (4,719,397 gals), WW-06 (4,484,135 gals) & MH-25 (11,470,614 gals).

Date: 6/19/15 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 63° F, Cloudy

Time of Collection: 11:40

Field Measurements:

11:40/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 7.82

Temperature: 18.4°C

Identification: EFF-061915

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.
PLC display volumes: WW-01 (1,448,989 gals), WW-02 (37,744 gals), WW-03 (46,641 gals),
WW-04 (622,125 gals), WW-05 (4,721,133 gals), WW-06 (4,487,838 gals) & MH-25 (11,477,691 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
JUNE 2015**

Sample ID	EFF-061915			
Matrix	Effluent Water			
Date Sampled	6/19/2015			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.26	0.02	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00003	1.17	No
Total Chromium	< 0.0010	< 0.0001	1.17	No
Total Copper	0.0044	0.000	3.74	No
Total Lead	< 0.0030	< 0.0002	1.17	No
Total Nickel	0.0042	0.0002	3.27	No
Total Zinc	0.038	0.002	5.84	No
Total Suspended Solids	< 4.0	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	7.82	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		7,077	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

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

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date(s) of Inspection: May 6, 2015

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-01S	OK	OK	OK	Bulged	4.43	14.94	
GW-01D	OK	OK	OK	Bulged	3.19	39.65	
GW-03S	OK	OK	OK	OK	3.05	13.22	
GW-03D	OK	OK	OK	OK	2.19	35.70	
GW-04S	OK	OK	OK	OK	4.71	16.23	
GW-04D	OK	OK	OK	OK	13.10	45.57	
GW-07S	OK	OK	OK	OK	5.00	35.04	
GW-07D	OK	OK	OK	Damaged	46.65	60.45	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date(s) of Inspection: May 6, 2015

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-08SR	OK	OK	OK	OK	5.31	13.02	
GW-08D	OK	OK	OK	OK	6.16	36.54	
GW-26D	OK	OK	OK	OK	6.99	40.70	
GW-28S	OK	OK	OK	OK	9.51	15.52	
GW-29S	OK	OK	OK	OK	8.86	20.04	
GW-30S	OK	OK	OK	OK	8.11	17.97	
GW-31S	OK	OK	OK	OK	3.62	9.57	
GW-32S	OK	OK	OK	OK	3.82	9.93	

Additional Comments: _____

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date(s) of Inspection: May 6, 2015

<i>Well I.D. Number</i>	<i>Lock</i>	<i>Surface Seal</i>	<i>Protective Casing</i>	<i>Riser</i>	<i>Water Level (ft. BTOC)</i>	<i>Well Depth (ft. BTOC)</i>	<i>Other Comments</i>
GW-33S	OK	OK	OK	OK	5.27	8.21	
GW-34S	OK	OK	OK	OK	2.77	10.01	
GW-35S	OK	OK	OK	OK	3.82	7.46	

Additional Comments: _____

DATA APPLICABILITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING

PFOHL BROTHERS LANDFILL SITE

Analyses Performed by:

**TESTAMERICA LABORATORIES, INC.
10 HAZELWOOD DRIVE
AMHERST, NY 14228**

Prepared for:

**TOWN OF CHEEKTOWAGA
CHEEKTOWAGA, NY 14225**

Prepared by:

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

JUNE 2015

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IV. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES.....	2
V. NON-CONFORMANCES	2
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VII. SUMMARY	3

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 2015 semi-annual monitoring program at the Pfohl Brothers Landfill Site, located in Cheektowaga, NY.

II. ANALYTICAL METHODOLOGIES AND DATA VALIDATION PROCEDURES

The data being evaluated are from the May 6-8, 2015 sampling of nineteen (19) groundwater samples, one (1) field duplicate, and one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair. A total of three (3) trip blanks, one per shipment, were sent to the laboratory along with the samples. The analytical laboratory that performed the analyses was TestAmerica Laboratories, Inc. 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 Method 6010C/7470A. The trip blanks were only analyzed for VOCs.

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

- *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014.
- *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-13-001, August 2014.

The limited data validation 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 validated analytical results are presented on Table 1 (groundwater) and Table 2 (field QC). Copies of the validated 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 were provided by the laboratory, which only consisted of analytical summaries and 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.

Due to the low recharge rates of monitoring wells GW-07D and GW-07S, the VOC aliquots were collected on 5/6/15, while the SVOC/metals aliquots were collected on 5/7/15. All aliquots of sample GW-04S were collected on 05/7/15, however the VOCs were collected at 10:15 am while the SVOC/metals were collected at 11:55 am.

V. NON-CONFORMANCES

The percent recovery (%R) of SVOC base-neutral (BN) surrogates nitrobenzene-d5 and p-terphenyl-d14 were below the lower QC limits in field duplicate FD-050715 (GW-26D). This sample was re-extracted outside of the holding time with acceptable surrogate %Rs. The results from the original extraction were reported and the associated compounds were qualified 'UJ'. It should be noted that all target compounds were non-detect in both the initial and re-extraction of the sample, as well as in the parent sample.

The metals method blank exhibited contamination for manganese (Mn) and zinc (Zn) at concentrations less than the RL. The laboratory qualified the detected results 'B' for Mn and Zn in the associated samples, however, since the sample results were greater than ten times the method blank results, and also greater than the RL, the 'B' qualifier was removed during the limited data validation. The Zn results for associated samples GW-04D, GW-07S, GW-28S, GW-33S, GW-34S, and GW-35S were qualified 'U' at the RL since they were less than the RL.

VI. SAMPLE RESULTS AND REPORTING

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

The VOC analysis of sample GW-08SR was performed at a five-fold dilution due to a foaming issue during the undiluted sample analysis. The reporting limits for the non-detect compounds are elevated due to the dilution utilized during the analysis.

A field duplicate was collected at groundwater location GW-26D. The field duplicate results exhibited good field and analytical precision with the following exception. The relative percent difference exceeded 20% for Zn. The Zn results were qualified 'J' or 'UJ' in these samples.

VII. SUMMARY

All sample analyses were found to be compliant with the method criteria, except where previously noted. Those results qualified 'U' during the limited data review are considered non-detect. Those results qualified 'J' or 'UJ' are considered conditionally usable. All other sample results are usable as reported. URS does not recommend the recollection of any samples at this time.

Prepared By: Ann Marie Kropovitch, Chemist

AMK

Date: 6/9/15

Reviewed by: Peter R. Fairbanks, Senior Chemist

PF

Date: 6/11/15

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		05/08/15	05/08/15	05/06/15	05/06/15	05/07/15
Parameter	Units					
Volatile Organic Compounds						
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
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	9.3 U	9.8 U	1.5 J	9.6 U	10 U
1,4-Dichlorobenzene	UG/L	9.3 U	9.8 U	2.1 J	9.6 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	4.7 U	4.9 U	5.0 U	4.8 U	5.2 U
Phenol	UG/L	4.7 U	4.9 U	5.0 U	4.8 U	5.2 U
Metals						
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	0.072	0.16	0.072	0.098	0.085
Cadmium	MG/L	0.0010 U	0.0013	0.0010 U	0.0015	0.0010 U
Chromium	MG/L	0.0053	0.0040 U	0.0040 U	0.013	0.0040 U
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.0019 J	0.010 U
Iron	MG/L	0.48	6.8	1.6	1.5	0.029 J
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	34.4	20.0	14.6	114	75.0
Manganese	MG/L	0.019	1.4	0.33	0.16	0.020
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	0.0025 J	0.057	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *CLW 6/4/15*
 CHECKED BY: *PF 6/5/15*

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		05/08/15	05/08/15	05/06/15	05/06/15	05/07/15
Parameter	Units					
Metals						
Silver	MGL	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	102	113	180	67.1	92.6
Zinc	MGL	0.010 U	0.0041 J	0.010 U	0.017	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *CLM/KG/4/15*
 CHECKED BY: *AF 6/5/15*

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Sample ID		GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/07/15	05/07/15	05/06/15	05/07/15	05/06/15
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	1.0 U	NA	1.0 U	NA	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	NA	2.0 U	NA	2.0 U
Acetone	UG/L	10 U	NA	10 U	NA	10 U
Benzene	UG/L	1.0 U	NA	1.0 U	NA	1.0 U
Vinyl chloride	UG/L	1.0 U	NA	1.0 U	NA	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	NA	9.8 U	NA	9.9 U	NA
1,4-Dichlorobenzene	UG/L	NA	9.8 U	NA	9.9 U	NA
bis(2-Ethylhexyl)phthalate	UG/L	NA	4.9 U	NA	5.0 U	NA
Phenol	UG/L	NA	4.9 U	NA	5.0 U	NA
Metals						
Antimony	MG/L	NA	0.020 U	NA	0.020 U	NA
Arsenic	MG/L	NA	0.010 U	NA	0.010 U	NA
Barium	MG/L	NA	0.12	NA	0.068	NA
Cadmium	MG/L	NA	0.00053 J	NA	0.00081 J	NA
Chromium	MG/L	NA	0.0075	NA	0.028	NA
Copper	MG/L	NA	0.0058 J	NA	0.0038 J	NA
Iron	MG/L	NA	4.2	NA	0.54	NA
Lead	MG/L	NA	0.0050 U	NA	0.011	NA
Magnesium	MG/L	NA	28.2	NA	34.1	NA
Manganese	MG/L	NA	0.14	NA	0.037	NA
Mercury	MG/L	NA	0.00020 U	NA	0.00020 U	NA
Nickel	MG/L	NA	0.0076 J	NA	0.022	NA

Flags assigned during chemistry validation are shown.

MADE BY: *CLM/6/14/15*
 CHECKED BY: *AF 6/5/15*

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Sample ID		GW-04S	GW-04S	GW-07D	GW-07D	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/07/15	05/07/15	05/06/15	05/07/15	05/06/15
Parameter	Units					
Metals						
Silver	MG/L	NA	0.0030 U	NA	0.0030 U	NA
Sodium	MG/L	NA	32.8	NA	81.8	NA
Zinc	MG/L	NA	0.019	NA	0.011	NA

Flags assigned during chemistry validation are shown.

MADE BY: *CLM 6/4/15*
 CHECKED BY: *AP 6/5/15*

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-07S	GW-08D	GW-08SR	GW-26D	GW-26D
Sample ID		GW-07S	GW-08D	GW-08SR	FD-050715	GW-26D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/07/15	05/06/15	05/06/15	05/07/15	05/07/15
Parameter	Units				Field Duplicate (1-1)	
Volatile Organic Compounds						
1,1,2-Trichloroethane	UG/L	NA	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	NA	2.0 U	10 U	1.2 J	1.2 J
Acetone	UG/L	NA	10 U	50 U	10 U	10 U
Benzene	UG/L	NA	1.0 U	5.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	NA	1.0 U	5.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	9.6 U	9.8 U	10 UJ	9.8 U
1,4-Dichlorobenzene	UG/L	10 U	9.6 U	9.8 U	10 UJ	9.8 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	4.8 U	4.9 U	5.0 UJ	4.9 U
Phenol	UG/L	5.0 U	4.8 U	4.9 U	5.0 U	4.9 U
Metals						
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	0.0058 J	0.010 U	0.010 U
Barium	MG/L	0.31	0.11	0.34	0.14	0.14
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0028 J	0.10	0.0041	0.0040 U	0.0040 U
Copper	MG/L	0.010 U	0.0018 J	0.010 U	0.0017 J	0.010 U
Iron	MG/L	0.12	1.2	26.4	4.8	4.7
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	38.0	22.0	48.5	19.0	18.7
Manganese	MG/L	0.067	0.053	1.3	0.50	0.49
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.061	0.019	0.0038 J	0.0018 J	0.0019 J

Flags assigned during chemistry validation are shown.

MADE BY: *CRK/g/1/15*
 CHECKED BY: *AP/g/1/15*

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-07S	GW-08D	GW-08SR	GW-26D	GW-26D
Sample ID		GW-07S	GW-08D	GW-08SR	FD-050715	GW-26D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/07/15	05/06/15	05/06/15	05/07/15	05/07/15
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	57.5	290	352	351	341
Zinc	MG/L	0.010 U	0.0086 J	0.0045 J	0.014 J	0.010 UJ

Flags assigned during chemistry validation are shown.

MADE BY: *ALM/6/15*
 CHECKED BY: *AF/6/15*

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Sample ID		GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/07/15	05/08/15	05/08/15	05/08/15	05/08/15
Parameter	Units					
Volatile Organic Compounds						
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
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	9.6 U	9.6 U	9.9 U	9.5 U	10 U
1,4-Dichlorobenzene	UG/L	9.6 U	9.6 U	9.9 U	9.5 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	4.8 U	4.9 U	4.8 U	5.0 U
Phenol	UG/L	4.8 U	4.8 U	4.9 U	4.8 U	5.0 U
Metals						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.013	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.076	0.20	0.18	0.087	0.054
Cadmium	MG/L	0.0014	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0040 U	0.0040 U	0.0011 J	0.0040 U
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.39	12.7	13.6	1.0	0.043 J
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	27.0	74.2	38.1	28.5	32.0
Manganese	MG/L	0.94	0.64	1.8	0.97	0.48
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0024 J	0.010 U	0.010 U	0.0031 J	0.0015 J

Flags assigned during chemistry validation are shown.

MADE BY: *OKK 6/4/15*
 CHECKED BY: *AE 6/5/15*

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Sample ID		GW-28S	GW-29S	GW-30S	GW-31S	GW-32S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/07/15	05/08/15	05/08/15	05/08/15	05/08/15
Parameter	Units					
Metals						
Silver	MGL	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	10.9	9.7	228	4.8	3.7
Zinc	MGL	0.010 U	0.010 U	0.010 U	0.012	0.0043 J

Flags assigned during chemistry validation are shown.

MADE BY: clerk 6/4/15
 CHECKED BY: AF 6/5/15

Detection Limits shown are PQL

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

Location ID		GW-33S	GW-34S	GW-35S
Sample ID		GW-33S	GW-34S	GW-35S
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		05/07/15	05/07/15	05/07/15
Parameter	Units			
Volatile Organic Compounds				
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds				
1,3-Dichlorobenzene	UG/L	10 U	9.7 U	9.8 U
1,4-Dichlorobenzene	UG/L	10 U	9.7 U	9.8 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	4.8 U	4.9 U
Phenol	UG/L	5.0 U	4.8 U	4.9 U
Metals				
Antimony	MG/L	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.031	0.13	0.084
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0012 J	0.0023 J	0.0040 U
Copper	MG/L	0.0022 J	0.0030 J	0.010 U
Iron	MG/L	0.050 U	0.53	0.058
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	38.1	53.3	22.7
Manganese	MG/L	0.041	0.48	0.17
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0016 J	0.0058 J	0.0015 J

Flags assigned during chemistry validation are shown.

MADE BY: *CLP 6/11/15*
CHECKED BY: *PE 6/15/15*

Detection Limits shown are PQL

TABLE 1
VALIDATED GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		GW-33S	GW-34S	GW-35S
Sample ID		GW-33S	GW-34S	GW-35S
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		05/07/15	05/07/15	05/07/15
Parameter	Units			
Metals				
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	3.3	24.8	2.5
Zinc	MG/L	0.010 U	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *CHL 6/14/15*
 CHECKED BY: *PE 6/15/15*

Detection Limits shown are PQL

TABLE 2
VALIDATED FIELD QC SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		FIELDQC	FIELDQC	FIELDQC
Sample ID		TB	TB-050715	TB-050815
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		05/06/15	05/07/15	05/08/15
Parameter	Units	Trip Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds				
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U

Flags assigned during chemistry validation are shown.

MADE BY: *CHL 6/15/15*
 CHECKED BY: *AF 6/5/15*

Detection Limits shown are PQL

APPENDIX A

VALIDATED SAMPLE REPORTING FORMS

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79809-1

Client Sample ID: GW-03D

Lab Sample ID: 480-79809-1

Date Collected: 05/06/15 11:20

Matrix: Water

Date Received: 05/06/15 17:50

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			05/16/15 11:35	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/16/15 11:35	1
Acetone	ND		10	3.0	ug/L			05/16/15 11:35	1
Benzene	ND		1.0	0.41	ug/L			05/16/15 11:35	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/16/15 11:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		66 - 137		05/16/15 11:35	1
Toluene-d8 (Surr)	93		71 - 126		05/16/15 11:35	1
4-Bromofluorobenzene (Surr)	108		73 - 120		05/16/15 11:35	1
Dibromofluoromethane (Surr)	98		60 - 140		05/16/15 11:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	1.5	J	10	0.48	ug/L		05/08/15 09:18	05/16/15 23:20	1
1,4-Dichlorobenzene	2.1	J	10	0.46	ug/L		05/08/15 09:18	05/16/15 23:20	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		05/08/15 09:18	05/16/15 23:20	1
Phenol	ND		5.0	0.39	ug/L		05/08/15 09:18	05/16/15 23:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		52 - 132	05/08/15 09:18	05/16/15 23:20	1
2-Fluorobiphenyl	67		48 - 120	05/08/15 09:18	05/16/15 23:20	1
2-Fluorophenol	46		20 - 120	05/08/15 09:18	05/16/15 23:20	1
Nitrobenzene-d5	67		46 - 120	05/08/15 09:18	05/16/15 23:20	1
Phenol-d5	36		16 - 120	05/08/15 09:18	05/16/15 23:20	1
p-Terphenyl-d14	93		67 - 150	05/08/15 09:18	05/16/15 23:20	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/12/15 07:50	05/13/15 21:21	1
Arsenic	ND		0.010	0.0056	mg/L		05/12/15 07:50	05/13/15 21:21	1
Barium	0.072		0.0020	0.00070	mg/L		05/12/15 07:50	05/13/15 21:21	1
Cadmium	ND		0.0010	0.00050	mg/L		05/12/15 07:50	05/13/15 21:21	1
Chromium	ND		0.0040	0.0010	mg/L		05/12/15 07:50	05/13/15 21:21	1
Copper	ND		0.010	0.0016	mg/L		05/12/15 07:50	05/13/15 21:21	1
Iron	1.6		0.050	0.019	mg/L		05/12/15 07:50	05/13/15 21:21	1
Lead	ND		0.0050	0.0030	mg/L		05/12/15 07:50	05/13/15 21:21	1
Magnesium	14.6		0.20	0.043	mg/L		05/12/15 07:50	05/13/15 21:21	1
Manganese	0.33		0.0030	0.00040	mg/L		05/12/15 07:50	05/13/15 21:21	1
Nickel	0.0025	J	0.010	0.0013	mg/L		05/12/15 07:50	05/13/15 21:21	1
Silver	ND		0.0030	0.0017	mg/L		05/12/15 07:50	05/13/15 21:21	1
Sodium	180		1.0	0.32	mg/L		05/12/15 07:50	05/13/15 21:21	1
Zinc	ND		0.010	0.0015	mg/L		05/12/15 07:50	05/13/15 21:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/14/15 08:45	05/14/15 15:21	1

TestAmerica Buffalo



Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79809-1

Client Sample ID: GW-03S

Lab Sample ID: 480-79809-2

Date Collected: 05/06/15 12:20

Matrix: Water

Date Received: 05/06/15 17:50

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			05/16/15 11:59	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/16/15 11:59	1
Acetone	ND		10	3.0	ug/L			05/16/15 11:59	1
Benzene	ND		1.0	0.41	ug/L			05/16/15 11:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/16/15 11:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		66 - 137		05/16/15 11:59	1
Toluene-d8 (Surr)	93		71 - 126		05/16/15 11:59	1
4-Bromofluorobenzene (Surr)	111		73 - 120		05/16/15 11:59	1
Dibromofluoromethane (Surr)	96		60 - 140		05/16/15 11:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		05/08/15 09:18	05/16/15 23:48	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/08/15 09:18	05/16/15 23:48	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/08/15 09:18	05/16/15 23:48	1
Phenol	ND		4.8	0.37	ug/L		05/08/15 09:18	05/16/15 23:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	95		52 - 132	05/08/15 09:18	05/16/15 23:48	1
2-Fluorobiphenyl	83		48 - 120	05/08/15 09:18	05/16/15 23:48	1
2-Fluorophenol	58		20 - 120	05/08/15 09:18	05/16/15 23:48	1
Nitrobenzene-d5	80		46 - 120	05/08/15 09:18	05/16/15 23:48	1
Phenol-d5	40		16 - 120	05/08/15 09:18	05/16/15 23:48	1
p-Terphenyl-d14	95		67 - 150	05/08/15 09:18	05/16/15 23:48	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/12/15 07:50	05/13/15 21:43	1
Arsenic	ND		0.010	0.0056	mg/L		05/12/15 07:50	05/13/15 21:43	1
Barium	0.098		0.0020	0.00070	mg/L		05/12/15 07:50	05/13/15 21:43	1
Cadmium	0.0015		0.0010	0.00050	mg/L		05/12/15 07:50	05/13/15 21:43	1
Chromium	0.013		0.0040	0.0010	mg/L		05/12/15 07:50	05/13/15 21:43	1
Copper	0.0019	J	0.010	0.0016	mg/L		05/12/15 07:50	05/13/15 21:43	1
Iron	1.5		0.050	0.019	mg/L		05/12/15 07:50	05/13/15 21:43	1
Lead	ND		0.0050	0.0030	mg/L		05/12/15 07:50	05/13/15 21:43	1
Magnesium	114		0.20	0.043	mg/L		05/12/15 07:50	05/13/15 21:43	1
Manganese	0.16		0.0030	0.00040	mg/L		05/12/15 07:50	05/13/15 21:43	1
Nickel	0.057		0.010	0.0013	mg/L		05/12/15 07:50	05/13/15 21:43	1
Silver	ND		0.0030	0.0017	mg/L		05/12/15 07:50	05/13/15 21:43	1
Sodium	67.1		1.0	0.32	mg/L		05/12/15 07:50	05/13/15 21:43	1
Zinc	0.017		0.010	0.0015	mg/L		05/12/15 07:50	05/13/15 21:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/14/15 08:45	05/14/15 15:31	1

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79809-1

Client Sample ID: GW-08D

Lab Sample ID: 480-79809-3

Date Collected: 05/06/15 13:45

Matrix: Water

Date Received: 05/06/15 17:50

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			05/16/15 12:23	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/16/15 12:23	1
Acetone	ND		10	3.0	ug/L			05/16/15 12:23	1
Benzene	ND		1.0	0.41	ug/L			05/16/15 12:23	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/16/15 12:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		66 - 137		05/16/15 12:23	1
Toluene-d8 (Surr)	94		71 - 126		05/16/15 12:23	1
4-Bromofluorobenzene (Surr)	115		73 - 120		05/16/15 12:23	1
Dibromofluoromethane (Surr)	98		60 - 140		05/16/15 12:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		05/08/15 09:18	05/17/15 00:16	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/08/15 09:18	05/17/15 00:16	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/08/15 09:18	05/17/15 00:16	1
Phenol	ND		4.8	0.37	ug/L		05/08/15 09:18	05/17/15 00:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	95		52 - 132	05/08/15 09:18	05/17/15 00:16	1
2-Fluorobiphenyl	82		48 - 120	05/08/15 09:18	05/17/15 00:16	1
2-Fluorophenol	62		20 - 120	05/08/15 09:18	05/17/15 00:16	1
Nitrobenzene-d5	80		46 - 120	05/08/15 09:18	05/17/15 00:16	1
Phenol-d5	46		16 - 120	05/08/15 09:18	05/17/15 00:16	1
p-Terphenyl-d14	99		67 - 150	05/08/15 09:18	05/17/15 00:16	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/12/15 07:50	05/13/15 21:46	1
Arsenic	ND		0.010	0.0056	mg/L		05/12/15 07:50	05/13/15 21:46	1
Barium	0.11		0.0020	0.00070	mg/L		05/12/15 07:50	05/13/15 21:46	1
Cadmium	ND		0.0010	0.00050	mg/L		05/12/15 07:50	05/13/15 21:46	1
Chromium	0.10		0.0040	0.0010	mg/L		05/12/15 07:50	05/13/15 21:46	1
Copper	0.0018	J	0.010	0.0016	mg/L		05/12/15 07:50	05/13/15 21:46	1
Iron	1.2		0.050	0.019	mg/L		05/12/15 07:50	05/13/15 21:46	1
Lead	ND		0.0050	0.0030	mg/L		05/12/15 07:50	05/13/15 21:46	1
Magnesium	22.0		0.20	0.043	mg/L		05/12/15 07:50	05/13/15 21:46	1
Manganese	0.053		0.0030	0.00040	mg/L		05/12/15 07:50	05/13/15 21:46	1
Nickel	0.019		0.010	0.0013	mg/L		05/12/15 07:50	05/13/15 21:46	1
Silver	ND		0.0030	0.0017	mg/L		05/12/15 07:50	05/13/15 21:46	1
Sodium	290		1.0	0.32	mg/L		05/12/15 07:50	05/13/15 21:46	1
Zinc	0.0086	J	0.010	0.0015	mg/L		05/12/15 07:50	05/13/15 21:46	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:13	1

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79809-1

Client Sample ID: GW-08SR

Lab Sample ID: 480-79809-4

Date Collected: 05/06/15 14:35

Matrix: Water

Date Received: 05/06/15 17:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		5.0	1.2	ug/L			05/16/15 12:47	5
1,2-Dichloroethene, Total	ND		10	4.1	ug/L			05/16/15 12:47	5
Acetone	ND		50	15	ug/L			05/16/15 12:47	5
Benzene	ND		5.0	2.1	ug/L			05/16/15 12:47	5
Vinyl chloride	ND		5.0	4.5	ug/L			05/16/15 12:47	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		66 - 137		05/16/15 12:47	5
Toluene-d8 (Surr)	93		71 - 126		05/16/15 12:47	5
4-Bromofluorobenzene (Surr)	111		73 - 120		05/16/15 12:47	5
Dibromofluoromethane (Surr)	98		60 - 140		05/16/15 12:47	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		05/08/15 09:18	05/17/15 00:44	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		05/08/15 09:18	05/17/15 00:44	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		05/08/15 09:18	05/17/15 00:44	1
Phenol	ND		4.9	0.38	ug/L		05/08/15 09:18	05/17/15 00:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	112		52 - 132	05/08/15 09:18	05/17/15 00:44	1
2-Fluorobiphenyl	82		48 - 120	05/08/15 09:18	05/17/15 00:44	1
2-Fluorophenol	59		20 - 120	05/08/15 09:18	05/17/15 00:44	1
Nitrobenzene-d5	81		46 - 120	05/08/15 09:18	05/17/15 00:44	1
Phenol-d5	41		16 - 120	05/08/15 09:18	05/17/15 00:44	1
p-Terphenyl-d14	97		67 - 150	05/08/15 09:18	05/17/15 00:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/12/15 07:50	05/13/15 21:49	1
Arsenic	0.0058	J	0.010	0.0056	mg/L		05/12/15 07:50	05/13/15 21:49	1
Barium	0.34		0.0020	0.00070	mg/L		05/12/15 07:50	05/13/15 21:49	1
Cadmium	ND		0.0010	0.00050	mg/L		05/12/15 07:50	05/13/15 21:49	1
Chromium	0.0041		0.0040	0.0010	mg/L		05/12/15 07:50	05/13/15 21:49	1
Copper	ND		0.010	0.0016	mg/L		05/12/15 07:50	05/13/15 21:49	1
Iron	26.4		0.050	0.019	mg/L		05/12/15 07:50	05/13/15 21:49	1
Lead	ND		0.0050	0.0030	mg/L		05/12/15 07:50	05/13/15 21:49	1
Magnesium	48.5		0.20	0.043	mg/L		05/12/15 07:50	05/13/15 21:49	1
Manganese	1.3		0.0030	0.00040	mg/L		05/12/15 07:50	05/13/15 21:49	1
Nickel	0.0038	J	0.010	0.0013	mg/L		05/12/15 07:50	05/13/15 21:49	1
Silver	ND		0.0030	0.0017	mg/L		05/12/15 07:50	05/13/15 21:49	1
Sodium	352		1.0	0.32	mg/L		05/12/15 07:50	05/13/15 21:49	1
Zinc	0.0045	J	0.010	0.0015	mg/L		05/12/15 07:50	05/13/15 21:49	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:23	1

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79809-1

Client Sample ID: GW-07D

Lab Sample ID: 480-79809-5

Date Collected: 05/06/15 15:15

Matrix: Water

Date Received: 05/06/15 17:50

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			05/16/15 13:11	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/16/15 13:11	1
Acetone	ND		10	3.0	ug/L			05/16/15 13:11	1
Benzene	ND		1.0	0.41	ug/L			05/16/15 13:11	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/16/15 13:11	1

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		66 - 137		05/16/15 13:11	1
Toluene-d8 (Surr)	94		71 - 126		05/16/15 13:11	1
4-Bromofluorobenzene (Surr)	110		73 - 120		05/16/15 13:11	1
Dibromofluoromethane (Surr)	99		60 - 140		05/16/15 13:11	1

Client Sample ID: GW-07S

Lab Sample ID: 480-79809-6

Date Collected: 05/06/15 16:00

Matrix: Water

Date Received: 05/06/15 17:50

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			05/16/15 13:34	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/16/15 13:34	1
Acetone	ND		10	3.0	ug/L			05/16/15 13:34	1
Benzene	ND		1.0	0.41	ug/L			05/16/15 13:34	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/16/15 13:34	1

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		66 - 137		05/16/15 13:34	1
Toluene-d8 (Surr)	93		71 - 126		05/16/15 13:34	1
4-Bromofluorobenzene (Surr)	110		73 - 120		05/16/15 13:34	1
Dibromofluoromethane (Surr)	95		60 - 140		05/16/15 13:34	1

Client Sample ID: TB

Lab Sample ID: 480-79809-7

Date Collected: 05/06/15 00:00

Matrix: Water

Date Received: 05/06/15 17:50

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			05/16/15 13:59	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/16/15 13:59	1
Acetone	ND		10	3.0	ug/L			05/16/15 13:59	1
Benzene	ND		1.0	0.41	ug/L			05/16/15 13:59	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/16/15 13:59	1

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		66 - 137		05/16/15 13:59	1
Toluene-d8 (Surr)	92		71 - 126		05/16/15 13:59	1
4-Bromofluorobenzene (Surr)	109		73 - 120		05/16/15 13:59	1
Dibromofluoromethane (Surr)	96		60 - 140		05/16/15 13:59	1

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: GW-34S

Lab Sample ID: 480-79934-1

Date Collected: 05/07/15 08:35

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 03:02	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/18/15 03:02	1
Acetone	ND		10	3.0	ug/L			05/18/15 03:02	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 03:02	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 03:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		66 - 137		05/18/15 03:02	1
Toluene-d8 (Surr)	86		71 - 126		05/18/15 03:02	1
4-Bromofluorobenzene (Surr)	84		73 - 120		05/18/15 03:02	1
Dibromofluoromethane (Surr)	122		60 - 140		05/18/15 03:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.7	0.46	ug/L		05/11/15 14:27	05/13/15 12:11	1
1,4-Dichlorobenzene	ND		9.7	0.45	ug/L		05/11/15 14:27	05/13/15 12:11	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/11/15 14:27	05/13/15 12:11	1
Phenol	ND		4.8	0.38	ug/L		05/11/15 14:27	05/13/15 12:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	90		52 - 132	05/11/15 14:27	05/13/15 12:11	1
2-Fluorobiphenyl	66		48 - 120	05/11/15 14:27	05/13/15 12:11	1
2-Fluorophenol	41		20 - 120	05/11/15 14:27	05/13/15 12:11	1
Nitrobenzene-d5	56		46 - 120	05/11/15 14:27	05/13/15 12:11	1
Phenol-d5	32		16 - 120	05/11/15 14:27	05/13/15 12:11	1
p-Terphenyl-d14	95		67 - 150	05/11/15 14:27	05/13/15 12:11	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:11	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:11	1
Barium	0.13		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:11	1
Cadmium	ND		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:11	1
Chromium	0.0023	J	0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:11	1
Copper	0.0030	J	0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:11	1
Iron	0.53		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 15:09	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:11	1
Magnesium	53.3		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:11	1
Manganese	0.48	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:11	1
Nickel	0.0058	J	0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:11	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:11	1
Sodium	24.8		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:11	1
Zinc	0.0020	J B	0.010	0.0015	mg/L		05/09/15 11:49	05/13/15 12:11	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:30	1

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TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: GW-28S

Lab Sample ID: 480-79934-2

Date Collected: 05/07/15 09:45

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 03:30	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/18/15 03:30	1
Acetone	ND		10	3.0	ug/L			05/18/15 03:30	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 03:30	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 03:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		66 - 137		05/18/15 03:30	1
Toluene-d8 (Surr)	87		71 - 126		05/18/15 03:30	1
4-Bromofluorobenzene (Surr)	88		73 - 120		05/18/15 03:30	1
Dibromofluoromethane (Surr)	120		60 - 140		05/18/15 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		9.6	0.46	ug/L		05/11/15 14:27	05/13/15 12:41	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/11/15 14:27	05/13/15 12:41	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/11/15 14:27	05/13/15 12:41	1
Phenol	ND		4.8	0.38	ug/L		05/11/15 14:27	05/13/15 12:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	88		52 - 132	05/11/15 14:27	05/13/15 12:41	1
2-Fluorobiphenyl	65		48 - 120	05/11/15 14:27	05/13/15 12:41	1
2-Fluorophenol	42		20 - 120	05/11/15 14:27	05/13/15 12:41	1
Nitrobenzene-d5	57		46 - 120	05/11/15 14:27	05/13/15 12:41	1
Phenol-d5	31		16 - 120	05/11/15 14:27	05/13/15 12:41	1
p-Terphenyl-d14	90		67 - 150	05/11/15 14:27	05/13/15 12:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:14	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:14	1
Barium	0.076		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:14	1
Cadmium	0.0014		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:14	1
Chromium	ND		0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:14	1
Copper	ND		0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:14	1
Iron	0.39		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 15:12	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:14	1
Magnesium	27.0		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:14	1
Manganese	0.94	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:14	1
Nickel	0.0024	J	0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:14	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:14	1
Sodium	10.9		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:14	1
Zinc	ND	J-B	0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:14	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:32	1

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TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: GW-04S

Lab Sample ID: 480-79934-3

Date Collected: 05/07/15 10:15

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 03:58	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/18/15 03:58	1
Acetone	ND		10	3.0	ug/L			05/18/15 03:58	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 03:58	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 03:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		66 - 137		05/18/15 03:58	1
Toluene-d8 (Surr)	85		71 - 126		05/18/15 03:58	1
4-Bromofluorobenzene (Surr)	82		73 - 120		05/18/15 03:58	1
Dibromofluoromethane (Surr)	122		60 - 140		05/18/15 03:58	1

Client Sample ID: GW-04D

Lab Sample ID: 480-79934-4

Date Collected: 05/07/15 11:45

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 04:26	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/18/15 04:26	1
Acetone	ND		10	3.0	ug/L			05/18/15 04:26	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 04:26	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 04:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		66 - 137		05/18/15 04:26	1
Toluene-d8 (Surr)	86		71 - 126		05/18/15 04:26	1
4-Bromofluorobenzene (Surr)	87		73 - 120		05/18/15 04:26	1
Dibromofluoromethane (Surr)	121		60 - 140		05/18/15 04:26	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		05/11/15 14:27	05/13/15 13:11	1
1,4-Dichlorobenzene	ND		10	0.48	ug/L		05/11/15 14:27	05/13/15 13:11	1
Bis(2-ethylhexyl) phthalate	ND		5.2	1.9	ug/L		05/11/15 14:27	05/13/15 13:11	1
Phenol	ND		5.2	0.40	ug/L		05/11/15 14:27	05/13/15 13:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	91		52 - 132	05/11/15 14:27	05/13/15 13:11	1
2-Fluorobiphenyl	78		48 - 120	05/11/15 14:27	05/13/15 13:11	1
2-Fluorophenol	49		20 - 120	05/11/15 14:27	05/13/15 13:11	1
Nitrobenzene-d5	69		46 - 120	05/11/15 14:27	05/13/15 13:11	1
Phenol-d5	38		16 - 120	05/11/15 14:27	05/13/15 13:11	1
p-Terphenyl-d14	88		67 - 150	05/11/15 14:27	05/13/15 13:11	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:17	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:17	1
Barium	0.085		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:17	1
Cadmium	ND		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:17	1

TestAmerica Buffalo

OK
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Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: GW-04D

Lab Sample ID: 480-79934-4

Date Collected: 05/07/15 11:45

Matrix: Water

Date Received: 05/07/15 16:45

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:17	1
Copper	ND		0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:17	1
Iron	0.029	J	0.050	0.019	mg/L		05/09/15 11:49	05/13/15 15:14	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:17	1
Magnesium	75.0		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:17	1
Manganese	0.020	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:17	1
Nickel	ND		0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:17	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:17	1
Sodium	92.6		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:17	1
Zinc	0.010	B	0.010	0.0015	mg/L		05/09/15 11:49	05/13/15 12:17	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:34	1

Client Sample ID: GW-04S

Lab Sample ID: 480-79934-5

Date Collected: 05/07/15 11:55

Matrix: Water

Date Received: 05/07/15 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		05/11/15 14:27	05/13/15 13:41	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		05/11/15 14:27	05/13/15 13:41	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		05/11/15 14:27	05/13/15 13:41	1
Phenol	ND		4.9	0.38	ug/L		05/11/15 14:27	05/13/15 13:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		52 - 132	05/11/15 14:27	05/13/15 13:41	1
2-Fluorobiphenyl	85		48 - 120	05/11/15 14:27	05/13/15 13:41	1
2-Fluorophenol	55		20 - 120	05/11/15 14:27	05/13/15 13:41	1
Nitrobenzene-d5	76		46 - 120	05/11/15 14:27	05/13/15 13:41	1
Phenol-d5	41		16 - 120	05/11/15 14:27	05/13/15 13:41	1
p-Terphenyl-d14	96		67 - 150	05/11/15 14:27	05/13/15 13:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:20	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:20	1
Barium	0.12		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:20	1
Cadmium	0.00053	J	0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:20	1
Chromium	0.0075		0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:20	1
Copper	0.0058	J	0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:20	1
Iron	4.2		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 12:20	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:20	1
Magnesium	28.2		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:20	1
Manganese	0.14	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:20	1
Nickel	0.0076	J	0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:20	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:20	1
Sodium	32.8		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:20	1
Zinc	0.019	B	0.010	0.0015	mg/L		05/09/15 11:49	05/13/15 12:20	1

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TestAmerica Buffalo



Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: GW-04S

Lab Sample ID: 480-79934-5

Date Collected: 05/07/15 11:55

Matrix: Water

Date Received: 05/07/15 16:45

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:35	1

Client Sample ID: GW-07D

Lab Sample ID: 480-79934-6

Date Collected: 05/07/15 12:20

Matrix: Water

Date Received: 05/07/15 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.9	0.48	ug/L		05/11/15 14:27	05/13/15 14:11	1
1,4-Dichlorobenzene	ND		9.9	0.46	ug/L		05/11/15 14:27	05/13/15 14:11	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		05/11/15 14:27	05/13/15 14:11	1
Phenol	ND		5.0	0.39	ug/L		05/11/15 14:27	05/13/15 14:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		52 - 132	05/11/15 14:27	05/13/15 14:11	1
2-Fluorobiphenyl	84		48 - 120	05/11/15 14:27	05/13/15 14:11	1
2-Fluorophenol	52		20 - 120	05/11/15 14:27	05/13/15 14:11	1
Nitrobenzene-d5	76		46 - 120	05/11/15 14:27	05/13/15 14:11	1
Phenol-d5	40		16 - 120	05/11/15 14:27	05/13/15 14:11	1
p-Terphenyl-d14	87		67 - 150	05/11/15 14:27	05/13/15 14:11	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:22	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:22	1
Barium	0.068		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:22	1
Cadmium	0.00081	J	0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:22	1
Chromium	0.028		0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:22	1
Copper	0.0038	J	0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:22	1
Iron	0.54		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 15:17	1
Lead	0.011		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:22	1
Magnesium	34.1		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:22	1
Manganese	0.037	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:22	1
Nickel	0.022		0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:22	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:22	1
Sodium	81.8		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:22	1
Zinc	0.011	B	0.010	0.0046	mg/L		05/09/15 11:49	05/13/15 12:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:40	1

Client Sample ID: GW-07S

Lab Sample ID: 480-79934-7

Date Collected: 05/07/15 12:30

Matrix: Water

Date Received: 05/07/15 16:45

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		05/11/15 14:27	05/13/15 14:41	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/11/15 14:27	05/13/15 14:41	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		05/11/15 14:27	05/13/15 14:41	1

TestAmerica Buffalo

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Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: GW-07S

Lab Sample ID: 480-79934-7

Date Collected: 05/07/15 12:30

Matrix: Water

Date Received: 05/07/15 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		5.0	0.39	ug/L		05/11/15 14:27	05/13/15 14:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		52 - 132				05/11/15 14:27	05/13/15 14:41	1
2-Fluorobiphenyl	90		48 - 120				05/11/15 14:27	05/13/15 14:41	1
2-Fluorophenol	55		20 - 120				05/11/15 14:27	05/13/15 14:41	1
Nitrobenzene-d5	77		46 - 120				05/11/15 14:27	05/13/15 14:41	1
Phenol-d5	41		16 - 120				05/11/15 14:27	05/13/15 14:41	1
p-Terphenyl-d14	99		67 - 150				05/11/15 14:27	05/13/15 14:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:25	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:25	1
Barium	0.31		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:25	1
Cadmium	ND		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:25	1
Chromium	0.0028	J	0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:25	1
Copper	ND		0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:25	1
Iron	0.12		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 15:20	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:25	1
Magnesium	38.0		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:25	1
Manganese	0.067	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:25	1
Nickel	0.061		0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:25	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:25	1
Sodium	57.5		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:25	1
Zinc	ND		0.010	0.0045	mg/L		05/09/15 11:49	05/13/15 12:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:42	1

Client Sample ID: GW-33S

Lab Sample ID: 480-79934-8

Date Collected: 05/07/15 13:25

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 04:54	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/18/15 04:54	1
Acetone	ND		10	3.0	ug/L			05/18/15 04:54	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 04:54	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 04:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		66 - 137					05/18/15 04:54	1
Toluene-d8 (Surr)	87		71 - 126					05/18/15 04:54	1
4-Bromofluorobenzene (Surr)	88		73 - 120					05/18/15 04:54	1
Dibromofluoromethane (Surr)	127		60 - 140					05/18/15 04:54	1

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6/3/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: GW-33S

Lab Sample ID: 480-79934-8

Date Collected: 05/07/15 13:25

Matrix: Water

Date Received: 05/07/15 16:45

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		05/11/15 14:27	05/13/15 15:11	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/11/15 14:27	05/13/15 15:11	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		05/11/15 14:27	05/13/15 15:11	1
Phenol	ND		5.0	0.39	ug/L		05/11/15 14:27	05/13/15 15:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		52 - 132	05/11/15 14:27	05/13/15 15:11	1
2-Fluorobiphenyl	85		48 - 120	05/11/15 14:27	05/13/15 15:11	1
2-Fluorophenol	53		20 - 120	05/11/15 14:27	05/13/15 15:11	1
Nitrobenzene-d5	77		46 - 120	05/11/15 14:27	05/13/15 15:11	1
Phenol-d5	41		16 - 120	05/11/15 14:27	05/13/15 15:11	1
p-Terphenyl-d14	95		67 - 150	05/11/15 14:27	05/13/15 15:11	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:36	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:36	1
Barium	0.031		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:36	1
Cadmium	ND		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:36	1
Chromium	0.0012	J	0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:36	1
Copper	0.0022	J	0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:36	1
Iron	ND		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 12:36	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:36	1
Magnesium	38.1		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:36	1
Manganese	0.041	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:36	1
Nickel	0.0016	J	0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:36	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:36	1
Sodium	3.3		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:36	1
Zinc	ND		0.010	0.0015	mg/L		05/09/15 11:49	05/13/15 12:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:43	1

Client Sample ID: GW-26D

Lab Sample ID: 480-79934-9

Date Collected: 05/07/15 14:55

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 05:22	1
1,2-Dichloroethene, Total	1.2	J	2.0	0.81	ug/L			05/18/15 05:22	1
Acetone	ND		10	3.0	ug/L			05/18/15 05:22	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 05:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 05:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		66 - 137		05/18/15 05:22	1
Toluene-d8 (Surr)	87		71 - 126		05/18/15 05:22	1
4-Bromofluorobenzene (Surr)	89		73 - 120		05/18/15 05:22	1
Dibromofluoromethane (Surr)	125		60 - 140		05/18/15 05:22	1

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6/2/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		05/11/15 14:27	05/13/15 15:41	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		05/11/15 14:27	05/13/15 15:41	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		05/11/15 14:27	05/13/15 15:41	1
Phenol	ND		4.9	0.38	ug/L		05/11/15 14:27	05/13/15 15:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		52 - 132	05/11/15 14:27	05/13/15 15:41	1
2-Fluorobiphenyl	71		48 - 120	05/11/15 14:27	05/13/15 15:41	1
2-Fluorophenol	41		20 - 120	05/11/15 14:27	05/13/15 15:41	1
Nitrobenzene-d5	60		46 - 120	05/11/15 14:27	05/13/15 15:41	1
Phenol-d5	32		16 - 120	05/11/15 14:27	05/13/15 15:41	1
p-Terphenyl-d14	78		67 - 150	05/11/15 14:27	05/13/15 15:41	1

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Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:39	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:39	1
Barium	0.14		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:39	1
Cadmium	ND		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:39	1
Chromium	ND		0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:39	1
Copper	ND		0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:39	1
Iron	4.7		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 12:39	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:39	1
Magnesium	18.7		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:39	1
Manganese	0.49	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:39	1
Nickel	0.0019	J	0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:39	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:39	1
Sodium	341		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:39	1
Zinc	ND	US	0.010	0.0015	mg/L		05/09/15 11:49	05/13/15 12:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:45	1

Client Sample ID: GW-35S

Lab Sample ID: 480-79934-10

Date Collected: 05/07/15 15:40

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 05:50	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/18/15 05:50	1
Acetone	ND		10	3.0	ug/L			05/18/15 05:50	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 05:50	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 05:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		66 - 137		05/18/15 05:50	1
Toluene-d8 (Surr)	86		71 - 126		05/18/15 05:50	1
4-Bromofluorobenzene (Surr)	88		73 - 120		05/18/15 05:50	1
Dibromofluoromethane (Surr)	125		60 - 140		05/18/15 05:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		05/11/15 14:27	05/13/15 16:10	1

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Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: GW-35S

Lab Sample ID: 480-79934-10

Date Collected: 05/07/15 15:40

Matrix: Water

Date Received: 05/07/15 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		05/11/15 14:27	05/13/15 16:10	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		05/11/15 14:27	05/13/15 16:10	1
Phenol	ND		4.9	0.38	ug/L		05/11/15 14:27	05/13/15 16:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	65		52 - 132	05/11/15 14:27	05/13/15 16:10	1
2-Fluorobiphenyl	74		48 - 120	05/11/15 14:27	05/13/15 16:10	1
2-Fluorophenol	42		20 - 120	05/11/15 14:27	05/13/15 16:10	1
Nitrobenzene-d5	64		46 - 120	05/11/15 14:27	05/13/15 16:10	1
Phenol-d5	33		16 - 120	05/11/15 14:27	05/13/15 16:10	1
p-Terphenyl-d14	87		67 - 150	05/11/15 14:27	05/13/15 16:10	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:42	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:42	1
Barium	0.084		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:42	1
Cadmium	ND		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:42	1
Chromium	ND		0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:42	1
Copper	ND		0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:42	1
Iron	0.058		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 12:42	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:42	1
Magnesium	22.7		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:42	1
Manganese	0.17	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:42	1
Nickel	0.0015	J	0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:42	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:42	1
Sodium	2.5		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:42	1
Zinc	ND	0.0037 JB	0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:47	1

Client Sample ID: FD-050715

Lab Sample ID: 480-79934-11

Date Collected: 05/07/15 00:00

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 06:19	1
1,2-Dichloroethene, Total	1.2	J	2.0	0.81	ug/L			05/18/15 06:19	1
Acetone	ND		10	3.0	ug/L			05/18/15 06:19	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 06:19	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 06:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		66 - 137		05/18/15 06:19	1
Toluene-d8 (Surr)	86		71 - 126		05/18/15 06:19	1
4-Bromofluorobenzene (Surr)	86		73 - 120		05/18/15 06:19	1
Dibromofluoromethane (Surr)	125		60 - 140		05/18/15 06:19	1

GW-26D
6/2/15

TestAmerica Buffalo

Client-Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: FD-050715

Lab Sample ID: 480-79934-11

Date Collected: 05/07/15 00:00

Matrix: Water

Date Received: 05/07/15 16:45

GW-26D

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND	SS	10	0.48	ug/L		05/11/15 14:27	05/14/15 19:57	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/11/15 14:27	05/14/15 19:57	1
Bis(2-ethylhexyl) phthalate	ND	↓	5.0	1.8	ug/L		05/11/15 14:27	05/14/15 19:57	1
Phenol	ND		5.0	0.39	ug/L		05/11/15 14:27	05/14/15 19:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	69		52 - 132	05/11/15 14:27	05/14/15 19:57	1
2-Fluorobiphenyl	46	X	48 - 120	05/11/15 14:27	05/14/15 19:57	1
2-Fluorophenol	28		20 - 120	05/11/15 14:27	05/14/15 19:57	1
Nitrobenzene-d5	40	X	46 - 120	05/11/15 14:27	05/14/15 19:57	1
Phenol-d5	23		16 - 120	05/11/15 14:27	05/14/15 19:57	1
p-Terphenyl-d14	66	X	67 - 150	05/11/15 14:27	05/14/15 19:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND	H	10	0.49	ug/L		05/16/15 08:08	05/22/15 18:02	1
1,4-Dichlorobenzene	ND	H	10	0.47	ug/L		05/16/15 08:08	05/22/15 18:02	1
Bis(2-ethylhexyl) phthalate	ND	H	5.1	1.8	ug/L		05/16/15 08:08	05/22/15 18:02	1
Phenol	ND	H	5.1	0.39	ug/L		05/16/15 08:08	05/22/15 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	125		52 - 132	05/16/15 08:08	05/22/15 18:02	1
2-Fluorobiphenyl	82		48 - 120	05/16/15 08:08	05/22/15 18:02	1
2-Fluorophenol	39		20 - 120	05/16/15 08:08	05/22/15 18:02	1
Nitrobenzene-d5	70		46 - 120	05/16/15 08:08	05/22/15 18:02	1
Phenol-d5	26		16 - 120	05/16/15 08:08	05/22/15 18:02	1
p-Terphenyl-d14	88		67 - 150	05/16/15 08:08	05/22/15 18:02	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 12:44	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 12:44	1
Barium	0.14		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 12:44	1
Cadmium	ND		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 12:44	1
Chromium	ND		0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 12:44	1
Copper	0.0017	J	0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 12:44	1
Iron	4.8		0.050	0.019	mg/L		05/09/15 11:49	05/13/15 12:44	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 12:44	1
Magnesium	19.0		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 12:44	1
Manganese	0.50	B	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 12:44	1
Nickel	0.0018	J	0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 12:44	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 12:44	1
Sodium	351		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 12:44	1
Zinc	0.014	B	0.010	0.0018	mg/L		05/09/15 11:49	05/13/15 12:44	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:48	1

0.014
 6/15/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Client Sample ID: TB-050715

Lab Sample ID: 480-79934-12

Date Collected: 05/07/15 00:00

Matrix: Water

Date Received: 05/07/15 16:45

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			05/18/15 01:10	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/18/15 01:10	1
Acetone	ND		10	3.0	ug/L			05/18/15 01:10	1
Benzene	ND		1.0	0.41	ug/L			05/18/15 01:10	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/18/15 01:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 137		05/18/15 01:10	1
Toluene-d8 (Surr)	87		71 - 126		05/18/15 01:10	1
4-Bromofluorobenzene (Surr)	86		73 - 120		05/18/15 01:10	1
Dibromofluoromethane (Surr)	116		60 - 140		05/18/15 01:10	1



Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-80040-1

Client Sample ID: GW-29S

Lab Sample ID: 480-80040-1

Date Collected: 05/08/15 08:50

Matrix: Water

Date Received: 05/08/15 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			05/19/15 02:52	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/19/15 02:52	1
Acetone	ND		10	3.0	ug/L			05/19/15 02:52	1
Benzene	ND		1.0	0.41	ug/L			05/19/15 02:52	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/19/15 02:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		66 - 137		05/19/15 02:52	1
Toluene-d8 (Surr)	88		71 - 126		05/19/15 02:52	1
4-Bromofluorobenzene (Surr)	87		73 - 120		05/19/15 02:52	1
Dibromofluoromethane (Surr)	115		60 - 140		05/19/15 02:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		05/14/15 09:20	05/21/15 00:43	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/14/15 09:20	05/21/15 00:43	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/14/15 09:20	05/21/15 00:43	1
Phenol	ND		4.8	0.37	ug/L		05/14/15 09:20	05/21/15 00:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	90		52 - 132	05/14/15 09:20	05/21/15 00:43	1
2-Fluorobiphenyl	80		48 - 120	05/14/15 09:20	05/21/15 00:43	1
2-Fluorophenol	47		20 - 120	05/14/15 09:20	05/21/15 00:43	1
Nitrobenzene-d5	75		46 - 120	05/14/15 09:20	05/21/15 00:43	1
Phenol-d5	33		16 - 120	05/14/15 09:20	05/21/15 00:43	1
p-Terphenyl-d14	100		67 - 150	05/14/15 09:20	05/21/15 00:43	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/13/15 07:45	05/14/15 01:09	1
Arsenic	0.013		0.010	0.0056	mg/L		05/13/15 07:45	05/14/15 01:09	1
Barium	0.20		0.0020	0.00070	mg/L		05/13/15 07:45	05/14/15 01:09	1
Cadmium	ND		0.0010	0.00050	mg/L		05/13/15 07:45	05/14/15 01:09	1
Chromium	ND		0.0040	0.0010	mg/L		05/13/15 07:45	05/14/15 01:09	1
Copper	ND		0.010	0.0016	mg/L		05/13/15 07:45	05/14/15 01:09	1
Iron	12.7		0.050	0.019	mg/L		05/13/15 07:45	05/14/15 01:09	1
Lead	ND		0.0050	0.0030	mg/L		05/13/15 07:45	05/14/15 01:09	1
Magnesium	74.2		0.20	0.043	mg/L		05/13/15 07:45	05/14/15 01:09	1
Manganese	0.64	B	0.0030	0.00040	mg/L		05/13/15 07:45	05/14/15 01:09	1
Nickel	ND		0.010	0.0013	mg/L		05/13/15 07:45	05/14/15 01:09	1
Silver	ND		0.0030	0.0017	mg/L		05/13/15 07:45	05/14/15 01:09	1
Sodium	9.7		1.0	0.32	mg/L		05/13/15 07:45	05/14/15 01:09	1
Zinc	ND		0.010	0.0015	mg/L		05/13/15 07:45	05/14/15 01:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/15 09:50	05/19/15 14:57	1

DUP
6/2/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-80040-1

Client Sample ID: GW-30S

Lab Sample ID: 480-80040-2

Date Collected: 05/08/15 09:50

Matrix: Water

Date Received: 05/08/15 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			05/19/15 03:19	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/19/15 03:19	1
Acetone	ND		10	3.0	ug/L			05/19/15 03:19	1
Benzene	ND		1.0	0.41	ug/L			05/19/15 03:19	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/19/15 03:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		66 - 137		05/19/15 03:19	1
Toluene-d8 (Surr)	88		71 - 126		05/19/15 03:19	1
4-Bromofluorobenzene (Surr)	88		73 - 120		05/19/15 03:19	1
Dibromofluoromethane (Surr)	116		60 - 140		05/19/15 03:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.9	0.47	ug/L		05/14/15 09:20	05/21/15 20:28	1
1,4-Dichlorobenzene	ND		9.9	0.45	ug/L		05/14/15 09:20	05/21/15 20:28	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		05/14/15 09:20	05/21/15 20:28	1
Phenol	ND		4.9	0.39	ug/L		05/14/15 09:20	05/21/15 20:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	91		52 - 132	05/14/15 09:20	05/21/15 20:28	1
2-Fluorobiphenyl	82		48 - 120	05/14/15 09:20	05/21/15 20:28	1
2-Fluorophenol	47		20 - 120	05/14/15 09:20	05/21/15 20:28	1
Nitrobenzene-d5	78		46 - 120	05/14/15 09:20	05/21/15 20:28	1
Phenol-d5	35		16 - 120	05/14/15 09:20	05/21/15 20:28	1
p-Terphenyl-d14	85		67 - 150	05/14/15 09:20	05/21/15 20:28	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/13/15 07:45	05/14/15 01:12	1
Arsenic	ND		0.010	0.0056	mg/L		05/13/15 07:45	05/14/15 01:12	1
Barium	0.18		0.0020	0.00070	mg/L		05/13/15 07:45	05/14/15 01:12	1
Cadmium	ND		0.0010	0.00050	mg/L		05/13/15 07:45	05/14/15 01:12	1
Chromium	ND		0.0040	0.0010	mg/L		05/13/15 07:45	05/14/15 01:12	1
Copper	ND		0.010	0.0016	mg/L		05/13/15 07:45	05/14/15 01:12	1
Iron	13.6		0.050	0.019	mg/L		05/13/15 07:45	05/14/15 01:12	1
Lead	ND		0.0050	0.0030	mg/L		05/13/15 07:45	05/14/15 01:12	1
Magnesium	38.1		0.20	0.043	mg/L		05/13/15 07:45	05/14/15 01:12	1
Manganese	1.8		0.0030	0.00040	mg/L		05/13/15 07:45	05/14/15 01:12	1
Nickel	ND		0.010	0.0013	mg/L		05/13/15 07:45	05/14/15 01:12	1
Silver	ND		0.0030	0.0017	mg/L		05/13/15 07:45	05/14/15 01:12	1
Sodium	228		1.0	0.32	mg/L		05/13/15 07:45	05/14/15 01:12	1
Zinc	ND		0.010	0.0015	mg/L		05/13/15 07:45	05/14/15 01:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/15 09:50	05/19/15 14:59	1

check
4/21/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-80040-1

Client Sample ID: GW-31S

Lab Sample ID: 480-80040-3

Date Collected: 05/08/15 10:40

Matrix: Water

Date Received: 05/08/15 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			05/19/15 03:53	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/19/15 03:53	1
Acetone	ND		10	3.0	ug/L			05/19/15 03:53	1
Benzene	ND		1.0	0.41	ug/L			05/19/15 03:53	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/19/15 03:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		66 - 137		05/19/15 03:53	1
Toluene-d8 (Surr)	84		71 - 126		05/19/15 03:53	1
4-Bromofluorobenzene (Surr)	87		73 - 120		05/19/15 03:53	1
Dibromofluoromethane (Surr)	120		60 - 140		05/19/15 03:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.5	0.46	ug/L		05/14/15 09:20	05/21/15 20:56	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/14/15 09:20	05/21/15 20:56	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/14/15 09:20	05/21/15 20:56	1
Phenol	ND		4.8	0.37	ug/L		05/14/15 09:20	05/21/15 20:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		52 - 132	05/14/15 09:20	05/21/15 20:56	1
2-Fluorobiphenyl	69		48 - 120	05/14/15 09:20	05/21/15 20:56	1
2-Fluorophenol	37		20 - 120	05/14/15 09:20	05/21/15 20:56	1
Nitrobenzene-d5	66		46 - 120	05/14/15 09:20	05/21/15 20:56	1
Phenol-d5	26		16 - 120	05/14/15 09:20	05/21/15 20:56	1
p-Terphenyl-d14	86		67 - 150	05/14/15 09:20	05/21/15 20:56	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/13/15 07:45	05/14/15 01:15	1
Arsenic	ND		0.010	0.0056	mg/L		05/13/15 07:45	05/14/15 01:15	1
Barium	0.087		0.0020	0.00070	mg/L		05/13/15 07:45	05/14/15 01:15	1
Cadmium	ND		0.0010	0.00050	mg/L		05/13/15 07:45	05/14/15 01:15	1
Chromium	0.0011	J	0.0040	0.0010	mg/L		05/13/15 07:45	05/14/15 01:15	1
Copper	ND		0.010	0.0016	mg/L		05/13/15 07:45	05/14/15 01:15	1
Iron	1.0		0.050	0.019	mg/L		05/13/15 07:45	05/14/15 01:15	1
Lead	ND		0.0050	0.0030	mg/L		05/13/15 07:45	05/14/15 01:15	1
Magnesium	28.5		0.20	0.043	mg/L		05/13/15 07:45	05/14/15 01:15	1
Manganese	0.97	B	0.0030	0.00040	mg/L		05/13/15 07:45	05/14/15 01:15	1
Nickel	0.0031	J	0.010	0.0013	mg/L		05/13/15 07:45	05/14/15 01:15	1
Silver	ND		0.0030	0.0017	mg/L		05/13/15 07:45	05/14/15 01:15	1
Sodium	4.8		1.0	0.32	mg/L		05/13/15 07:45	05/14/15 01:15	1
Zinc	0.012		0.010	0.0015	mg/L		05/13/15 07:45	05/14/15 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		05/19/15 09:50	05/19/15 15:01	1

OK
4/3/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-80040-1

Client Sample ID: GW-32S

Lab Sample ID: 480-80040-4

Date Collected: 05/08/15 11:30

Matrix: Water

Date Received: 05/08/15 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			05/19/15 04:21	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/19/15 04:21	1
Acetone	ND		10	3.0	ug/L			05/19/15 04:21	1
Benzene	ND		1.0	0.41	ug/L			05/19/15 04:21	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/19/15 04:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		66 - 137		05/19/15 04:21	1
Toluene-d8 (Surr)	87		71 - 126		05/19/15 04:21	1
4-Bromofluorobenzene (Surr)	87		73 - 120		05/19/15 04:21	1
Dibromofluoromethane (Surr)	120		60 - 140		05/19/15 04:21	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		05/14/15 09:20	05/21/15 21:24	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/14/15 09:20	05/21/15 21:24	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		05/14/15 09:20	05/21/15 21:24	1
Phenol	ND		5.0	0.39	ug/L		05/14/15 09:20	05/21/15 21:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	90		52 - 132	05/14/15 09:20	05/21/15 21:24	1
2-Fluorobiphenyl	84		48 - 120	05/14/15 09:20	05/21/15 21:24	1
2-Fluorophenol	50		20 - 120	05/14/15 09:20	05/21/15 21:24	1
Nitrobenzene-d5	72		46 - 120	05/14/15 09:20	05/21/15 21:24	1
Phenol-d5	35		16 - 120	05/14/15 09:20	05/21/15 21:24	1
p-Terphenyl-d14	99		67 - 150	05/14/15 09:20	05/21/15 21:24	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/13/15 07:45	05/14/15 01:17	1
Arsenic	ND		0.010	0.0056	mg/L		05/13/15 07:45	05/14/15 01:17	1
Barium	0.054		0.0020	0.00070	mg/L		05/13/15 07:45	05/14/15 01:17	1
Cadmium	ND		0.0010	0.00050	mg/L		05/13/15 07:45	05/14/15 01:17	1
Chromium	ND		0.0040	0.0010	mg/L		05/13/15 07:45	05/14/15 01:17	1
Copper	ND		0.010	0.0016	mg/L		05/13/15 07:45	05/14/15 01:17	1
Iron	0.043	J	0.050	0.019	mg/L		05/13/15 07:45	05/14/15 01:17	1
Lead	ND		0.0050	0.0030	mg/L		05/13/15 07:45	05/14/15 01:17	1
Magnesium	32.0		0.20	0.043	mg/L		05/13/15 07:45	05/14/15 01:17	1
Manganese	0.48	B	0.0030	0.00040	mg/L		05/13/15 07:45	05/14/15 01:17	1
Nickel	0.0015	J	0.010	0.0013	mg/L		05/13/15 07:45	05/14/15 01:17	1
Silver	ND		0.0030	0.0017	mg/L		05/13/15 07:45	05/14/15 01:17	1
Sodium	3.7		1.0	0.32	mg/L		05/13/15 07:45	05/14/15 01:17	1
Zinc	0.0043	J	0.010	0.0015	mg/L		05/13/15 07:45	05/14/15 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		05/19/15 09:50	05/19/15 15:06	1

4/21/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-80040-1

Client Sample ID: GW-01D

Lab Sample ID: 480-80040-5

Date Collected: 05/08/15 13:10

Matrix: Water

Date Received: 05/08/15 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			05/19/15 04:50	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/19/15 04:50	1
Acetone	ND		10	3.0	ug/L			05/19/15 04:50	1
Benzene	ND		1.0	0.41	ug/L			05/19/15 04:50	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/19/15 04:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		66 - 137		05/19/15 04:50	1
Toluene-d8 (Surr)	88		71 - 126		05/19/15 04:50	1
4-Bromofluorobenzene (Surr)	90		73 - 120		05/19/15 04:50	1
Dibromofluoromethane (Surr)	122		60 - 140		05/19/15 04:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.3	0.45	ug/L		05/14/15 09:20	05/21/15 07:19	1
1,4-Dichlorobenzene	ND		9.3	0.43	ug/L		05/14/15 09:20	05/21/15 07:19	1
Bis(2-ethylhexyl) phthalate	ND		4.7	1.7	ug/L		05/14/15 09:20	05/21/15 07:19	1
Phenol	ND		4.7	0.36	ug/L		05/14/15 09:20	05/21/15 07:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	77		52 - 132	05/14/15 09:20	05/21/15 07:19	1
2-Fluorobiphenyl	86		48 - 120	05/14/15 09:20	05/21/15 07:19	1
2-Fluorophenol	42		20 - 120	05/14/15 09:20	05/21/15 07:19	1
Nitrobenzene-d5	80		46 - 120	05/14/15 09:20	05/21/15 07:19	1
Phenol-d5	34		16 - 120	05/14/15 09:20	05/21/15 07:19	1
p-Terphenyl-d14	92		67 - 150	05/14/15 09:20	05/21/15 07:19	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/13/15 07:45	05/14/15 01:28	1
Arsenic	ND		0.010	0.0056	mg/L		05/13/15 07:45	05/14/15 01:28	1
Barium	0.072		0.0020	0.00070	mg/L		05/13/15 07:45	05/14/15 01:28	1
Cadmium	ND		0.0010	0.00050	mg/L		05/13/15 07:45	05/14/15 01:28	1
Chromium	0.0053		0.0040	0.0010	mg/L		05/13/15 07:45	05/14/15 01:28	1
Copper	ND		0.010	0.0016	mg/L		05/13/15 07:45	05/14/15 01:28	1
Iron	0.48		0.050	0.019	mg/L		05/13/15 07:45	05/14/15 01:28	1
Lead	ND		0.0050	0.0030	mg/L		05/13/15 07:45	05/14/15 01:28	1
Magnesium	34.4		0.20	0.043	mg/L		05/13/15 07:45	05/14/15 01:28	1
Manganese	0.019	B	0.0030	0.00040	mg/L		05/13/15 07:45	05/14/15 01:28	1
Nickel	ND		0.010	0.0013	mg/L		05/13/15 07:45	05/14/15 01:28	1
Silver	ND		0.0030	0.0017	mg/L		05/13/15 07:45	05/14/15 01:28	1
Sodium	102		1.0	0.32	mg/L		05/13/15 07:45	05/14/15 01:28	1
Zinc	ND		0.010	0.0015	mg/L		05/13/15 07:45	05/14/15 01:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/19/15 09:50	05/19/15 15:07	1

05/22/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-80040-1

Client Sample ID: GW-01S

Lab Sample ID: 480-80040-6

Date Collected: 05/08/15 14:00

Matrix: Water

Date Received: 05/08/15 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			05/19/15 05:18	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/19/15 05:18	1
Acetone	ND		10	3.0	ug/L			05/19/15 05:18	1
Benzene	ND		1.0	0.41	ug/L			05/19/15 05:18	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/19/15 05:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		66 - 137		05/19/15 05:18	1
Toluene-d8 (Surr)	90		71 - 126		05/19/15 05:18	1
4-Bromofluorobenzene (Surr)	90		73 - 120		05/19/15 05:18	1
Dibromofluoromethane (Surr)	122		60 - 140		05/19/15 05:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		05/14/15 09:20	05/21/15 07:47	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		05/14/15 09:20	05/21/15 07:47	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		05/14/15 09:20	05/21/15 07:47	1
Phenol	ND		4.9	0.38	ug/L		05/14/15 09:20	05/21/15 07:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	98		52 - 132	05/14/15 09:20	05/21/15 07:47	1
2-Fluorobiphenyl	77		48 - 120	05/14/15 09:20	05/21/15 07:47	1
2-Fluorophenol	49		20 - 120	05/14/15 09:20	05/21/15 07:47	1
Nitrobenzene-d5	73		46 - 120	05/14/15 09:20	05/21/15 07:47	1
Phenol-d5	36		16 - 120	05/14/15 09:20	05/21/15 07:47	1
p-Terphenyl-d14	90		67 - 150	05/14/15 09:20	05/21/15 07:47	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/13/15 07:45	05/14/15 01:31	1
Arsenic	ND		0.010	0.0056	mg/L		05/13/15 07:45	05/14/15 01:31	1
Barium	0.16		0.0020	0.00070	mg/L		05/13/15 07:45	05/14/15 01:31	1
Cadmium	0.0013		0.0010	0.00050	mg/L		05/13/15 07:45	05/14/15 01:31	1
Chromium	ND		0.0040	0.0010	mg/L		05/13/15 07:45	05/14/15 01:31	1
Copper	ND		0.010	0.0016	mg/L		05/13/15 07:45	05/14/15 01:31	1
Iron	6.8		0.050	0.019	mg/L		05/13/15 07:45	05/14/15 01:31	1
Lead	ND		0.0050	0.0030	mg/L		05/13/15 07:45	05/14/15 01:31	1
Magnesium	20.0		0.20	0.043	mg/L		05/13/15 07:45	05/14/15 01:31	1
Manganese	1.4	B	0.0030	0.00040	mg/L		05/13/15 07:45	05/14/15 01:31	1
Nickel	ND		0.010	0.0013	mg/L		05/13/15 07:45	05/14/15 01:31	1
Silver	ND		0.0030	0.0017	mg/L		05/13/15 07:45	05/14/15 01:31	1
Sodium	113		1.0	0.32	mg/L		05/13/15 07:45	05/14/15 01:31	1
Zinc	0.0041	J	0.010	0.0015	mg/L		05/13/15 07:45	05/14/15 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		05/19/15 09:50	05/19/15 15:09	1

OK
 6/2/15

TestAmerica Buffalo

Client Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-80040-1

Client Sample ID: TB-050815

Lab Sample ID: 480-80040-7

Date Collected: 05/08/15 00:00

Matrix: Water

Date Received: 05/08/15 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			05/19/15 05:46	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/19/15 05:46	1
Acetone	ND		10	3.0	ug/L			05/19/15 05:46	1
Benzene	ND		1.0	0.41	ug/L			05/19/15 05:46	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/19/15 05:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		66 - 137		05/19/15 05:46	1
Toluene-d8 (Surr)	88		71 - 126		05/19/15 05:46	1
4-Bromofluorobenzene (Surr)	87		73 - 120		05/19/15 05:46	1
Dibromofluoromethane (Surr)	125		60 - 140		05/19/15 05:46	1



APPENDIX B
SUPPORT DOCUMENTATION

CHAIN OF CUSTODY RECORD

FROM
LAST

PROJECT NO.
11175616.00000

SITE NAME
PFOHL BROTHERS LANDFILL

SAMPLERS (PRINT/SIGNATURE)
ROB MURPHY / Rob Murphy Tim J KOSIY / Tim J Kosiy

TESTS				
TCL VOCs	TCL SVCS	TAL Metals		

URS

LAB TEST AMERICA
COOLER 1 of 1
PAGE 1 of 1

DELIVERY SERVICE: DROP OFF AIRBILL NO.:

BOTTLE TYPE AND PRESERVATIVE

LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO. # OF CONTAINERS	40ml vial HCL	250ml Amber Home	250ml plastic HNO3	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO. # (PAPIMS ONLY)
GW-03D	5/6/15	1120	G	GW-03D	WG	6	3	2	1		N ₁			
GW-03S	5/6/15	1220	G	GW-03S	WG	6	3	2	1		N ₁			
GW-03D	5/6/15	1120	G	GW-03D-MS	WG	6	3	2	1	MATRIX SPIKE	MS ₁			
GW-03D	5/6/15	1120	G	GW-03D-MSD	WG	6	3	2	1	SPIKE DUP	SD ₁			
GW-08D	5/6/15	1345	G	GW-08D	WG	6	3	2	1		N ₁			
GW-08SR	5/6/15	1435	G	GW-08SR	WG	6	3	2	1		N ₁			
GW-07D	5/6/15	1515	G	GW-07D	WG	3	3				N ₁			
GW-07S	5/6/15	1600	G	GW-07S	WG	3	3				N ₁			



480-79809 Chain of Custody

MATRIX CODES	AA - AMBIENT AIR SE - SEDIMENT SH - HAZARDOUS SOLID WASTE	SL - SLUDGE WP - DRINKING WATER WW - WASTE WATER	WG - GROUND WATER SO - SOIL DC - DRILL CUTTINGS	WL - LEACHATE GS - SOIL GAS WC - DRILLING WATER	WO - OCEAN WATER WS - SURFACE WATER WQ - WATER FIELD QC	LH - HAZARDOUS LIQUID WASTE LF - FLOATING/FREE PRODUCT ON GW TABLE
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SAMPLE TYPE CODES	TB# - TRIP BLANK SD# - MATRIX SPIKE DUPLICATE	RB# - RINSE BLANK FR# - FIELD REPLICATE	N# - NORMAL ENVIRONMENTAL SAMPLE MS# - MATRIX SPIKE	(* - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)
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RELINQUISHED BY (SIGNATURE) <i>[Signature]</i>	DATE 5/6/15	TIME 1750	RECEIVED BY (SIGNATURE) <i>[Signature]</i>	DATE 5/6/15	TIME 1750	SPECIAL INSTRUCTIONS Standard TAT
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME	

Distribution: Original accompanies shipment, copy to coordinator field files

29#1

CHAIN OF CUSTODY RECORD

URS

PROJECT NO.
11175616.00000

SITE NAME
PFOHL BROS.

SAMPLERS (PRINT/SIGNATURE)
Tim Izkovits / Tim Affaril Ernest Thalhammer

TESTS

PFOHL LIST
VOCs 82600
SVOCs 82600
metals
COALC 74200

LAB Test America

COOLER 1 of 2

PAGE _____ of _____

BOTTLE TYPE AND PRESERVATIVE

DELIVERY SERVICE: Drop off AIRBILL NO.: _____

LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO.# OF CONTAINERS	40ml VOC HCL	250ml Amber	250ml Plastic H2O2	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (RPPMS ONLY)
GW-345	5/7/15	0835	G	GW-345	WG	6	3	2	1		N ₁			
GW-285	5/7/15	0945	G	GW-285	WG	6	3	2	1		N ₁			
GW-045	5/7/15	1015	G	GW-045	WG	3	3	-	-		N ₁			
GW-040	5/7/15	1145	G	GW-040	WG	6	3	2	1		N ₁			
GW-045	5/7/15	1155	G	GW-045	WG	3	-	2	1		N ₁			
GW-070	5/7/15	1220	G	GW-070	WG	3	-	2	1		N ₁			
GW-075	5/7/15	1230	G	GW-075	WG	3	-	2	1		N ₁			
GW-2335	5/7/15	1325	G	GW-2335	WG	6	3	2	1		N ₁			
GW-260	5/7/15	1455	G	GW-260	WG	6	3	2	1		N ₁			
GW-355	5/7/15	1545	G	GW-355	WG	6	3	2	1		N ₁			
Field Trip	5/7/15	-	G	FD-050715	WG	6	3	2	1		FR			
Trip Blank	5/7/15	-	-	TB-050715	WG	1					TB ₁			



480-79934 Chain of Custody

GW-260

MATRIX CODES	AA - AMBIENT AIR SE - SEDIMENT SH - HAZARDOUS SOLID WASTE	SL - SLUDGE WP - DRINKING WATER WW - WASTE WATER	WG - GROUND WATER SO - SOIL DC - DRILL CUTTINGS	WL - LEACHATE GS - SOIL GAS WC - DRILLING WATER	WO - OCEAN WATER WS - SURFACE WATER WQ - WATER FIELD QC	LH - HAZARDOUS LIQUID WASTE LF - FLOATING/FREE PRODUCT ON GW TABLE
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SAMPLE TYPE CODES	TB# - TRIP BLANK SD# - MATRIX SPIKE DUPLICATE	RB# - RINSE BLANK FR# - FIELD REPLICATE	N# - NORMAL ENVIRONMENTAL SAMPLE MS# - MATRIX SPIKE	(# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)
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RELINQUISHED BY (SIGNATURE) <i>[Signature]</i>	DATE 5/7/15	TIME 1645	RECEIVED BY (SIGNATURE) <i>[Signature]</i>	DATE 5/7/15	TIME 1645
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS
For questions contact
Ann Marie Kropovitch
@ 716-856-5636

Distribution: Original accompanies shipment, copy to coordinator field files

3.1, 2.7 #1

Pfohl List

CHAIN OF CUSTODY RECORD

URS

PROJECT NO. 11175616.00000 SITE NAME Pfohl Brothers

TESTS					
VOCs	8260C	SVOCs	8270D	Metals	6010C/710A

LAB TestAmerica

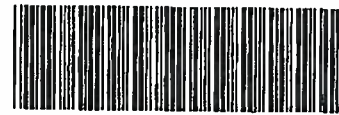
SAMPLERS (PRINT/SIGNATURE) Ernest Thalhammer *[Signature]* Tim Izkovich *[Signature]*

BOTTLE TYPE AND PRESERVATIVE

COOLER 1 of 1
PAGE 1 of 1

DELIVERY SERVICE: Drop Off AIRBILL NO.: —

LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO.# OF CONTAINERS	40 mL VOA HCl	250 mL Amber	250 mL Plastic HNO ₃	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (RPMs ONLY)
GW-29S	5-8-15	08:50	G	GW-29S	WG	6	3	2	1		N1			
GW-30S	5-8-15	09:50	G	GW-30S	WG	6	3	2	1		N1			
GW-31S	5-8-15	10:40	G	GW-31S	WG	6	3	2	1		N1			
GW-32S	5-8-15	11:30	G	GW-32S	WG	6	3	2	1		N1			
GW-01D	5-8-15	13:10	G	GW-01D	WG	6	3	2	1		N1			
GW-01S	5-8-15	14:00	G	GW-01S	WG	6	3	2	1		N1			
Trip Blank	5-8-15	—	—	TB-050815	TB	1					TB1			



480-80040 Chain of Custody

MATRIX CODES	AA - AMBIENT AIR SE - SEDIMENT SH - HAZARDOUS SOLID WASTE	SL - SLUDGE WP - DRINKING WATER WW - WASTE WATER	WG - GROUND WATER SO - SOIL DC - DRILL CUTTINGS	WL - LEACHATE GS - SOIL GAS WC - DRILLING WATER	WO - OCEAN WATER WS - SURFACE WATER WQ - WATER FIELD QC	LH - HAZARDOUS LIQUID WASTE LF - FLOATING/FREE PRODUCT ON GW TABLE
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SAMPLE TYPE CODES	TB# - TRIP BLANK SD# - MATRIX SPIKE DUPLICATE	RB# - RINSE BLANK FR# - FIELD REPLICATE	N# - NORMAL ENVIRONMENTAL SAMPLE MS# - MATRIX SPIKE	(* - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)
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RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	SPECIAL INSTRUCTIONS For Questions Contact Ann Marie Kropovitch at 716-856-5636
<i>[Signature]</i>	5-8-15	15:00	<i>[Signature]</i>	5/8/15	1:10W	
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME	

Distribution: Original accompanies shipment, copy to coordinator field files

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5/22/2015

2d #1

Case Narrative

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79809-1

Job ID: 480-79809-1

Laboratory: TestAmerica Buffalo

4

Narrative

Job Narrative
480-79809-1

Receipt

The samples were received on 5/6/2015 5:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

GC/MS VOA

Method(s) 8260C: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: GW-08SR (480-79809-4). 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(s) 6010, 6010C: The low level continuing calibration verification (CCVL 480-242339/16) recovered above the upper control limit for total iron. The samples (LCS 480-241746/2-A) and (MB 480-241746/1-A) associated with this CCVL were either ND or contained this analyte at a concentration greater than 10X the value found in the CCVL; therefore, re-analysis of samples was not performed.

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.

Case Narrative

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Job ID: 480-79934-1

Laboratory: TestAmerica Buffalo

4

Narrative

Job Narrative 480-79934-1

Receipt

The samples were received on 5/7/2015 4:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.7° C and 3.1° C.

GC/MS VOA

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 242949 recovered above the upper control limit for Vinyl Chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: GW-34S (480-79934-1), GW-28S (480-79934-2), GW-04S (480-79934-3), GW-04D (480-79934-4), GW-33S (480-79934-8), GW-26D (480-79934-9), GW-35S (480-79934-10), FD-050715 (480-79934-11) and TB-050715 (480-79934-12).

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

GC/MS Semi VOA

Method(s) 8270D: Surrogate recovery for the following sample was outside control limits: FD-050715 (480-79934-11). Re-extraction was performed outside of holding time. Both sets of data are reported.

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 480-243907 recovered above the upper control limit for 2,4,6-Tribromophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCVIS 480-243907/4), (LCS 480-242844/2-A) and (MB 480-242844/1-A).

Method(s) 8270D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 480-242844 and analytical batch 480-243907 recovered outside control limits for the surrogate: 2,4,6-Tribromophenol. This surrogate was biased high in the LCS and were the associated samples did not contain analytes above the reporting limit; therefore, the data have been reported.

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

Metals

Method(s) 6010C: The low level continuing calibration verification (CCVL 480-242183/27) recovered above the upper control limit for total iron. The samples GW-04S (480-79934-5), (LCS 480-241506/2-A) and (MB 480-241506/1-A) associated with this CCVL were either ND or contained this analyte at a concentration greater than 10X the value found in the CCVL; therefore, re-analysis of samples was not performed.

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

Organic Prep

Method(s) 3510C: Re-extraction of the following sample was performed outside of the preparation holding time due to low surrogate recoveries in the initial extraction : FD-050715 (480-79934-11).

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

Surrogate Summary

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		12DCE (66-137)	TOL (71-126)	BFB (73-120)	DBFM (60-140)
480-79934-1	GW-34S	112	86	84	122
480-79934-2	GW-28S	114	87	88	120
480-79934-3	GW-04S	113	85	82	122
480-79934-4	GW-04D	113	86	87	121
480-79934-8	GW-33S	115	87	88	127
480-79934-9	GW-26D	117	87	89	125
480-79934-10	GW-35S	117	86	88	125
480-79934-11	FD-050715	115	86	86	125
480-79934-12	TB-050715	108	87	86	116
LCS 480-242949/4	Lab Control Sample	100	99	101	103
MB 480-242949/6	Method Blank	107	90	90	113

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (52-132)	FBP (48-120)	2FP (20-120)	NBZ (46-120)	PHL (16-120)	TPH (67-150)
480-79934-1	GW-34S	90	66	41	56	32	95
480-79934-2	GW-28S	88	65	42	57	31	90
480-79934-4	GW-04D	91	78	49	69	38	88
480-79934-5	GW-04S	76	85	55	76	41	96
480-79934-6	GW-07D	83	84	52	76	40	87
480-79934-7	GW-07S	76	90	55	77	41	99
480-79934-8	GW-33S	79	85	53	77	41	95
480-79934-9	GW-26D	79	71	41	60	32	78
480-79934-10	GW-35S	65	74	42	64	33	87
480-79934-11	FD-050715	69	46 X	28	40 X	23	66 X
480-79934-11 - RE	FD-050715	125	82	39	70	26	88
LCS 480-241711/2-A	Lab Control Sample	90	76	56	72	45	93
LCS 480-242844/2-A	Lab Control Sample	144 X	102	67	98	48	108
MB 480-241711/1-A	Method Blank	61	78	49	68	38	97
MB 480-242844/1-A	Method Blank	113	90	45	86	30	102

Surrogate Legend

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

TestAmerica Buffalo

QC Sample Results

Client: URS Corporation
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-79934-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-241506/1-A
 Matrix: Water
 Analysis Batch: 242183

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 241506

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND		0.020	0.0068	mg/L		05/09/15 11:49	05/13/15 11:31	1
Arsenic	ND		0.010	0.0056	mg/L		05/09/15 11:49	05/13/15 11:31	1
Barium	ND		0.0020	0.00070	mg/L		05/09/15 11:49	05/13/15 11:31	1
Cadmium	ND		0.0010	0.00050	mg/L		05/09/15 11:49	05/13/15 11:31	1
Chromium	ND		0.0040	0.0010	mg/L		05/09/15 11:49	05/13/15 11:31	1
Copper	ND		0.010	0.0016	mg/L		05/09/15 11:49	05/13/15 11:31	1
Iron	ND	^	0.050	0.019	mg/L		05/09/15 11:49	05/13/15 11:31	1
Lead	ND		0.0050	0.0030	mg/L		05/09/15 11:49	05/13/15 11:31	1
Magnesium	ND		0.20	0.043	mg/L		05/09/15 11:49	05/13/15 11:31	1
Manganese	0.00132	J	0.0030	0.00040	mg/L		05/09/15 11:49	05/13/15 11:31	1
Nickel	ND		0.010	0.0013	mg/L		05/09/15 11:49	05/13/15 11:31	1
Silver	ND		0.0030	0.0017	mg/L		05/09/15 11:49	05/13/15 11:31	1
Sodium	ND		1.0	0.32	mg/L		05/09/15 11:49	05/13/15 11:31	1
Zinc	0.00219	J	0.010	0.0015	mg/L		05/09/15 11:49	05/13/15 11:31	1

Lab Sample ID: LCS 480-241506/2-A
 Matrix: Water
 Analysis Batch: 242183

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 241506
 %Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.200	0.197		mg/L		99	80 - 120
Barium	0.200	0.206		mg/L		103	80 - 120
Cadmium	0.200	0.210		mg/L		105	80 - 120
Chromium	0.200	0.208		mg/L		104	80 - 120
Copper	0.200	0.203		mg/L		101	80 - 120
Iron	10.0	10.16	^	mg/L		102	80 - 120
Lead	0.200	0.202		mg/L		101	80 - 120
Magnesium	10.0	10.43		mg/L		104	80 - 120
Manganese	0.200	0.194		mg/L		97	80 - 120
Nickel	0.200	0.203		mg/L		102	80 - 120
Silver	0.0500	0.0541		mg/L		108	80 - 120
Sodium	10.0	10.06		mg/L		100	80 - 120
Zinc	0.200	0.215		mg/L		107	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-242588/1-A
 Matrix: Water
 Analysis Batch: 242968

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 242588

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.00020	0.00012	mg/L		05/15/15 09:25	05/15/15 16:05	1

TestAmerica Buffalo

Case Narrative

TestAmerica Job ID: 480-80040-1

Client: URS Corporation
Project/Site: Pfohl Brothers Landfill GW Monitoring

Job ID: 480-80040-1

Laboratory: TestAmerica Buffalo

4

Narrative

Job Narrative 480-80040-1

Receipt

The samples were received on 5/8/2015 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

GC/MS VOA

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 243214 recovered above the upper control limit for Vinyl Chloride. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: GW-29S (480-80040-1), GW-30S (480-80040-2), GW-31S (480-80040-3), GW-32S (480-80040-4), GW-01D (480-80040-5), GW-01S (480-80040-6) and TB-050815 (480-80040-7).

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

GC/MS Semi VOA

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 480-243907 recovered above the upper control limit for the surrogate 2,4,6-Tribromophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: GW-30S (480-80040-2), GW-31S (480-80040-3) and GW-32S (480-80040-4).

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 480-243567 recovered above the upper control limit for the surrogate 2,4,6-Tribromophenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: GW-01D (480-80040-5) and GW-01S (480-80040-6).

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

Metals

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

Organic Prep

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

ATTACHMENT B

July 2015 – December 2015

Semi Annual Report

And

Data Applicability Report

**SEMI ANNUAL REPORT
OPERATION AND MAINTENANCE
JULY 2015 TO DECEMBER 2015
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**

**MAY
2016**



May 31, 2016

Mr. Jaspal Singh Walia, P.E.
New York State Department of Environmental Conservation
270 Michigan Ave.
Buffalo, NY 14203

**Re: Semi-Annual Report July 2015 – December 2015
Pfohl Brothers Landfill, Town of Cheektowaga, New York**

Dear Mr. Walia:

Enclosed is one copy of the twenty-fourth Semi-Annual Report for the Pfohl Brothers Landfill in Cheektowaga, New York. A copy has also been sent to Ms. Pamela Tames, P.E. of the United States Environmental Protection Agency. Also enclosed is the Data Applicability Report for laboratory analyses associated with the Semi-Annual Report. PDF copies of the reports are also enclosed.

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

Sincerely,

URS CORPORATION

A handwritten signature in black ink, appearing to read "Jon Sundquist".

Jon Sundquist, Ph.D.
Project Manager

Enclosures

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

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Appendix B	Monthly Flow Summaries (July 2015 – December 2015)
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Appendix F	BSA Permit No. 13-04-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 manual was not approved by the NYSDEC until March 10, 2006. However, the Town of Cheektowaga and its consultant (URS Corporation – New York) 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 report is the twenty-fourth 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 2015 through December 2015 include the following actions.

- The amount of groundwater discharged through the collection system was recorded on a daily basis. 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. Examples of the daily inspection sheet are attached in Appendix A.
- Total cumulative effluent flow rates and volumes were summarized on a monthly basis starting in February 2003. The monthly totals for the period of July 2015 through December 2015, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shut down during wet weather flow conditions as necessary at various times throughout the year to reduce hydraulic loading to the sewer. 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 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.
- Replaced surge suppressors, fuses, and discharge hoses as needed for pump station instrumentation equipment.
- Sprayed Weed Patrol and wasp killer around the control building.
- Replaced batteries in the Emergency Lighting System.
- Replaced pump couplings and hose clamps as needed.
- Replaced Control Room Air Conditioning Unit.

- Hired exterminator to trap and remove 14 woodchucks.
- Replaced utility poles along the fence line and side property.

3.0 MONITORING ACTIVITIES

The Town of Cheektowaga retained URS Corporation to perform monitoring activities as outlined in Section 3.1 of the O&M plan. During the period of January 2004 through the present, URS performed 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) on a quarterly basis. URS also performed the semi-annual groundwater quality monitoring (Section 3.1.1.3 of the O&M plan) 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. Table 1 of Appendix C lists the measured elevations. Table 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

The twenty-fourth semi-annual round of groundwater sampling was conducted between November 11 and 13, 2015. All 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 at most monitoring well locations.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on September 15, 2015. The PDBs were removed from the wells during the sampling event and their contents were analyzed for VOCs. Following removal of the PDBs the three wells were purged dry. These wells were sampled for the other required parameters after their water levels recovered.

Purge logs and sampling summary sheets are provided in Appendix D. Measurements of pH, specific conductivity, temperature, dissolved oxygen, oxidation reduction potential, and turbidity taken during purging are provided in Appendix D. The samples were packed with ice in coolers and transported under chain-of-custody (CoC) control to Test America Laboratories of Amherst, New York.

Table 3-1 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. Groundwater samples were analyzed for the parameters 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 (that table is included in this report as Table 3-2).

Results

No VOCs were detected at concentrations above the Class GA water quality standards at any location. The SVOC bis(2-ethylhexyl)phthalate was detected at a concentration of 10 micrograms per liter ($\mu\text{g/L}$), exceeding the class GA standard of 5 $\mu\text{g/L}$. No other SVOCs were detected at concentrations above the Class GA water quality standards.

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. In addition, arsenic was detected at a concentration exceeding its Class GA standard in well GW-29S, and chromium was detected at a concentration exceeding its Class GA standard in well GW-07D.

Comparison to Historical Results

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

Sodium concentrations were generally higher in bedrock wells (GW-01D, GW-03D, GW-08D and GW-26D) and shallow wells adjacent to roads (GW-01S and GW-30S). The sodium concentration was also elevated in GW-08SR. The higher sodium concentrations in the

bedrock wells may be attributed to the local bedrock composition and the elevated concentration in the shallow wells may be the result of seasonal road de-icing activities.

Trend Analysis

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented 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 twenty-four semi-annual sampling events except as described below. Figure E-2 for GW-01S, indicates a recent upward trend in manganese concentrations, and a downward trend in sodium concentration over the twenty-four sampling events. Figure E-3 for GW-03D indicates a downward trend for manganese. Figure E-4 indicates upward trends for magnesium and sodium in GW-03S since monitoring began. Figure E-5 for GW-04D, indicates a slight increasing trend for magnesium. Figure E-7 for GW-07D shows concentrations for chromium, iron, and lead were significantly lower the last four events after increasing steadily for the previous eleven events. Figure E-9 for GW-08D shows a decreasing trend for both iron and manganese since monitoring began. Figure E-11 for GW-26D indicates downward trends for iron and manganese and an upward trend for sodium. Figures E-12 and E-13 for GW-28S and GW-29S, respectively, indicate a decreasing trend for sodium since monitoring began. Figure E-16 shows there is a seasonal variation in sodium concentration in monitoring well GW-32S. Figure E-18 for GW-34S indicates a seasonal fluctuation in manganese concentration.

Laboratory Report

The groundwater analytical data package was prepared by Test America in accordance with NYSDEC Category A deliverable requirements. It was reviewed for compliance with analytical method requirements and the following guidelines: *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014; and *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-13-001, August 2014. Qualifications applied to the data include “J/UJ” (estimated concentration/estimated quantitation limit), “J+” (estimated concentration with possible high bias), “J-” (estimated concentration with possible low bias), and “U” (not detected).

A Data Applicability Report (DAR) was prepared 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 2015 is submitted separately from this report.

3.3 Groundwater Discharge Monitoring

URS completed two quarterly sampling events (September 2015 and December 2015) of the groundwater collection system discharge since the previous semi-annual report. The sampling was performed in accordance with the requirements of Discharge Permit No. 13-04-CH016 between the Buffalo Sewer Authority and the Town of Cheektowaga. A copy of Permit No. 13-04-CH016 is included as Appendix F.

During the sampling events in September 2015 and December 2015, each regulated parameter was below the limits set by the permit. Copies of the data summary tables that were included with the monitoring reports are included as Appendix G.

3.4 Monitoring Well Inspections

During the November 2015 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing damage to the risers on GW-07D, GW-01S, and GW-01D. The monitoring well inspection logs may be found in Appendix H.

4.0 SUMMARY AND RECOMMENDATIONS

General Maintenance: The Town 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 access to the control building during winter months 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 hydraulic gradient is from outside the landfill towards the collection trench. Continued quarterly monitoring is recommended.

Groundwater Quality Monitoring: Groundwater sample results indicate that only low levels of organic compounds and metals are present. Similar concentrations of most parameters were found during previous sampling events. The twenty-fifth round of groundwater sampling will be conducted in May 2016. 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 even using low flow sampling techniques.

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

TABLES

**TABLE 3-1
GROUNDWATER ELEVATIONS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2015**

Location ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID			GW-1D	GW-1S	GW-3D	GW-3S	GW-4D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/13/15	11/13/15	11/11/15	11/11/15	11/12/15
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			1.8 J		
1,4-Dichlorobenzene	UG/L	3			2.5 J		
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.070	0.17	0.064	0.073	0.083
Cadmium	MG/L	0.005		0.0015		0.00092 J	
Chromium	MG/L	0.05	0.033	0.0033 J		0.0058	0.0013 J
Copper	MG/L	0.2					
Iron	MG/L	0.3	0.26	7.9	1.1	0.26	
Lead	MG/L	0.025				0.0034 J	
Magnesium	MG/L	35	32.3	21.9	13.9	101	74.9
Manganese	MG/L	0.3	0.017	1.6	0.27	0.25	0.018
Nickel	MG/L	0.1	0.0039 J	0.0021 J	0.0016 J	0.054	
Sodium	MG/L	20	94.9	95.6	138	46.0	83.9
Zinc	MG/L	2	0.010	0.0040 J	0.0030 J	0.011	

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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 3-1
GROUNDWATER ELEVATIONS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2015**

Location ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID			GW-4S	GW-7D	GW-7D	GW-7S	GW-7S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/12/15	11/11/15	11/12/15	11/11/15	11/12/15
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5			NA		NA
Acetone	UG/L	50		4.2 J	NA	3.4 J	NA
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
bis(2-Ethylhexyl)phthalate	UG/L	5		NA		NA	
Metals							
Arsenic	MG/L	0.025		NA	0.0077 J	NA	
Barium	MG/L	1	0.13	NA	0.097	NA	0.26
Cadmium	MG/L	0.005		NA	0.0020	NA	0.00082 J
Chromium	MG/L	0.05	0.0072	NA	0.20	NA	0.012
Copper	MG/L	0.2	0.0051 J	NA	0.021	NA	0.0027 J
Iron	MG/L	0.3	2.4	NA	3.9	NA	0.20
Lead	MG/L	0.025		NA	0.12	NA	
Magnesium	MG/L	35	25.6	NA	35.4	NA	35.2
Manganese	MG/L	0.3	0.17	NA	0.067	NA	0.044
Nickel	MG/L	0.1	0.0061 J	NA	0.099	NA	0.022
Sodium	MG/L	20	39.0	NA	77.7	NA	52.9
Zinc	MG/L	2	0.020	NA	0.061	NA	

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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 3-1
GROUNDWATER ELEVATIONS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2015**

Location ID			GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID			GW-8D	GW-8SR	FD-111215	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/11/15	11/11/15	11/12/15	11/12/15	11/12/15
Parameter	Units	*			Field Duplicate (1-1)		
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5			0.99 J	1.0 J	
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025			0.0057 J	0.0079 J	
Barium	MG/L	1	0.093	0.27	0.13	0.14	0.086
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.030	0.0024 J			
Copper	MG/L	0.2	0.0019 J				
Iron	MG/L	0.3	0.31	19.9	4.3	4.4	0.52
Lead	MG/L	0.025	0.0033 J	0.0044 J			
Magnesium	MG/L	35	16.5	39.6	19.3	19.9	27.6
Manganese	MG/L	0.3	0.046	1.2	0.48	0.49	0.92
Nickel	MG/L	0.1	0.0063 J	0.0023 J	0.0030 J	0.0025 J	0.0019 J
Sodium	MG/L	20	254	320	307	317	12.4
Zinc	MG/L	2	0.0087 J	0.0026 J			

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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 3-1
GROUNDWATER ELEVATIONS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2015**

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			11/13/15	11/13/15	11/13/15	11/13/15	11/12/15
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Acetone	UG/L	50					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025	0.028				
Barium	MG/L	1	0.23	0.35	0.092	0.059	0.044
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.0011 J		0.0023 J	0.0020 J	0.0023 J
Copper	MG/L	0.2			0.0027 J		0.021
Iron	MG/L	0.3	14.7	17.3	0.99	0.034 J	
Lead	MG/L	0.025		0.0033 J			
Magnesium	MG/L	35	85.1	50.7	30.1	33.5	37.9
Manganese	MG/L	0.3	0.49	2.8	0.88	0.21	0.0090
Nickel	MG/L	0.1	0.0015 J		0.0053 J	0.0026 J	
Sodium	MG/L	20	11.0	596	6.7	7.3	3.4
Zinc	MG/L	2	0.0023 J		0.013	0.0022 J	0.014

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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 3-1
GROUNDWATER ELEVATIONS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2015**

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			11/12/15	11/12/15
Parameter	Units	*		
Volatile Organic Compounds				
1,2-Dichloroethene (total)	UG/L	5		
Acetone	UG/L	50		
Semivolatile Organic Compounds				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
bis(2-Ethylhexyl)phthalate	UG/L	5	10	
Metals				
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.13	0.11
Cadmium	MG/L	0.005		
Chromium	MG/L	0.05	0.0059	
Copper	MG/L	0.2		
Iron	MG/L	0.3	0.27	0.055
Lead	MG/L	0.025		
Magnesium	MG/L	35	64.6	28.8
Manganese	MG/L	0.3	0.19	0.13
Nickel	MG/L	0.1	0.0092 J	
Sodium	MG/L	20	36.8	3.8
Zinc	MG/L	2		

* - NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 and 6/2004 Addenda). Class GA. * - PCB Criteria based on sum of the aroclors.

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

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 3-2 (continued)

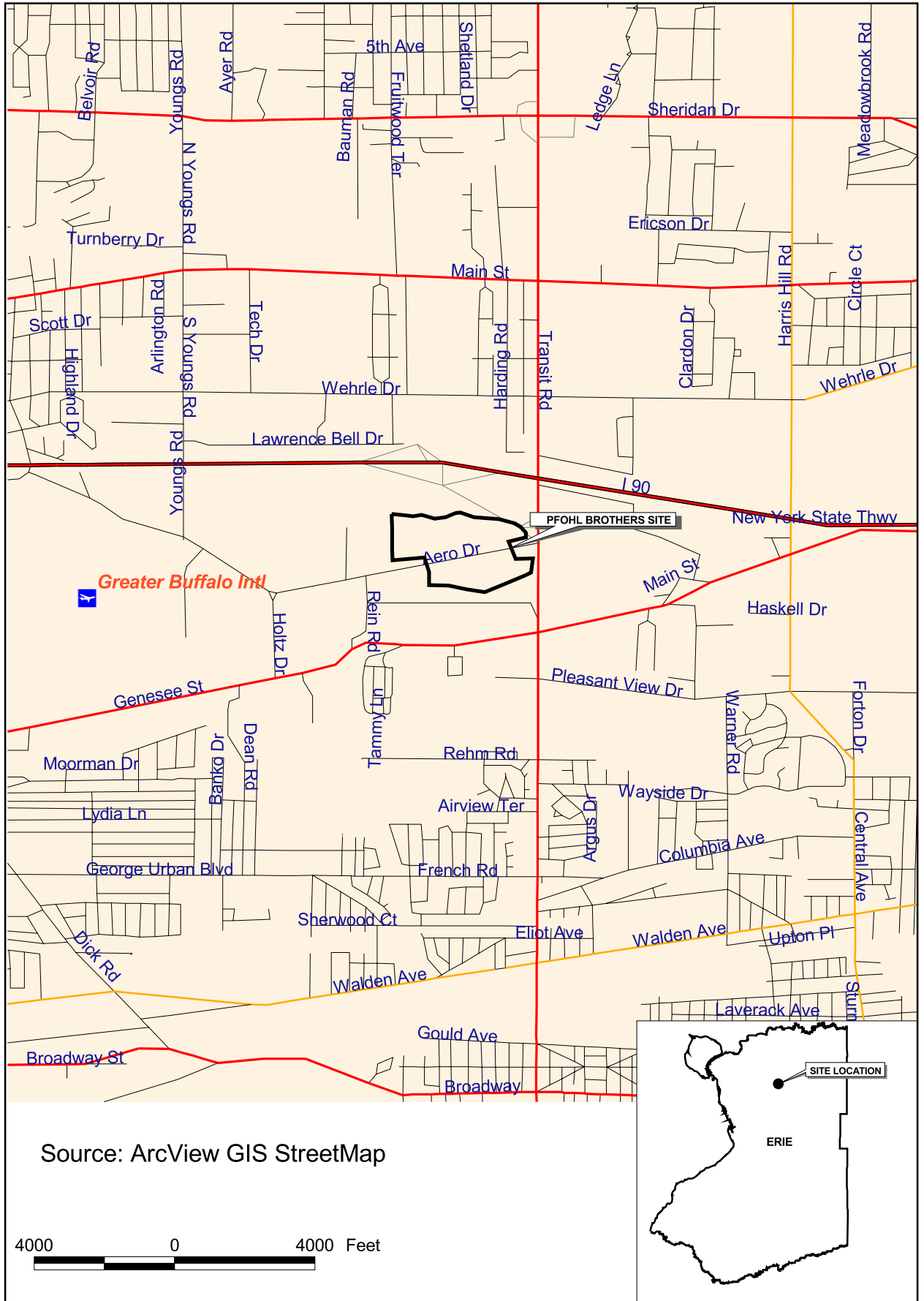
APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

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

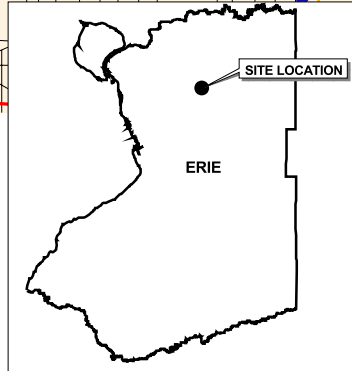
PARAMETERS (cont'd)

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

FIGURES



Source: ArcView GIS StreetMap

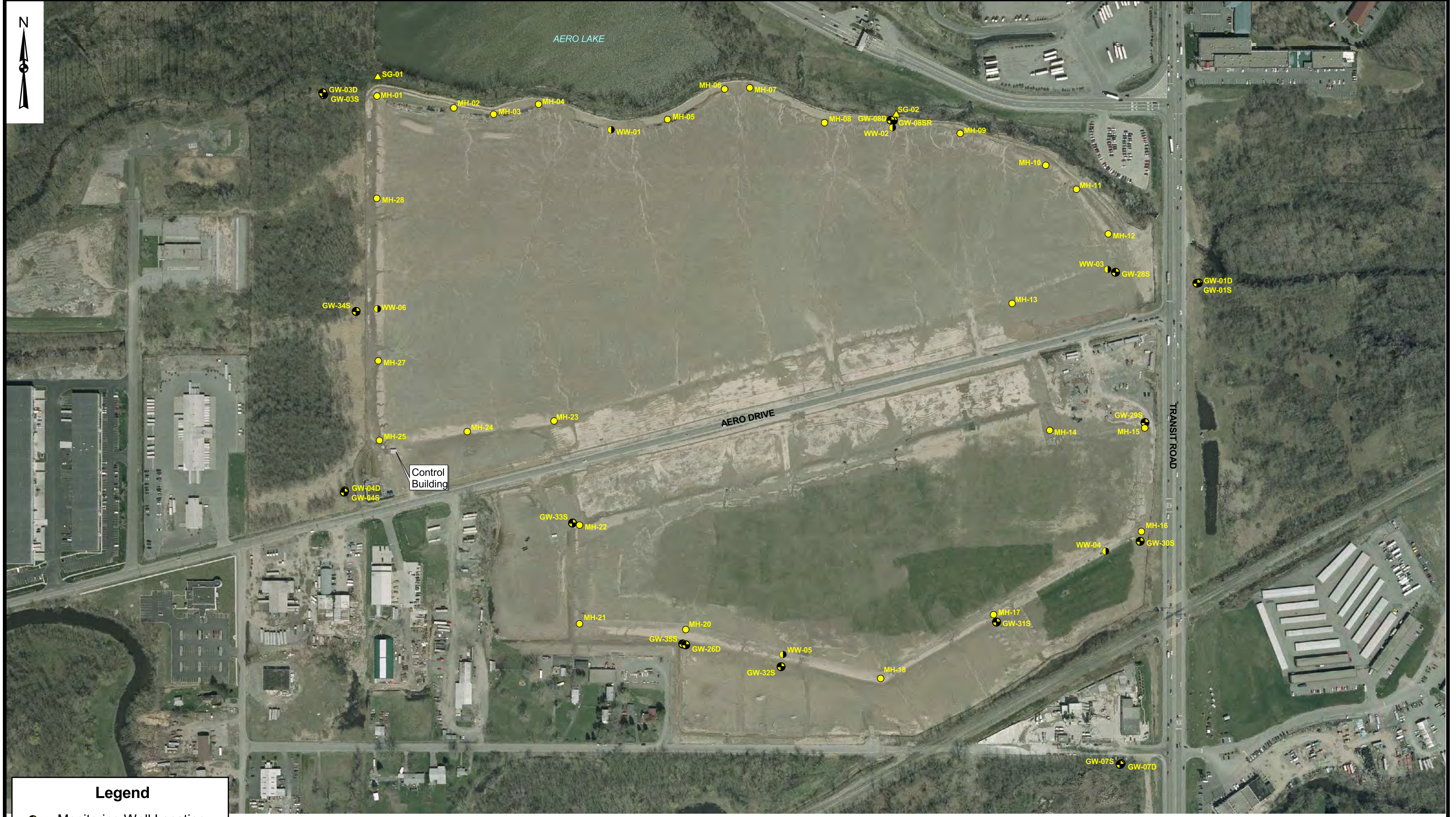


n:\1172700.0000\gis\arcview\pfohl_site\location.apr Pfohl Bros Location Map 12/15/2005







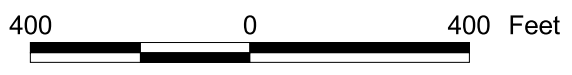
PFOHL BROTHERS LANDFILL SITE LOCATION MAP

FIGURE 1-1



Legend

-  Monitoring Well Location
-  Staff Gauge Location
-  Manhole Location
-  Wet Well Location



PFOHL BROTHERS LANDFILL
MONITORING LOCATIONS




FIGURE 3-1

N:\1172700\000000\GIS\ArcView\pfohl.apr WELL LOCATIONS 12/15/2005

APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheets

Town of Cheektowaga

Date 8/18/15
Time 1244

Weather conditions lt. rain
Read by: [Signature]

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	0	2780
WW-2	4.7	0	0	161
WW-1	4.8	0	38523	4621
WW-6	7.4	0	558819	12469
WW-4	7.0	0	21510	6881
WW-5	6.3	45.4	1043182	14835

Flow Totalizer at Meter chamber _____

Heat Trace

Outside temp T = 73
Current A = 0

Set point SP = 40

Surge Suppressor events 416 D11

Motor Control Center

Volts 480 volts
Amps 10 amps

Which WW was running?

1 2 3 4 5 6

Filter **Checked** **Changed**

Comments and/or Current Conditions

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

10/21/15

Weather conditions

Mostly Clear

Time

11:45

Read by:

JWA

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	3935	2782
WW-2	4.10	0	0	161
WW-1	3.9	0	38523	4621
WW-6	6.3	0	1403115	12688
WW-4	7.0	0	44855	6891
WW-5	7.5	0	1422694	15129

Flow Totalizer at Meter chamber

2912979

Heat Trace

Outside temp T = 65

Set point SP = 40

Current A = 2

Surge Suppressor events

416027

Motor Control Center

Volts 400 volts

Which WW was running?

Amps 5 amps

1 2 3 4 5 6

Filter

Checked

Changed

Comments and/or Current Conditions

OK

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

12/4/15

Weather conditions

Cloudy

Time

12:54

Read by:

JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	4423	2782
WW-2	4.6	0	0	161
WW-1	3.9	0	114572	4651
WW-6	10.5	0	204112	12846
WW-4	7.0	0	44855	6891
WW-5	7.5	0	210497.7	15371

Flow Totalizer at Meter chamber

4310022

Heat Trace

Outside temp T = 40

Set point SP = 40

Current A = 1.9

Surge Suppressor events

416057

Motor Control Center

Volts 480 volts

Which WW was running?

Amps 6 amps

1 2 3 4 5 6

Filter

Checked

Changed

Comments and/or Current Conditions

DATA

APPENDIX B

MONTHLY FLOW SUMMARIES JULY 2015 – DECEMBER 2015

The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

January 6, 2016

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the December 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

New exterior L.E.D. security lighting was installed at the Control Building on 12/30/15.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

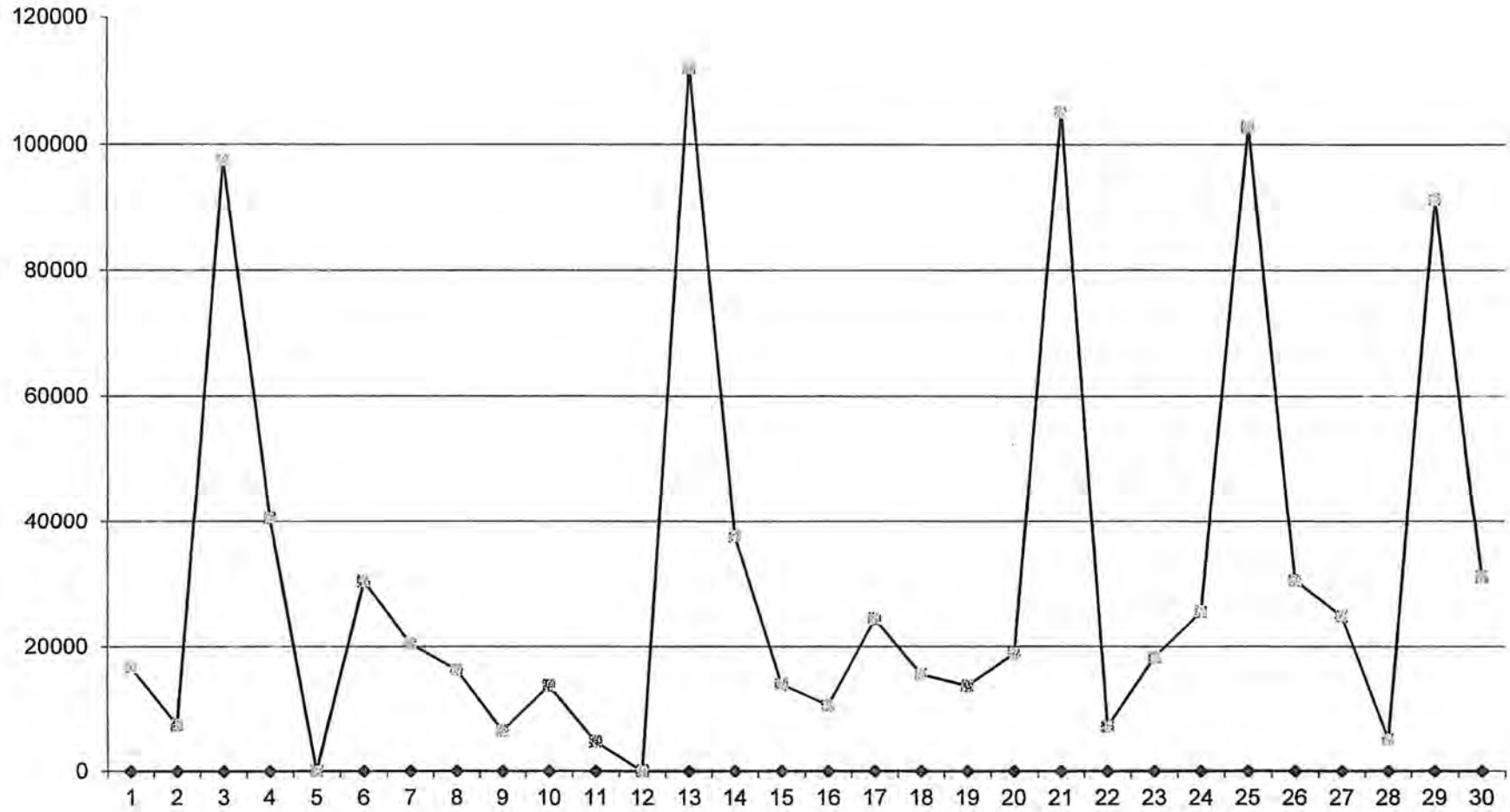
A handwritten signature in black ink, appearing to read "J. Nichy", written over a horizontal line.

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

11/30/2015		4147823	20,364	
Dec-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		4,164,525	16,702	
2		4,171,930	7,405	
3		4,269,398	97,467	
4		4,310,021	40,623	
5		4,310,021	0	
6		4,340,371	30,350	
7		4,360,807	20,436	
8		4,377,041	16,233	
9		4,383,502	6,461	
10		4,397,189	13,687	
11		4,401,869	4,680	
12		4,401,869	0	
13		4,513,920	112,051	
14		4,551,520	37,599	
15		4,565,416	13,896	
16		4,575,988	10,571	
17		4,600,392	24,404	
18		4,615,895	15,502	
19		4,629,596	13,701	
20		4,648,432	18,836	
21		4,753,596	105,164	
22		4,760,743	7,147	
23		4,779,026	18,283	
24		4,804,598	25,571	
25		4,907,406	102,808	
26		4,937,897	30,491	
27		4,962,718	24,820	
28		4,967,755	5,037	07:26 inhibit
29		5,059,009	91254	09:23 enable
30		5,090,086	31077	07:11 inhibit
31		5,164,841	74755	12:22 enable
		1,017,018	1,017,011	

December
2015



The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

December 12, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

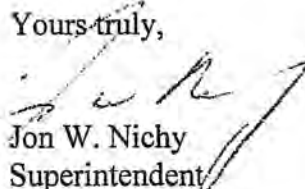
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the November 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

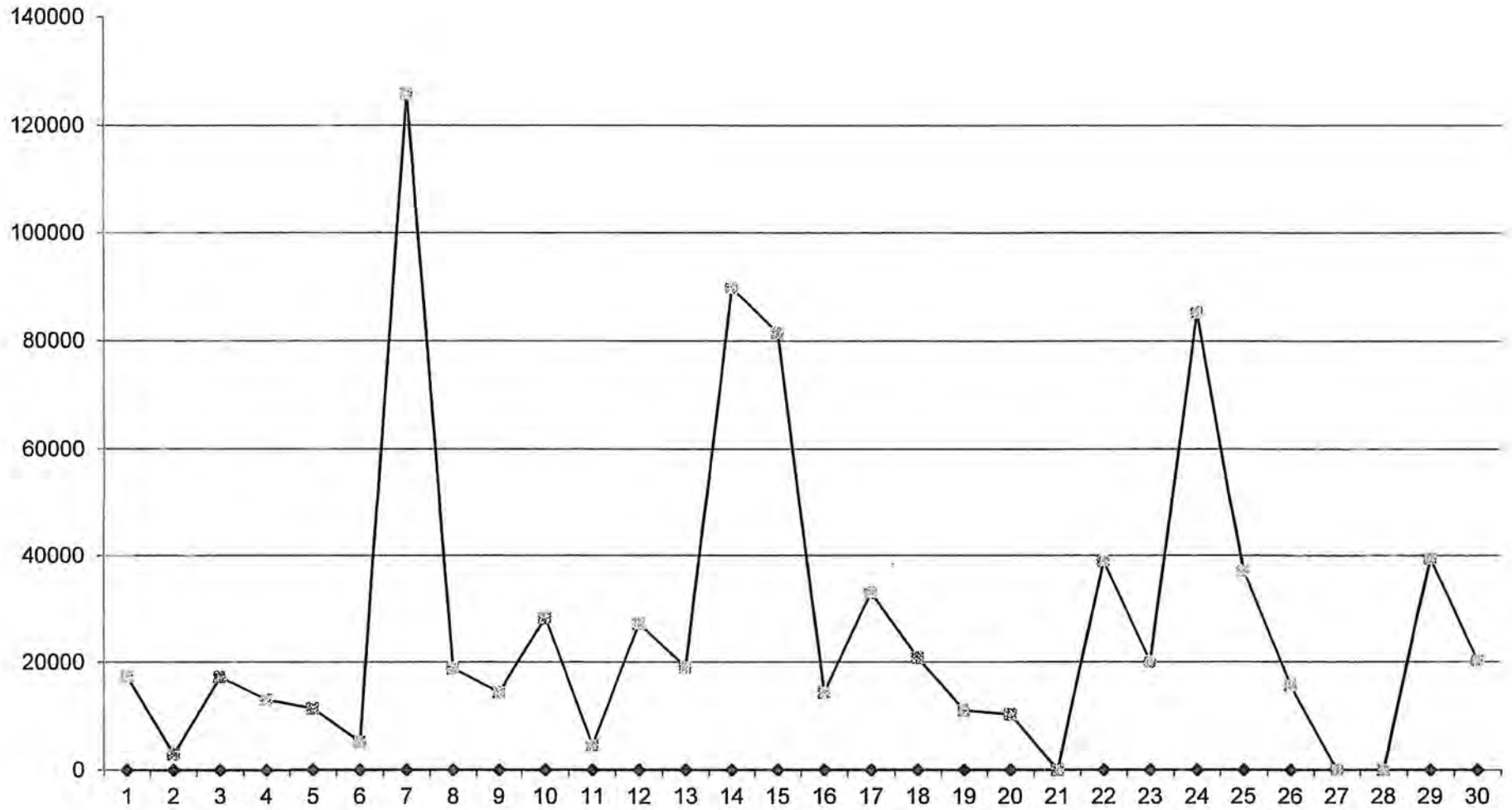
10/31/2015

3324641

85,993

Nov-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		3,341,986	17,345	
2		3,344,914	2,928	
3		3,362,177	17,263	
4		3,375,235	13,057	
5		3,386,714	11,479	
6		3,392,011	5,296	
7		3,517,836	125,825	
8		3,536,714	18,877	
9		3,551,117	14,403	
10		3,579,341	28,224	
11		3,583,934	4,592	
12		3,611,101	27,167	
13		3,630,132	19,031	18:43 inhibit
14		3,719,909	89,777	07:07 enable
15		3,801,419	81,509	
16		3,815,779	14,360	
17		3,848,796	33,017	
18		3,869,584	20,788	
19		3,880,684	11,100	
20		3,891,024	10,340	
21		3,891,024	0	
22		3,929,948	38,923	
23		3,950,066	20,118	
24		4,035,327	85,261	
25		4,072,433	37,106	
26		4,088,034	15,601	
27		4,088,034	0	
28		4,088,034	0	
29		4,127,458	39423	
30		4,147,823	20364	
		823,182	823,174	

November
2015



The
TOWN OF
CHEEKTOWAGA



Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

November 5, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

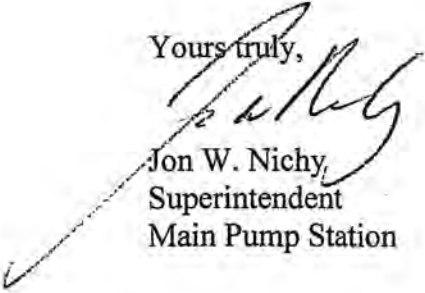
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the September 2015 Direct Discharge Flow Data Report and October 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,


Jon W. Nichy,
Superintendent
Main Pump Station

Direct Discharge Flow Data

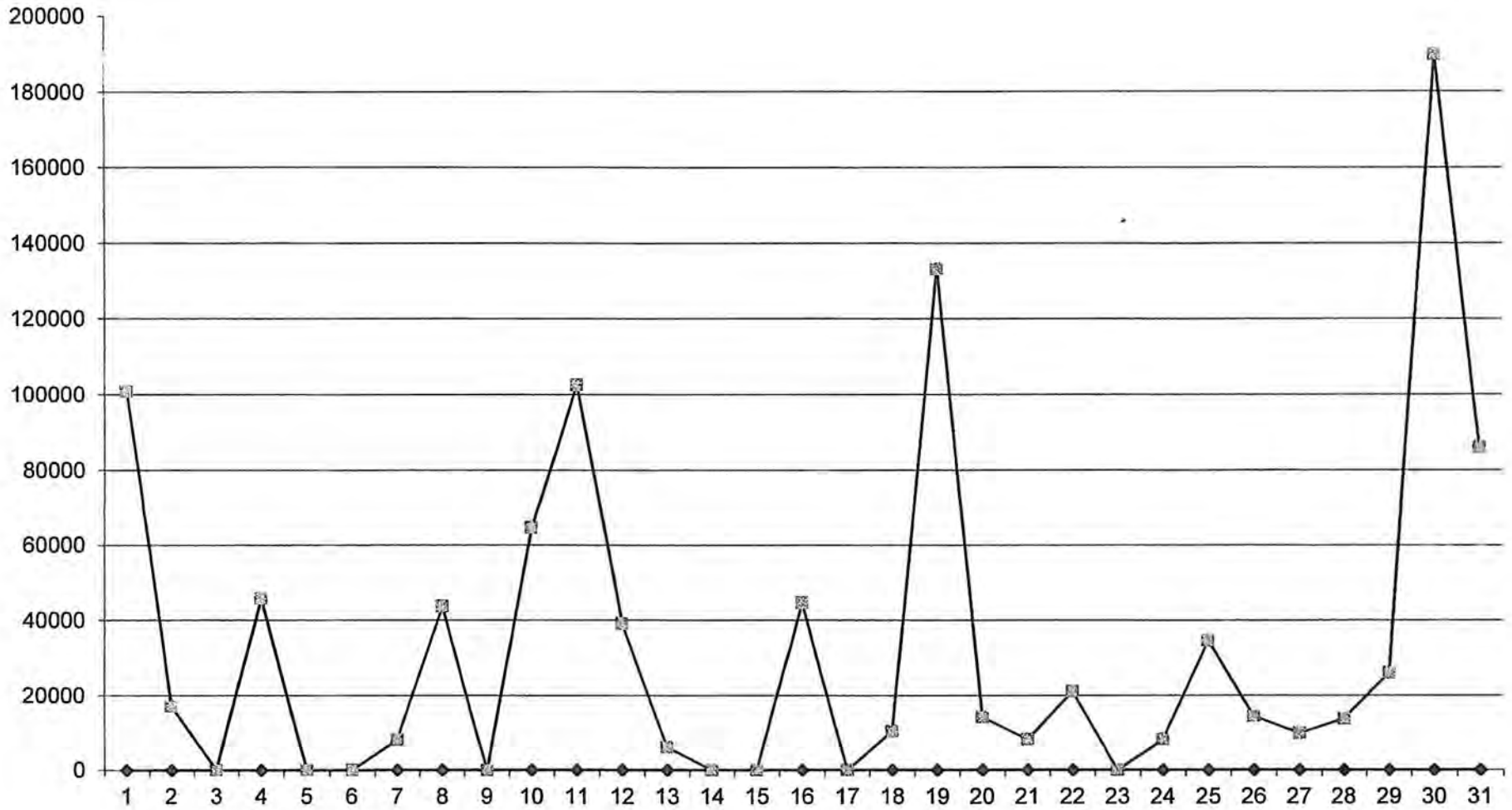
9/30/2015

2282612

70,589

Oct-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Notes
1		2,383,522	100,910	
2		2,400,584	17,062	
3		2,400,584	0	
4		2,446,317	45,733	
5		2,446,317	0	
6		2,446,317	0	
7		2,454,466	8,148	
8		2,498,090	43,624	23:38 inhibit
9		2,498,090	0	
10		2,562,738	64,648	13:10 enable
11		2,665,303	102,564	
12		2,704,362	39,059	
13		2,710,484	6,121	02:44 inhibit 07:05 enable
14		2,710,484	0	
15		2,710,484	0	
16		2,755,028	44,544	
17		2,755,028	0	
18		2,765,437	10,409	
19		2,898,667	133,230	
20		2,912,900	14,232	
21		2,920,966	8,215	
22		2,942,023	21,057	
23		2,942,023	0	
24		2,950,238	8,215	
25		2,984,884	34,645	
26		2,999,303	14,418	
27		3,009,208	9,905	
28		3,022,960	13,752	07:29 inhibit
29		3,048,907	25946	20:14 enable
30		3,238,647	189739	
31		3,324,641	85993	
		1,042,029	1,042,169	

October
2015



The
TOWN OF
CHEEKTOWAGA



Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

Main Pump Station
171 Central Blvd.
Cheektowaga, NY 14225
Phone: 716-896-1777
Fax: 716-896-6437

October 13, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

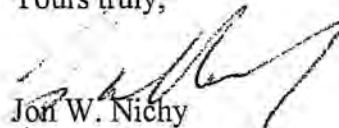
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the September 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

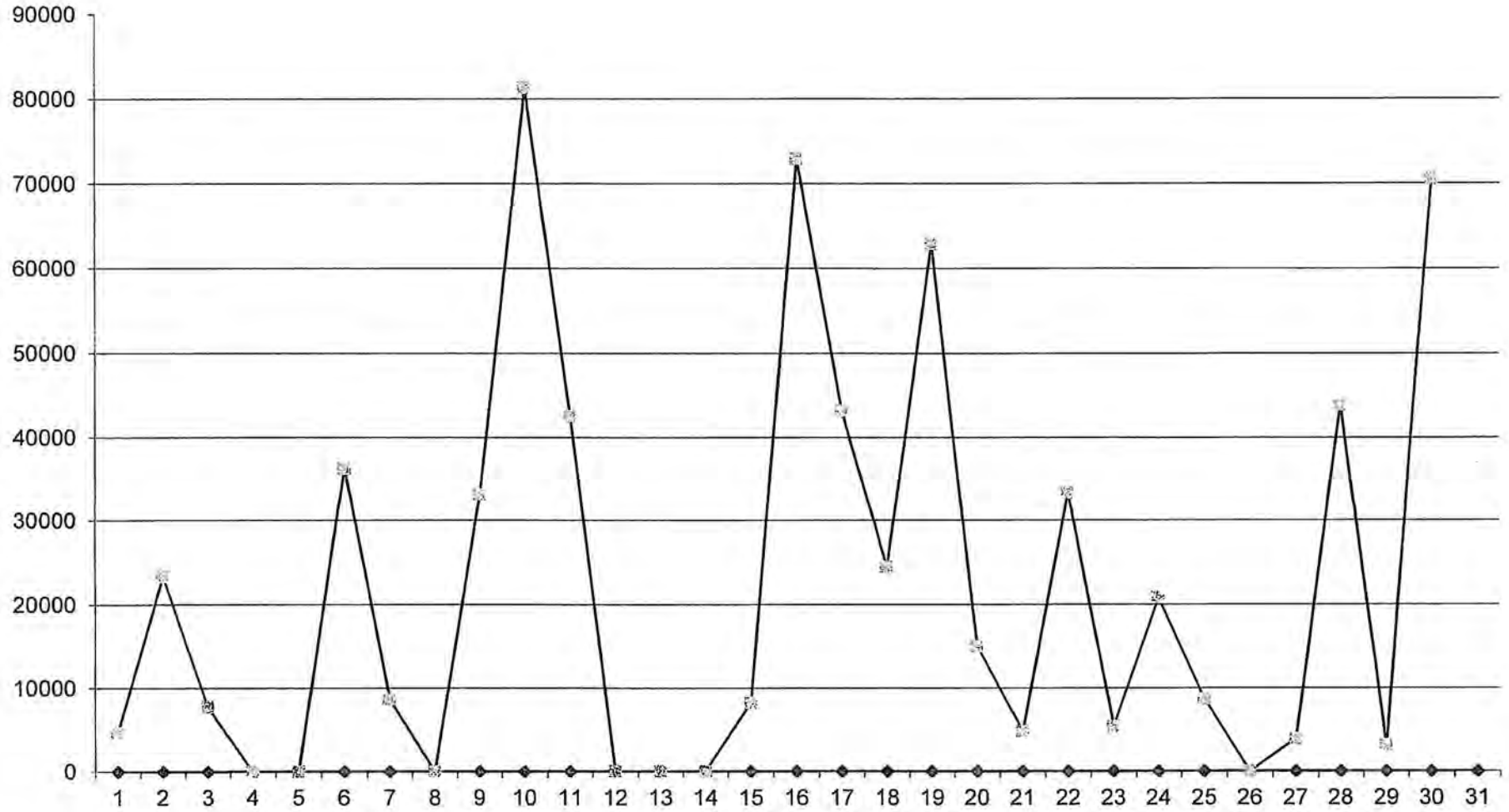

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

8/31/2015

		1623150	32,158		
Sep-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		1,627,857	4,706		
2		1,651,178	23,321		
3		1,658,936	7,757		
4		1,658,936	0		
5		1,658,936	0		
6		1,695,241	36,305		
7		1,703,905	8,663		
8		1,703,905	0		
9		1,737,113	33,207		12:00inhibit 15:29enable
10		1,818,439	81,326		
11		1,860,991	42,551		
12		1,860,991	0		06:25inhibit
13		1,860,991	0		12:11enable 21:55inhibit
14		1,860,991	0		
15		1,869,241	8,249		09:59enable
16		1,942,194	72,953		
17		1,985,388	43,193		
18		2,009,823	24,435		
19		2,072,762	62,938		
20		2,087,790	15,028		
21		2,092,628	4,837		
22		2,126,043	33,415		
23		2,131,446	5,402		
24		2,152,308	20,862		
25		2,161,038	8,730		
26		2,161,038	0		
27		2,164,942	3,903		
28		2,208,855	43,913		
29		2,212,023	3168		13:38inhibit
30		2,282,612	70589		11:08enable
31					
		659,462	659,451		

September
2015



September 9, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

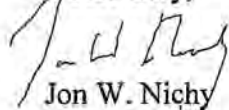
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the August 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,



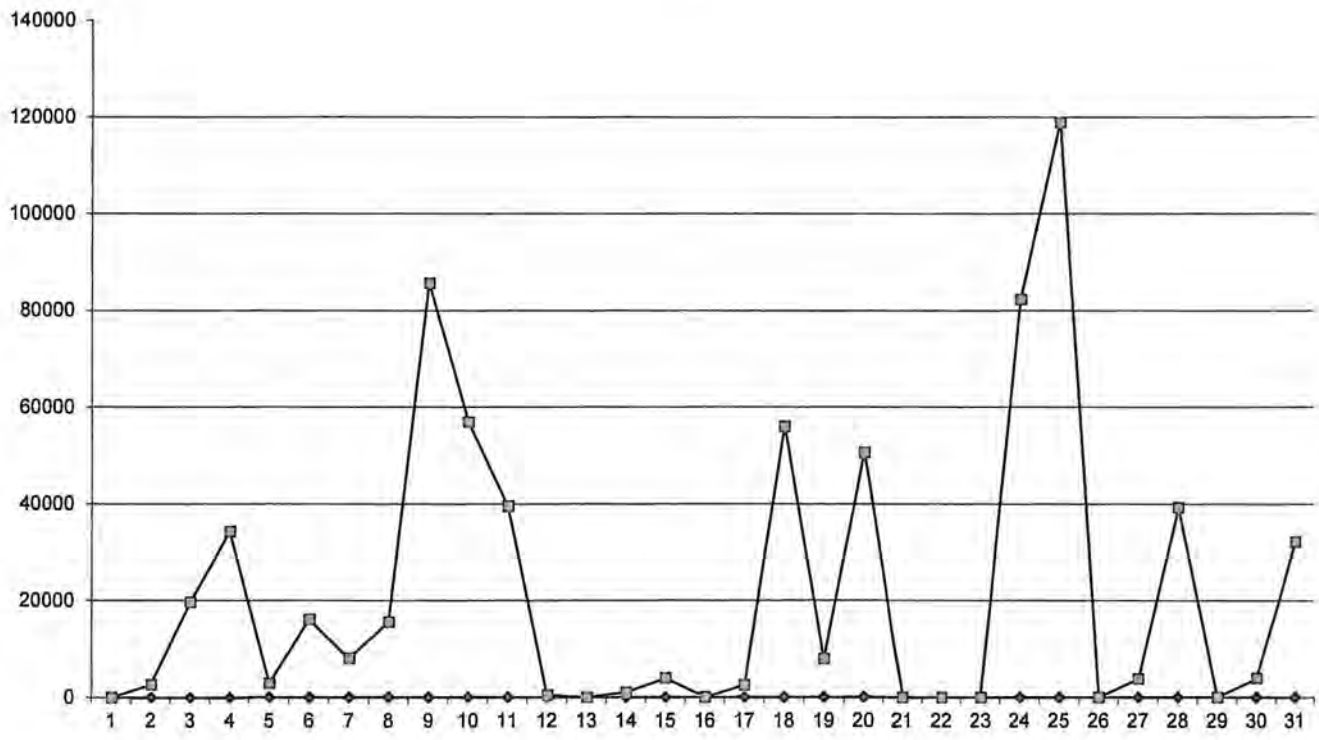
Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

7/31/2015

		938876	28,908		
Aug-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		938,876	0		
2		941,512	2,635		23:23 inhibit
3		961,179	19,667		16:07 enable
4		995,439	34,260		
5		998,362	2,923		
6		1,014,449	16,086		
7		1,022,532	8,082		
8		1,038,087	15,554		
9		1,123,747	85,660		
10		1,180,598	56,850		18:38 inhibit
11		1,220,089	39,491		07:02 enable
12		1,220,539	449		
13		1,220,539	0		
14		1,221,546	1,007		
15		1,225,542	3,995		01:17 inhibit
16		1,225,542	0		
17		1,228,108	2,566		22:58 enable
18		1,284,128	56,020		
19		1,292,122	7,993		
20		1,342,765	50,642		13:23 inhibit
21		1,342,765	0		
22		1,342,765	0		
23		1,342,765	0		
24		1,425,045	82,280		10:43 enable
25		1,543,924	118,878		
26		1,543,924	0		
27		1,547,811	3,887		
28		1,587,016	39,204		
29		1,587,016	0		
30		1,590,992	3975		
31		1,623,150	32158		
		684,274	684,262		

August
2015



August 8, 2015

Mr. Pat Bowen, P.E.
Town Engineer
Town of Cheektowaga

Re: Pfohl Bros. Flow Data

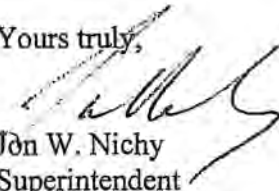
Dear Mr. Bowen,

Enclosed for your review, please find a copy of the July 2015 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

On July 1, 2015 the Flow Totalizers were reset to zero.

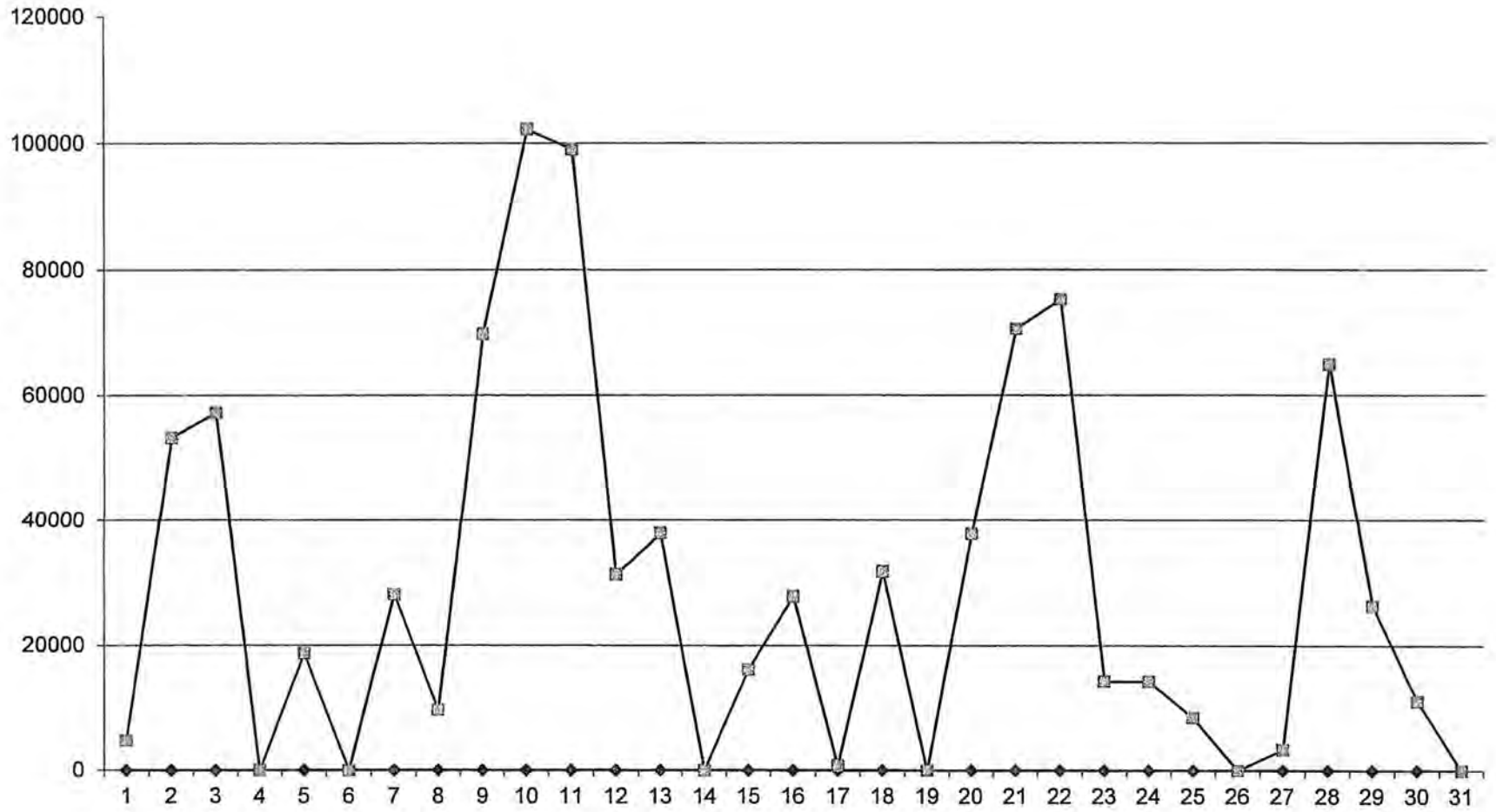
Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,



Jon W. Nichy
Superintendent
Main Pump Station

July
2015



Direct Discharge Flow Data

6/30/2015

11763594

119,884

Jul-15	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		11,768,301	4,707		Annual Reset
2		0	53,216		
3		110,449	57,233		
4		110,449	0		
5		129,167	18,718		
6		129,167	0		19:02inhibit
7		157,302	28,135		12:03enable 23:55inhibit
8		166,917	9,615		10:58enable
9		236,713	69,796		13:01inhibit 20:26enable
10		338,862	102,149		
11		437,884	99,022		
12		469,198	31,314		
13		507,041	37,843		
14		507,041	0		00:09off 08:07on 14:13off 23:33on
15		523,180	16,139		
16		551,013	27,833		
17		551,810	797		
18		583,665	31,855		
19		583,665	0		
20		621,497	37,832		
21		692,087	70,590		
22		767,364	75,278		
23		781,617	14,253		
24		795,838	14,221		
25		804,266	8,427		
26		804,266	0		
27		807,631	3,366		
28		872,554	64,923		
29		898,864	26309.4		
30		909,968	11104.4		
31		909,968	0		
		909,968	909,968		

APPENDIX C

HYDRAULIC MONITORING TABLES

**TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2015**

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
GW-01D MNW	1073088.634	1117968.213	694.41	NM	696.12	D	1	9/15/2015 1145	3.12	693.00	0.00	693.00	
								11/11/2015 1645	3.00	693.12	0.00	693.12	
								12/17/2015 0944	3.16	692.96	0.00	692.96	
GW-01S MNW	1073087.779	1117961.500	694.53	NM	696.19	S	1	9/15/2015 1146	4.32	691.87	0.00	691.87	
								11/11/2015 1645	4.06	692.13	0.00	692.13	
								12/17/2015 0943	4.26	691.93	0.00	691.93	
GW-03D MNW	1073819.106	1114602.426	692.35	NM	693.88	D	1	9/15/2015 1042	1.75	692.13	0.00	692.13	
								11/11/2015 0845	1.68	692.20	0.00	692.20	
								12/17/2015 0845	1.76	692.12	0.00	692.12	
GW-03S MNW	1073812.622	1114605.762	692.61	NM	693.80	S	1	9/15/2015 1042	6.85	686.95	0.00	686.95	
								11/11/2015 0846	2.68	691.12	0.00	691.12	
								12/17/2015 0845	3.35	690.45	0.00	690.45	
GW-04D MNW	1072289.432	1114685.625	690.89	NM	692.75	D	1	9/15/2015 1153	13.26	679.49	0.00	679.49	
								11/11/2015 0938	12.68	680.07	0.00	680.07	
								12/17/2015 0952	12.30	680.45	0.00	680.45	
GW-04S MNW	1072284.456	1114685.127	690.76	NM	692.72	S	1	9/15/2015 1154	4.32	688.40	0.00	688.40	
								11/11/2015 0938	4.30	688.42	0.00	688.42	
								12/17/2015 0952	4.36	688.36	0.00	688.36	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2015**

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
GW-07D	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								9/15/2015 1135	49.40	650.54	0.00	650.54	
MNW								11/11/2015 1520	45.61	654.33	0.00	654.33	
MNW								12/17/2015 0937	55.57	644.37	0.00	644.37	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								9/15/2015 1136	6.15	693.36	0.00	693.36	
MNW								11/11/2015 1525	5.81	693.70	0.00	693.70	
MNW								12/17/2015 0938	6.16	693.35	0.00	693.35	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								9/15/2015 1051	5.72	692.07	0.00	692.07	
MNW								11/11/2015 0857	5.67	692.12	0.00	692.12	
MNW								12/17/2015 0856	5.76	692.03	0.00	692.03	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								9/15/2015 1051	5.23	692.27	0.00	692.27	
MNW								11/11/2015 0856	5.20	692.30	0.00	692.30	
MNW								12/17/2015 0855	5.18	692.32	0.00	692.32	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								9/15/2015 1126	6.59	691.91	0.00	691.91	
MNW								11/11/2015 0928	6.52	691.98	0.00	691.98	
MNW								12/17/2015 0926	6.60	691.90	0.00	691.90	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								9/15/2015 1100	10.35	690.60	0.00	690.60	
MNW								11/11/2015 0905	9.47	691.48	0.00	691.48	
MNW								12/17/2015 0901	9.84	691.11	0.00	691.11	

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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2015**

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
GW-29S	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								9/15/2015 1109	9.52	690.11	0.00	690.11	
MNW								11/11/2015 0915	8.56	691.07	0.00	691.07	
MNW								12/17/2015 0912	9.32	690.31	0.00	690.31	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								9/15/2015 1111	7.99	688.59	0.00	688.59	
MNW								11/11/2015 0917	8.13	688.45	0.00	688.45	
MNW								12/17/2015 0916	8.13	688.45	0.00	688.45	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								9/15/2015 1118	5.95	692.67	0.00	692.67	
MNW								11/11/2015 0921	3.06	695.56	0.00	695.56	
MNW								12/17/2015 0920	NM	-	0.00	-	Erroneous Measurement
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								9/15/2015 1120	5.55	692.82	0.00	692.82	
MNW								11/11/2015 0924	3.07	695.30	0.00	695.30	
MNW								12/17/2015 0924	3.08	695.29	0.00	695.29	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								9/15/2015 1129	5.81	692.43	0.00	692.43	
MNW								11/11/2015 0932	3.74	694.50	0.00	694.50	
MNW								12/17/2015 0930	3.88	694.36	0.00	694.36	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								9/15/2015 1035	3.17	691.60	0.00	691.60	
MNW								11/11/2015 0837	2.63	692.14	0.00	692.14	
MNW								12/17/2015 0837	2.62	692.15	0.00	692.15	

NM - No Measurement

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Type:

- MH Manhole Monitoring Point
- MNW Monitoring Well
- SG Staff Gauge

**TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2015**

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
GW-35S MNW	1071701.925	1115985.585	696.19	NM	697.39	S	1	9/15/2015 1125	5.68	691.71	0.00	691.71	
								11/11/2015 0928	4.22	693.17	0.00	693.17	
								12/17/2015 0926	3.98	693.41	0.00	693.41	
MH-01 MH	1073806.665	1114810.501	698.62	NM	698.62	NA	1	9/15/2015 1038	9.72	688.90	0.00	688.90	
								11/11/2015 0847	10.21	688.41	0.00	688.41	
								12/17/2015 0842	10.11	688.51	0.00	688.51	
MH-03 MH	1073736.789	1115259.334	699.40	NM	699.40	NA	1	9/15/2015 1045	10.59	688.81	0.00	688.81	
								11/11/2015 0850	11.08	688.32	0.00	688.32	
								12/17/2015 0851	11.02	688.38	0.00	688.38	
MH-07 MH	1073838.229	1116243.757	696.82	NM	696.82	NA	1	9/15/2015 1047	8.80	688.02	0.00	688.02	
								11/11/2015 0854	9.30	687.52	0.00	687.52	
								12/17/2015 0853	9.23	687.59	0.00	687.59	
MH-10 MH	1073540.729	1117381.524	703.01	NM	703.01	NA	1	9/15/2015 1057	14.52	688.49	0.00	688.49	
								11/11/2015 0900	14.54	688.47	0.00	688.47	
								12/17/2015 0900	14.53	688.48	0.00	688.48	
MH-15 MH	1072531.567	1117761.125	699.02	NM	699.02	NA	1	9/15/2015 1108	13.81	685.21	0.00	685.21	
								11/11/2015 0915	14.39	684.63	0.00	684.63	
								12/17/2015 0912	14.37	684.65	0.00	684.65	

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Type:

MH Manhole Monitoring Point
 MNW Monitoring Well
 SG Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2015

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
MH-16 MH	1072133.714	1117748.238	698.57	NM	698.57	NA	1	9/15/2015 1110	13.60	684.97	0.00	684.97	
								11/11/2015 0917	14.54	684.03	0.00	684.03	
								12/17/2015 0915	14.49	684.08	0.00	684.08	
MH-17 MH	1071813.137	1117180.019	702.16	NM	702.16	NA	1	9/15/2015 1117	17.23	684.93	0.00	684.93	
								11/11/2015 0920	18.11	684.05	0.00	684.05	
								12/17/2015 0918	18.11	684.05	0.00	684.05	
MH-20 MH	1071756.395	1115997.024	706.20	NM	706.20	NA	1	9/15/2015 1124	19.74	686.46	0.00	686.46	
								11/11/2015 0926	19.76	686.44	0.00	686.44	
								12/17/2015 0926	19.77	686.43	0.00	686.43	
MH-22 MH	1072158.023	1115589.309	698.05	NM	698.05	NA	1	9/15/2015 1126	9.00	689.05	0.00	689.05	
								11/11/2015 0932	9.00	689.05	0.00	689.05	
								12/17/2015 0930	9.01	689.04	0.00	689.04	
MH-25 MH	1072483.928	1114820.313	698.17	NM	698.17	NA	1	9/15/2015 1030	9.28	688.89	0.00	688.89	
								11/11/2015 0828	9.81	688.36	0.00	688.36	
								12/17/2015 0835	9.82	688.35	0.00	688.35	
SG-01 SG	1073882.887	1114813.101	NM	NM	690.00	NA	1	9/15/2015 1039	NM	-	NM	-	Dry
								11/11/2015 0841	-0.80	690.80	0.00	690.80	
								12/17/2015 0843	-0.77	690.77	0.00	690.77	

NM - No Measurement

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Type:

MH Manhole Monitoring Point
MNW Monitoring Well
SG Staff Gauge

**TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2015**

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	9/15/2015 1052	-3.20	693.20	0.00	693.20	
								11/11/2015 0856	-3.26	693.26	0.00	693.26	
								12/17/2015 0856	-3.24	693.24	0.00	693.24	
WW-01 MH	1073676.903	1115710.476	NM	NM	684.02	NA	1	9/15/2015 1000	-4.6	688.62	0.00	688.62	
								11/11/2015 0745	-4.1	688.12	0.00	688.12	
								12/17/2015 0700	-4.2	688.22	0.00	688.22	
WW-02 MH	1073684.724	1116792.311	NM	NM	684.18	NA	1	9/15/2015 1000	-4.6	688.78	0.00	688.78	
								11/11/2015 0745	-4.6	688.78	0.00	688.78	
								12/17/2015 0700	-4.6	688.78	0.00	688.78	
WW-03 MH	1073140.339	1117618.499	NM	NM	683.80	NA	1	9/15/2015 1000	-4.73	688.53	0.00	688.53	
								11/11/2015 0745	-4.64	688.44	0.00	688.44	
								12/17/2015 0700	-4.68	688.48	0.00	688.48	
WW-04 MH	1072057.563	1117610.508	NM	NM	676.62	NA	1	9/15/2015 1000	-8.44	685.06	0.00	685.06	
								11/11/2015 0745	-6.9	683.52	0.00	683.52	
								12/17/2015 0700	-6.9	683.52	0.00	683.52	
WW-05 MH	1071661.368	1116370.876	NM	NM	676.14	NA	1	9/15/2015 1000	-8.64	684.78	0.00	684.78	
								11/11/2015 0745	-5.6	681.74	0.00	681.74	
								12/17/2015 0700	-7.0	683.14	0.00	683.14	

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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 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2015**

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
WW-06	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								9/15/2015 1000	-7.4	689.29	0.00	689.29	
MH								11/11/2015 0745	-7.0	688.89	0.00	688.89	
MH								12/17/2015 0700	-7.1	688.99	0.00	688.99	

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 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)
9/15/2015	688.62	---	---	688.78	692.27	3.49	693.20	4.42
11/11/2015	688.12	---	---	688.78	692.30	3.52	693.26	4.48
12/17/2015	688.22	---	---	688.78	692.32	3.54	693.24	4.46

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)
9/15/2015	688.53	690.60	2.07	685.06	---	---
11/11/2015	688.44	691.48	3.04	683.52	---	---
12/17/2015	688.48	691.11	2.63	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)
9/15/2015	684.78	692.82	8.04	689.29	691.60	2.31
11/11/2015	681.74	695.30	13.56	688.89	692.14	3.25
12/17/2015	683.14	695.29	12.15	688.99	692.15	3.16

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)
9/15/2015	688.90	DRY	NA	685.21	690.11	4.90
11/11/2015	688.41	690.80	2.39	684.63	691.07	6.44
12/17/2015	688.51	690.77	2.26	684.65	690.31	5.66

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)
9/15/2015	684.97	688.59	3.62	684.93	692.67	7.74
11/11/2015	684.03	688.45	4.42	684.05	695.56	11.51
12/17/2015	684.08	688.45	4.37	684.05	NM	NA

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)
9/15/2015	686.46	691.71	5.25	689.05	692.43	3.38
11/11/2015	686.44	693.17	6.73	689.05	694.50	5.45
12/17/2015	686.43	693.41	6.98	689.04	694.36	5.32

Notes:

- * = No corresponding monitoring well.
- NA = Not applicable
- NM =No measurement

APPENDIX D

**GROUNDWATER PURGE AND SAMPLE COLLECTION
LOGS**

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-1S

Date: 11/13/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 3.32' Depth to Well Bottom: 14.94' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 7.2 Estimated Purge Volume (liters): 10.8

Sample ID: GW-1S Sample Time: 12:58 QA/QC: None

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.
Orange stain in water initially.

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:13	7.28	12.93	1.39	2.01	291	-92	310	3.32
12:18	7.29	12.95	1.36	0.99	362	-101	250	4.38
12:23	7.27	12.96	1.39	0.75	241	-100	250	4.47
12:28	7.21	12.99	1.45	0.56	118	-94	250	4.49
12:33	7.18	12.98	1.47	0.47	72.5	-92	250	4.45
12:38	7.16	12.94	1.49	0.41	41.0	-91	250	4.34
12:43	7.03	12.85	1.48	0.41	46.6	-85	200	4.20
12:48	7.14	12.90	1.48	0.39	37.3	-92	200	4.28
12:53	7.12	12.87	1.48	0.37	40.7	-92	200	4.27
12:58	7.12	12.86	1.47	0.37	37.2	-92	200	4.27
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 ($vq_d = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-1D

Date: 11/13/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 2.40' Depth to Well Bottom: 39.65' Well Diameter: 4" Screen Length: _____

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 92.0 Estimated Purge Volume (liters): 56.1

Sample ID: GW-1D Sample Time: 14:07 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: Sulfur odor

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:06	7.32	12.69	1.38	3.87	13.9	-69	920	2.40
13:11	7.41	13.08	1.38	0.38	3.7	-69	920	2.40
13:16	7.43	13.01	1.38	0.31	1.3	-97	920	2.40
13:21	7.45	12.98	1.39	0.27	0.6	-122	920	2.46
13:26	7.47	12.95	1.39	0.23	0.0	-167	920	2.46
13:31	7.45	12.94	1.39	0.23	0.0	-191	920	2.46
13:36	7.42	12.93	1.39	0.23	0.0	-203	920	2.46
13:41	7.39	12.92	1.39	0.22	0.0	-214	920	2.46
13:46	7.38	12.92	1.39	0.22	0.0	-226	920	2.46
13:51	7.49	12.90	1.39	0.21	0.0	-246	920	2.47
13:56	7.47	12.90	1.39	0.21	0.0	-254	920	2.47
14:01	7.46	12.88	1.39	0.21	0.0	-264	920	2.47
14:04	7.46	12.90	1.39	0.21	0.0	-270	920	2.47
14:07	7.44	12.90	1.39	0.21	0.0	-274	920	2.47
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 (v_q_i = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-3S

Date: 11/11/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 2.68' Depth to Well Bottom: 13.22' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 6.5 Estimated Purge Volume (liters): 7.6

Sample ID: GW-3S Sample Time: 10:53 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:08	7.39	14.68	1.86	3.65	16.9	106	175	2.68
10:13	7.12	13.79	1.84	3.62	4.3	101	175	4.21
10:18	7.12	13.68	1.81	3.43	4.2	117	175	4.97
10:23	7.11	13.67	1.81	3.20	4.3	121	175	5.52
10:28	7.10	13.61	1.83	4.45	3.9	117	175	6.10
10:33	7.10	13.60	1.83	4.27	4.6	119	175	6.64
10:38	7.10	13.56	1.83	4.08	3.9	121	175	7.15
10:43	7.08	13.55	1.83	3.84	3.4	120	150	7.58
10:48	7.10	13.54	1.84	3.70	3.4	118	150	7.80
10:53	7.09	13.53	1.84	3.56	4.5	119	150	8.01
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 (v_q_i = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-3D

Date: 11/11/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy Company: URS Corporation

Purging/
Sampling
Device: Geopump 2 Tubing Type: LDPE/Silicone Pump/Tubing
Inlet
Location: Screen midpoint

Measuring Below Top of Initial Depth Depth to Well Diameter: Screen
Point: Riser to Water: 1.68' Well Bottom: 35.70' Diameter: 4" Length:

Casing Volume in 1 Estimated
Type: Stainless Steel Well Casing (liters): 84.0 Purge Volume (liters): 60.0

Sample ID: GW-3D Sample Time: 12:04 QA/QC: MS/MSD

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:04	7.31	13.28	1.43	0.61	0.0	-71	1000	1.68
11:09	7.30	13.21	1.43	0.50	0.0	-103	1000	1.68
11:14	7.33	13.20	1.43	0.47	0.0	-112	1000	1.68
11:19	7.33	13.19	1.43	0.47	0.0	-119	1000	1.68
11:24	7.32	13.17	1.43	0.46	0.0	-124	1000	1.68
11:29	7.33	13.17	1.44	0.47	0.0	-127	1000	1.68
11:34	7.34	13.16	1.44	0.47	0.0	-129	1000	1.68
11:39	7.34	13.15	1.44	0.48	0.0	-131	1000	1.68
11:44	7.36	13.15	1.45	0.49	0.0	-133	1000	1.68
11:49	7.28	13.15	1.44	0.42	0.0	-132	1000	1.68
11:54	7.26	13.14	1.44	0.40	0.0	-131	1000	1.68
11:59	7.34	13.08	1.45	0.39	0.0	-137	1000	1.68
12:04	7.30	13.09	1.45	0.38	0.0	-138	1000	1.68
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 ($vq_{jt} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-4S

Date: 11/12/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 4.30' 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): 11.4

Sample ID: GW-4S Sample Time: 10:10 VOCs/ 11:35 SVOCs & Metals QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 9/15/15, sampled VOCs from PDB at 10:10 on 11/12/15.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 11:35.

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:14	8.51	12.70	0.619	4.81	7.4	57	Initial	4.30
10:16	8.56	12.93	0.636	7.34	43.5	39	1 Gal. Purged	-
10:18	8.50	13.02	0.646	4.66	95.7	-1	2 Gal. Purged	-
10:20	8.39	13.07	0.657	3.07	170	-90	3 Gal. Purged	-
								Dry
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 (v_q_i = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-4D
 Date: 11/12/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 12.13' Depth to Well Bottom: 45.57' Well Diameter: 4" Screen Length: _____
 Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 82.6 Estimated Purge Volume (liters): 13.6

Sample ID: GW-4D Sample Time: 11:30 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
 Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:30	7.69	12.70	1.92	1.47	2.1	-182	290	12.13
10:35	7.46	12.51	1.92	0.93	2.3	-262	220	12.54
10:40	7.41	12.62	1.91	0.63	0.4	-299	220	12.79
10:45	7.41	12.74	1.91	0.52	0.0	-305	220	12.95
10:50	7.41	12.80	1.92	0.43	0.0	-313	220	13.17
10:55	7.39	12.83	1.93	0.42	0.0	-318	220	13.28
11:00	7.39	12.88	1.92	0.41	2.3	-320	220	13.36
11:05	7.38	12.93	1.91	0.40	0.0	-326	220	13.47
11:10	7.37	12.93	1.92	0.39	4.9	-329	220	13.53
11:15	7.36	12.94	1.91	0.38	0.0	-330	220	13.62
11:20	7.37	12.98	1.93	0.35	3.9	-335	220	13.72
11:25	7.36	13.08	1.92	0.34	0.0	-337	220	13.76
11:30	7.37	13.04	1.93	0.36	0.0	-338	220	13.80
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 ($vq_{jt} = \pi r^2 h$)

WELL PURGING LOG

URS Corporation

SITE NAME: Pfohl Brothers Landfill WELL NO.: GW-7S
 PROJECT NO.: 11175616.00000
 STAFF: Rob Murphy, Tim Ifkovich
 DATE(S): 11/11/15, 11/12/15

		WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	= <u>35.04</u>	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	= <u>5.81</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	= <u>29.23</u>	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	= <u>0.17</u>	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	= <u>4.97</u>	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	= _____	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	= <u>7.0</u>	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	2	4	7						
pH	8.14	8.20	8.19	8.12						
SPEC. COND. (mS/cm)	0.825	0.812	0.804	0.783						
DO (mg/l)	4.51	4.49	2.94	3.12						
TEMPERATURE (°C)	12.64	12.56	12.46	12.33						
TURBIDITY (NTU)	3.8	4.7	3.5	41.7						
ORP (millivolts)	-160	-112	-59	-62						
TIME	16:15	16:20	16:25	16:32						

COMMENTS: 15:25 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/15/15
 16:15 - Begin hand bailing well.
 16:32- Well dry after removing 7 gallons.
 11/12/2015 11:50 - Return to well, depth to water = 5.80 feet.
 11:58 - Collect sample for SVOCs and Metals.

WELL PURGING LOG

URS Corporation

SITE NAME: Pfohl Brothers Landfill WELL NO.: GW-7D
 PROJECT NO.: 11175616.00000
 STAFF: Rob Murphy, Tim Ifkovich
 DATE(S): 11/11/15, 11/12/15

		WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	= <u>60.45</u>	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	= <u>45.61</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	= <u>14.84</u>	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	= <u>0.66</u>	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	= <u>9.79</u>	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	= <u> </u>	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	= <u>9.8</u>	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Init	3	6	9.8						
pH	7.71	7.75	7.79	7.86						
SPEC. COND. (mS/cm)	0.946	0.955	1.020	1.110						
DO (mg/l)	2.58	2.80	2.94	3.23						
TEMPERATURE (°C)	12.44	12.42	12.43	12.40						
TURBIDITY (NTU)	3.9	8.9	10.6	11.7						
ORP (millivolts)	-23	-87	-136	-204						
TIME	15:30	15:45	15:55	16:07						

COMMENTS: 15:20 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/15/15
 15:30 - Begin hand bailing well.
 16:07 - Well dry after removing 9.8 gallons
 11/12/2015 11:49 - return to well, depth to water = 58.80 feet.
 11:53 - Collect sample for SVOCs and Metals.

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-8D

Date: 11/11/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 5.67' Depth to Well Bottom: 36.54' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 76.2 Estimated Purge Volume (liters): 66.0

Sample ID: GW-8D Sample Time: 13:36 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:30	7.21	12.21	2.86	1.78	77.6	-73	1000	5.67
12:35	7.16	12.23	2.87	1.01	3.7	-78	1000	5.67
12:40	7.16	12.19	2.84	0.82	6.8	-75	1000	5.67
12:45	7.07	12.29	2.86	0.69	7.9	-71	1000	5.67
12:50	7.09	12.30	2.86	0.51	2.7	-87	1000	5.67
12:55	7.07	12.34	2.68	0.43	4.3	-121	1000	5.67
13:00	7.04	12.43	2.26	0.40	0.7	-83	1000	5.67
13:05	7.03	12.43	2.24	0.38	0.0	-65	1000	5.67
13:10	7.05	12.45	2.23	0.36	0.0	-50	1000	5.67
13:15	7.04	12.46	2.23	0.35	0.0	-40	1000	5.67
13:20	7.02	12.47	2.23	0.33	0.0	-27	1000	5.67
13:25	7.06	12.45	2.23	0.33	0.0	-20	1000	5.67
13:30	7.06	12.44	2.23	0.32	0.0	-13	1000	5.67
13:33	7.05	12.45	2.23	0.31	0.0	-8	1000	5.67
13:36	7.05	12.45	2.23	0.31	0.0	-5	1000	5.67
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 (vq_d = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-26D

Date: 11/12/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 6.54' Depth to Well Bottom: 40.70' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 84.4 Estimated Purge Volume (liters): 52.8

Sample ID: GW-26D Sample Time: 15:11 QA/QC: Duplicate (FD-111215)

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:11	6.99	12.60	2.57	2.14	0.0	-70	880	6.54
14:16	7.10	12.52	2.61	0.26	0.0	-102	880	6.54
14:21	7.10	12.53	2.61	0.25	0.0	-108	880	6.54
14:26	7.10	12.52	2.61	0.25	0.0	-112	880	6.54
14:31	7.10	12.52	2.61	0.24	0.0	-115	880	6.54
14:36	7.10	12.51	2.61	0.22	0.0	-118	880	6.54
14:41	7.09	12.51	2.61	0.21	0.0	-119	880	6.54
14:46	7.09	12.51	2.61	0.20	0.0	-120	880	6.54
14:51	7.09	12.52	2.61	0.19	0.0	-124	880	6.53
14:56	7.10	12.52	2.61	0.19	0.0	-127	880	6.52
15:01	7.10	12.53	2.61	0.19	0.0	-128	880	6.51
15:06	7.11	12.54	2.61	0.18	0.0	-129	880	6.50
15:11	7.12	12.52	2.61	0.18	0.0	-129	880	6.50
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 ($vq_d = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-28S
 Date: 11/12/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy Company: URS Corporation

Purging/
Sampling
Device: Geopump 2 Tubing Type: LDPE/Silicone Pump/Tubing
Inlet
Location: Screen midpoint

Measuring Below Top of Initial Depth Depth to Well Well Screen
Point: Riser to Water: 9.14' Well Bottom: 15.52' Diameter: 2" Length:

Casing Volume in 1 Well Casing Estimated
Type: Stainless Steel (liters): 3.9 Purge Volume (liters): 5.4

Sample ID: GW-28S Sample Time: 9:46 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
 Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:16	7.79	12.98	0.822	2.11	28.5	44	210	9.14
9:21	7.36	13.67	0.796	1.12	14.1	1	210	10.23
9:26	7.33	13.76	0.785	0.85	11.2	-2	165	10.40
9:31	7.31	13.74	0.777	0.81	10.7	-5	165	10.40
9:36	7.33	13.75	0.781	0.77	12.0	-6	165	10.40
9:41	7.33	13.79	0.787	0.73	10.8	-12	165	10.40
9:46	7.32	13.80	0.789	0.71	10.3	-13	165	10.40
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 (vq_h = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-29S

Date: 11/13/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 8.41' Depth to Well Bottom: 20.04' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 7.2 Estimated Purge Volume (liters): 6.8

Sample ID: GW-29S Sample Time: 9:11 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
 Other Information: Orange iron particulates at start of purge

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:36	8.26	13.59	1.15	3.86	19.8	81	275	8.41
8:41	7.67	13.23	1.49	2.31	27.9	-2	275	8.68
8:46	7.18	13.04	1.54	1.25	35.0	-91	200	8.83
8:51	7.15	13.00	1.53	0.91	19.3	-110	150	9.15
8:56	7.11	12.87	1.53	0.82	15.5	-113	150	9.30
9:01	7.13	12.75	1.53	0.77	18.5	-115	150	9.39
9:06	7.13	12.49	1.54	0.74	21.6	-115	150	9.39
9:11	7.15	12.41	1.55	0.73	16.5	-116	150	9.40
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 ($vq_{jt} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-30S

Date: 11/13/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy Company: URS Corporation

Purging/
Sampling
Device: Geopump 2 Tubing Type: LDPE/Silicone Pump/Tubing
Inlet
Location: Screen midpoint

Measuring Below Top of Initial Depth Depth to Well Well Screen
Point: Riser to Water: 7.93' Well Bottom: 17.97' Diameter: 2" Length:

Casing Volume in 1 Estimated
Type: Stainless Steel Well Casing (liters): 6.2 Purge Volume (liters): 13.0

Sample ID: GW-30S Sample Time: 10:02 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:37	6.76	13.21	4.75	3.57	22.8	-100	520	7.93
9:42	6.96	14.08	4.76	0.70	8.2	-117	520	8.00
9:47	6.99	14.17	4.79	0.50	1.4	-126	520	8.02
9:52	6.99	14.12	4.80	0.45	0.2	-129	520	8.00
9:57	6.99	14.15	4.81	0.42	0.0	-132	520	8.00
10:02	6.99	14.20	4.80	0.40	0.0	-133	520	8.00
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 ($vq_d = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-31S

Date: 11/13/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 2.84' Depth to Well Bottom: 9.57' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.2 Estimated Purge Volume (liters): 6.0

Sample ID: GW-31S Sample Time: 10:55 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:20	8.10	12.65	0.945	3.37	141	-67	210	2.84
10:25	7.43	12.21	0.888	0.56	34.5	-3	210	4.44
10:30	7.37	12.08	0.885	0.56	31.0	4	155	4.63
10:35	7.36	12.09	0.896	0.51	26.4	-2	155	4.82
10:40	7.33	12.07	0.906	0.51	18.7	-13	155	4.94
10:45	7.31	12.14	0.912	0.49	17.6	-22	155	5.05
10:50	7.30	12.21	0.915	0.48	19.6	-26	155	5.12
10:55	7.26	12.29	0.917	0.46	16.0	-29	155	5.17
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 (vq₁ = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-33S
 Date: 11/12/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 3.47' Depth to Well Bottom: 8.21' Well Diameter: 2" Screen Length:
 Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 2.9 Estimated Purge Volume (liters): 4.9

Sample ID: GW-33S Sample Time: 12:59 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
 Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:18	7.51	14.21	0.944	2.62	0.4	-141	120	3.47
12:23	7.38	14.25	0.942	2.16	0.7	-130	120	4.44
12:28	7.36	14.39	0.939	1.65	0.6	-120	120	4.37
12:33	7.35	14.37	0.939	1.79	0.0	-113	120	4.49
12:38	7.35	14.36	0.938	1.85	0.0	-104	120	4.60
12:43	7.34	14.45	0.932	1.73	0.0	-94	120	4.66
12:48	7.34	14.52	0.929	1.65	0.0	-83	120	4.68
12:53	7.33	14.39	0.927	1.54	0.0	-77	120	4.84
12:56	7.33	14.34	0.922	1.47	0.0	-70	120	4.99
12:59	7.32	14.34	0.926	1.43	0.0	-67	120	5.04
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 ($vq_d = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-34S
 Date: 11/12/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 2.61' Depth to Well Bottom: 10.01' Well Diameter: 2" Screen Length:
 Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.6 Estimated Purge Volume (liters): 5.4

Sample ID: GW-34S Sample Time: 8:50 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:20	7.48	13.07	1.74	2.78	127	67	225	2.61
8:25	7.01	12.59	1.71	2.11	64.5	52	170	3.70
8:30	7.01	12.36	1.68	2.17	42.3	59	170	3.58
8:35	7.00	12.20	1.66	1.91	13.8	66	170	3.58
8:40	7.00	12.16	1.66	1.69	12.2	66	170	3.58
8:45	6.98	12.14	1.65	1.67	11.8	66	170	3.57
8:50	6.97	12.12	1.64	1.64	6.6	66	170	3.57
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 (vq_h = πr²h)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-35S

Date: 11/12/2015 Sampling Personnel: Tim Ifkovich, Rob Murphy 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: 4.18' Depth to Well Bottom: 7.46' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 2.0 Estimated Purge Volume (liters): 9.5

Sample ID: GW-35S Sample Time: 14:02 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals
Other Information: _____

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:27	7.23	13.51	0.781	2.13	2.0	-4	270	4.18
13:32	7.26	13.24	0.773	0.94	0.0	-19	270	4.87
13:37	7.24	13.19	0.773	0.79	0.0	-23	270	4.85
13:42	7.22	13.14	0.773	0.57	0.0	-28	270	4.89
13:47	7.21	13.03	0.772	0.50	0.0	-30	270	4.92
13:52	7.20	12.81	0.772	0.40	0.0	-32	270	4.90
13:57	7.20	12.81	0.775	0.38	0.0	-37	270	4.90
14:02	7.19	12.76	0.775	0.37	0.0	-38	270	4.89
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 ($vq_d = \pi r^2 h$)

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date of Sampling: November 11, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-03S	GW-03S	6.5	7.6	10:53	Matrix Spike Duplicate	VOCs/SVOCs/ Metals	Not Applicable
GW-03D	GW-03D	84.0	60.0	12:04	Groundwater		Not Applicable
GW-03D-MS	GW-03D	84.0	60.0	12:04	Matrix Spike		Not Applicable
GW-03D-MSD	GW-03D	84.0	60.0	12:04	Matrix Spike Duplicate		Not Applicable
GW-08D	GW-08D	76.2	66.0	13:36	Groundwater		Not Applicable
GW-08SR	GW-08SR	4.8	5.0	14:25	Groundwater		Not Applicable
TB-111115	---	---	---	---	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: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date of Sampling: November 11, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-07D	GW-07D	37.1	PDB	15:20	Groundwater	VOCs	Not Applicable
GW-07S	GW-07S	18.8	PDB	15:25	Groundwater		Not Applicable

Additional Comments: GW-7D and GW-7S were sampled for VOCs using passive diffusion bags (PDBs).
GW-7D and GW-7S were then purged dry, and remaining parameters were collected November 12, 2015.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date of Sampling: November 12, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-34S	GW-34S	4.6	5.4	8:50	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-28S	GW-28S	3.9	5.4	9:46	Groundwater		Not Applicable
GW-04S	GW-04S	7.4	11.4	10:10 & 11:35	Groundwater		Not Applicable
GW-04D	GW-04D	82.6	13.6	11:30	Groundwater		Not Applicable
GW-07D	GW-07D	37.1	37.1	11:53	Groundwater	SVOCs/Metals	Not Applicable
GW-07S	GW-07S	18.8	26.5	11:58	Groundwater		Not Applicable
GW-33S	GW-33S	2.9	4.9	12:59	Groundwater	VOCs/SVOCs/ Metals	Not Applicable

Additional Comments: GW-4S was sampled for VOCs using a passive diffusion bag and then purged dry/allowed to recharge for collection of other parameters. GW-7D and GW-7S 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: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date of Sampling: November 12, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-35S	GW-35S	2.0	9.5	14:02	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-26D	GW-26D	84.4	52.8	15:11	Groundwater		Not Applicable
FD-050715	GW-26D	84.4	52.8	15:11	Groundwater		Not Applicable
TB-111215	---	---	---	---	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: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date of Sampling: November 13, 2015

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-29S	GW-29S	7.2	6.8	9:11	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-30S	GW-30S	6.2	13.0	10:02	Groundwater		Not Applicable
GW-31S	GW-31S	4.2	6.0	10:55	Groundwater		Not Applicable
GW-32S	GW-32S	4.5	10.2	11:50	Groundwater		Not Applicable
GW-01S	GW-01S	7.2	10.8	12:58	Groundwater		Not Applicable
GW-01D	GW-01D	92.0	56.1	14:07	Groundwater		Not Applicable
TB-111315	---	---	---	---	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

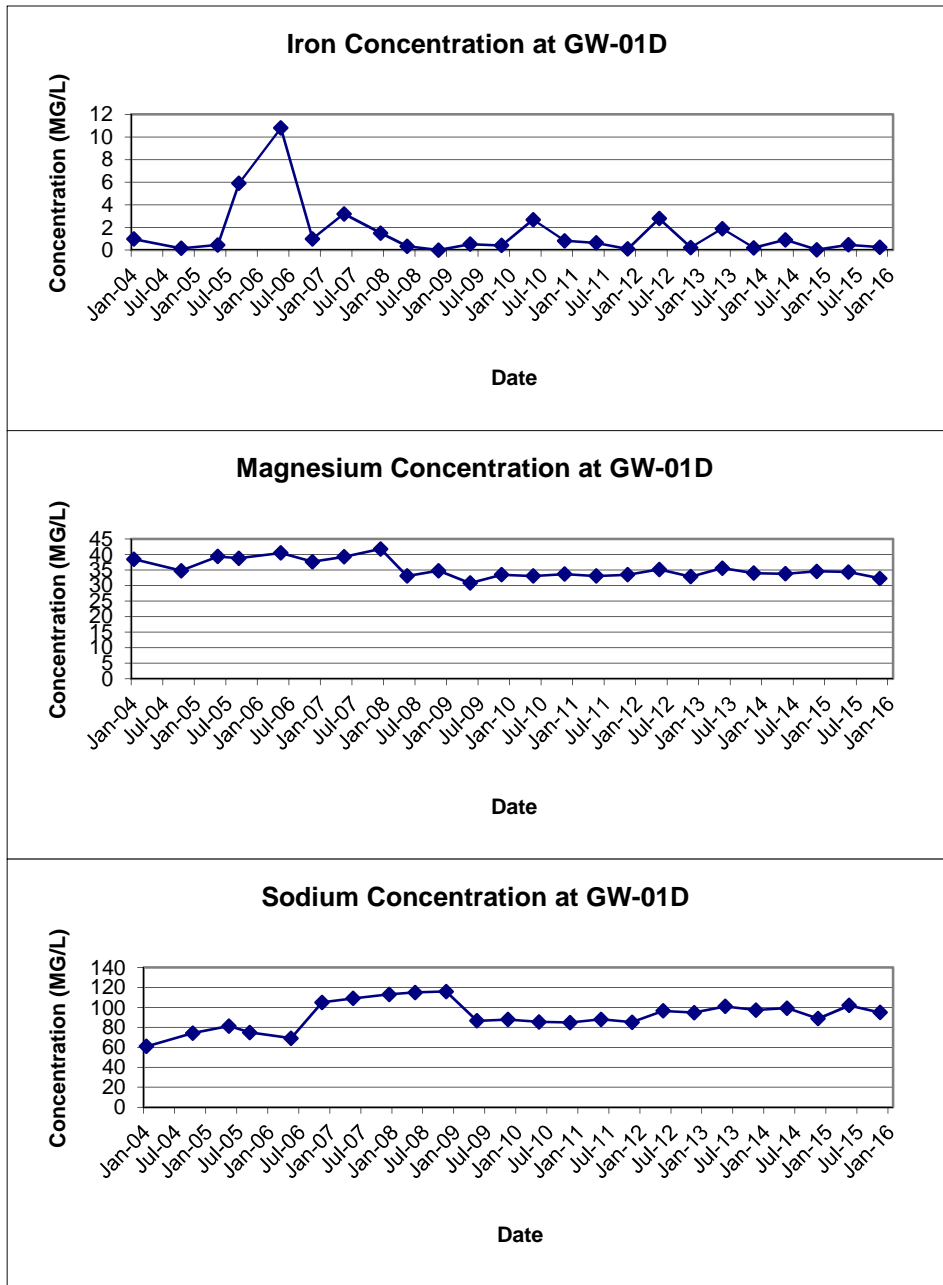


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-1S

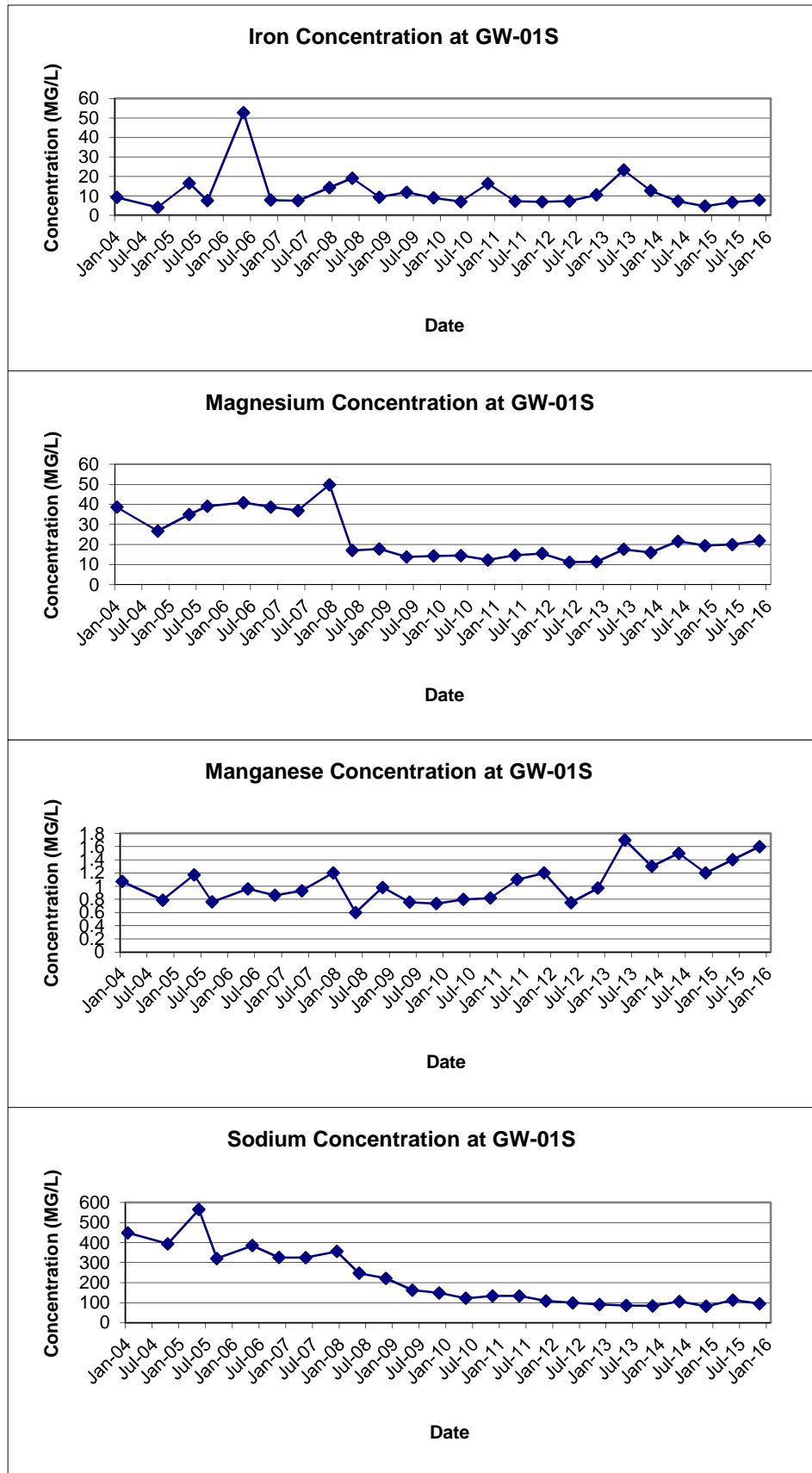


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3D

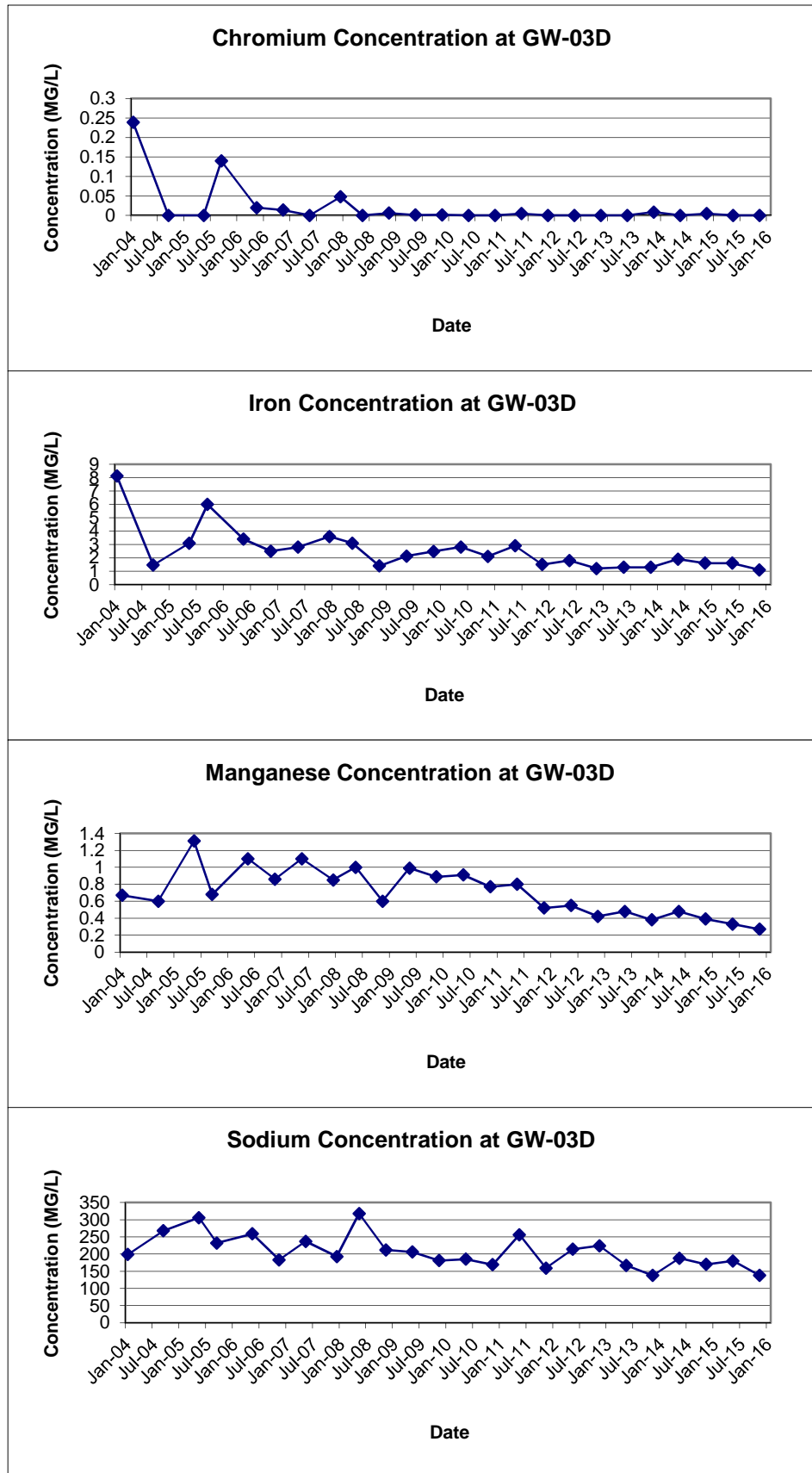


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

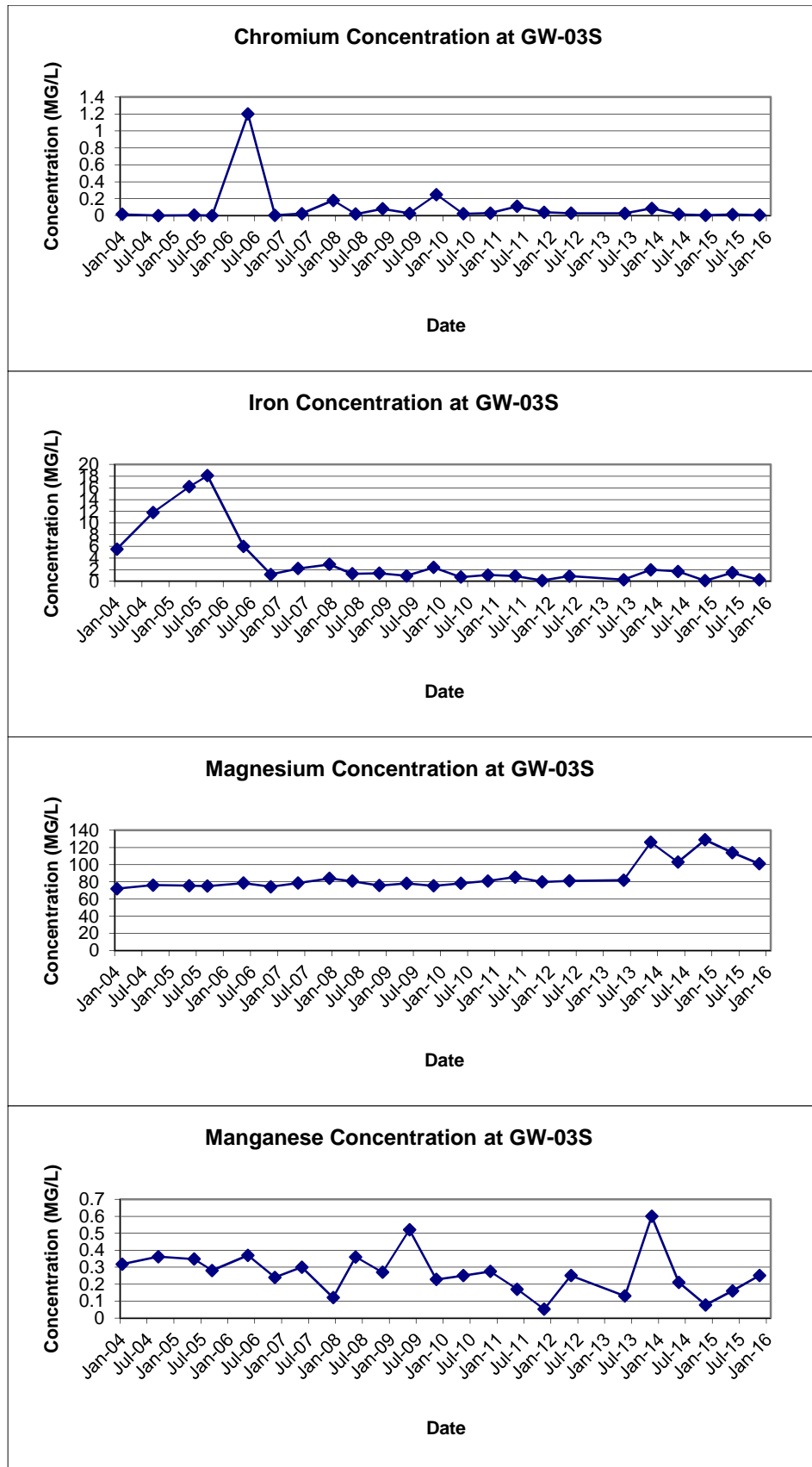


FIGURE E-4
 TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
 IN MONITORING WELL GW-3S

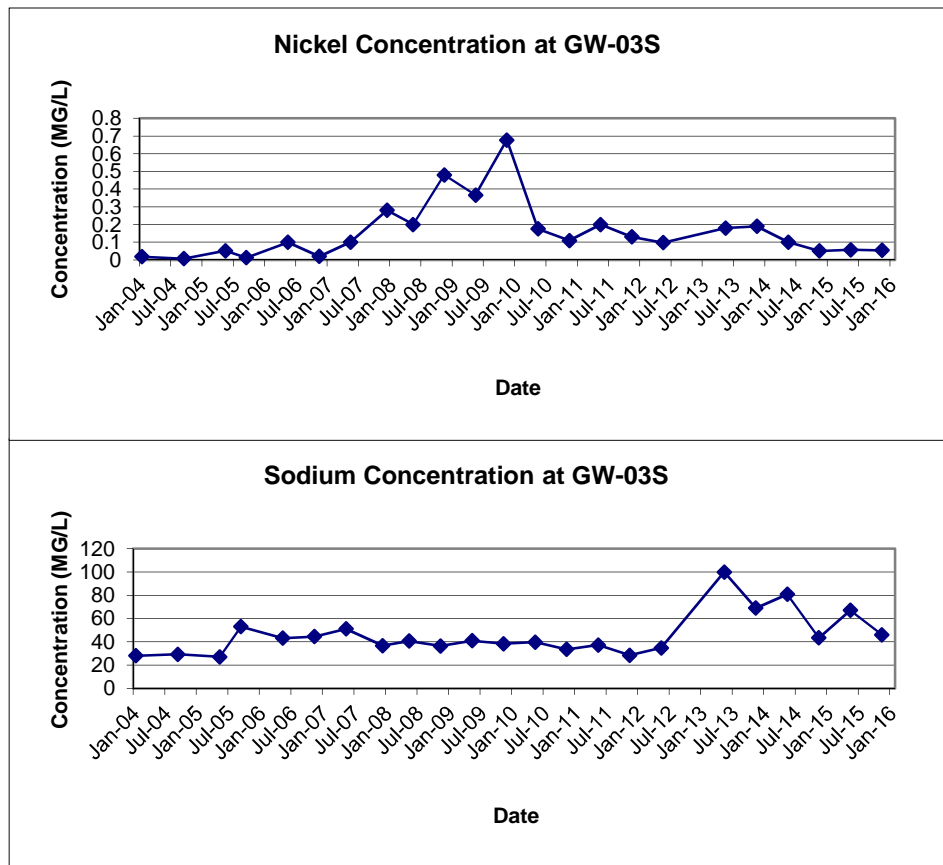


FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04D

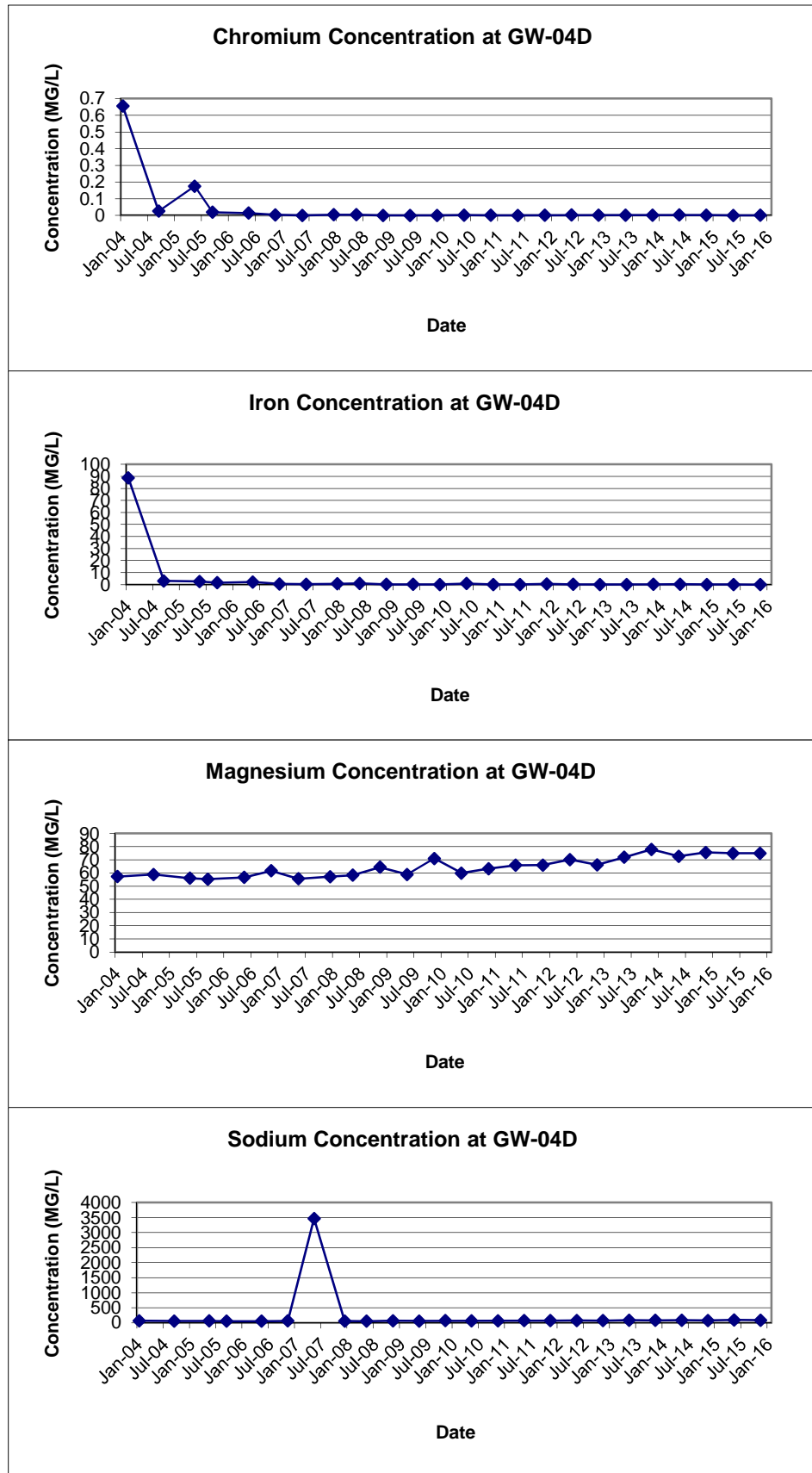


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-4S

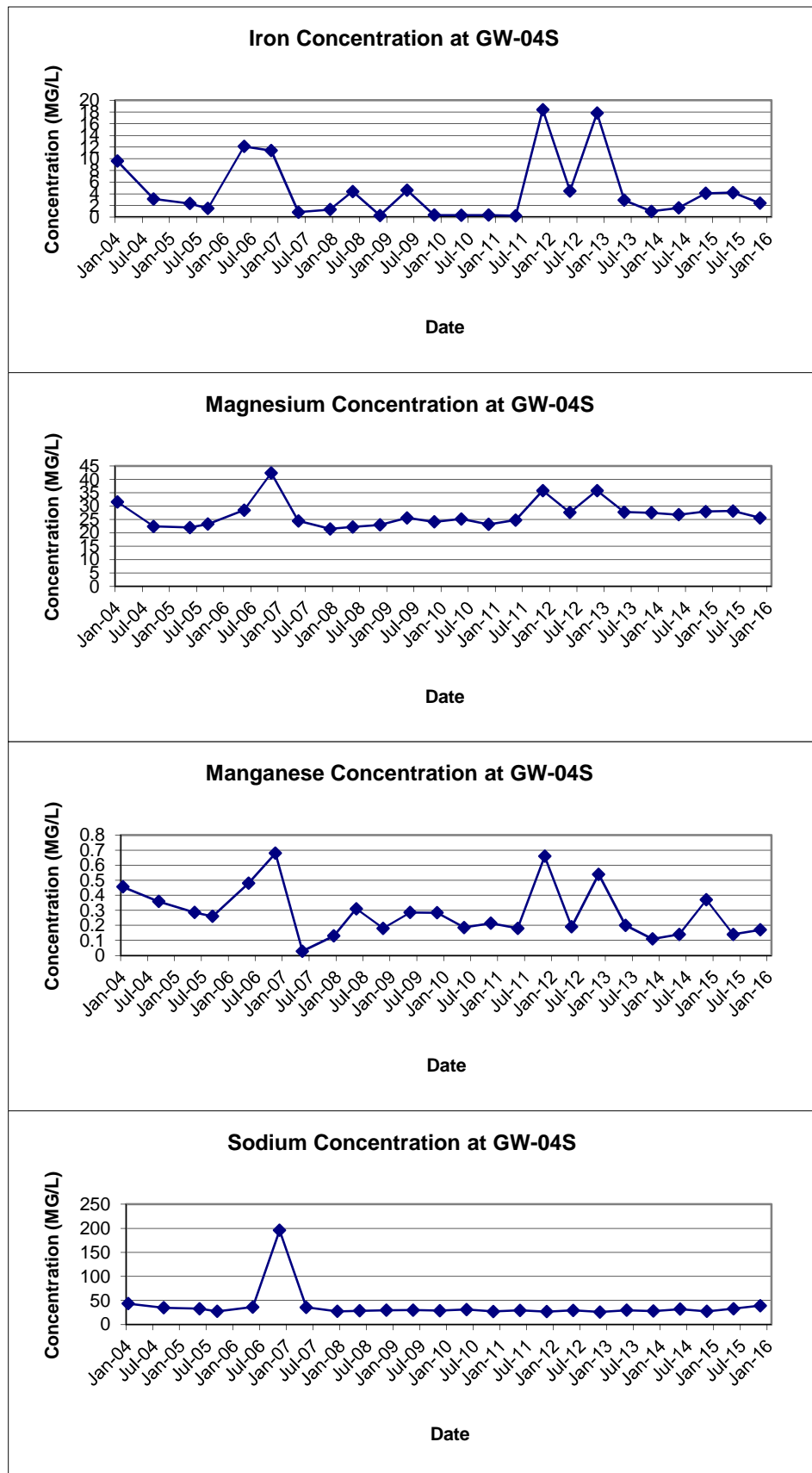


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7D

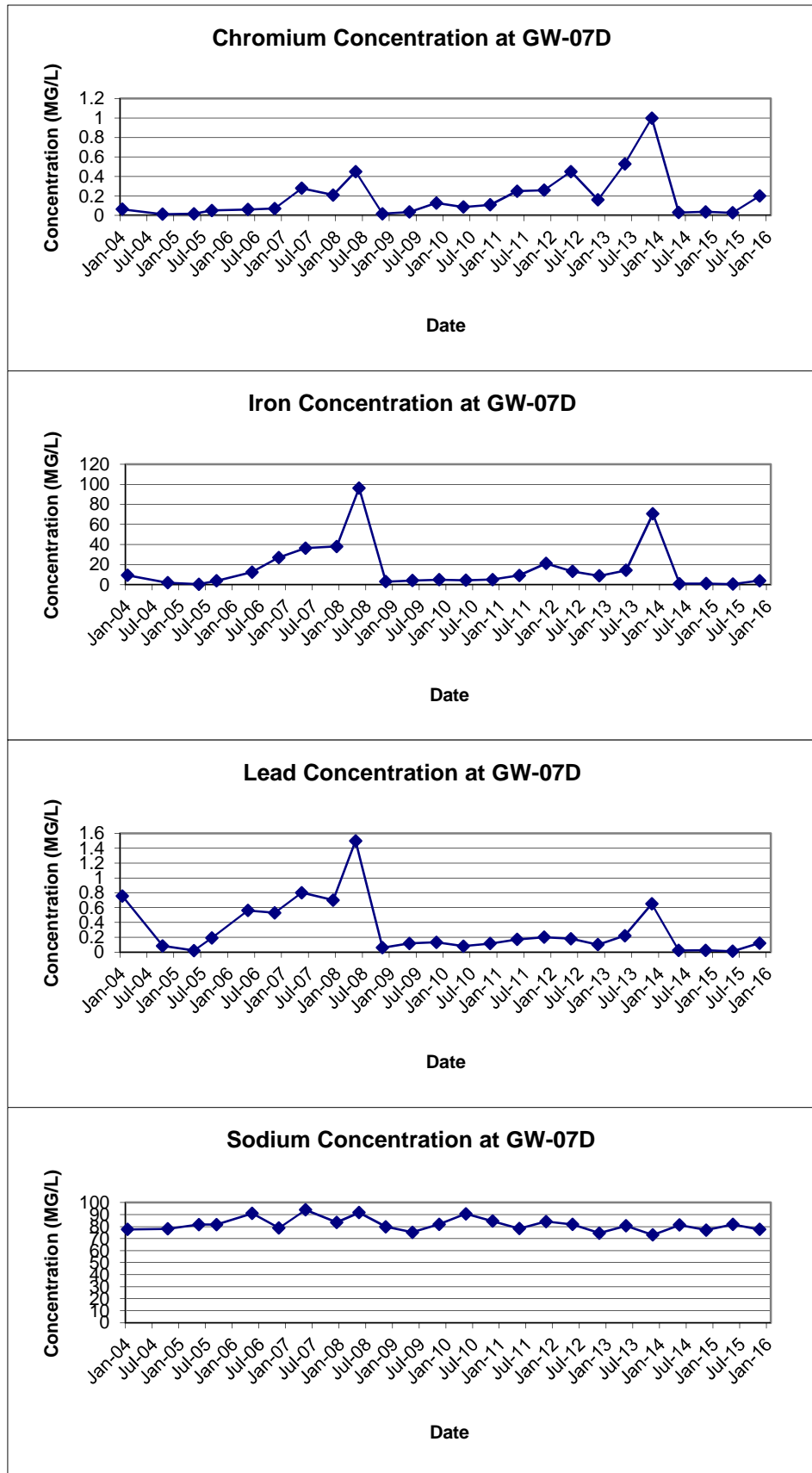


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7S

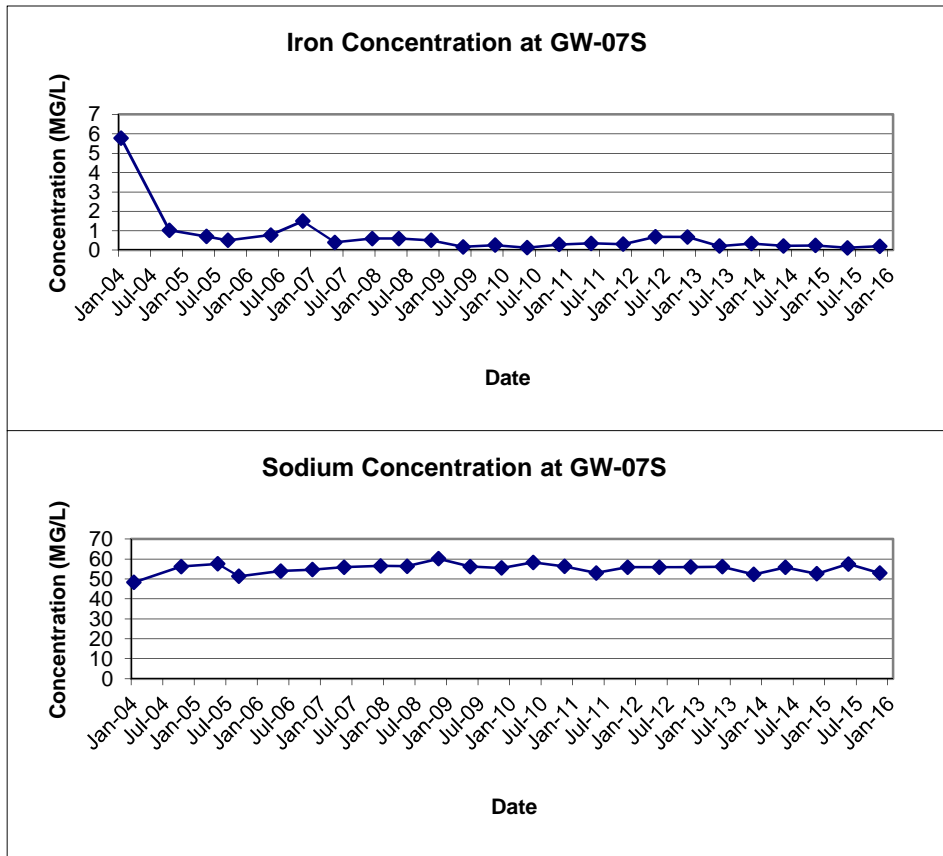


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8D

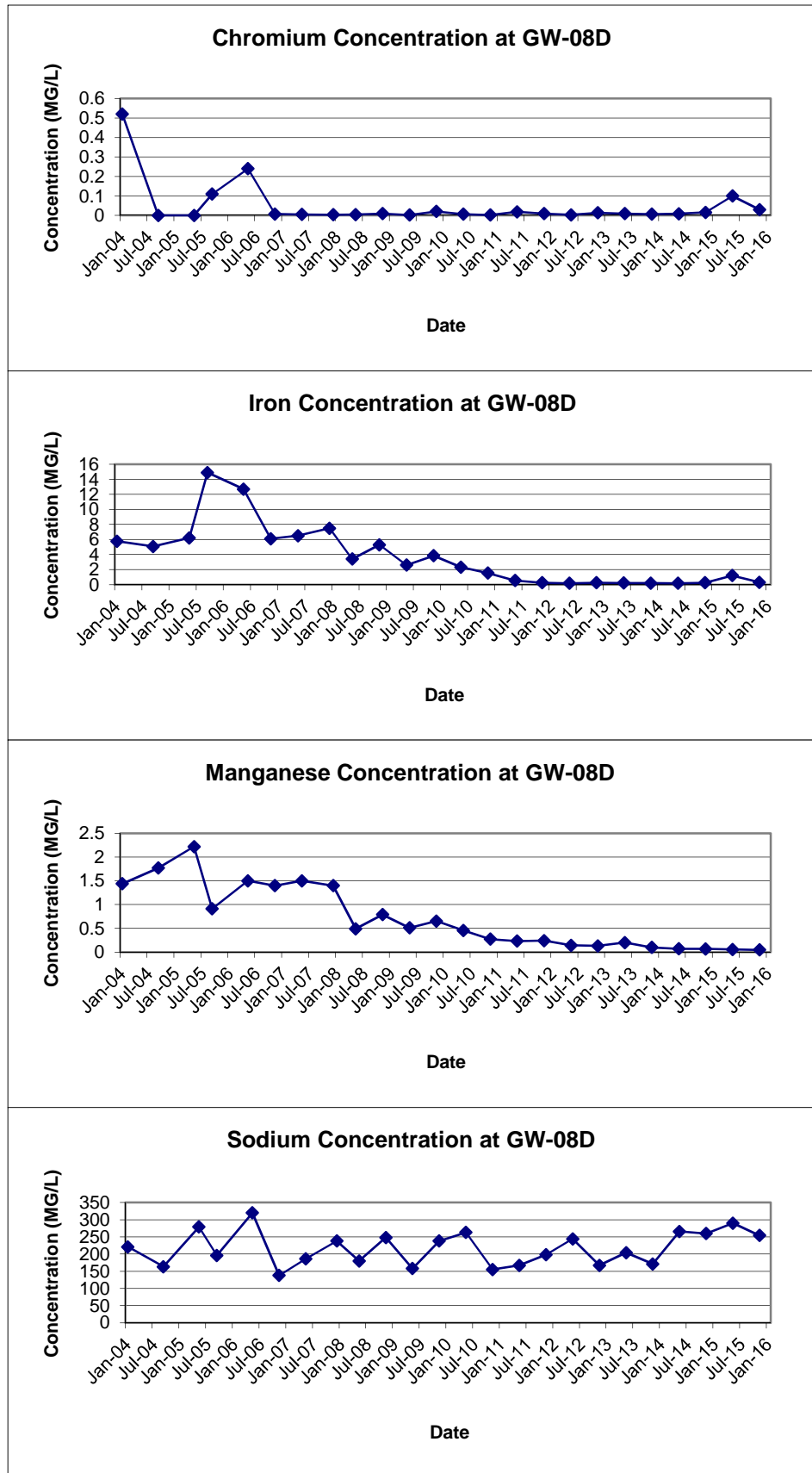


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8SR

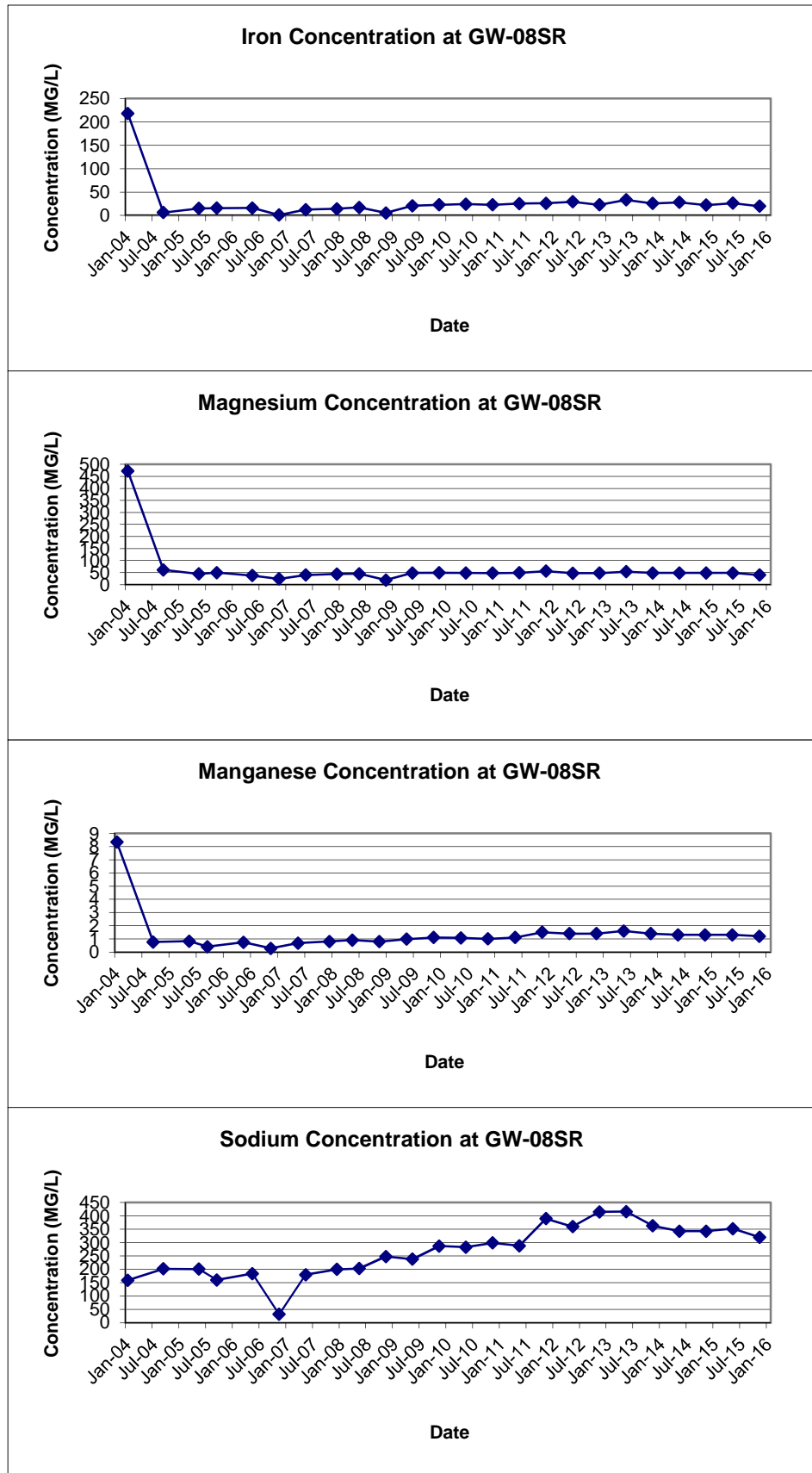


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

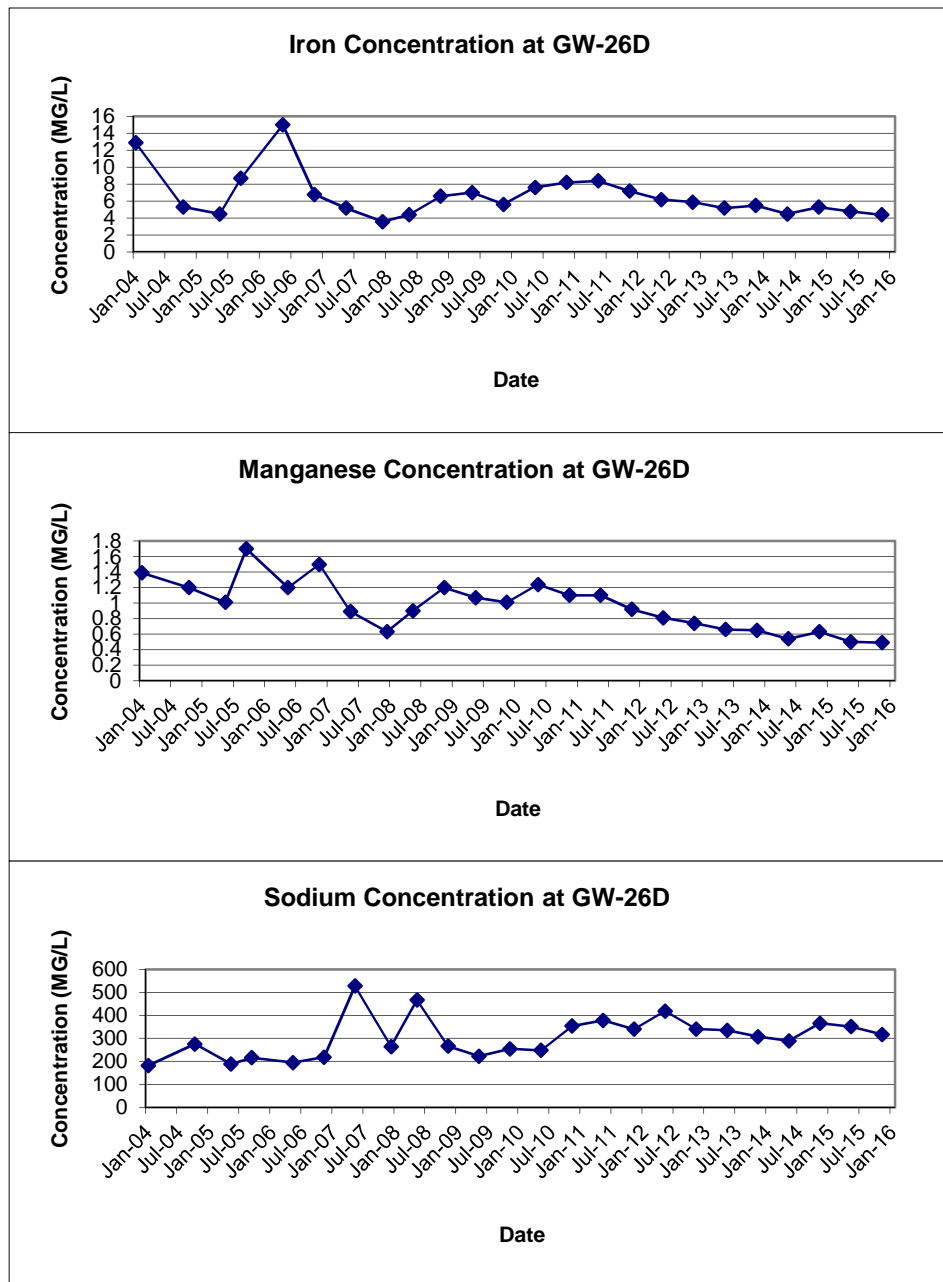


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

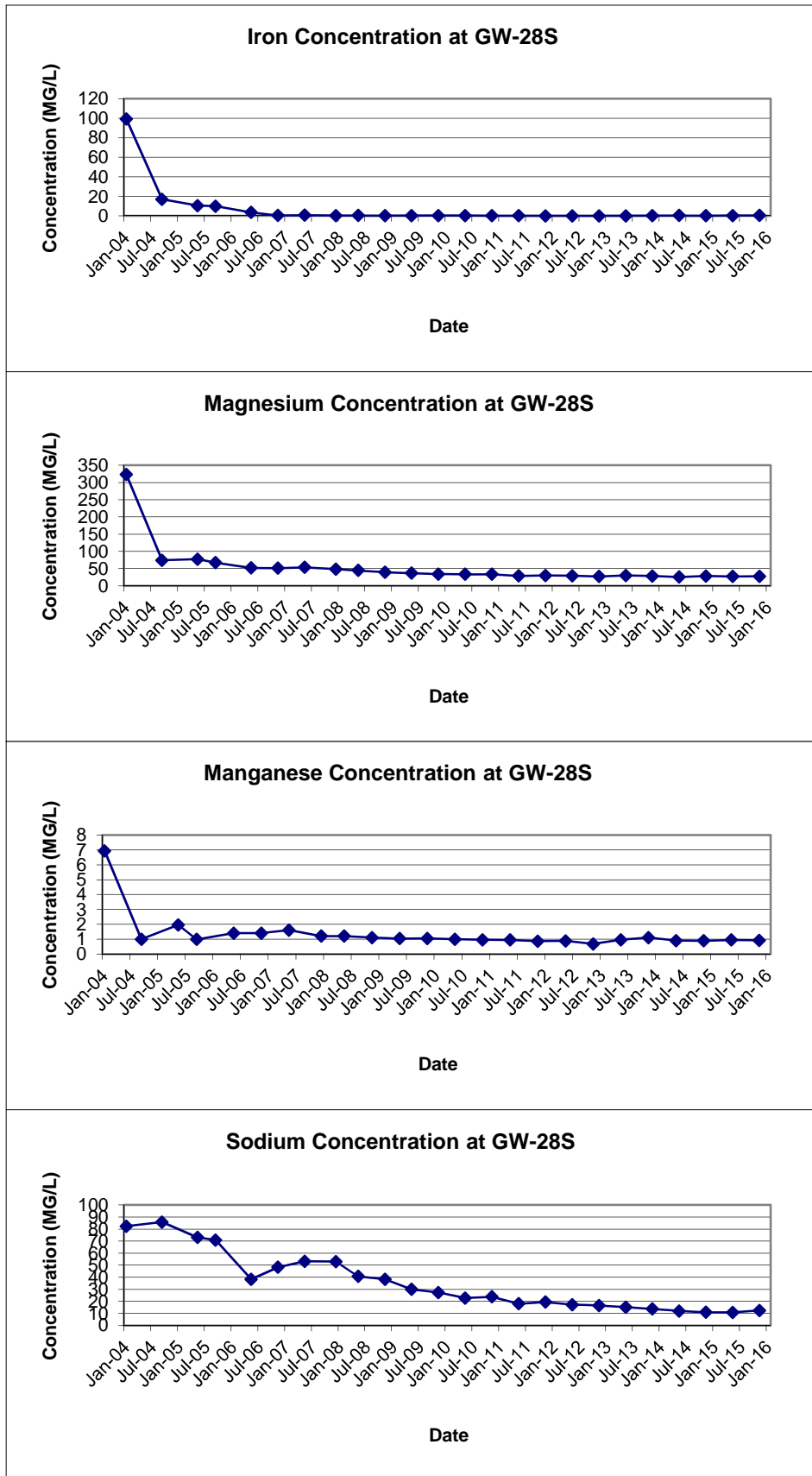


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

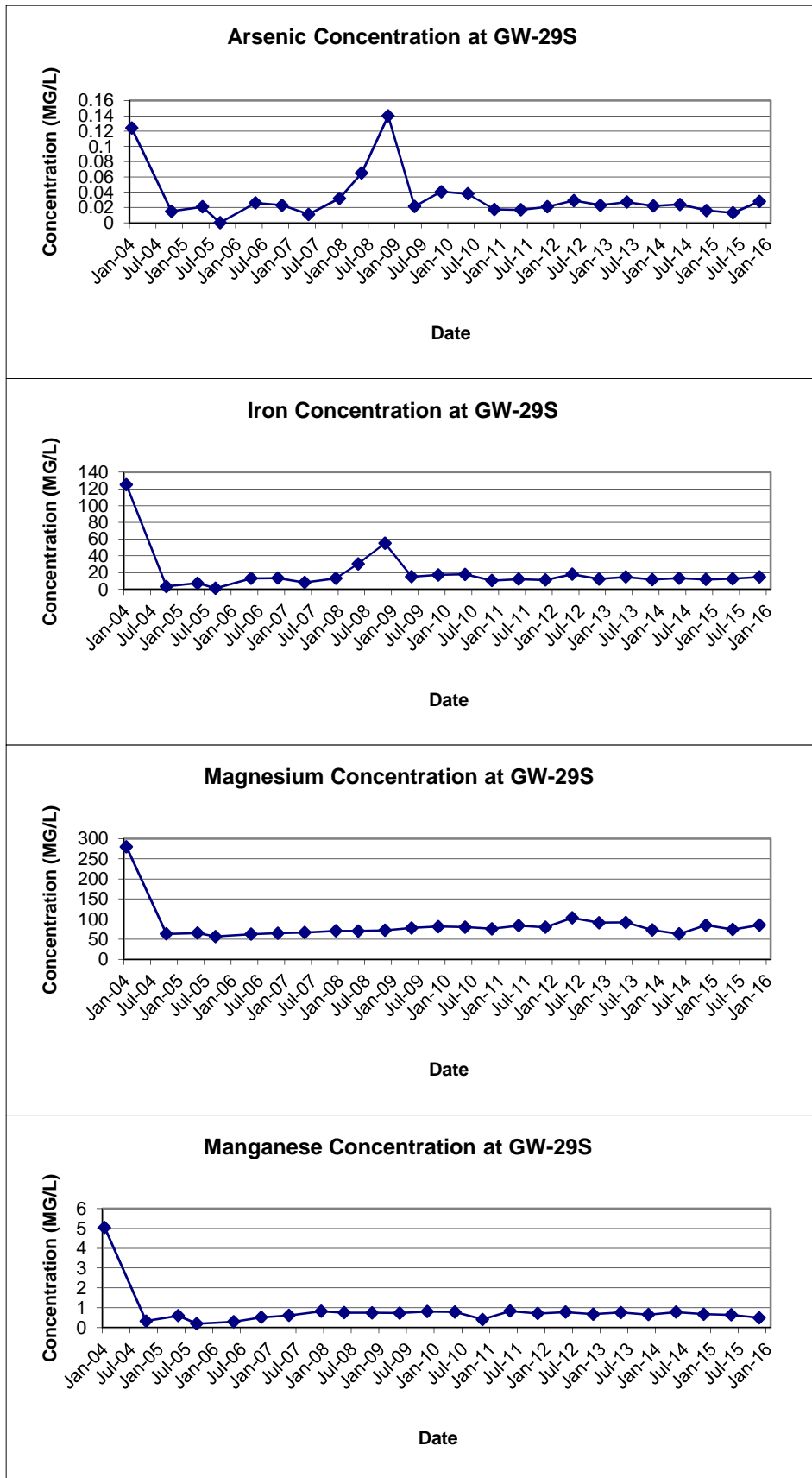


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

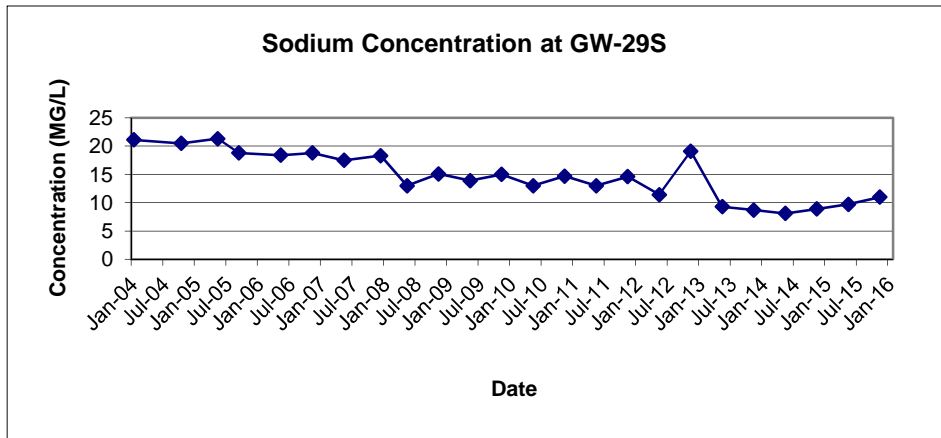


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

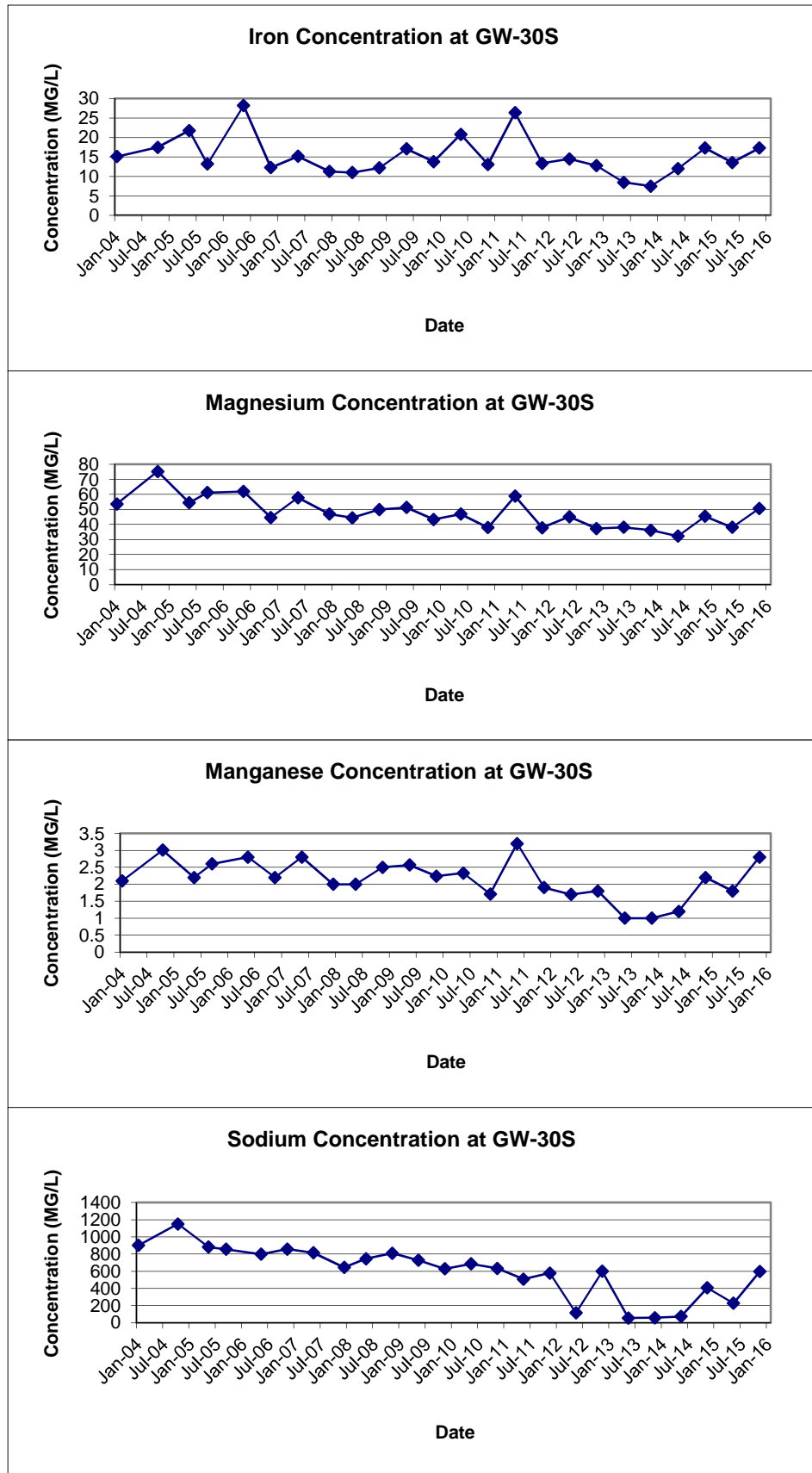


FIGURE E-15
 TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
 IN MONITORING WELL GW-31S

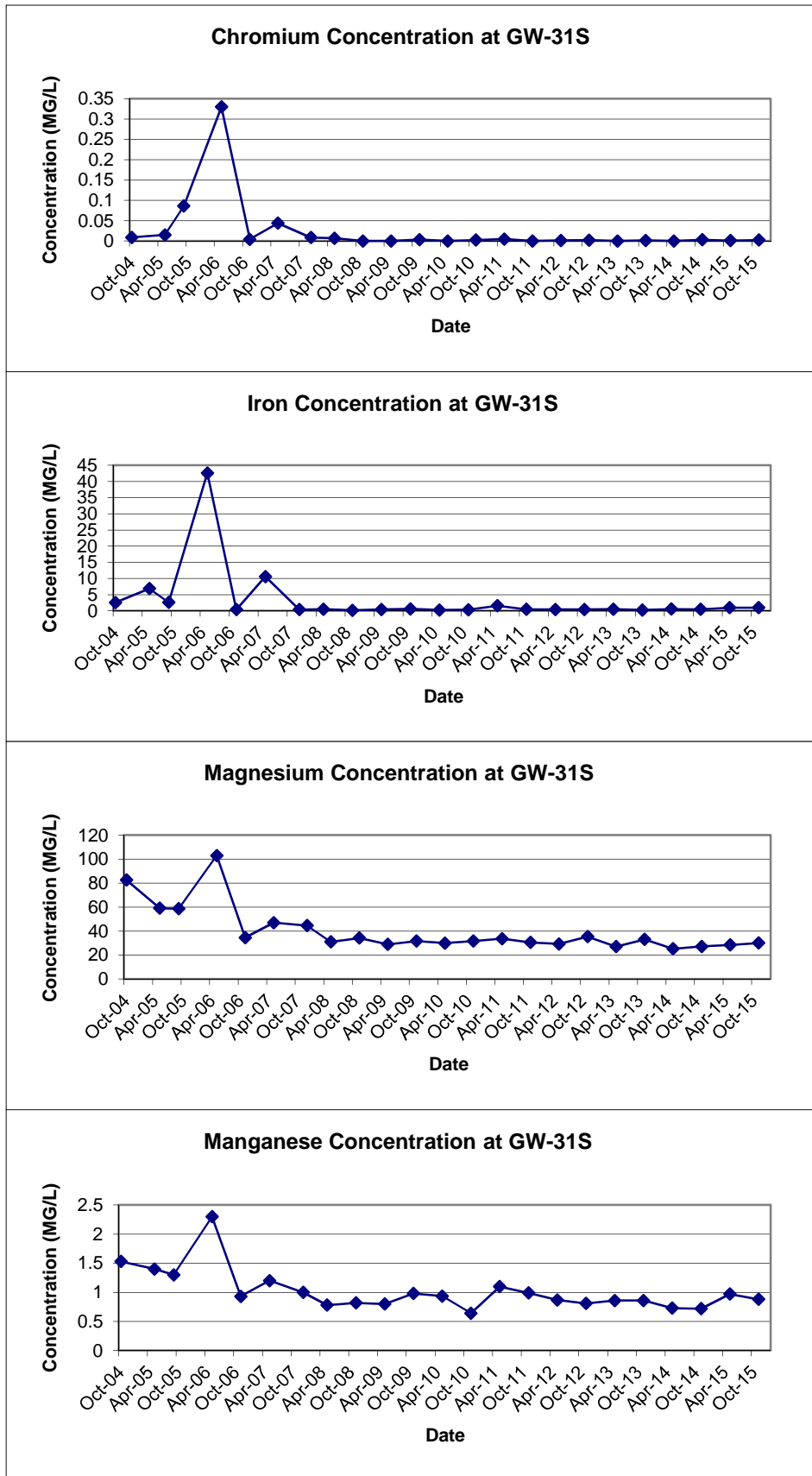


FIGURE E-16
 TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
 IN MONITORING WELL GW-32S

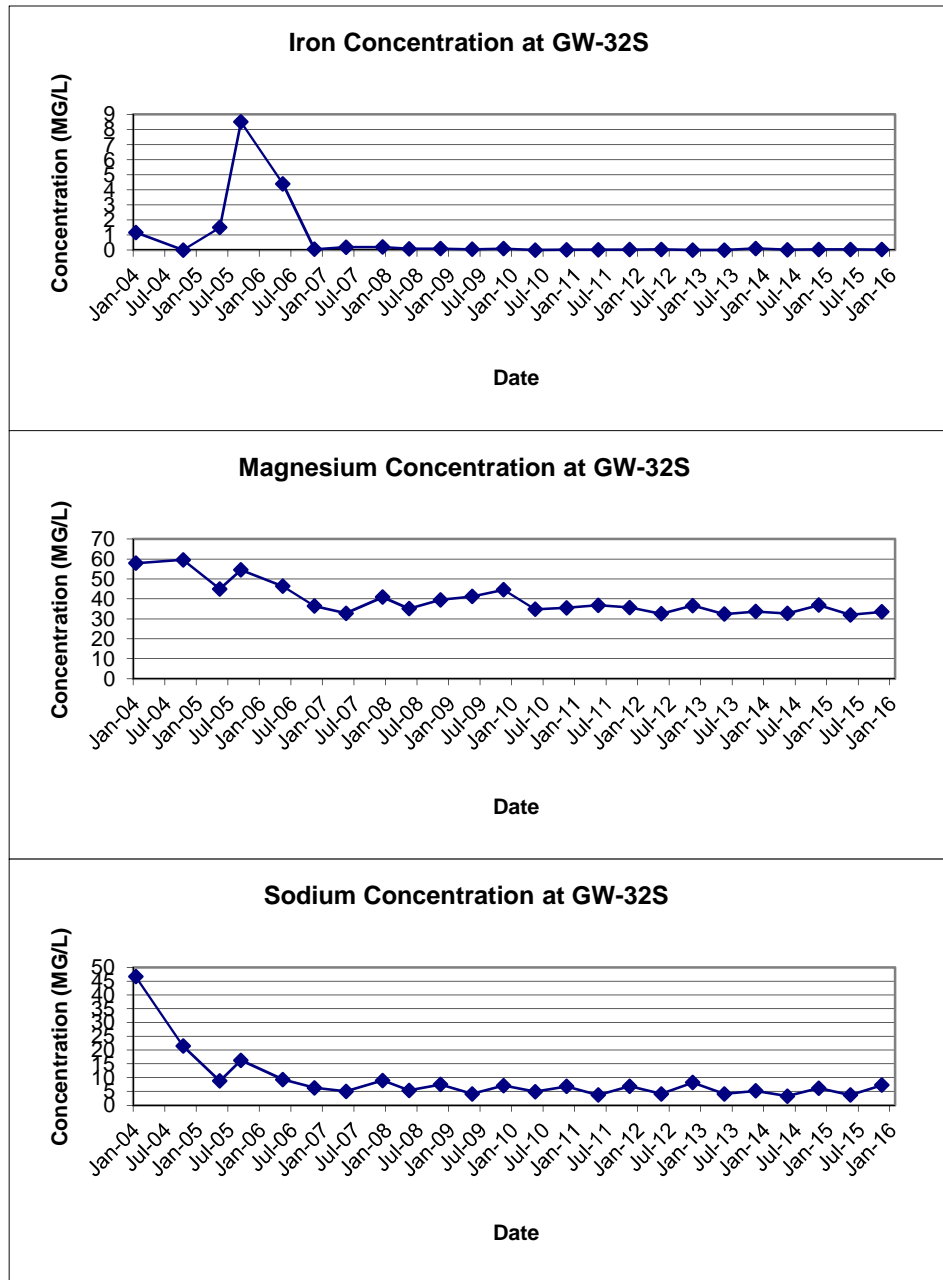


FIGURE E-17
 TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
 IN MONITORING WELL GW-33S

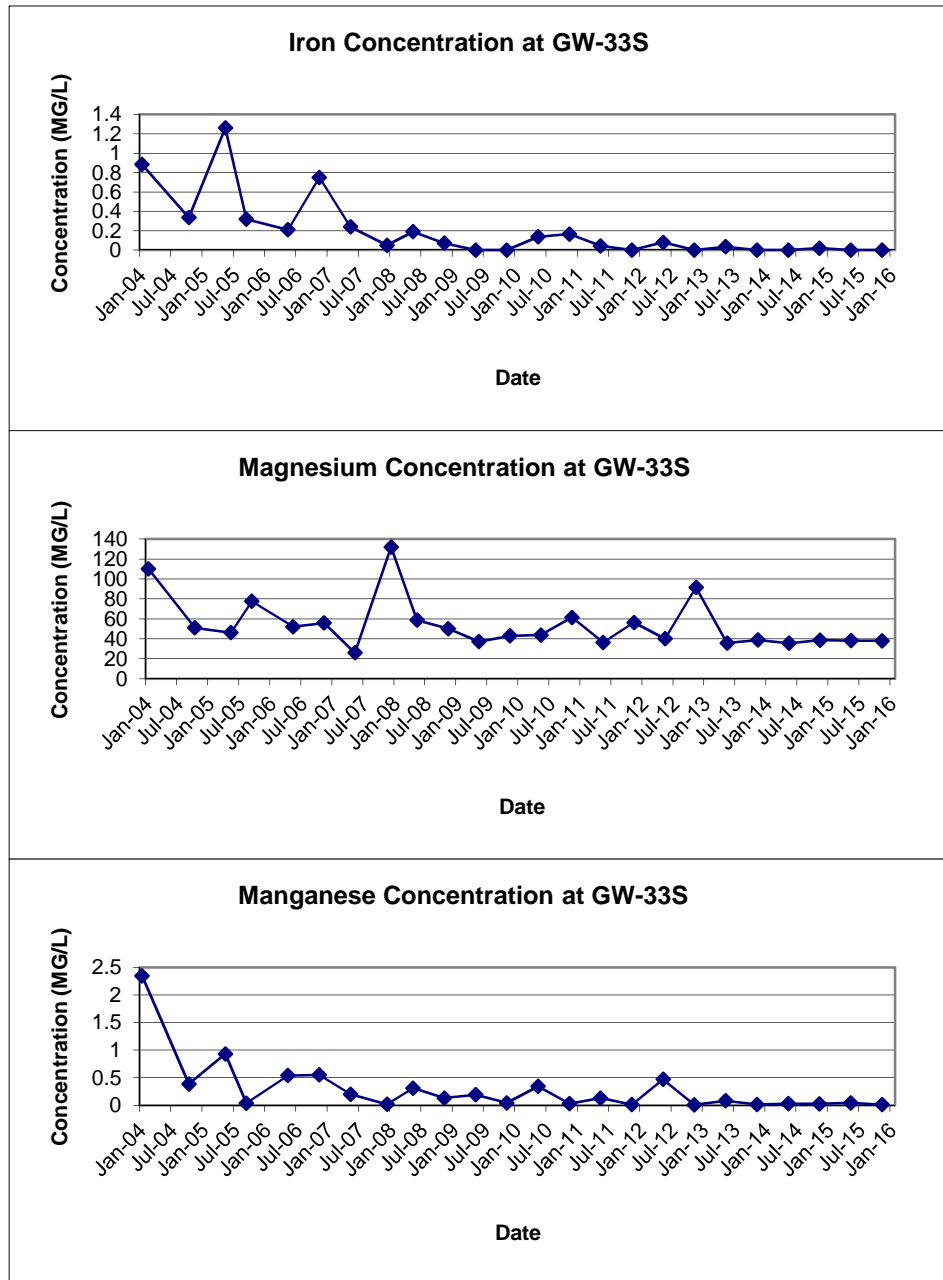


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

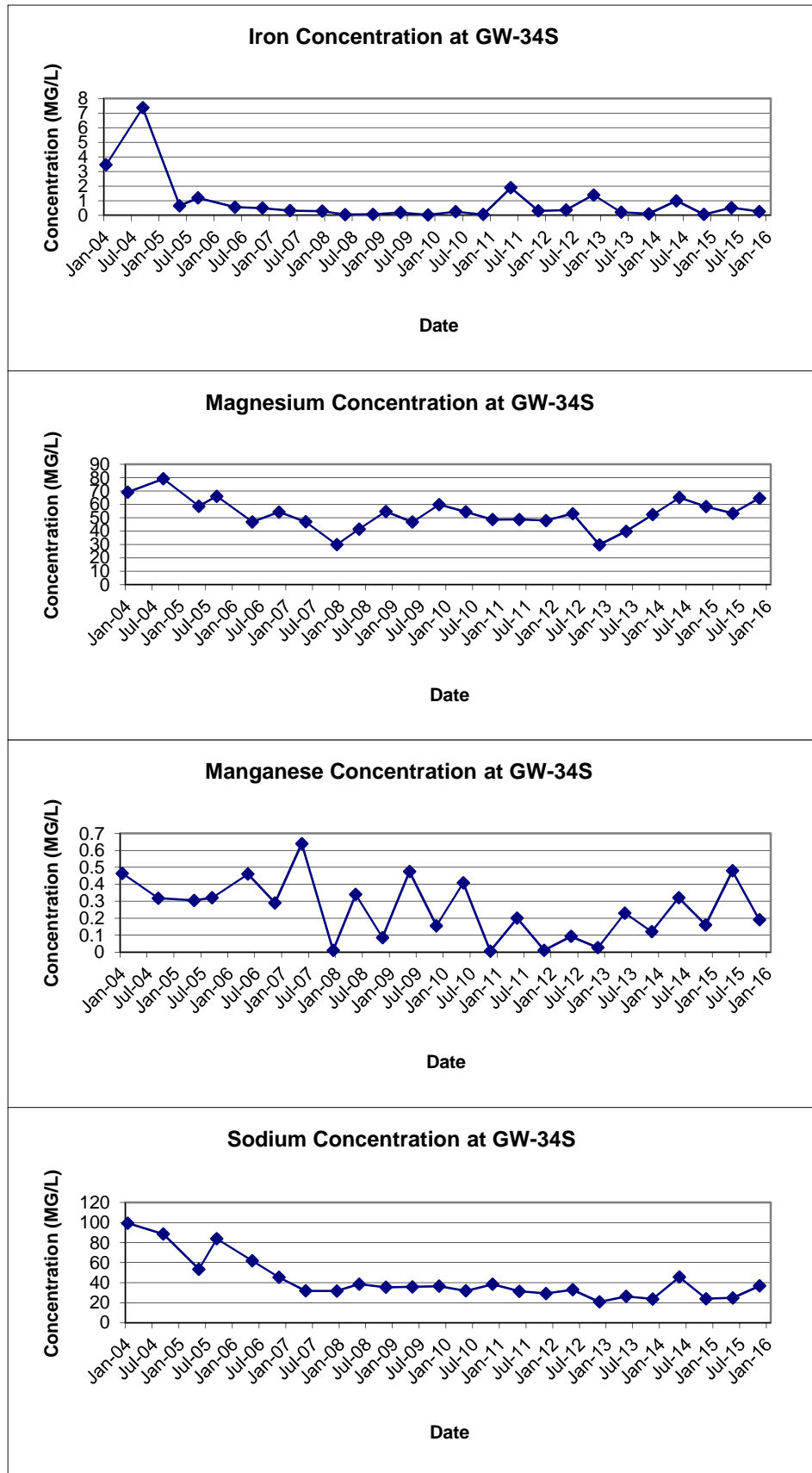
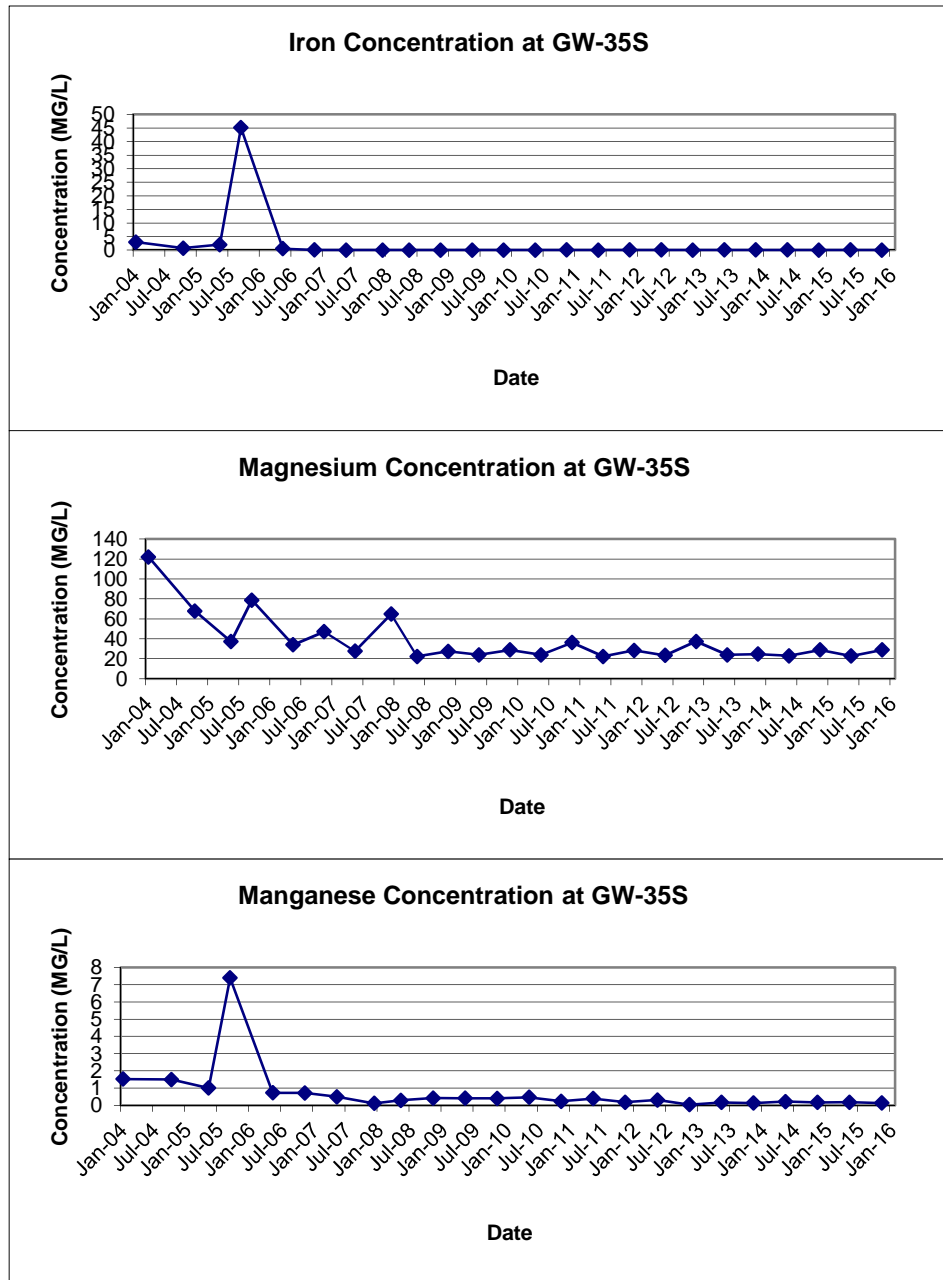


FIGURE E-19
 TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
 IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT NO. 13-04-CH016

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

**PERMIT NO. 13-04-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 11, 2013** 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^{day} of April, 2013

To Expire the 31st day of March, 2016



General Manager

Signed this 12th day of March, 2013

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 ⁽¹⁾		Sampling Requirements	
			Daily Max	Period	Type
001	pH	5.0 – 12.0	S.U.	1 day	Composite ²
	Total Cadmium	1.17	lbs.	1 day	Composite ²
	Total Chromium	1.17	lbs.	1 day	Composite ²
	Total Copper	3.74	lbs.	1 day	Composite ²
	Total Lead	1.17	lbs.	1 day	Composite ²
	Total Nickel	3.27	lbs.	1 day	Composite ²
	Total Zinc	5.84	lbs.	1 day	Composite ²
	Total Barium	2.34	lbs.	1 day	Composite ²
	Total Suspended Solids ⁵	250	mg/l	1 day	Composite ²
	Total Flow	140,100	gallons ⁶	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 ⁽¹⁾	Sampling Requirements	
		Daily Max	Period	Type
001	Total Mercury	0.001 lbs.	1 day	Composite ²
	USEPA Test Method 608 ⁴	To be monitored	1 day	Grab ³
	USEPA Test Method 624 ⁴	To be monitored	1 day	Grab ³
	USEPA Test Method 625 ⁴	To be monitored	1 day	Grab ³

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

B. DISCHARGE MONITORING REPORTING REQUIREMENTS

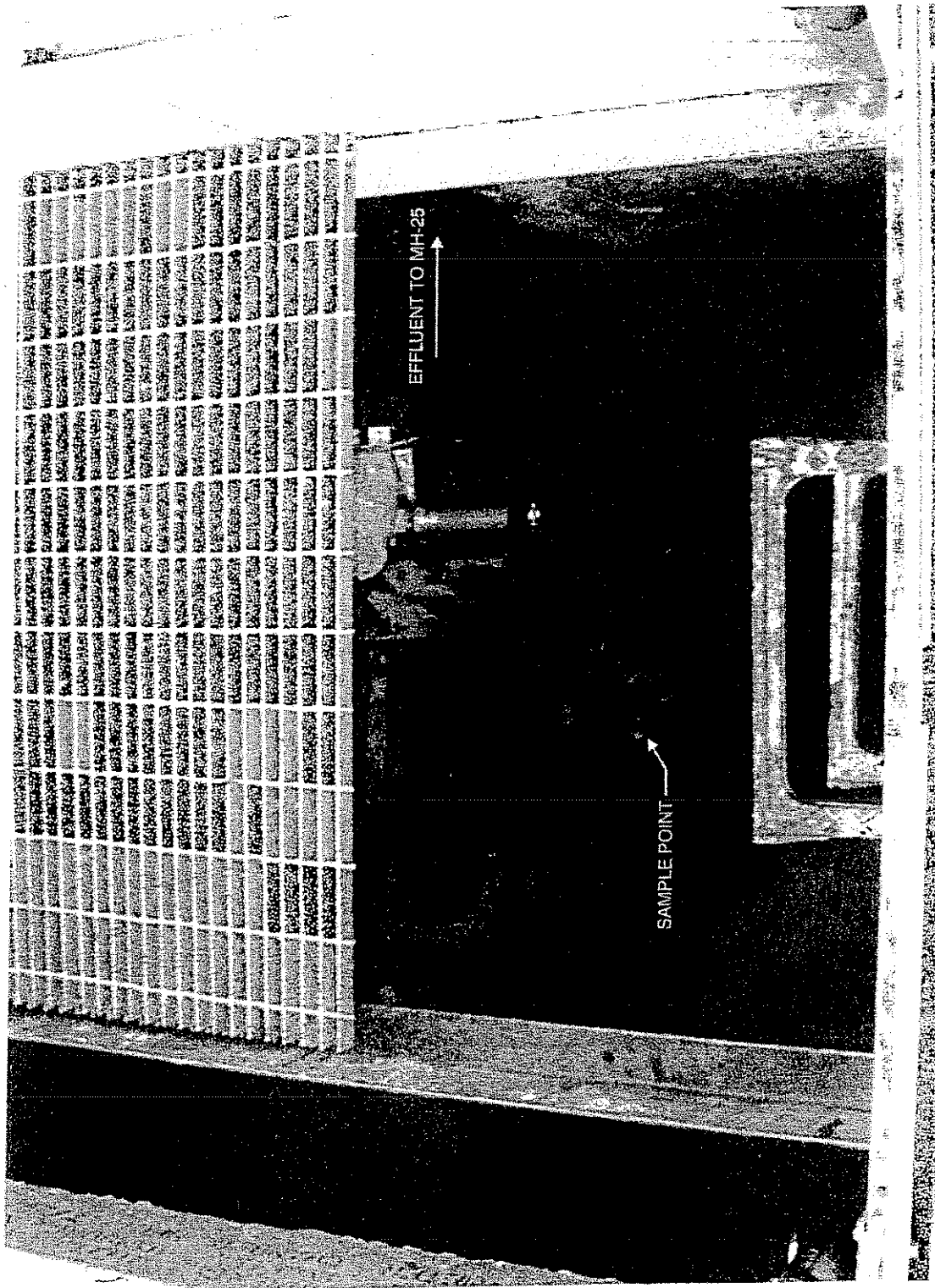
During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	March 31, 2011	Every March 31 st , June 30 th , September 30 th and December 31 st
	USEPA Test Methods 608, 624 and 625 & T Mercury	March 31, 2011	

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.



URS

PFOHL BROTHERS LANDFILL
EFFLUENT SAMPLE POINT

FIGURE 1

**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:

**Mr. William Pugh, 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: 9/15/15 Crew: R. Murphy, T. Ifkovich, T. Burmeier

Weather: 74° F, Sunny

Sampling Device: NA

Time of Installation: 10:20 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells were running at the time of sample set-up.
PLC display volumes: WW-01 (38,523 gals), WW-02 (0 gals), WW-03 (0 gals),
WW-04 (21,510 gals), WW-05 (938,845 gals), WW-06 (862,234 gals) & MH-25 (1,860,992 gals).

Date: 9/16/15 Crew: R. Murphy, T. Ifkovich, T. Burmeier

Weather: 80° F, Sunny

Time of Collection: 10:20

Field Measurements:

10:20/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 8.33

Temperature: 19.7°C

Identification: EFF-091615

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: Well WW-6 was running at the time of sample collection.
PLC display volumes: WW-01 (38,523 gals), WW-02 (0 gals), WW-03 (3,964 gals),
WW-04 (21,510 gals), WW-05 (943,133 gals), WW-06 (881,676 gals) & MH-25 (1,888,739 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
SEPTEMBER 2015**

Sample ID	EFF-091615			
Matrix	Effluent Water			
Date Sampled	9/16/2015			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.39	0.09	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00012	1.17	No
Total Chromium	< 0.0010	< 0.0002	1.17	No
Total Copper	0.016	0.004	3.74	No
Total Lead	< 0.0030	< 0.0007	1.17	No
Total Nickel	0.0055	0.0013	3.27	No
Total Zinc	0.074	0.017	5.84	No
Total Suspended Solids	40.0	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	8.33	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		27,747	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

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

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: 12/17/15 Crew: R. Murphy, T. Urban, N. Wetzel

Weather: 46° F, Light Rain

Sampling Device: NA

Time of Installation: 8:05 Type of Sample: Composite & 4 grab samples for lab composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells were running at the time of sample set-up.
PLC display volumes: WW-01 (114,572 gals), WW-02 (0 gals), WW-03 (4,423 gals),
WW-04 (44,855 gals), WW-05 (2,293,559 gals), WW-06 (2,142,547 gals) & MH-25 (4,600,393 gals).

Date: 12/18/15 Crew: R. Murphy, T. Urban, N. Wetzel

Weather: 38° F, Cloudy

Time of Collection: 8:05

Field Measurements:

8:05/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 8.02

Temperature: 11.2°C

Identification: EFF-121815

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.
PLC display volumes: WW-01 (114,572 gals), WW-02 (0 gals), WW-03 (4,604 gals),
WW-04 (44,855 gals), WW-05 (2,310,929 gals), WW-06 (2,142,547 gals) & MH-25 (4,617,833 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
DECEMBER 2015**

Sample ID	EFF-121815			
Matrix	Effluent Water			
Date Sampled	12/18/2015			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.26	0.04	2.34	No
Total Cadmuim	< ⁽¹⁾ 0.0005	< 0.00007	1.17	No
Total Chromium	< 0.0010	< 0.0001	1.17	No
Total Copper	0.016	0.002	3.74	No
Total Lead	< 0.0030	< 0.0004	1.17	No
Total Mercury	< 0.00012	< 0.00002	0.001	No
Total Nickel	0.0041	0.0006	3.27	No
Total Zinc	0.062	0.009	5.84	No
Total Suspended Solids	12.4	NA ⁽²⁾	250 ⁽³⁾	No
pH ⁽⁴⁾	8.02	NA	5.0 - 12.0	No
1,4-dichlorobenzene*	0.00053	NA	NA	No
chlorobenzene*	0.012	NA	NA	No
4,4'-DDD*	0.000016	NA	NA	No
Total Flow ⁽⁵⁾		17,440	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
- * Mercury and organics analysis performed once per permit duration

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

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date(s) of Inspection: November 11, 2015

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-01S	OK	OK	OK	Bulged	4.06	14.94	
GW-01D	OK	OK	OK	Bulged	3.00	39.65	
GW-03S	OK	OK	OK	OK	2.68	13.22	
GW-03D	OK	OK	OK	OK	1.68	35.70	
GW-04S	OK	OK	OK	OK	4.30	16.23	
GW-04D	OK	OK	OK	OK	12.68	45.57	
GW-07S	OK	OK	OK	OK	5.81	35.04	
GW-07D	OK	OK	OK	Damaged	45.61	60.45	

Additional Comments: _____

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date(s) of Inspection: November 11, 2015

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-08SR	OK	OK	OK	OK	5.20	13.02	
GW-08D	OK	OK	OK	OK	5.67	36.54	
GW-26D	OK	OK	OK	OK	6.52	40.70	
GW-28S	OK	OK	OK	OK	9.47	15.52	
GW-29S	OK	OK	OK	OK	8.56	20.04	
GW-30S	OK	OK	OK	OK	8.13	17.97	
GW-31S	OK	OK	OK	OK	3.06	9.57	
GW-32S	OK	OK	OK	OK	3.07	9.93	

Additional Comments: _____

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich Supervisor: J. Sundquist

Date(s) of Inspection: November 11, 2015

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-33S	OK	OK	OK	OK	3.74	8.21	
GW-34S	OK	OK	OK	OK	2.63	10.01	
GW-35S	OK	OK	OK	OK	4.22	7.46	

Additional Comments: _____

DATA APPLICABILITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING

PFOHL BROTHERS LANDFILL SITE

Analyses Performed by:

**TESTAMERICA LABORATORIES, INC.
10 HAZELWOOD DRIVE
AMHERST, NY 14228**

Prepared for:

**TOWN OF CHEEKTOWAGA
CHEEKTOWAGA, NY 14225**

Prepared by:

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

DECEMBER 2015

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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 2015 semi-annual monitoring program at the Pfohl Brothers Landfill Site, located in Cheektowaga, NY.

II. ANALYTICAL METHODOLOGIES AND DATA VALIDATION PROCEDURES

The data being evaluated are from the November 11-13, 2015 sampling of nineteen (19) groundwater samples, one (1) field duplicate, and one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair. A total of three (3) trip blanks, one per sample shipment, were sent to the laboratory along with the samples. The analytical laboratory that performed the analyses was TestAmerica Laboratories, Inc. 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 Method 6010C/7470A. The trip blanks were only analyzed for VOCs.

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

- *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-014-002, August 2014.
- *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-13-001, August 2014.

The limited data validation 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 validated analytical results are presented on Table 1 (groundwater) and Table 2 (field QC). Copies of the validated 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 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.

Due to the low recharge rates of monitoring wells GW-07D and GW-07S, the VOC aliquots were collected on 11/11/15, while the SVOC/metals aliquots were collected on 11/12/15. All aliquots of sample GW-04S were collected on 11/12/15, however the VOCs were collected at 10:10 am while the SVOCs/metals were collected at 11:35 am.

V. NON-CONFORMANCES

The metals method blanks exhibited contamination for iron (Fe), manganese (Mn) and zinc (Zn) at concentrations less than the reporting limit (RL). The laboratory qualified the detected results 'B' for Mn in the associated samples, however, since the sample results were greater than ten times the method blank results, and also greater than the RL, the 'B' qualifier was removed during the limited data validation. The Fe and/or Zn results for associated samples GW-04D, GW-07S, GW-28S, GW-33S, GW-34S, and GW-35S were qualified 'U' at the RL since their concentrations were less than the RL.

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-26D. 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. Those results qualified 'U' (non-detect) during the limited data review are considered conditionally usable. All other sample results are usable as reported. URS does not recommend the recollection of any samples at this time.

Prepared By: Ann Marie Kropovitch, Chemist



Date: 12/29/15

Reviewed by: Peter R. Fairbanks, Senior Chemist



Date: 12/29/15

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-1D	GW-1S	GW-3D	GW-3S	GW-4D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/13/15	11/13/15	11/11/15	11/11/15	11/12/15
Parameter	Units					
Volatile Organic Compounds						
1,1,2-Trichloroethane	UGL	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UGL	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UGL	10 U	10 U	10 U	10 U	10 U
Benzene	UGL	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UGL	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UGL	10 U	10 U	1.8 J	10 U	210 U
1,4-Dichlorobenzene	UGL	10 U	10 U	2.5 J	10 U	210 U
bis(2-Ethylhexyl)phthalate	UGL	5.1 U	5.0 U	5.1 U	5.2 U	100 U
Phenol	UGL	5.1 U	5.0 U	5.1 U	5.2 U	100 U
Metals						
Antimony	MGL	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MGL	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MGL	0.070	0.17	0.064	0.073	0.083
Cadmium	MGL	0.0010 U	0.0015	0.0010 U	0.00092 J	0.0010 U
Chromium	MGL	0.033	0.0033 J	0.0040 U	0.0058	0.0013 J
Copper	MGL	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MGL	0.26	7.9	1.1	0.26	0.050 U
Lead	MGL	0.0050 U	0.0050 U	0.0050 U	0.0034 J	0.0050 U
Magnesium	MGL	32.3	21.9	13.9	101	74.9
Manganese	MGL	0.017	1.6	0.27	0.25	0.018
Mercury	MGL	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MGL	0.0039 J	0.0021 J	0.0016 J	0.054	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *DLK 12/3/15*
 CHECKED BY: *PF 12/28/15*

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-1D	GW-1S	GW-3D	GW-3S	GW-4D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/13/15	11/13/15	11/11/15	11/11/15	11/12/15
Parameter	Units					
Metals						
Silver	MGL	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	94.9	95.6	138	46.0	83.9
Zinc	MGL	0.010	0.0040 J	0.0030 J	0.011	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *[Signature]* 12/2/15
 CHECKED BY: *[Signature]* 12/2/15

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-4S	GW-7D	GW-7D	GW-7S	GW-7S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/12/15	11/11/15	11/12/15	11/11/15	11/12/15
Parameter	Units					
Volatile Organic Compounds						
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	4.2 J	NA	3.4 J	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
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	9.6 U	NA	9.6 U	NA	10 U
1,4-Dichlorobenzene	UG/L	9.6 U	NA	9.6 U	NA	10 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	NA	4.8 U	NA	5.0 U
Phenol	UG/L	4.8 U	NA	4.8 U	NA	5.0 U
Metals						
Antimony	MGL	0.020 U	NA	0.020 U	NA	0.020 U
Arsenic	MGL	0.010 U	NA	0.0077 J	NA	0.010 U
Barium	MGL	0.13	NA	0.097	NA	0.26
Cadmium	MGL	0.0010 U	NA	0.0020	NA	0.00082 J
Chromium	MGL	0.0072	NA	0.20	NA	0.012
Copper	MGL	0.0051 J	NA	0.021	NA	0.0027 J
Iron	MGL	2.4	NA	3.9	NA	0.20
Lead	MGL	0.0050 U	NA	0.12	NA	0.0050 U
Magnesium	MGL	25.6	NA	35.4	NA	35.2
Manganese	MGL	0.17	NA	0.067	NA	0.044
Mercury	MGL	0.00020 U	NA	0.00020 U	NA	0.00020 U
Nickel	MGL	0.0061 J	NA	0.099	NA	0.022

Flags assigned during chemistry validation are shown

MADE BY: *OLH 11/15*
 CHECKED BY: *PF 11/15*

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-4S	GW-7D	GW-7D	GW-7S	GW-7S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/12/15	11/11/15	11/12/15	11/11/15	11/12/15
Parameter	Units					
Metals						
Silver	MGL	0.0030 U	NA	0.0030 U	NA	0.0030 U
Sodium	MGL	39.0	NA	77.7	NA	52.9
Zinc	MGL	0.020	NA	0.061	NA	0.010 U

Flags assigned during chemistry validation are shown

MADE BY: *chuck 12/2/15*
 CHECKED BY: *PF 12/2/15*

Detection Limits shown are PQL

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

Location ID		GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID		GW-8D	GW-8SR	FD-111215	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/11/15	11/11/15	11/12/15	11/12/15	11/12/15
Parameter	Units			Field Duplicate (1-1)		
Volatile Organic Compounds						
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	0.99 J	1.0 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
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	9.7 U	10 U	10 U	10 U	9.9 U
1,4-Dichlorobenzene	UG/L	9.7 U	10 U	10 U	10 U	9.9 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	5.1 U	5.0 U	5.2 U	4.9 U
Phenol	UG/L	4.8 U	5.1 U	5.0 U	5.2 U	4.9 U
Metals						
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	0.0057 J	0.0079 J	0.010 U
Barium	MG/L	0.093	0.27	0.13	0.14	0.086
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.030	0.0024 J	0.0040 U	0.0040 U	0.0040 U
Copper	MG/L	0.0019 J	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.31	19.9	4.3	4.4	0.52
Lead	MG/L	0.0033 J	0.0044 J	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	16.5	39.6	19.3	19.9	27.6
Manganese	MG/L	0.046	1.2	0.48	0.49	0.92
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0063 J	0.0023 J	0.0030 J	0.0025 J	0.0019 J

Flags assigned during chemistry validation are shown.

MADE BY: *CLM/KLD/15*
CHECKED BY: *HE/LH/15*

Detection Limits shown are PQL

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

Location ID		GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID		GW-8D	GW-8SR	FD-111216	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/11/15	11/11/15	11/12/15	11/12/15	11/12/15
Parameter	Units			Field Duplicate (1-1)		
Metals						
Silver	MGL	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	254	320	307	317	12.4
Zinc	MGL	0.0087 J	0.0026 J	0.010 U	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *clark 12/2/15*
 CHECKED BY: *PF 12/28/15*

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		11/13/15	11/13/15	11/13/15	11/13/15	11/12/15
Parameter	Units					
Volatile Organic Compounds						
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
Semivolatile Organic Compounds						
1,3-Dichlorobenzene	UG/L	10 U	9.8 U	10 U	11 U	10 U
1,4-Dichlorobenzene	UG/L	10 U	9.8 U	10 U	11 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.1 U	4.9 U	5.1 U	5.4 U	5.2 U
Phenol	UG/L	5.1 U	4.9 U	5.1 U	5.4 U	5.2 U
Metals						
Antimony	MGL	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MGL	0.028	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MGL	0.23	0.35	0.092	0.059	0.044
Cadmium	MGL	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MGL	0.0011 J	0.0040 U	0.0023 J	0.0020 J	0.0023 J
Copper	MGL	0.010 U	0.010 U	0.0027 J	0.010 U	0.021
Iron	MGL	14.7	17.3	0.99	0.034 J	0.050 U
Lead	MGL	0.0050 U	0.0033 J	0.0050 U	0.0050 U	0.0050 U
Magnesium	MGL	85.1	50.7	30.1	33.5	37.9
Manganese	MGL	0.49	2.8	0.88	0.21	0.0090
Mercury	MGL	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MGL	0.0015 J	0.010 U	0.0053 J	0.0026 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *CHL 12/15*
CHECKED BY: *RF 12/23/15*

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		11/13/15	11/13/15	11/13/15	11/13/15	11/12/15
Parameter	Units					
Metals						
Silver	MGL	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	11.0	596	6.7	7.3	3.4
Zinc	MGL	0.0023 J	0.010 U	0.013	0.0022 J	0.014

Flags assigned during chemistry validation are shown.

MADE BY: *CHP 12/15*
 CHECKED BY: *PC 12/15*

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		11/12/15	11/12/15
Parameter	Units		
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
Semivolatile Organic Compounds			
1,3-Dichlorobenzene	UG/L	9.8 U	9.8 U
1,4-Dichlorobenzene	UG/L	9.8 U	9.8 U
bis(2-Ethylhexyl)phthalate	UG/L	10	4.9 U
Phenol	UG/L	4.9 U	4.9 U
Metals			
Antimony	MGL	0.020 U	0.020 U
Arsenic	MGL	0.010 U	0.010 U
Barium	MGL	0.13	0.11
Cadmium	MGL	0.0010 U	0.0010 U
Chromium	MGL	0.0059	0.0040 U
Copper	MGL	0.010 U	0.010 U
Iron	MGL	0.27	0.055
Lead	MGL	0.0050 U	0.0050 U
Magnesium	MGL	64.6	28.8
Manganese	MGL	0.19	0.13
Mercury	MGL	0.00020 U	0.00020 U
Nickel	MGL	0.0092 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *DAK/11/15*
 CHECKED BY: *PF-12/15/15*

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		11/12/15	11/12/15
Parameter	Units		
Metals			
Silver	MGL	0.0030 U	0.0030 U
Sodium	MGL	36.8	3.8
Zinc	MGL	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: OLK 12/6/15
 CHECKED BY: RF 12/10/15

Detection Limits shown are PQL

TABLE 2
VALIDATED FIELD QC SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE

Location ID		FIELDQC	FIELDQC	FIELDQC
Sample ID		TB-111115	TB-111215	TB-111315
Matrix		Quality Control	Quality Control	Quality Control
Depth Interval (ft)		-	-	-
Date Sampled		11/11/15	11/12/15	11/13/15
Parameter	Units	Trip Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds				
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U

Flags assigned during chemistry validation are shown.

MADE BY: CHL 11/15/15
 CHECKED BY: AR-11/23/15

Detection Limits shown are PQL

APPENDIX A
VALIDATED SAMPLE REPORTING FORMS

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-3S

Lab Sample ID: 480-90909-1

Date Collected: 11/11/15 10:53

Matrix: Water

Date Received: 11/11/15 17:45

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			11/23/15 13:36	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/23/15 13:36	1
Acetone	ND		10	3.0	ug/L			11/23/15 13:36	1
Benzene	ND		1.0	0.41	ug/L			11/23/15 13:36	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/23/15 13:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		11/23/15 13:36	1
Toluene-d8 (Surr)	93		71 - 126		11/23/15 13:36	1
4-Bromofluorobenzene (Surr)	87		73 - 120		11/23/15 13:36	1
Dibromofluoromethane (Surr)	109		60 - 140		11/23/15 13:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.50	ug/L		11/13/15 08:03	11/17/15 13:59	1
1,4-Dichlorobenzene	ND		10	0.48	ug/L		11/13/15 08:03	11/17/15 13:59	1
Bis(2-ethylhexyl) phthalate	ND		5.2	1.9	ug/L		11/13/15 08:03	11/17/15 13:59	1
Phenol	ND		5.2	0.41	ug/L		11/13/15 08:03	11/17/15 13:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	69		52 - 132	11/13/15 08:03	11/17/15 13:59	1
2-Fluorobiphenyl	77		48 - 120	11/13/15 08:03	11/17/15 13:59	1
2-Fluorophenol	43		20 - 120	11/13/15 08:03	11/17/15 13:59	1
Nitrobenzene-d5	61		46 - 120	11/13/15 08:03	11/17/15 13:59	1
Phenol-d5	31		16 - 120	11/13/15 08:03	11/17/15 13:59	1
p-Terphenyl-d14	80		67 - 150	11/13/15 08:03	11/17/15 13:59	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/12/15 11:14	11/13/15 12:55	1
Arsenic	ND		0.010	0.0056	mg/L		11/12/15 11:14	11/13/15 12:55	1
Barium	0.073		0.0020	0.00070	mg/L		11/12/15 11:14	11/13/15 12:55	1
Cadmium	0.00092	J	0.0010	0.00050	mg/L		11/12/15 11:14	11/13/15 12:55	1
Chromium	0.0058		0.0040	0.0010	mg/L		11/12/15 11:14	11/13/15 12:55	1
Copper	ND		0.010	0.0016	mg/L		11/12/15 11:14	11/13/15 12:55	1
Iron	0.26		0.050	0.019	mg/L		11/12/15 11:14	11/13/15 12:55	1
Lead	0.0034	J	0.0050	0.0030	mg/L		11/12/15 11:14	11/13/15 12:55	1
Magnesium	101		0.20	0.043	mg/L		11/12/15 11:14	11/13/15 12:55	1
Manganese	0.25	B	0.0030	0.00040	mg/L		11/12/15 11:14	11/13/15 12:55	1
Nickel	0.054		0.010	0.0013	mg/L		11/12/15 11:14	11/13/15 12:55	1
Silver	ND		0.0030	0.0017	mg/L		11/12/15 11:14	11/13/15 12:55	1
Sodium	46.0		1.0	0.32	mg/L		11/12/15 11:14	11/13/15 12:55	1
Zinc	0.011		0.010	0.0015	mg/L		11/12/15 11:14	11/13/15 12:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/13/15 10:20	11/13/15 14:52	1

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12/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-3D

Lab Sample ID: 480-90909-2

Date Collected: 11/11/15 12:04

Matrix: Water

Date Received: 11/11/15 17:45

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			11/23/15 14:02	1
1,2-Dichloroethene, Total	ND	F1	2.0	0.81	ug/L			11/23/15 14:02	1
Acetone	ND	F2	10	3.0	ug/L			11/23/15 14:02	1
Benzene	ND	F1	1.0	0.41	ug/L			11/23/15 14:02	1
Vinyl chloride	ND	F1	1.0	0.90	ug/L			11/23/15 14:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		66 - 137		11/23/15 14:02	1
Toluene-d8 (Surr)	91		71 - 126		11/23/15 14:02	1
4-Bromofluorobenzene (Surr)	87		73 - 120		11/23/15 14:02	1
Dibromofluoromethane (Surr)	111		60 - 140		11/23/15 14:02	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	0.49	ug/L		11/13/15 08:03	11/17/15 14:29	1
1,4-Dichlorobenzene	2.5	J	10	0.47	ug/L		11/13/15 08:03	11/17/15 14:29	1
Bis(2-ethylhexyl) phthalate	ND		5.1	1.8	ug/L		11/13/15 08:03	11/17/15 14:29	1
Phenol	ND		5.1	0.40	ug/L		11/13/15 08:03	11/17/15 14:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	71		52 - 132	11/13/15 08:03	11/17/15 14:29	1
2-Fluorobiphenyl	89		48 - 120	11/13/15 08:03	11/17/15 14:29	1
2-Fluorophenol	48		20 - 120	11/13/15 08:03	11/17/15 14:29	1
Nitrobenzene-d5	68		46 - 120	11/13/15 08:03	11/17/15 14:29	1
Phenol-d5	33		16 - 120	11/13/15 08:03	11/17/15 14:29	1
p-Terphenyl-d14	87		67 - 150	11/13/15 08:03	11/17/15 14:29	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/12/15 11:14	11/13/15 13:08	1
Arsenic	ND		0.010	0.0056	mg/L		11/12/15 11:14	11/13/15 13:08	1
Barium	0.064		0.0020	0.00070	mg/L		11/12/15 11:14	11/13/15 13:08	1
Cadmium	ND		0.0010	0.00050	mg/L		11/12/15 11:14	11/13/15 13:08	1
Chromium	ND		0.0040	0.0010	mg/L		11/12/15 11:14	11/13/15 13:08	1
Copper	ND	F2	0.010	0.0016	mg/L		11/12/15 11:14	11/13/15 13:08	1
Iron	1.1		0.050	0.019	mg/L		11/12/15 11:14	11/13/15 13:08	1
Lead	ND		0.0050	0.0030	mg/L		11/12/15 11:14	11/13/15 13:08	1
Magnesium	13.9		0.20	0.043	mg/L		11/12/15 11:14	11/13/15 13:08	1
Manganese	0.27	B	0.0030	0.00040	mg/L		11/12/15 11:14	11/13/15 13:08	1
Nickel	0.0016	J	0.010	0.0013	mg/L		11/12/15 11:14	11/13/15 13:08	1
Silver	ND		0.0030	0.0017	mg/L		11/12/15 11:14	11/13/15 13:08	1
Sodium	138		1.0	0.32	mg/L		11/12/15 11:14	11/13/15 13:08	1
Zinc	0.0030	J	0.010	0.0015	mg/L		11/12/15 11:14	11/13/15 13:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/13/15 10:20	11/13/15 14:53	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-8D

Lab Sample ID: 480-90909-3

Date Collected: 11/11/15 13:36

Matrix: Water

Date Received: 11/11/15 17:45

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			11/23/15 14:27	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/23/15 14:27	1
Acetone	ND		10	3.0	ug/L			11/23/15 14:27	1
Benzene	ND		1.0	0.41	ug/L			11/23/15 14:27	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/23/15 14:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		66 - 137		11/23/15 14:27	1
Toluene-d8 (Surr)	91		71 - 126		11/23/15 14:27	1
4-Bromofluorobenzene (Surr)	87		73 - 120		11/23/15 14:27	1
Dibromofluoromethane (Surr)	112		60 - 140		11/23/15 14:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.7	0.46	ug/L		11/13/15 08:03	11/17/15 15:27	1
1,4-Dichlorobenzene	ND		9.7	0.44	ug/L		11/13/15 08:03	11/17/15 15:27	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		11/13/15 08:03	11/17/15 15:27	1
Phenol	ND		4.8	0.38	ug/L		11/13/15 08:03	11/17/15 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	67		52 - 132	11/13/15 08:03	11/17/15 15:27	1
2-Fluorobiphenyl	77		48 - 120	11/13/15 08:03	11/17/15 15:27	1
2-Fluorophenol	40		20 - 120	11/13/15 08:03	11/17/15 15:27	1
Nitrobenzene-d5	59		46 - 120	11/13/15 08:03	11/17/15 15:27	1
Phenol-d5	28		16 - 120	11/13/15 08:03	11/17/15 15:27	1
p-Terphenyl-d14	85		67 - 150	11/13/15 08:03	11/17/15 15:27	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/12/15 11:14	11/13/15 13:23	1
Arsenic	ND		0.010	0.0056	mg/L		11/12/15 11:14	11/13/15 13:23	1
Barium	0.093		0.0020	0.00070	mg/L		11/12/15 11:14	11/13/15 13:23	1
Cadmium	ND		0.0010	0.00050	mg/L		11/12/15 11:14	11/13/15 13:23	1
Chromium	0.030		0.0040	0.0010	mg/L		11/12/15 11:14	11/13/15 13:23	1
Copper	0.0019	J	0.010	0.0016	mg/L		11/12/15 11:14	11/13/15 13:23	1
Iron	0.31		0.050	0.019	mg/L		11/12/15 11:14	11/13/15 13:23	1
Lead	0.0033	J	0.0050	0.0030	mg/L		11/12/15 11:14	11/13/15 13:23	1
Magnesium	16.5		0.20	0.043	mg/L		11/12/15 11:14	11/13/15 13:23	1
Manganese	0.046	J	0.0030	0.00040	mg/L		11/12/15 11:14	11/13/15 13:23	1
Nickel	0.0063	J	0.010	0.0013	mg/L		11/12/15 11:14	11/13/15 13:23	1
Silver	ND		0.0030	0.0017	mg/L		11/12/15 11:14	11/13/15 13:23	1
Sodium	254		1.0	0.32	mg/L		11/12/15 11:14	11/13/15 13:23	1
Zinc	0.0087	J	0.010	0.0015	mg/L		11/12/15 11:14	11/13/15 13:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/13/15 10:20	11/13/15 14:59	1

4/15/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-8SR

Lab Sample ID: 480-90909-4

Date Collected: 11/11/15 14:25

Matrix: Water

Date Received: 11/11/15 17:45

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			11/23/15 14:53	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/23/15 14:53	1
Acetone	ND		10	3.0	ug/L			11/23/15 14:53	1
Benzene	ND		1.0	0.41	ug/L			11/23/15 14:53	1
Vinyl chloride	ND	Y	1.0	0.90	ug/L			11/23/15 14:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		66 - 137		11/23/15 14:53	1
Toluene-d8 (Surr)	91		71 - 126		11/23/15 14:53	1
4-Bromofluorobenzene (Surr)	86		73 - 120		11/23/15 14:53	1
Dibromofluoromethane (Surr)	114		60 - 140		11/23/15 14:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.49	ug/L		11/13/15 08:03	11/17/15 14:58	1
1,4-Dichlorobenzene	ND		10	0.47	ug/L		11/13/15 08:03	11/17/15 14:58	1
Bis(2-ethylhexyl) phthalate	ND		5.1	1.8	ug/L		11/13/15 08:03	11/17/15 14:58	1
Phenol	ND		5.1	0.40	ug/L		11/13/15 08:03	11/17/15 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		52 - 132	11/13/15 08:03	11/17/15 14:58	1
2-Fluorobiphenyl	74		48 - 120	11/13/15 08:03	11/17/15 14:58	1
2-Fluorophenol	40		20 - 120	11/13/15 08:03	11/17/15 14:58	1
Nitrobenzene-d5	56		46 - 120	11/13/15 08:03	11/17/15 14:58	1
Phenol-d5	28		16 - 120	11/13/15 08:03	11/17/15 14:58	1
p-Terphenyl-d14	64	X	67 - 150	11/13/15 08:03	11/17/15 14:58	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/12/15 11:14	11/13/15 13:27	1
Arsenic	ND		0.010	0.0056	mg/L		11/12/15 11:14	11/13/15 13:27	1
Barium	0.27		0.0020	0.00070	mg/L		11/12/15 11:14	11/13/15 13:27	1
Cadmium	ND		0.0010	0.00050	mg/L		11/12/15 11:14	11/13/15 13:27	1
Chromium	0.0024	J	0.0040	0.0010	mg/L		11/12/15 11:14	11/13/15 13:27	1
Copper	ND		0.010	0.0016	mg/L		11/12/15 11:14	11/13/15 13:27	1
Iron	19.9		0.050	0.019	mg/L		11/12/15 11:14	11/13/15 13:27	1
Lead	0.0044	J	0.0050	0.0030	mg/L		11/12/15 11:14	11/13/15 13:27	1
Magnesium	39.6		0.20	0.043	mg/L		11/12/15 11:14	11/13/15 13:27	1
Manganese	1.2	B	0.0030	0.00040	mg/L		11/12/15 11:14	11/13/15 13:27	1
Nickel	0.0023	J	0.010	0.0013	mg/L		11/12/15 11:14	11/13/15 13:27	1
Silver	ND		0.0030	0.0017	mg/L		11/12/15 11:14	11/13/15 13:27	1
Sodium	320		1.0	0.32	mg/L		11/12/15 11:14	11/13/15 13:27	1
Zinc	0.0026	J	0.010	0.0015	mg/L		11/12/15 11:14	11/13/15 13:27	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/13/15 10:20	11/13/15 15:01	1

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11/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-7D

Lab Sample ID: 480-90909-5

Date Collected: 11/11/15 15:20

Matrix: Water

Date Received: 11/11/15 17:45

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			11/23/15 15:18	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/23/15 15:18	1
Acetone	4.2	J	10	3.0	ug/L			11/23/15 15:18	1
Benzene	ND		1.0	0.41	ug/L			11/23/15 15:18	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/23/15 15:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		66 - 137		11/23/15 15:18	1
Toluene-d8 (Surr)	92		71 - 126		11/23/15 15:18	1
4-Bromofluorobenzene (Surr)	87		73 - 120		11/23/15 15:18	1
Dibromofluoromethane (Surr)	112		60 - 140		11/23/15 15:18	1

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Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-7S

Lab Sample ID: 480-90909-6

Date Collected: 11/11/15 15:25

Matrix: Water

Date Received: 11/11/15 17:45

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			11/23/15 15:44	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/23/15 15:44	1
Acetone	3.4	J	10	3.0	ug/L			11/23/15 15:44	1
Benzene	ND		1.0	0.41	ug/L			11/23/15 15:44	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/23/15 15:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		66 - 137		11/23/15 15:44	1
Toluene-d8 (Surr)	92		71 - 126		11/23/15 15:44	1
4-Bromofluorobenzene (Surr)	87		73 - 120		11/23/15 15:44	1
Dibromofluoromethane (Surr)	115		60 - 140		11/23/15 15:44	1

ok
12/1/15



Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-34S

Lab Sample ID: 480-91007-1

Date Collected: 11/12/15 08:50

Matrix: Water

Date Received: 11/12/15 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			11/24/15 17:55	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/15 17:55	1
Acetone	ND		10	3.0	ug/L			11/24/15 17:55	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 17:55	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 17:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 137		11/24/15 17:55	1
Toluene-d8 (Surr)	95		71 - 126		11/24/15 17:55	1
4-Bromofluorobenzene (Surr)	97		73 - 120		11/24/15 17:55	1
Dibromofluoromethane (Surr)	96		60 - 140		11/24/15 17:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		11/13/15 13:05	11/17/15 18:46	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		11/13/15 13:05	11/17/15 18:46	1
Bis(2-ethylhexyl) phthalate	10		4.9	1.8	ug/L		11/13/15 13:05	11/17/15 18:46	1
Phenol	ND		4.9	0.38	ug/L		11/13/15 13:05	11/17/15 18:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	96		52 - 132	11/13/15 13:05	11/17/15 18:46	1
2-Fluorobiphenyl	93		48 - 120	11/13/15 13:05	11/17/15 18:46	1
2-Fluorophenol	57		20 - 120	11/13/15 13:05	11/17/15 18:46	1
Nitrobenzene-d5	79		46 - 120	11/13/15 13:05	11/17/15 18:46	1
Phenol-d5	45		16 - 120	11/13/15 13:05	11/17/15 18:46	1
p-Terphenyl-d14	87		67 - 150	11/13/15 13:05	11/17/15 18:46	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:16	1
Arsenic	ND		0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:16	1
Barium	0.13		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:16	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:16	1
Chromium	0.0059		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:16	1
Copper	ND		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:16	1
Iron	0.27	B	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:16	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:16	1
Magnesium	64.6		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:16	1
Manganese	0.19		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:16	1
Nickel	0.0092	J	0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:16	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:16	1
Sodium	36.8		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:16	1
Zinc	0.010	B	0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 12:43	1

OK
12/1/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-28S

Lab Sample ID: 480-91007-2

Date Collected: 11/12/15 09:46

Matrix: Water

Date Received: 11/12/15 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			11/24/15 18:21	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/15 18:21	1
Acetone	ND		10	3.0	ug/L			11/24/15 18:21	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 18:21	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 18:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 137		11/24/15 18:21	1
Toluene-d8 (Surr)	97		71 - 126		11/24/15 18:21	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/24/15 18:21	1
Dibromofluoromethane (Surr)	99		60 - 140		11/24/15 18:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.9	0.47	ug/L		11/13/15 13:05	11/17/15 19:15	1
1,4-Dichlorobenzene	ND		9.9	0.45	ug/L		11/13/15 13:05	11/17/15 19:15	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		11/13/15 13:05	11/17/15 19:15	1
Phenol	ND		4.9	0.38	ug/L		11/13/15 13:05	11/17/15 19:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	109		52 - 132	11/13/15 13:05	11/17/15 19:15	1
2-Fluorobiphenyl	104		48 - 120	11/13/15 13:05	11/17/15 19:15	1
2-Fluorophenol	61		20 - 120	11/13/15 13:05	11/17/15 19:15	1
Nitrobenzene-d5	86		46 - 120	11/13/15 13:05	11/17/15 19:15	1
Phenol-d5	50		16 - 120	11/13/15 13:05	11/17/15 19:15	1
p-Terphenyl-d14	99		67 - 150	11/13/15 13:05	11/17/15 19:15	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:19	1
Arsenic	ND		0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:19	1
Barium	0.086		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:19	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:19	1
Chromium	ND		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:19	1
Copper	ND		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:19	1
Iron	0.52	B	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:19	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:19	1
Magnesium	27.6		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:19	1
Manganese	0.92		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:19	1
Nickel	0.0019	J	0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:19	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:19	1
Sodium	12.4		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:19	1
Zinc	0.010	0.0039 J B	0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 12:50	1

Check
12/7/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-4S

Lab Sample ID: 480-91007-3

Date Collected: 11/12/15 11:35

Matrix: Water

Date Received: 11/12/15 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			11/24/15 18:47	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/15 18:47	1
Acetone	ND		10	3.0	ug/L			11/24/15 18:47	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 18:47	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 18:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 137		11/24/15 18:47	1
Toluene-d8 (Surr)	95		71 - 126		11/24/15 18:47	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/24/15 18:47	1
Dibromofluoromethane (Surr)	97		60 - 140		11/24/15 18:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		11/13/15 13:05	11/17/15 19:44	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/13/15 13:05	11/17/15 19:44	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		11/13/15 13:05	11/17/15 19:44	1
Phenol	ND		4.8	0.37	ug/L		11/13/15 13:05	11/17/15 19:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	101		52 - 132	11/13/15 13:05	11/17/15 19:44	1
2-Fluorobiphenyl	113		48 - 120	11/13/15 13:05	11/17/15 19:44	1
2-Fluorophenol	66		20 - 120	11/13/15 13:05	11/17/15 19:44	1
Nitrobenzene-d5	97		46 - 120	11/13/15 13:05	11/17/15 19:44	1
Phenol-d5	54		16 - 120	11/13/15 13:05	11/17/15 19:44	1
p-Terphenyl-d14	101		67 - 150	11/13/15 13:05	11/17/15 19:44	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:22	1
Arsenic	ND		0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:22	1
Barium	0.13		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:22	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:22	1
Chromium	0.0072		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:22	1
Copper	0.0051	J	0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:22	1
Iron	2.4	B	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:22	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:22	1
Magnesium	25.6		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:22	1
Manganese	0.17		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:22	1
Nickel	0.0061	J	0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:22	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:22	1
Sodium	39.0		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:22	1
Zinc	0.020	B	0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 12:52	1

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11/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-4D

Lab Sample ID: 480-91007-4

Date Collected: 11/12/15 11:30

Matrix: Water

Date Received: 11/12/15 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			11/24/15 19:13	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/15 19:13	1
Acetone	ND		10	3.0	ug/L			11/24/15 19:13	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 19:13	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 137		11/24/15 19:13	1
Toluene-d8 (Surr)	96		71 - 126		11/24/15 19:13	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/24/15 19:13	1
Dibromofluoromethane (Surr)	96		60 - 140		11/24/15 19:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		210	9.9	ug/L		11/13/15 13:05	11/18/15 19:18	20
1,4-Dichlorobenzene	ND		210	9.5	ug/L		11/13/15 13:05	11/18/15 19:18	20
Bis(2-ethylhexyl) phthalate	ND		100	37	ug/L		11/13/15 13:05	11/18/15 19:18	20
Phenol	ND		100	8.1	ug/L		11/13/15 13:05	11/18/15 19:18	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	100		52 - 132	11/13/15 13:05	11/18/15 19:18	20
2-Fluorobiphenyl	91		48 - 120	11/13/15 13:05	11/18/15 19:18	20
2-Fluorophenol	51		20 - 120	11/13/15 13:05	11/18/15 19:18	20
Nitrobenzene-d5	72		46 - 120	11/13/15 13:05	11/18/15 19:18	20
Phenol-d5	41		16 - 120	11/13/15 13:05	11/18/15 19:18	20
p-Terphenyl-d14	102		67 - 150	11/13/15 13:05	11/18/15 19:18	20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:25	1
Arsenic	ND		0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:25	1
Barium	0.083		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:25	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:25	1
Chromium	0.0013	J	0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:25	1
Copper	ND		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:25	1
Iron	0.025	J B	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:25	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:25	1
Magnesium	74.9		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:25	1
Manganese	0.018		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:25	1
Nickel	ND		0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:25	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:25	1
Sodium	83.9		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:25	1
Zinc	0.010	J B	0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 12:54	1

CLAY
11/15/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-7D

Lab Sample ID: 480-91007-5

Date Collected: 11/12/15 11:53

Matrix: Water

Date Received: 11/12/15 16:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.6	0.46	ug/L		11/13/15 13:05	11/17/15 20:41	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/13/15 13:05	11/17/15 20:41	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		11/13/15 13:05	11/17/15 20:41	1
Phenol	ND		4.8	0.37	ug/L		11/13/15 13:05	11/17/15 20:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	103		52 - 132	11/13/15 13:05	11/17/15 20:41	1
2-Fluorobiphenyl	106		48 - 120	11/13/15 13:05	11/17/15 20:41	1
2-Fluorophenol	65		20 - 120	11/13/15 13:05	11/17/15 20:41	1
Nitrobenzene-d5	90		46 - 120	11/13/15 13:05	11/17/15 20:41	1
Phenol-d5	52		16 - 120	11/13/15 13:05	11/17/15 20:41	1
p-Terphenyl-d14	89		67 - 150	11/13/15 13:05	11/17/15 20:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:39	1
Arsenic	0.0077	J	0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:39	1
Barium	0.097		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:39	1
Cadmium	0.0020		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:39	1
Chromium	0.20		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:39	1
Copper	0.021		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:39	1
Iron	3.9	B	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:39	1
Lead	0.12		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:39	1
Magnesium	35.4		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:39	1
Manganese	0.067		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:39	1
Nickel	0.099		0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:39	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:39	1
Sodium	77.7		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:39	1
Zinc	0.061	B	0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 12:56	1

OK
12/2/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-7S

Lab Sample ID: 480-91007-6

Date Collected: 11/12/15 11:58

Matrix: Water

Date Received: 11/12/15 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		11/13/15 13:05	11/17/15 21:10	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/13/15 13:05	11/17/15 21:10	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		11/13/15 13:05	11/17/15 21:10	1
Phenol	ND		5.0	0.39	ug/L		11/13/15 13:05	11/17/15 21:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	101		52 - 132	11/13/15 13:05	11/17/15 21:10	1
2-Fluorobiphenyl	111		48 - 120	11/13/15 13:05	11/17/15 21:10	1
2-Fluorophenol	71		20 - 120	11/13/15 13:05	11/17/15 21:10	1
Nitrobenzene-d5	98		46 - 120	11/13/15 13:05	11/17/15 21:10	1
Phenol-d5	56		16 - 120	11/13/15 13:05	11/17/15 21:10	1
p-Terphenyl-d14	101		67 - 150	11/13/15 13:05	11/17/15 21:10	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:42	1
Arsenic	ND		0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:42	1
Barium	0.26		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:42	1
Cadmium	0.00082	J	0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:42	1
Chromium	0.012		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:42	1
Copper	0.0027	J	0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:42	1
Iron	0.20	J	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:42	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:42	1
Magnesium	35.2		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:42	1
Manganese	0.044		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:42	1
Nickel	0.022		0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:42	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:42	1
Sodium	52.9		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:42	1
Zinc	0.010	J	0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:01	1

0.010
12/1/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-33S

Lab Sample ID: 480-91007-7

Date Collected: 11/12/15 12:59

Matrix: Water

Date Received: 11/12/15 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			11/24/15 19:39	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/15 19:39	1
Acetone	ND		10	3.0	ug/L			11/24/15 19:39	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 19:39	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 19:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 137		11/24/15 19:39	1
Toluene-d8 (Surr)	97		71 - 126		11/24/15 19:39	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/24/15 19:39	1
Dibromofluoromethane (Surr)	98		60 - 140		11/24/15 19:39	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		11/13/15 13:05	11/17/15 21:39	1
1,4-Dichlorobenzene	ND		10	0.48	ug/L		11/13/15 13:05	11/17/15 21:39	1
Bis(2-ethylhexyl) phthalate	ND		5.2	1.9	ug/L		11/13/15 13:05	11/17/15 21:39	1
Phenol	ND		5.2	0.41	ug/L		11/13/15 13:05	11/17/15 21:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	94		52 - 132	11/13/15 13:05	11/17/15 21:39	1
2-Fluorobiphenyl	111		48 - 120	11/13/15 13:05	11/17/15 21:39	1
2-Fluorophenol	66		20 - 120	11/13/15 13:05	11/17/15 21:39	1
Nitrobenzene-d5	94		46 - 120	11/13/15 13:05	11/17/15 21:39	1
Phenol-d5	55		16 - 120	11/13/15 13:05	11/17/15 21:39	1
p-Terphenyl-d14	110		67 - 150	11/13/15 13:05	11/17/15 21:39	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:45	1
Arsenic	ND		0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:45	1
Barium	0.044		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:45	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:45	1
Chromium	0.0023	J	0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:45	1
Copper	0.021		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:45	1
Iron	0.050 0.041	J-B	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:45	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:45	1
Magnesium	37.9		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:45	1
Manganese	0.0090		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:45	1
Nickel	ND		0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:45	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:45	1
Sodium	3.4		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:45	1
Zinc	0.014		0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:03	1

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12/1/15

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-35S

Lab Sample ID: 480-91007-8

Date Collected: 11/12/15 14:02

Matrix: Water

Date Received: 11/12/15 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			11/24/15 20:05	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/15 20:05	1
Acetone	ND		10	3.0	ug/L			11/24/15 20:05	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 20:05	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 20:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 137		11/24/15 20:05	1
Toluene-d8 (Surr)	97		71 - 126		11/24/15 20:05	1
4-Bromofluorobenzene (Surr)	97		73 - 120		11/24/15 20:05	1
Dibromofluoromethane (Surr)	98		60 - 140		11/24/15 20:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		11/13/15 13:05	11/17/15 22:08	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		11/13/15 13:05	11/17/15 22:08	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		11/13/15 13:05	11/17/15 22:08	1
Phenol	ND		4.9	0.38	ug/L		11/13/15 13:05	11/17/15 22:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	98		52 - 132	11/13/15 13:05	11/17/15 22:08	1
2-Fluorobiphenyl	111		48 - 120	11/13/15 13:05	11/17/15 22:08	1
2-Fluorophenol	64		20 - 120	11/13/15 13:05	11/17/15 22:08	1
Nitrobenzene-d5	94		46 - 120	11/13/15 13:05	11/17/15 22:08	1
Phenol-d5	52		16 - 120	11/13/15 13:05	11/17/15 22:08	1
p-Terphenyl-d14	110		67 - 150	11/13/15 13:05	11/17/15 22:08	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:48	1
Arsenic	ND		0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:48	1
Barium	0.11		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:48	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:48	1
Chromium	ND		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:48	1
Copper	ND		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:48	1
Iron	0.055		0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:48	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:48	1
Magnesium	28.8		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:48	1
Manganese	0.13		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:48	1
Nickel	ND		0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:48	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:48	1
Sodium	3.8		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:48	1
Zinc	0.010		0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:05	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-26D

Lab Sample ID: 480-91007-9

Date Collected: 11/12/15 15:11

Matrix: Water

Date Received: 11/12/15 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			11/24/15 20:31	1
1,2-Dichloroethene, Total	1.0	J	2.0	0.81	ug/L			11/24/15 20:31	1
Acetone	ND		10	3.0	ug/L			11/24/15 20:31	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 20:31	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 20:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 137		11/24/15 20:31	1
Toluene-d8 (Surr)	97		71 - 126		11/24/15 20:31	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/24/15 20:31	1
Dibromofluoromethane (Surr)	98		60 - 140		11/24/15 20:31	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		11/13/15 13:05	11/17/15 22:36	1
1,4-Dichlorobenzene	ND		10	0.48	ug/L		11/13/15 13:05	11/17/15 22:36	1
Bis(2-ethylhexyl) phthalate	ND		5.2	1.9	ug/L		11/13/15 13:05	11/17/15 22:36	1
Phenol	ND		5.2	0.40	ug/L		11/13/15 13:05	11/17/15 22:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	102		52 - 132	11/13/15 13:05	11/17/15 22:36	1
2-Fluorobiphenyl	110		48 - 120	11/13/15 13:05	11/17/15 22:36	1
2-Fluorophenol	65		20 - 120	11/13/15 13:05	11/17/15 22:36	1
Nitrobenzene-d5	90		46 - 120	11/13/15 13:05	11/17/15 22:36	1
Phenol-d5	55		16 - 120	11/13/15 13:05	11/17/15 22:36	1
p-Terphenyl-d14	104		67 - 150	11/13/15 13:05	11/17/15 22:36	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:52	1
Arsenic	0.0079	J	0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:52	1
Barium	0.14		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:52	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:52	1
Chromium	ND		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:52	1
Copper	ND		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:52	1
Iron	4.4	B	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:52	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:52	1
Magnesium	19.9		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:52	1
Manganese	0.49		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:52	1
Nickel	0.0025	J	0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:52	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:52	1
Sodium	317		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:52	1
Zinc	ND		0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:09	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: FD-111215

Lab Sample ID: 480-91007-10

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/12/15 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			11/24/15 20:56	1
1,2-Dichloroethene, Total	0.99	J	2.0	0.81	ug/L			11/24/15 20:56	1
Acetone	ND		10	3.0	ug/L			11/24/15 20:56	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 20:56	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 20:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 137		11/24/15 20:56	1
Toluene-d8 (Surr)	97		71 - 126		11/24/15 20:56	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/24/15 20:56	1
Dibromofluoromethane (Surr)	98		60 - 140		11/24/15 20:56	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		11/13/15 13:05	11/17/15 23:05	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/13/15 13:05	11/17/15 23:05	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		11/13/15 13:05	11/17/15 23:05	1
Phenol	ND		5.0	0.39	ug/L		11/13/15 13:05	11/17/15 23:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	103		52 - 132	11/13/15 13:05	11/17/15 23:05	1
2-Fluorobiphenyl	104		48 - 120	11/13/15 13:05	11/17/15 23:05	1
2-Fluorophenol	60		20 - 120	11/13/15 13:05	11/17/15 23:05	1
Nitrobenzene-d5	88		46 - 120	11/13/15 13:05	11/17/15 23:05	1
Phenol-d5	49		16 - 120	11/13/15 13:05	11/17/15 23:05	1
p-Terphenyl-d14	96		67 - 150	11/13/15 13:05	11/17/15 23:05	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 14:55	1
Arsenic	0.0057	J	0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 14:55	1
Barium	0.13		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 14:55	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 14:55	1
Chromium	ND		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 14:55	1
Copper	ND		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 14:55	1
Iron	4.3	B	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 14:55	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 14:55	1
Magnesium	19.3		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 14:55	1
Manganese	0.48		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 14:55	1
Nickel	0.0030	J	0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 14:55	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 14:55	1
Sodium	307		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 14:55	1
Zinc	ND		0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 14:55	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:07	1

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TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: TB-111115

Lab Sample ID: 480-91007-11

Date Collected: 11/11/15 00:00

Matrix: Water

Date Received: 11/12/15 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			11/24/15 13:52	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/15 13:52	1
Acetone	ND		10	3.0	ug/L			11/24/15 13:52	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 13:52	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 13:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 137		11/24/15 13:52	1
Toluene-d8 (Surr)	93		71 - 126		11/24/15 13:52	1
4-Bromofluorobenzene (Surr)	88		73 - 120		11/24/15 13:52	1
Dibromofluoromethane (Surr)	113		60 - 140		11/24/15 13:52	1



Client Sample Results

Client: AECOM, Inc.
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: TB-111215

Lab Sample ID: 480-91007-12

Date Collected: 11/12/15 00:00

Matrix: Water

Date Received: 11/12/15 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			11/24/15 21:22	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/15 21:22	1
Acetone	ND	✓	10	3.0	ug/L			11/24/15 21:22	1
Benzene	ND		1.0	0.41	ug/L			11/24/15 21:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/15 21:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 137		11/24/15 21:22	1
Toluene-d8 (Surr)	97		71 - 126		11/24/15 21:22	1
4-Bromofluorobenzene (Surr)	97		73 - 120		11/24/15 21:22	1
Dibromofluoromethane (Surr)	98		60 - 140		11/24/15 21:22	1

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Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-29S

Lab Sample ID: 480-91071-1

Date Collected: 11/13/15 09:11

Matrix: Water

Date Received: 11/13/15 15:30

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			11/25/15 15:16	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/25/15 15:16	1
Acetone	ND		10	3.0	ug/L			11/25/15 15:16	1
Benzene	ND		1.0	0.41	ug/L			11/25/15 15:16	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/15 15:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 137		11/25/15 15:16	1
Toluene-d8 (Surr)	97		71 - 126		11/25/15 15:16	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/25/15 15:16	1
Dibromofluoromethane (Surr)	94		60 - 140		11/25/15 15:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.49	ug/L		11/16/15 08:57	11/17/15 18:23	1
1,4-Dichlorobenzene	ND		10	0.47	ug/L		11/16/15 08:57	11/17/15 18:23	1
Bis(2-ethylhexyl) phthalate	ND		5.1	1.8	ug/L		11/16/15 08:57	11/17/15 18:23	1
Phenol	ND		5.1	0.40	ug/L		11/16/15 08:57	11/17/15 18:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	148	X	52 - 132	11/16/15 08:57	11/17/15 18:23	1
2-Fluorobiphenyl	143	X	48 - 120	11/16/15 08:57	11/17/15 18:23	1
2-Fluorophenol	81		20 - 120	11/16/15 08:57	11/17/15 18:23	1
Nitrobenzene-d5	109		46 - 120	11/16/15 08:57	11/17/15 18:23	1
Phenol-d5	57		16 - 120	11/16/15 08:57	11/17/15 18:23	1
p-Terphenyl-d14	127		67 - 150	11/16/15 08:57	11/17/15 18:23	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/16/15 11:30	11/16/15 18:15	1
Arsenic	0.028		0.010	0.0056	mg/L		11/16/15 11:30	11/16/15 18:15	1
Barium	0.23		0.0020	0.00070	mg/L		11/16/15 11:30	11/16/15 18:15	1
Cadmium	ND		0.0010	0.00050	mg/L		11/16/15 11:30	11/16/15 18:15	1
Chromium	0.0011	J	0.0040	0.0010	mg/L		11/16/15 11:30	11/16/15 18:15	1
Copper	ND		0.010	0.0016	mg/L		11/16/15 11:30	11/16/15 18:15	1
Iron	14.7		0.050	0.019	mg/L		11/16/15 11:30	11/16/15 18:15	1
Lead	ND		0.0050	0.0030	mg/L		11/16/15 11:30	11/16/15 18:15	1
Magnesium	85.1		0.20	0.043	mg/L		11/16/15 11:30	11/16/15 18:15	1
Manganese	0.49		0.0030	0.00040	mg/L		11/16/15 11:30	11/16/15 18:15	1
Nickel	0.0015	J	0.010	0.0013	mg/L		11/16/15 11:30	11/16/15 18:15	1
Silver	ND		0.0030	0.0017	mg/L		11/16/15 11:30	11/16/15 18:15	1
Sodium	11.0		1.0	0.32	mg/L		11/16/15 11:30	11/16/15 18:15	1
Zinc	0.0023	J	0.010	0.0015	mg/L		11/16/15 11:30	11/16/15 18:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:36	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-30S

Lab Sample ID: 480-91071-2

Date Collected: 11/13/15 10:02

Matrix: Water

Date Received: 11/13/15 15:30

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			11/25/15 15:41	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/25/15 15:41	1
Acetone	ND		10	3.0	ug/L			11/25/15 15:41	1
Benzene	ND		1.0	0.41	ug/L			11/25/15 15:41	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/15 15:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		66 - 137		11/25/15 15:41	1
Toluene-d8 (Surr)	97		71 - 126		11/25/15 15:41	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/25/15 15:41	1
Dibromofluoromethane (Surr)	96		60 - 140		11/25/15 15:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.8	0.47	ug/L		11/16/15 08:57	11/17/15 18:52	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		11/16/15 08:57	11/17/15 18:52	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		11/16/15 08:57	11/17/15 18:52	1
Phenol	ND		4.9	0.38	ug/L		11/16/15 08:57	11/17/15 18:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	73		52 - 132	11/16/15 08:57	11/17/15 18:52	1
2-Fluorobiphenyl	75		48 - 120	11/16/15 08:57	11/17/15 18:52	1
2-Fluorophenol	42		20 - 120	11/16/15 08:57	11/17/15 18:52	1
Nitrobenzene-d5	57		46 - 120	11/16/15 08:57	11/17/15 18:52	1
Phenol-d5	27		16 - 120	11/16/15 08:57	11/17/15 18:52	1
p-Terphenyl-d14	60	X	67 - 150	11/16/15 08:57	11/17/15 18:52	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/16/15 11:30	11/16/15 18:18	1
Arsenic	ND		0.010	0.0056	mg/L		11/16/15 11:30	11/16/15 18:18	1
Barium	0.35		0.0020	0.00070	mg/L		11/16/15 11:30	11/16/15 18:18	1
Cadmium	ND		0.0010	0.00050	mg/L		11/16/15 11:30	11/16/15 18:18	1
Chromium	ND		0.0040	0.0010	mg/L		11/16/15 11:30	11/16/15 18:18	1
Copper	ND		0.010	0.0016	mg/L		11/16/15 11:30	11/16/15 18:18	1
Iron	17.3		0.050	0.019	mg/L		11/16/15 11:30	11/16/15 18:18	1
Lead	0.0033	J	0.0050	0.0030	mg/L		11/16/15 11:30	11/16/15 18:18	1
Magnesium	50.7		0.20	0.043	mg/L		11/16/15 11:30	11/16/15 18:18	1
Manganese	2.8		0.0030	0.00040	mg/L		11/16/15 11:30	11/16/15 18:18	1
Nickel	ND		0.010	0.0013	mg/L		11/16/15 11:30	11/16/15 18:18	1
Silver	ND		0.0030	0.0017	mg/L		11/16/15 11:30	11/16/15 18:18	1
Sodium	596		1.0	0.32	mg/L		11/16/15 11:30	11/16/15 18:18	1
Zinc	ND		0.010	0.0015	mg/L		11/16/15 11:30	11/16/15 18:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:47	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-31S

Lab Sample ID: 480-91071-3

Date Collected: 11/13/15 10:55

Matrix: Water

Date Received: 11/13/15 15:30

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			11/25/15 16:07	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/25/15 16:07	1
Acetone	ND		10	3.0	ug/L			11/25/15 16:07	1
Benzene	ND		1.0	0.41	ug/L			11/25/15 16:07	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/15 16:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		66 - 137		11/25/15 16:07	1
Toluene-d8 (Surr)	97		71 - 126		11/25/15 16:07	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/25/15 16:07	1
Dibromofluoromethane (Surr)	96		60 - 140		11/25/15 16:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.49	ug/L		11/16/15 08:57	11/17/15 19:21	1
1,4-Dichlorobenzene	ND		10	0.47	ug/L		11/16/15 08:57	11/17/15 19:21	1
Bis(2-ethylhexyl) phthalate	ND		5.1	1.8	ug/L		11/16/15 08:57	11/17/15 19:21	1
Phenol	ND		5.1	0.40	ug/L		11/16/15 08:57	11/17/15 19:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	78		52 - 132	11/16/15 08:57	11/17/15 19:21	1
2-Fluorobiphenyl	86		48 - 120	11/16/15 08:57	11/17/15 19:21	1
2-Fluorophenol	50		20 - 120	11/16/15 08:57	11/17/15 19:21	1
Nitrobenzene-d5	66		46 - 120	11/16/15 08:57	11/17/15 19:21	1
Phenol-d5	34		16 - 120	11/16/15 08:57	11/17/15 19:21	1
p-Terphenyl-d14	81		67 - 150	11/16/15 08:57	11/17/15 19:21	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/16/15 11:30	11/16/15 18:22	1
Arsenic	ND		0.010	0.0056	mg/L		11/16/15 11:30	11/16/15 18:22	1
Barium	0.092		0.0020	0.00070	mg/L		11/16/15 11:30	11/16/15 18:22	1
Cadmium	ND		0.0010	0.00050	mg/L		11/16/15 11:30	11/16/15 18:22	1
Chromium	0.0023	J	0.0040	0.0010	mg/L		11/16/15 11:30	11/16/15 18:22	1
Copper	0.0027	J	0.010	0.0016	mg/L		11/16/15 11:30	11/16/15 18:22	1
Iron	0.99		0.050	0.019	mg/L		11/16/15 11:30	11/16/15 18:22	1
Lead	ND		0.0050	0.0030	mg/L		11/16/15 11:30	11/16/15 18:22	1
Magnesium	30.1		0.20	0.043	mg/L		11/16/15 11:30	11/16/15 18:22	1
Manganese	0.88		0.0030	0.00040	mg/L		11/16/15 11:30	11/16/15 18:22	1
Nickel	0.0053	J	0.010	0.0013	mg/L		11/16/15 11:30	11/16/15 18:22	1
Silver	ND		0.0030	0.0017	mg/L		11/16/15 11:30	11/16/15 18:22	1
Sodium	6.7		1.0	0.32	mg/L		11/16/15 11:30	11/16/15 18:22	1
Zinc	0.013		0.010	0.0015	mg/L		11/16/15 11:30	11/16/15 18:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:49	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-32S

Lab Sample ID: 480-91071-4

Date Collected: 11/13/15 11:50

Matrix: Water

Date Received: 11/13/15 15:30

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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			11/25/15 16:32	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/25/15 16:32	1
Acetone	ND		10	3.0	ug/L			11/25/15 16:32	1
Benzene	ND		1.0	0.41	ug/L			11/25/15 16:32	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/15 16:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 137		11/25/15 16:32	1
Toluene-d8 (Surr)	96		71 - 126		11/25/15 16:32	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/25/15 16:32	1
Dibromofluoromethane (Surr)	97		60 - 140		11/25/15 16:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		11	0.51	ug/L		11/16/15 08:57	11/17/15 19:51	1
1,4-Dichlorobenzene	ND		11	0.49	ug/L		11/16/15 08:57	11/17/15 19:51	1
Bis(2-ethylhexyl) phthalate	ND		5.4	1.9	ug/L		11/16/15 08:57	11/17/15 19:51	1
Phenol	ND		5.4	0.42	ug/L		11/16/15 08:57	11/17/15 19:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	72		52 - 132	11/16/15 08:57	11/17/15 19:51	1
2-Fluorobiphenyl	80		48 - 120	11/16/15 08:57	11/17/15 19:51	1
2-Fluorophenol	44		20 - 120	11/16/15 08:57	11/17/15 19:51	1
Nitrobenzene-d5	61		46 - 120	11/16/15 08:57	11/17/15 19:51	1
Phenol-d5	31		16 - 120	11/16/15 08:57	11/17/15 19:51	1
p-Terphenyl-d14	89		67 - 150	11/16/15 08:57	11/17/15 19:51	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/16/15 11:30	11/16/15 18:25	1
Arsenic	ND		0.010	0.0056	mg/L		11/16/15 11:30	11/16/15 18:25	1
Barium	0.059		0.0020	0.00070	mg/L		11/16/15 11:30	11/16/15 18:25	1
Cadmium	ND		0.0010	0.00050	mg/L		11/16/15 11:30	11/16/15 18:25	1
Chromium	0.0020	J	0.0040	0.0010	mg/L		11/16/15 11:30	11/16/15 18:25	1
Copper	ND		0.010	0.0016	mg/L		11/16/15 11:30	11/16/15 18:25	1
Iron	0.034	J	0.050	0.019	mg/L		11/16/15 11:30	11/16/15 18:25	1
Lead	ND		0.0050	0.0030	mg/L		11/16/15 11:30	11/16/15 18:25	1
Magnesium	33.5		0.20	0.043	mg/L		11/16/15 11:30	11/16/15 18:25	1
Manganese	0.21		0.0030	0.00040	mg/L		11/16/15 11:30	11/16/15 18:25	1
Nickel	0.0026	J	0.010	0.0013	mg/L		11/16/15 11:30	11/16/15 18:25	1
Silver	ND		0.0030	0.0017	mg/L		11/16/15 11:30	11/16/15 18:25	1
Sodium	7.3		1.0	0.32	mg/L		11/16/15 11:30	11/16/15 18:25	1
Zinc	0.0022	J	0.010	0.0015	mg/L		11/16/15 11:30	11/16/15 18:25	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:51	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-1S

Lab Sample ID: 480-91071-5

Date Collected: 11/13/15 12:58

Matrix: Water

Date Received: 11/13/15 15:30

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			11/25/15 16:58	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/25/15 16:58	1
Acetone	ND		10	3.0	ug/L			11/25/15 16:58	1
Benzene	ND		1.0	0.41	ug/L			11/25/15 16:58	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/15 16:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 137		11/25/15 16:58	1
Toluene-d8 (Surr)	97		71 - 126		11/25/15 16:58	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/25/15 16:58	1
Dibromofluoromethane (Surr)	98		60 - 140		11/25/15 16:58	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		11/16/15 08:57	11/18/15 12:03	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/16/15 08:57	11/18/15 12:03	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		11/16/15 08:57	11/18/15 12:03	1
Phenol	ND		5.0	0.39	ug/L		11/16/15 08:57	11/18/15 12:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	77		52 - 132	11/16/15 08:57	11/18/15 12:03	1
2-Fluorobiphenyl	82		48 - 120	11/16/15 08:57	11/18/15 12:03	1
2-Fluorophenol	48		20 - 120	11/16/15 08:57	11/18/15 12:03	1
Nitrobenzene-d5	62		46 - 120	11/16/15 08:57	11/18/15 12:03	1
Phenol-d5	32		16 - 120	11/16/15 08:57	11/18/15 12:03	1
p-Terphenyl-d14	76		67 - 150	11/16/15 08:57	11/18/15 12:03	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/16/15 11:30	11/16/15 18:28	1
Arsenic	ND		0.010	0.0056	mg/L		11/16/15 11:30	11/16/15 18:28	1
Barium	0.17		0.0020	0.00070	mg/L		11/16/15 11:30	11/16/15 18:28	1
Cadmium	0.0015		0.0010	0.00050	mg/L		11/16/15 11:30	11/16/15 18:28	1
Chromium	0.0033	J	0.0040	0.0010	mg/L		11/16/15 11:30	11/16/15 18:28	1
Copper	ND		0.010	0.0016	mg/L		11/16/15 11:30	11/16/15 18:28	1
Iron	7.9		0.050	0.019	mg/L		11/16/15 11:30	11/16/15 18:28	1
Lead	ND		0.0050	0.0030	mg/L		11/16/15 11:30	11/16/15 18:28	1
Magnesium	21.9		0.20	0.043	mg/L		11/16/15 11:30	11/16/15 18:28	1
Manganese	1.6		0.0030	0.00040	mg/L		11/16/15 11:30	11/16/15 18:28	1
Nickel	0.0021	J	0.010	0.0013	mg/L		11/16/15 11:30	11/16/15 18:28	1
Silver	ND		0.0030	0.0017	mg/L		11/16/15 11:30	11/16/15 18:28	1
Sodium	95.6		1.0	0.32	mg/L		11/16/15 11:30	11/16/15 18:28	1
Zinc	0.0040	J	0.010	0.0015	mg/L		11/16/15 11:30	11/16/15 18:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:53	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: GW-1D

Lab Sample ID: 480-91071-6

Date Collected: 11/13/15 14:07

Matrix: Water

Date Received: 11/13/15 15:30

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			11/25/15 17:24	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/25/15 17:24	1
Acetone	ND		10	3.0	ug/L			11/25/15 17:24	1
Benzene	ND		1.0	0.41	ug/L			11/25/15 17:24	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/15 17:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		66 - 137		11/25/15 17:24	1
Toluene-d8 (Surr)	96		71 - 126		11/25/15 17:24	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/25/15 17:24	1
Dibromofluoromethane (Surr)	96		60 - 140		11/25/15 17:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.49	ug/L		11/16/15 08:57	11/18/15 12:32	1
1,4-Dichlorobenzene	ND		10	0.47	ug/L		11/16/15 08:57	11/18/15 12:32	1
Bis(2-ethylhexyl) phthalate	ND		5.1	1.8	ug/L		11/16/15 08:57	11/18/15 12:32	1
Phenol	ND		5.1	0.40	ug/L		11/16/15 08:57	11/18/15 12:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		52 - 132	11/16/15 08:57	11/18/15 12:32	1
2-Fluorobiphenyl	78		48 - 120	11/16/15 08:57	11/18/15 12:32	1
2-Fluorophenol	44		20 - 120	11/16/15 08:57	11/18/15 12:32	1
Nitrobenzene-d5	60		46 - 120	11/16/15 08:57	11/18/15 12:32	1
Phenol-d5	31		16 - 120	11/16/15 08:57	11/18/15 12:32	1
p-Terphenyl-d14	86		67 - 150	11/16/15 08:57	11/18/15 12:32	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/16/15 11:30	11/16/15 18:41	1
Arsenic	ND		0.010	0.0056	mg/L		11/16/15 11:30	11/16/15 18:41	1
Barium	0.070		0.0020	0.00070	mg/L		11/16/15 11:30	11/16/15 18:41	1
Cadmium	ND		0.0010	0.00050	mg/L		11/16/15 11:30	11/16/15 18:41	1
Chromium	0.033		0.0040	0.0010	mg/L		11/16/15 11:30	11/16/15 18:41	1
Copper	ND		0.010	0.0016	mg/L		11/16/15 11:30	11/16/15 18:41	1
Iron	0.26		0.050	0.019	mg/L		11/16/15 11:30	11/16/15 18:41	1
Lead	ND		0.0050	0.0030	mg/L		11/16/15 11:30	11/16/15 18:41	1
Magnesium	32.3		0.20	0.043	mg/L		11/16/15 11:30	11/16/15 18:41	1
Manganese	0.017		0.0030	0.00040	mg/L		11/16/15 11:30	11/16/15 18:41	1
Nickel	0.0039	J	0.010	0.0013	mg/L		11/16/15 11:30	11/16/15 18:41	1
Silver	ND		0.0030	0.0017	mg/L		11/16/15 11:30	11/16/15 18:41	1
Sodium	94.9		1.0	0.32	mg/L		11/16/15 11:30	11/16/15 18:41	1
Zinc	0.010		0.010	0.0015	mg/L		11/16/15 11:30	11/16/15 18:41	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/18/15 08:25	11/18/15 13:54	1

TestAmerica Buffalo

Client Sample Results

Client: AECOM, Inc.
 Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Client Sample ID: TB-111315

Lab Sample ID: 480-91071-7

Date Collected: 11/13/15 00:00

Matrix: Water

Date Received: 11/13/15 15:30

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			11/25/15 17:50	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/25/15 17:50	1
Acetone	ND		10	3.0	ug/L			11/25/15 17:50	1
Benzene	ND		1.0	0.41	ug/L			11/25/15 17:50	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/15 17:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 137		11/25/15 17:50	1
Toluene-d8 (Surr)	98		71 - 126		11/25/15 17:50	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/25/15 17:50	1
Dibromofluoromethane (Surr)	101		60 - 140		11/25/15 17:50	1



APPENDIX B
SUPPORT DOCUMENTATION

Chain of Custody Record

Client Information
 Client Contact: **R. MURPHY / T. KRIVOVIK**
 Ann Marie Kropovitch
 Company: **AECOM, Inc.**
 Address: **257 West Genesee St. Suite 400**
 City: **Buffalo**
 State, Zip: **NY, 14202-2657**
 Phone: **716-856-5636(Tel) 716-856-2545(Fax)**
 Email: **ann.marie.kropovitch@aecom.com**
 Project Name: **Pfohl Brothers Landfill GW Monitoring**
 Site:


Sampler: **R. MURPHY / T. KRIVOVIK**
Lab PM: **Deyo, Melissa L**
E-Mail: **melissa.deyo@testamericainc.com**
Carrier Tracking No(s):
COC No: **480-74084-7612.3**
Page: **1 of 1**
Job #:

Due Date Requested:
TAT Requested (days): **STANDARD**

PO #: **Ann_Marie_Kropovitch@URSCorp.com**
WO #: **Vendor # 1427536**
Project #: **48002809**
SSOW#:

Analysis Requested:

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 - Na2S2SO3
 G - Amchlor S - H2SO4
 H - Ascorbic Acid T - TSP Dodecahydrate
 I - Ice U - Acetone
 J - DI Water V - MCAA
 K - EDTA W - ph 4-5



480-90909 Chain of Custody

Field: Filled Sample (Yes/No) **Field: Filled Sample (Yes/No)**
 8010B - 7470A **PHOL LIST**
 8280B - Volatile Organic Compounds (GC/MS) **PHOL LIST**
 8270D - Semivolatile Compounds by GC/MS **PHOL LIST**

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=Other, BT=Tissue, ANAL)	Preservation Code	Field	A	N	...	Special Instructions/Notes	
GW-3S	11/11/15	1053	GRAB	Water		N	A	1	3	2	
GW-3D	11/11/15	1204	GRAB	Water		N	A	1	3	2	
GW-3D-MS	11/11/15	1204	GRAB	Water		Y	A	1	3	2	6 MATRIX SPIKE
GW-3D-MSD	11/11/15	1204	GRAB	Water		Y	A	1	3	2	6 MATRIX SPIKE DUPLICATE
GW-8D	11/11/15	1336	GRAB	Water		N	A	1	3	2	
GW-8SR	11/11/15	1425	GRAB	Water		N	A	1	3	2	
GW-7D	11/11/15	1520	GRAB	Water		N	A	3			
GW-7S	11/11/15	1525	GRAB	Water		N	A	3			

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

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

Deliverable Requested: I, II, III, IV, Other (specify)
 Special Instructions/QC Requirements:

Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: **Drop off**

Relinquished by: **R. Murphy** Date/Time: **11/11/15 1745** Company: **AECOM**
 Received by: **Car Corp** Date/Time: **11/11/15 1745** Company: **TA**

Relinquished by: _____ Date/Time: _____ Company: _____
 Received by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No Custody Seal No.: _____
 Cooler Temperature(s) °C and Other Remarks: **4.7 #1**

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11/30/2015



TestAmerica Buffalo

10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: R. MURPHY / T. IFRONICH		Lab PM: Deyo, Melissa L		Carrier Tracking No(s):		COC No: 480-74084-7612.2	
Client Contact: Ann Marie Kropovitch		Phone: 716 / 923-1176		E-Mail: melissa.deyo@testamericainc.com				Page: 1 of 1	
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested		Total Number of Containers		Preservation Codes: A - HCL M - Hexane B - NaOH N - Nona C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3 G - Amchlor 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)	
Address: 257 West Genesee St. Suite 400		TAT Requested (days):							
City: Buffalo		STANDARD		Field Filled Sample (Vial No)		8010B, 747DA		Special Instructions/Note: 480-91007 Chain of Custody DUPLICATE (BLIND) THIS IS TO BE INSTANTLY LEFT OUT OF REFRIGERATOR COOLER	
State, Zip: NY, 14202-2657		PO #: Ann_Marie_Kropovitch@URSCorp.com		8200B - Volatile Organic Compounds (GC/MS)		8270D - Semivolatile Compounds by GC/MS			
Phone: 716-856-5836(Tel) 716-856-2545(Fax)		WO #: Vendor # 1427536		8270D - Semivolatile Compounds by GC/MS					
Email: ann.marie.kropovitch@aecom.com		Project #: 48002609		SSOW#:					
Project Name: Pfohl Brothers Landfill GW Monitoring									
Site:									
Sample Identification		Sample Date		Sample Time		Sample Type (C-comp, G-grab)		Matrix (W-water, S-soil, O-others)	
GW-345		11/12/15		0850		GRAB		Water	
GW-285		11/12/15		0946		GRAB		Water	
GW-45		11/12/15		10135		GRAB		Water	
GW-4D		11/12/15		1130		GRAB		Water	
GW-7D		11/12/15		1153		GRAB		Water	
GW-7S		11/12/15		1158		GRAB		Water	
GW-33S		11/12/15		1259		GRAB		Water	
GW-35S		11/12/15		1402		GRAB		Water	
GW-26D		11/12/15		1511		GRAB		Water	
FD-111215		11/12/15		-		GRAB		Water	
TB-11115 / FB-111215		11/11/15 / 11/12/15		-		GRAB		Water	
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<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					<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)					Special Instructions/QC Requirements:				
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment: DROP OFF			
Relinquished by: [Signature]		Date/Time: 11/12/15 1630		Company: AECOM		Received by: [Signature]		Date/Time: 11/12/15 1630	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 4.3 #1					

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11/30/2015


TestAmerica Buffalo

10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: <i>Rob Muehl / Tim Ikonick</i>		Lab PM: Deyo, Melissa L		Carrier Tracking No(s):		COC No: 480-74084-7612.1	
Client Contact: Ann Marie Kropovitch		Phone: 716-923-1176		E-Mail: melissa.deyo@testamericainc.com				Page: Page 1 of 3	
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested				Job #:	
Address: 257 West Genesee St. Suite 400		TAT Requested (days): <i>STANDARD TAT</i>		Field Filtered Sample (Yes or No)				Preservation Codes:	
City: Buffalo		PO #: Ann_Marie_Kropovitch@URSCorp.com		8910B - Volatile Organic Compounds (GC/MS)				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid	
State, Zip: NY, 14202-2657		WO #: Vendor # 1427538		8260B - Volatile Organic Compounds (GC/MS)				M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2SO3 S - H2SO4 T - TSP Dodecahydrate	
Phone: 716-856-5636(Tel) 716-856-2545(Fax)		Project #: 48002609		8270D - Semivolatile Compounds by GC/MS				 480-91071 Chain of Custody	
Email: ann.marie.kropovitch@aecom.com		SSOW#:							
Project Name: Pfohl Brothers Landfill GW Monitoring									
Site:									

Sample Identification	Sample Date	Sample Time	Sample Type (C-comp, G-grab)	Matrix (Water, Sediment, Composite)	Preservation Code	Field Filtered Sample (Yes or No)	8910B - Volatile Organic Compounds (GC/MS)	8260B - Volatile Organic Compounds (GC/MS)	8270D - Semivolatile Compounds by GC/MS	Total	Special Instructions/Note:
GW-29S	11/13/15	0911	G	Water				3	2	6	
GW-30S	11/13/15	1002	G	Water				1	3	2	
GW-31S	11/13/15	1055	G	Water				1	3	2	
GW-32S	11/13/15	1150	G	Water				1	3	2	
GW-1S	11/13/15	1258	G	Water				1	3	2	
GW-1D	11/13/15	1407	G	Water				1	3	2	
TB-111315	11/13/15	-	G	Water					2		TRIP BLANK.
				Water							
				Water							
				Water							
				Water							

Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<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	<input type="checkbox"/> Return To Client	<input checked="" type="checkbox"/> Disposal By Lab	<input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:				
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment: <i>DROP OFF</i>				
Relinquished by: <i>[Signature]</i>	Date/Time: 11/13/15 1530	Company: <i>AECOM</i>	Received by: <i>[Signature]</i>	Date/Time: 11/13/15 1530	Company: <i>[Signature]</i>			
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:			
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:			
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: <i>5.0 #1</i>						

Case Narrative

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Job ID: 480-90909-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-90909-1**

Receipt

The samples were received on 11/11/2015 5:45 PM, 11/12/2015 4:30 PM and 11/13/2015 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 4.3° C, 4.7° C and 5.0° C.

GC/MS VOA

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-276460 recovered above the upper control limit for Vinyl Chloride and 1,1-Dichloroethene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: GW-3S (480-90909-1), GW-3D (480-90909-2), GW-8D (480-90909-3), GW-8SR (480-90909-4), GW-7D (480-90909-5) and GW-7S (480-90909-6).

Method(s) 8260C: The laboratory control sample (LCS) for batch analytical batch 480-276460 recovered outside control limits for the following analyte: Vinyl Chloride. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported. The following samples are impacted: GW-3S (480-90909-1), GW-3D (480-90909-2), GW-8D (480-90909-3), GW-8SR (480-90909-4), GW-7D (480-90909-5) and GW-7S (480-90909-6).

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-276712 recovered outside acceptance criteria, low biased, for Carbon tetrachloride. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. (480-91002-A-1)

Method(s) 8260C: The laboratory control sample (LCS) for analytical batch 480-276712 recovered outside control limits for the following analyte: Acetone. Acetone has been identified as poor performing analytes when analyzed using this method; therefore, re-analysis was not performed for the following samples: (480-91002-A-1).

Method(s) 8260C: The laboratory control sample (LCS) for analytical batch 480-276712 recovered outside control limits for the following analyte: Acetone. Acetone has been identified as a poor performing analyte when analyzed using this method; therefore, re-analysis was not performed for the following samples: GW-34S (480-91007-1), GW-28S (480-91007-2), GW-4S (480-91007-3), GW-4D (480-91007-4), GW-33S (480-91007-7), GW-35S (480-91007-8), GW-26D (480-91007-9), FD-111215 (480-91007-10) and TB-111215 (480-91007-12).

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

GC/MS Semi VOA

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 480-275572 was outside the method criteria for the following analyte: Phenol. 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 is considered estimated.

Method(s) 8270D, 8270D_LL_PAH: The following sample was diluted due to the nature of the sample matrix: GW-4D (480-91007-4). Elevated reporting limits (RLs) are provided.

Method(s) 8270D, 8270D_LL_PAH: The following samples required a dilution due to the nature of the sample matrix or for target analytes: GW-4D (480-91007-4). Because of these dilutions, the surrogate and spike concentration in the samples were reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: Six surrogates are used for this analysis. The laboratory's SOP allows two of these surrogates to be outside acceptance criteria without performing re-analysis. The following samples contained an allowable number of surrogate compounds outside limits: GW-8SR (480-90909-4), GW-29S (480-91071-1) and GW-30S (480-91071-2). These results have been reported and qualified.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 480-275357 was outside the method criteria for the following analyte: Phenol. 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 is considered estimated.

Case Narrative

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Job ID: 480-90909-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 480-275637 recovered above the upper control limit for Phenol . The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: GW-4D (480-91007-4).

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

Metals

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

Organic Prep

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 480-274902.

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with 275176.

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

4

QC Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 480-90909-2 MS
Matrix: Water
Analysis Batch: 275058

Client Sample ID: GW-3D
Prep Type: Total/NA
Prep Batch: 274592
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Magnesium	13.9		10.0	23.20		mg/L		93	75 - 125
Manganese	0.27	B	0.200	0.447		mg/L		90	75 - 125
Nickel	0.0016	J	0.200	0.187		mg/L		93	75 - 125
Silver	ND		0.0500	0.0483		mg/L		97	75 - 125
Sodium	138		10.0	148.8	4	mg/L		106	75 - 125
Zinc	0.0030	J	0.200	0.188		mg/L		92	75 - 125

Lab Sample ID: 480-90909-2 MSD
Matrix: Water
Analysis Batch: 275058

Client Sample ID: GW-3D
Prep Type: Total/NA
Prep Batch: 274592
%Rec. RPD

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	ND		0.200	0.196		mg/L		98	75 - 125	3	20
Arsenic	ND		0.200	0.201		mg/L		100	75 - 125	3	20
Barium	0.064		0.200	0.254		mg/L		95	75 - 125	3	20
Cadmium	ND		0.200	0.200		mg/L		100	75 - 125	2	20
Chromium	ND		0.200	0.204		mg/L		102	75 - 125	4	20
Copper	ND	F2	0.200	0.250	F2	mg/L		125	75 - 125	28	20
Iron	1.1		10.0	10.75		mg/L		96	75 - 125	1	20
Lead	ND		0.200	0.207		mg/L		103	75 - 125	4	20
Magnesium	13.9		10.0	23.79		mg/L		99	75 - 125	2	20
Manganese	0.27	B	0.200	0.457		mg/L		94	75 - 125	2	20
Nickel	0.0016	J	0.200	0.192		mg/L		95	75 - 125	2	20
Silver	ND		0.0500	0.0511		mg/L		102	75 - 125	6	20
Sodium	138		10.0	147.8	4	mg/L		96	75 - 125	1	20
Zinc	0.0030	J	0.200	0.227		mg/L		112	75 - 125	19	20

Lab Sample ID: MB 480-274846/1-A
Matrix: Water
Analysis Batch: 275148

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 274846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/13/15 11:15	11/14/15 13:21	1
Arsenic	ND		0.010	0.0056	mg/L		11/13/15 11:15	11/14/15 13:21	1
Barium	ND		0.0020	0.00070	mg/L		11/13/15 11:15	11/14/15 13:21	1
Cadmium	ND		0.0010	0.00050	mg/L		11/13/15 11:15	11/14/15 13:21	1
Chromium	ND		0.0040	0.0010	mg/L		11/13/15 11:15	11/14/15 13:21	1
Copper	ND		0.010	0.0016	mg/L		11/13/15 11:15	11/14/15 13:21	1
Iron	0.0288	J	0.050	0.019	mg/L		11/13/15 11:15	11/14/15 13:21	1
Lead	ND		0.0050	0.0030	mg/L		11/13/15 11:15	11/14/15 13:21	1
Magnesium	ND		0.20	0.043	mg/L		11/13/15 11:15	11/14/15 13:21	1
Manganese	ND		0.0030	0.00040	mg/L		11/13/15 11:15	11/14/15 13:21	1
Nickel	ND		0.010	0.0013	mg/L		11/13/15 11:15	11/14/15 13:21	1
Silver	ND		0.0030	0.0017	mg/L		11/13/15 11:15	11/14/15 13:21	1
Sodium	ND		1.0	0.32	mg/L		11/13/15 11:15	11/14/15 13:21	1
Zinc	0.00166	J	0.010	0.0015	mg/L		11/13/15 11:15	11/14/15 13:21	1

TestAmerica Buffalo

QC Sample Results

Client: AECOM, Inc.
Project/Site: Pfohl Brothers Landfill GW Monitoring

TestAmerica Job ID: 480-90909-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-274592/1-A
Matrix: Water
Analysis Batch: 275058

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 274592

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	ND		0.020	0.0068	mg/L		11/12/15 11:14	11/13/15 12:10	1
Arsenic	ND		0.010	0.0056	mg/L		11/12/15 11:14	11/13/15 12:10	1
Barium	ND		0.0020	0.00070	mg/L		11/12/15 11:14	11/13/15 12:10	1
Cadmium	ND		0.0010	0.00050	mg/L		11/12/15 11:14	11/13/15 12:10	1
Chromium	ND		0.0040	0.0010	mg/L		11/12/15 11:14	11/13/15 12:10	1
Copper	ND		0.010	0.0016	mg/L		11/12/15 11:14	11/13/15 12:10	1
Iron	ND		0.050	0.019	mg/L		11/12/15 11:14	11/13/15 12:10	1
Lead	ND		0.0050	0.0030	mg/L		11/12/15 11:14	11/13/15 12:10	1
Magnesium	ND		0.20	0.043	mg/L		11/12/15 11:14	11/13/15 12:10	1
Manganese	0.000570	J	0.0030	0.00040	mg/L		11/12/15 11:14	11/13/15 12:10	1
Nickel	ND		0.010	0.0013	mg/L		11/12/15 11:14	11/13/15 12:10	1
Silver	ND		0.0030	0.0017	mg/L		11/12/15 11:14	11/13/15 12:10	1
Sodium	ND		1.0	0.32	mg/L		11/12/15 11:14	11/13/15 12:10	1
Zinc	ND		0.010	0.0015	mg/L		11/12/15 11:14	11/13/15 12:10	1

Lab Sample ID: LCS 480-274592/2-A
Matrix: Water
Analysis Batch: 275058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 274592

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec.	Limits
		Result	Qualifier					
Antimony	0.200	0.187		mg/L		94		80 - 120
Arsenic	0.200	0.189		mg/L		95		80 - 120
Barium	0.200	0.189		mg/L		94		80 - 120
Cadmium	0.200	0.193		mg/L		96		80 - 120
Chromium	0.200	0.200		mg/L		100		80 - 120
Copper	0.200	0.187		mg/L		94		80 - 120
Iron	10.0	9.57		mg/L		96		80 - 120
Lead	0.200	0.193		mg/L		97		80 - 120
Magnesium	10.0	9.99		mg/L		100		80 - 120
Manganese	0.200	0.191		mg/L		95		80 - 120
Nickel	0.200	0.182		mg/L		91		80 - 120
Silver	0.0500	0.0488		mg/L		98		80 - 120
Sodium	10.0	9.56		mg/L		95		80 - 120
Zinc	0.200	0.191		mg/L		95		80 - 120

Lab Sample ID: 480-90909-2 MS
Matrix: Water
Analysis Batch: 275058

Client Sample ID: GW-3D
Prep Type: Total/NA
Prep Batch: 274592

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Antimony	ND		0.200	0.191		mg/L		95	75 - 125
Arsenic	ND		0.200	0.195		mg/L		97	75 - 125
Barium	0.064		0.200	0.248		mg/L		92	75 - 125
Cadmium	ND		0.200	0.195		mg/L		98	75 - 125
Chromium	ND		0.200	0.196		mg/L		98	75 - 125
Copper	ND	F2	0.200	0.188		mg/L		94	75 - 125
Iron	1.1		10.0	10.87		mg/L		98	75 - 125
Lead	ND		0.200	0.198		mg/L		99	75 - 125

TestAmerica Buffalo

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 Pfohl Brothers Landfill		
Site Address: Aero Drive and Transit Road	Zip Code: 14225	
City/Town: Cheektowaga		
County: Erie		
Site Acreage: 94.0		
Reporting Period: February 12, 2015 to February 12, 2016		
		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"/>
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?		<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/ECs 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
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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
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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	Ground Water Use Restriction Landuse Restriction Building Use Restriction
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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.

81.04-2-11

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.

81.04-2-9.1

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.

82.03-4-10

Elizabeth L. McBride

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.

82.03-4-11

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.

82.03-4-5

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.

82.03-4-6

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.

82.03-4-8

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.

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:

- 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.

82.03-4-9.12

Stuart Jenkins

Ground Water Use Restriction
Landuse Restriction
Building Use Restriction

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.

82.03-4-9.2

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:

- 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.

Box 4

Description of Engineering Controls

<u>Parcel</u>	<u>Engineering Control</u>
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
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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
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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
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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
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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
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For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

<u>Parcel</u>	<u>Engineering Control</u>
82.03-4-10	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
82.03-4-11	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 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 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. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or 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

2/4/16
Date

IC/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
275 Alexander Ave, Cheektowaga, NY 14211
print name 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~~ Rendering Certification
Site O&M Provider/Manager



2/4/16

Date

Stamp
(Required for PE)