



April 30, 2015

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

**Re: 2014 Periodic Review Report  
Pfohl Brothers Landfill, Town of Cheektowaga, New York  
Site 915043**

Dear Mr. Szymanski:

Enclosed is the 2014 Periodic Review Report (PRR) for the Pfohl Brothers Landfill in Cheektowaga, New York. URS has prepared this report on the behalf of the Town of Cheektowaga in accordance with your correspondence to me on April 15, 2014. Specifically, starting with this PRR, no separate Semi-Annual report for the July-December period is submitted. It is included only as an attachment to this report. Additionally, the Data Applicability Reports for each semi-annual periods are included.

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

**PERIODIC REVIEW REPORT 2014  
AND  
JULY 2014 - DECEMBER 2014 SEMI-ANNUAL REPORT  
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**

**Prepared for:**

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

**APRIL 2015**

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Figure 2-1      Site Plan

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Attachment B    July 2014 – December 2014 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 2014, 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 2014 are attached to this Periodic Review Report. A summary of the findings of performance, effectiveness, and protectiveness for 2014 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 rounds of semi-annual groundwater sampling. The most recent sampling was conducted in May and November 2013. 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 2014 sampling event. However, bis(2-ethylhexyl)phthalate was detected slightly above Class GA water quality standards at 17 of 19 well locations in November 2014. This is the first time it has been detected in this many wells during a single sampling event. Since O&M sampling began in 2004, bis(2-ethylhexyl)phthalate has only been detected above Class GA standards in two wells (i.e., GW-07D and GW-31S). This SVOC is a known laboratory contaminant, and the bis(2-ethylhexyl)phthalate results for wells GW-01D, GW-01S, GW-30S, GW-31S, GW-32S, and GW-33S were qualified as biased high due to blank contamination. The presence of this SVOC will be closely monitored during the May 2015 sampling event.

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. No other metals were detected above Class GA standards in 2014. 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 2014 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 2014. 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 2014. 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 2014. 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 2014 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**

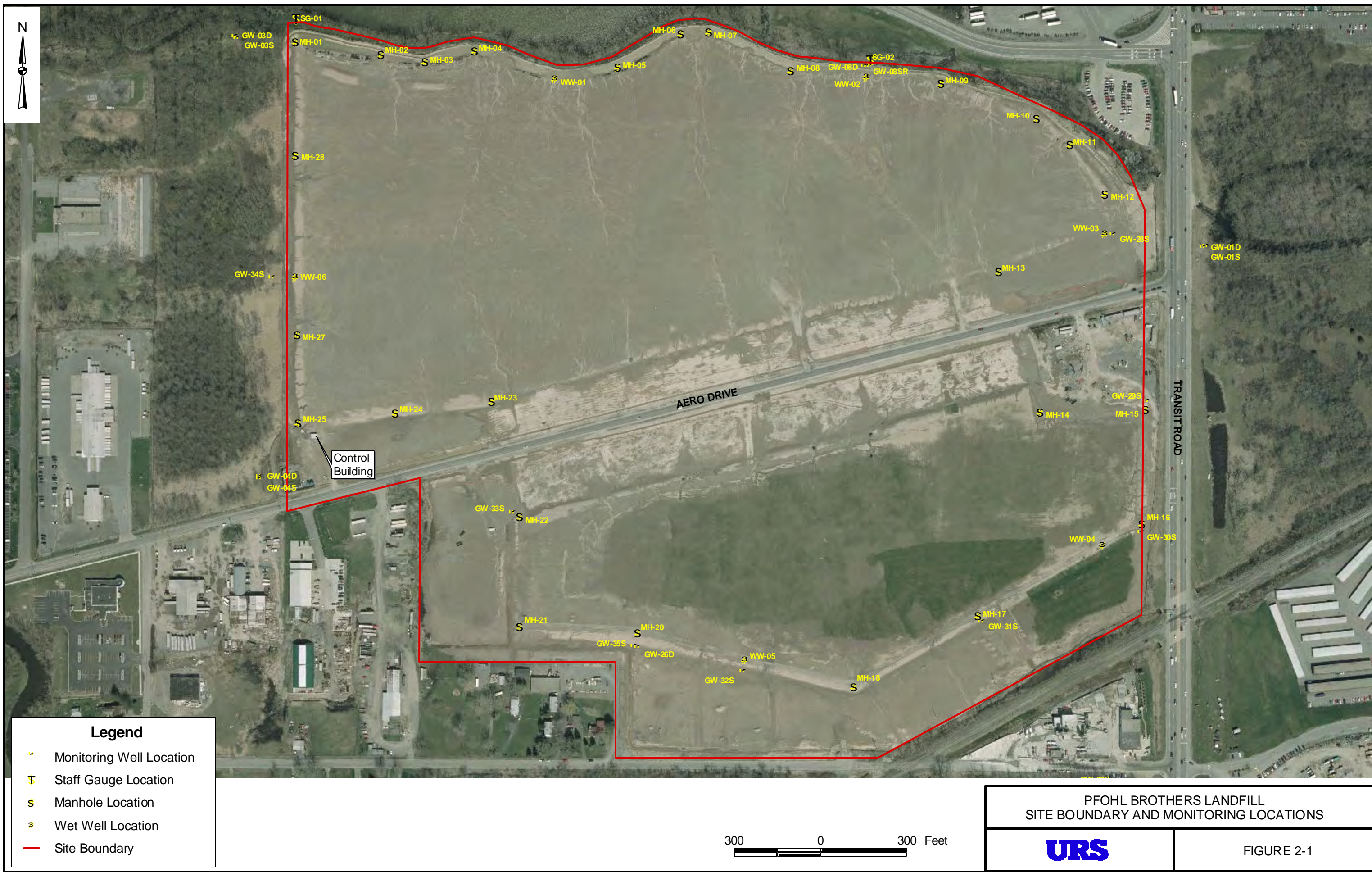
The components of the OM&M Plan are discussed above in Section 3.0. Summaries of OM&M activities performed during 2014 are provided in the attached semi-annual reports. The OM&M activities show that the landfill and its groundwater/leachate collection system are operating as intended, and receive repairs 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







## **ATTACHMENTS**



**ATTACHMENT A**

**January 2014 – June 2014**

**Semi Annual Report**

**And**

**Data Applicability Report**

**SEMI ANNUAL REPORT  
OPERATION AND MAINTENANCE  
JANUARY 2014 TO JUNE 2014  
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**

**NOVEMBER  
2014**



November 26, 2014

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

**Re:    Semi-Annual Report January 2014 – June 2014  
       Pfohl Brothers Landfill, Town of Cheektowaga, New York**

Dear Mr. Walia:

Enclosed is one copy of the twenty-first 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", is positioned above the printed name.

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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## 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 2014 – June 2014)
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-first 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 2014 through June 2014 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 January 2014 through June 2014, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shutdown during wet weather flow conditions throughout the year to reduce hydraulic loading to the sewer. Such actions were only taken upon request of the Buffalo Sewer Authority 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 wet wells.
- Replaced surge suppressors and fuses as needed for pump station instrumentation equipment.
- Replaced discharge hose at WW-5 (February 2014).

### **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-first 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 this 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-first semi-annual round of groundwater sampling was conducted between May 21, 2014 and May 23, 2014. 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 20, 2014. 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 (this 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.

### 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-one 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-one sampling events. Figure E-3 for GW-03D indicates a downward trend for manganese. Figure E-4 indicates a slight upward trend for magnesium 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 decreased significantly this event 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. Figures E-12 for GW-28S indicates a decreasing trend for sodium since monitoring began. Figure E-13 for GW-29S show a downward trend for sodium since monitoring began. Figure E-14 for GW-30S indicates a downward trend for iron, magnesium, manganese, and sodium. Figure E-16 shows there is a seasonal variation in sodium concentration in monitoring well GW-32S. Figures E-17 and E-18 for GW-33S and GW-34S, respectively, indicate a seasonal fluctuation in manganese concentration. Figure E-18 also shows an upward trend in magnesium concentrations over the last four sampling events in GW-34S.

### 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: USEPA *Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA-540-R-99-008, October 1999; USEPA *CLP National Functional Guidelines for Inorganic Data Review*, EPA-540-R-01-008, July 2002; and USEPA *Region II Data Validation SOP for SW-846 Method 8290, PCDDs and PCDFs by High Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS)*, SOP No. HW-19, Revision 1, October 1994. 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 August 2014 is submitted separately from this report.

### **3.3 Groundwater Discharge Monitoring**

URS completed two quarterly sampling events (March 2014 and June 2014) 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 2014 and June 2014, 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 2014 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-second round of groundwater sampling will be conducted in November 2014. 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.

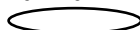
## **TABLES**

**TABLE 3-1**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**MAY 2014**

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			05/23/14	05/23/14	05/21/14	05/21/14	05/22/14
Parameter	Units	Criteria*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5					
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3			1.1 J		
1,4-Dichlorobenzene	UG/L	3			1.7 J		
bis(2-Ethylhexyl)phthalate	UG/L	5					
<b>Metals</b>							
Arsenic	MG/L	0.025		0.0068 J			
Barium	MG/L	1	0.071	0.17	0.091	0.14	0.079
Cadmium	MG/L	0.005		0.0013		0.00085 J	
Chromium	MG/L	0.05	0.0017 J			0.016	0.0025 J
Copper	MG/L	0.2				0.0031 J	
Iron	MG/L	0.3	0.91	7.3	1.9	1.7	0.32
Lead	MG/L	0.025				0.0030 J	
Magnesium	MG/L	35	33.8	21.6	18.6	103	72.6
Manganese	MG/L	0.3	0.019	1.5	0.48	0.21	0.025
Nickel	MG/L	0.1		0.0013 J	0.0036 J	0.10	0.0014 J
Sodium	MG/L	20	99.3	106	188	80.8	84.1
Zinc	MG/L	2		0.0029 J	0.0021 J		0.0024 J

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

Flags assigned during chemistry validation are shown.

 Concentration Exceeds Criteria

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 2014**

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			05/22/14	05/21/14	05/22/14	05/21/14	05/22/14
Parameter	Units	Criteria*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5			NA		NA
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
bis(2-Ethylhexyl)phthalate	UG/L	5		NA		NA	
<b>Metals</b>							
Arsenic	MG/L	0.025		NA		NA	
Barium	MG/L	1	0.10	NA	0.067	NA	0.29
Cadmium	MG/L	0.005	0.00080 J	NA		NA	
Chromium	MG/L	0.05	0.0056	NA	0.031	NA	0.0055
Copper	MG/L	0.2		NA		NA	
Iron	MG/L	0.3	1.6	NA	0.96	NA	0.22
Lead	MG/L	0.025		NA	0.021	NA	
Magnesium	MG/L	35	26.8	NA	32.9	NA	36.2
Manganese	MG/L	0.3	0.14	NA	0.034	NA	0.10
Nickel	MG/L	0.1	0.0071 J	NA	0.022	NA	0.012
Sodium	MG/L	20	31.9	NA	81.3	NA	55.8
Zinc	MG/L	2	0.012	NA	0.015	NA	0.0092 J

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

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria

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 2014**

Location ID			GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID			GW-8D	GW-8SR	FD-052214	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/21/14	05/21/14	05/22/14	05/22/14	05/22/14
Parameter	Units	Criteria*			Field Duplicate (1-1)		
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5			1.4 J	1.5 J	
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5	2.0 J				
<b>Metals</b>							
Arsenic	MG/L	0.025		0.0086 J		0.0059 J	
Barium	MG/L	1	0.11	0.38	0.12	0.12	0.076
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.0089	0.0030 J			0.0018 J
Copper	MG/L	0.2	0.0031 J				
Iron	MG/L	0.3	0.18	28.1	4.4	4.5	0.47
Lead	MG/L	0.025					
Magnesium	MG/L	35	19.5	48.4	17.3	17.5	25.6
Manganese	MG/L	0.3	0.069	1.3	0.53	0.54	0.90
Nickel	MG/L	0.1	0.0042 J	0.0054 J	0.0020 J	0.0016 J	0.0028 J
Sodium	MG/L	20	266	343	286	289	12.0
Zinc	MG/L	2					0.0074 J

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

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria

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

NA - Not Analyzed.

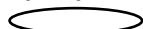
Only Detected Results Reported.

**TABLE 3-1**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**MAY 2014**

Location ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/22/14	05/23/14	05/23/14	05/23/14	05/23/14
Parameter	Units	Criteria*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5					
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5			2.7 J		
<b>Metals</b>							
Arsenic	MG/L	0.025	0.024				
Barium	MG/L	1	0.18	0.12	0.048	0.056	0.032
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.0017 J				
Copper	MG/L	0.2			0.0022 J		
Iron	MG/L	0.3	13.2	12.0	0.58	0.029 J	
Lead	MG/L	0.025					
Magnesium	MG/L	35	63.2	32.2	25.3	32.7	35.5
Manganese	MG/L	0.3	0.78	1.2	0.73	0.53	0.028
Nickel	MG/L	0.1	0.0015 J		0.0036 J	0.0017 J	0.0013 J
Sodium	MG/L	20	8.1	72.7	3.7	3.3	3.4
Zinc	MG/L	2	0.0048 J	0.0018 J	0.0081 J	0.0037 J	0.0035 J

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

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria

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 2014**

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			05/22/14	05/22/14
Parameter	Units	Criteria*		
<b>Volatile Organic Compounds</b>				
1,2-Dichloroethene (total)	UG/L	5		
<b>Semivolatile Organic Compounds</b>				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
bis(2-Ethylhexyl)phthalate	UG/L	5		
<b>Metals</b>				
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.12	0.084
Cadmium	MG/L	0.005		
Chromium	MG/L	0.05	0.0035 J	
Copper	MG/L	0.2		
Iron	MG/L	0.3	1.0	0.071
Lead	MG/L	0.025		
Magnesium	MG/L	35	65.2	22.9
Manganese	MG/L	0.3	0.32	0.21
Nickel	MG/L	0.1	0.0086 J	0.0013 J
Sodium	MG/L	20	45.6	2.5
Zinc	MG/L	2	0.0041 J	0.0037 J

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

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria

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)**

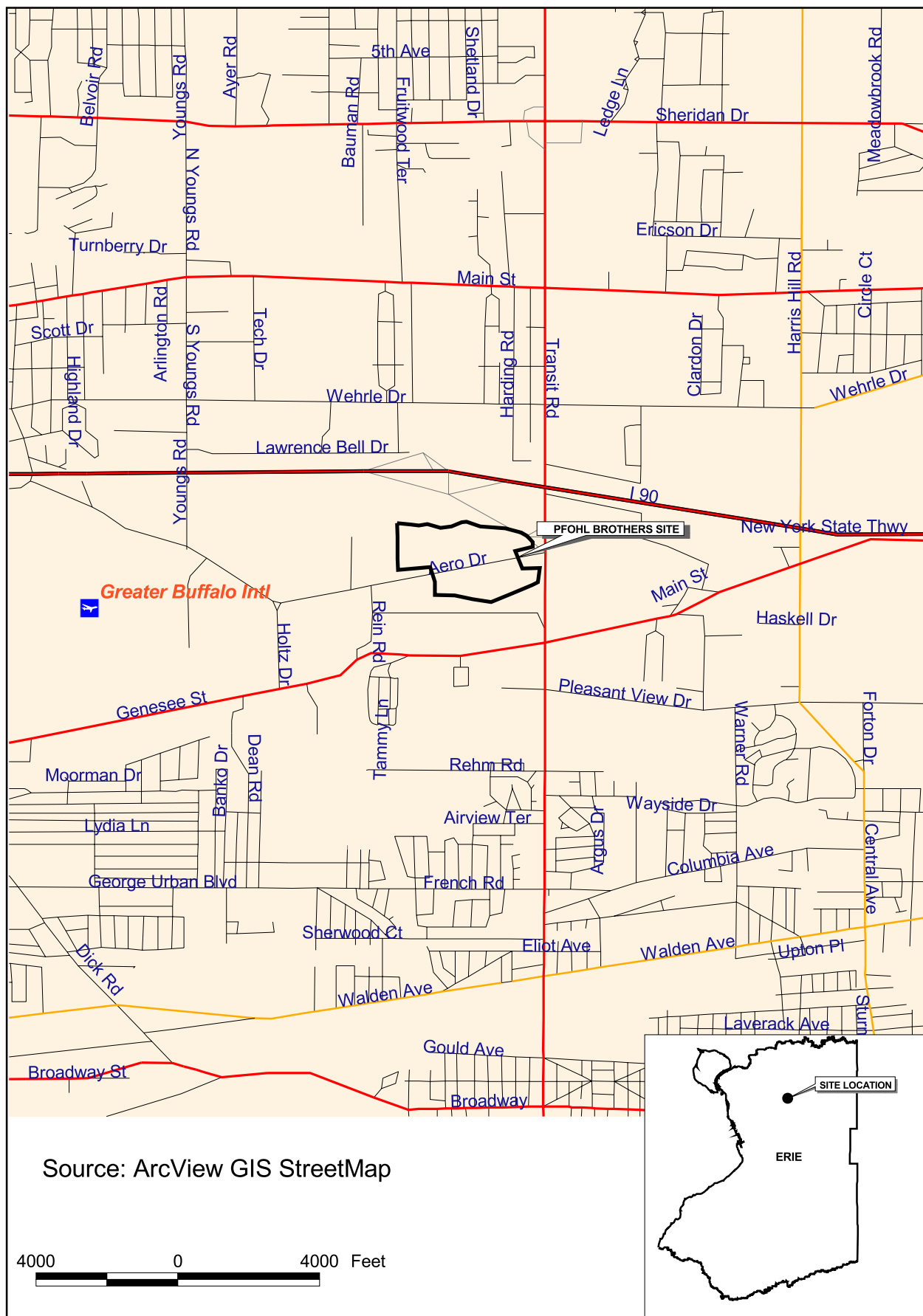
**APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN**

**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**





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



### Legend

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

400 0 400 Feet

PFOHL BROTHERS LANDFILL  
MONITORING LOCATIONS

**URS**

FIGURE 3-1



**APPENDIX A**

**EXAMPLE DAILY INSPECTION SHEETS**

# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 2/6/14  
Time 9:00 AM

Weather conditions COLD, CLEAR 15°  
Read by: Bill PUGH

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	5.3	38.9	240,347	2709
WW-2	4.6	0	-20,625	144
WW-1	4.1	-35.4	1,363,380	3326
WW-6	7.1	62.9	3,048,196	10,368
WW-4	6.9	0	794,509	6083
WW-5	6.8	0	2,895,324	11,835

Flow Totalizer at Meter chamber 8,657,463

Heat Trace

Outside temp T = 14  
Current A = 2.3 A

Set point SP = 40

Surge Suppressor events 415,692

Motor Control Center

Volts 480 volts  
Amps 9 amps

Which WW was running?

1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 ☐ 6 ☒

Filter Checked ☐ Changed ☐

3 MANUAL

Comments and/or Current Conditions

RESET LEVEL INVALID ALARM WW6 - WW6 BEGAN  
PUMPING ON AUTO, RAN WW3 MANUAL FOR 45 MIN.

NEGATIVE FLOW INTO WW1 WHEN WW3 ALONE,  
OR WW6 ALONE PUMPING. - NEEDS TO

SERVICE BALL/CHECK VALVE WW1 WHEN WEATHER  
PERMITS. - 8" SNOW FELL YESTERDAY ON  
TOP OF SEVERAL EXISTING INCHES ACROSS SITE.



# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 3/14/14  
Time 1:30

Weather conditions SUNNY 52°  
Read by: BILL PUGH

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	5.8	0 (26.0)	311,038	2758
WW-2	4.7	0	-20,625	144
WW-1	5.3	0	1,450,786	3392
WW-6	8.4	0 (46.6)	3,411,251	10,477
WW-4	8.1	0 (24.8)	794,509	6083
WW-5	8.7	0 (30.6)	3,362,018	11,997

Flow Totalizer at Meter chamber ARRIVAL DEPARTURE 9,672,269

Heat Trace

Outside temp T = 52°  
Current A = 0

Set point SP = 40

Surge Suppressor events 415,708

Motor Control Center

Volts 480 volts  
Amps 3 amps

Which WW was running?

1 ☒ 2 ☐ 3 ☐ 4 ☒ 5 ☐ 6 ☒

Filter ☒ Checked ☐ Changed ☐

Comments and/or Current Conditions

SYSTEM SET TO INITIATE FLOW AT ARRIVAL  
RESET LEVEL INVALID ALARM WW6

8" to 10" OF SNOWFALL FELL ON 3/12/14 -

MELTING RAPIDLY TODAY

SPOKE TO JON N. AND ME

DE-ACTIVATED INHIBIT AND WW1, 6, 4, & 5 NOW  
PUMPING IN AUTO MODE

# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

6/2/14

Weather conditions

SUNNY 80°

Time

2:30

Read by:

BILL PUGH

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	5.6	0	31,201	2758
WW-2	4.7	0	-20,624	144
WW-1	4.8	0	2,160,332	3869
WW-6	7.4	34.5	4,733,017	10,909
WW-4	8.1	23.5	1,176,216	6390
WW-5	8.7	35.1	4,670,766	12,510

Flow Totalizer at Meter chamber

13,481,576

Heat Trace

Outside temp T = 80

Set point SP = 40

Current A = 0

Surge Suppressor events

415,719

Motor Control Center

Volts

480

volts

Which WW was running?

Amps

10

amps

1 ☐ 2 ☐ 3 ☐ 4 ☒ 5 ☒ 6 ☒

Filter

Checked ☐

Changed ☐

Comments and/or Current Conditions

SITE INHIBIT FEATURE ON UPON ARRIVAL -

CONTACTED JON N. AND CANCELED

NEG FLOW ALARM WW 4 CANCELED

PUMP FAILURE ALARM WW 3 - DOES NOT CLEAR

**APPENDIX B**

**MONTHLY FLOW SUMMARIES**  
**JANUARY 2014 – JUNE 2014**

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

February 8, 2014

Mr. William R. Pugh, P.E.  
Town Engineer  
Town of Cheektowaga

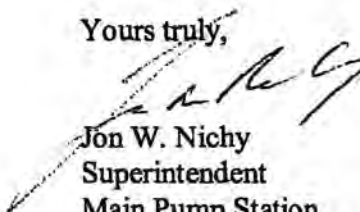
Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

Enclosed for your review, please find a copy of the January 2014 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,

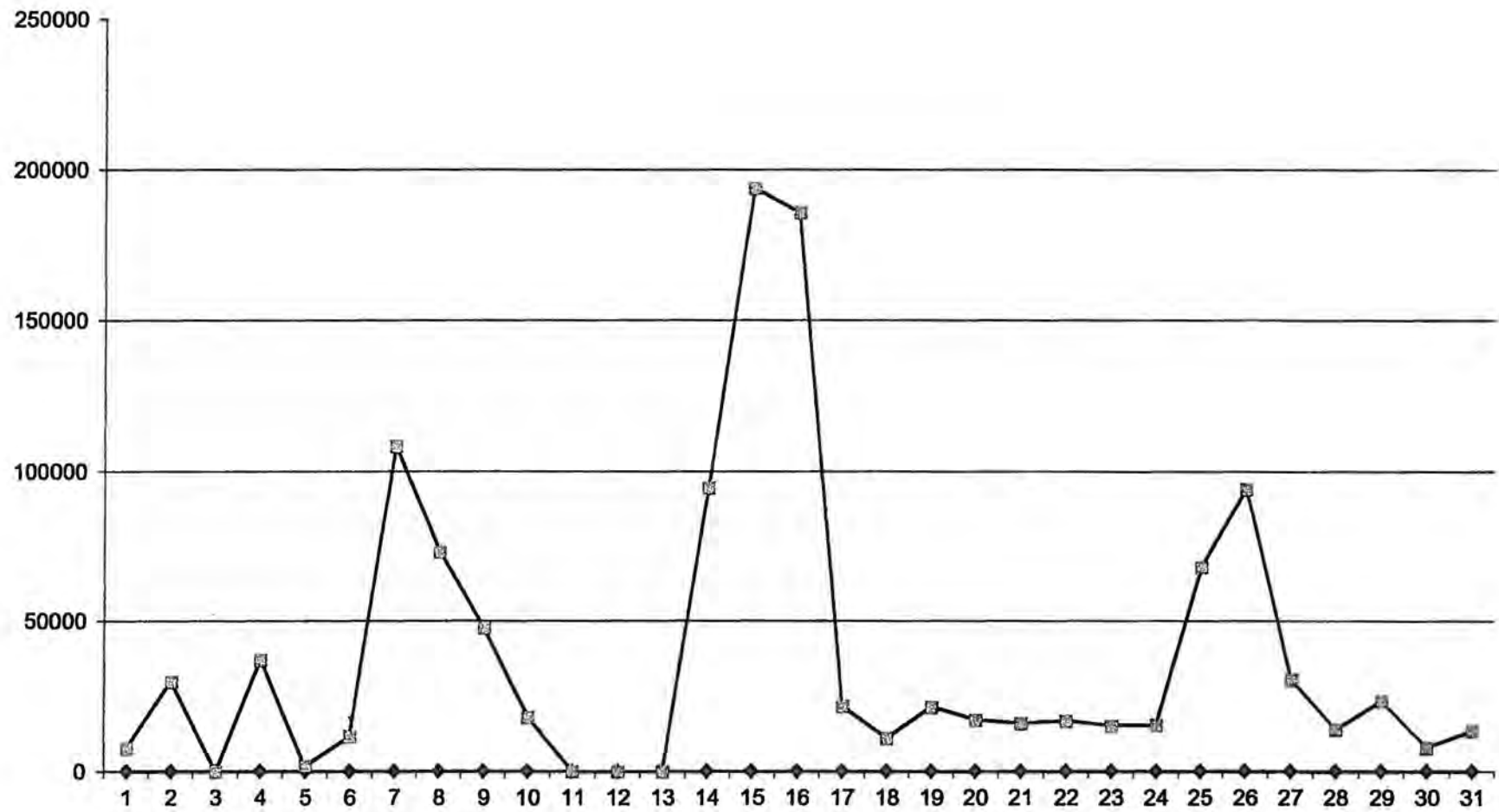
  
Jon W. Nichy  
Superintendent  
Main Pump Station

# Direct Discharge Flow Data

12/31/2013

		7198832	35,778	7,198,845	
Jan-14	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		7206603	7,772	7,206,617	
2		7236400	29,797	7,236,414	
3		7236400	0	7,236,414	
4		7273356	36,956	7,273,370	
5		7275119	1,763	7,275,133	
6		7286707	11,589	7,286,722	12:19inhibit 21:26enable
7		7395123	108,416	7,395,138	
8		7468082	72,959	7,468,097	
9		7515720	47,638	7,515,735	
10		7533636	17,916	7,533,651	21:39 inhibit
11		7533636	0	7,533,651	
12		7533636	0	7,533,651	
13		7533636	0	7,533,651	
14		7628197	94,561	7,628,212	10:37 enable
15		7822014	193,818	7,822,030	
16		8007764	185,750	8,007,780	
17		8029356	21,592	8,029,372	
18		8040473	11,118	8,040,490	
19		8061808	21,335	8,061,825	
20		8078970	17,162	8,078,987	
21		8094978	16,008	8,094,995	
22		8111744	16,767	8,111,762	
23		8126994	15,250	8,127,012	
24		8142465	15,471	8,142,483	
25		8210208	67,743	8,210,226	
26		8304441	94,233	8,304,459	
27		8334913	30,473	8,334,932	
28		8349023	14,110	8,349,042	
29		8372425	23,402	8,372,444	
30		8380427	8,002	8,380,446	
31		8394006	13,580	8,394,026	
		1,195,174	1,195,181	1,195,181	

**January  
2014**



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

March 5, 2014

Mr. William R. Pugh, P.E.  
Town Engineer  
Town of Cheektowaga

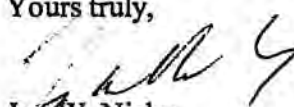
Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

Enclosed for your review, please find a copy of the February 2014 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

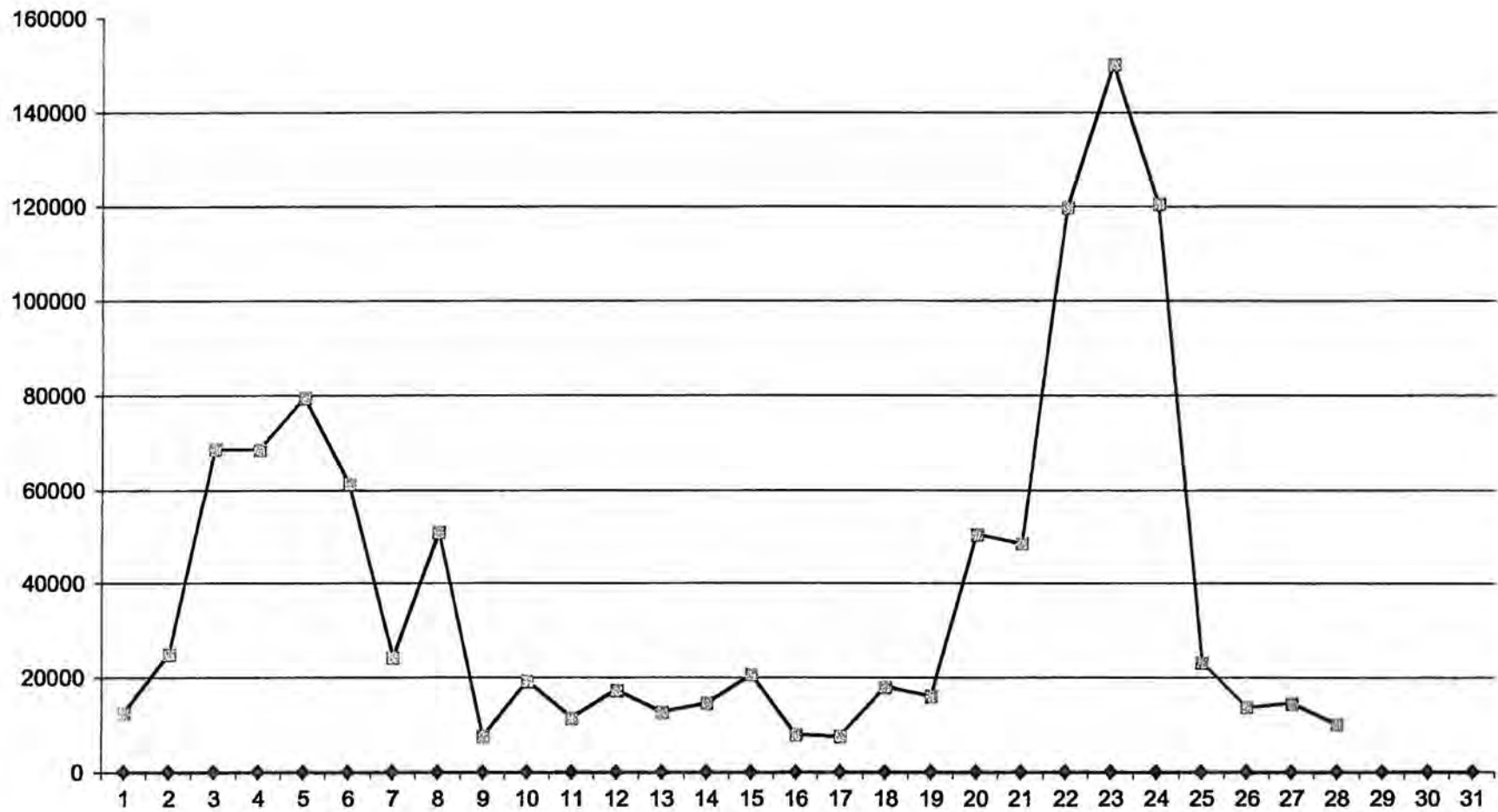


## Direct Discharge Flow Data

1/31/2014		8394006	13,580	8,394,026	
<b>Feb-14</b>	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		8406614	12,608	8,406,634	20:48 inhibit
2		8431596	24,982	8,431,616	12:50 enable
3		8500393	68,797	8,500,413	
4		8569086	68,693	8,569,106	
5		8648631	79,545	8,648,651	
6		8710075	61,444	8,710,095	
7		8734427	24,352	8,734,447	
8		8785341	50,914	8,785,361	
9		8792997	7,656	8,793,017	
10		8812269	19,272	8,812,289	
11		8823786	11,517	8,823,806	
12		8841132	17,346	8,841,152	
13		8853906	12,774	8,853,926	
14		8868509	14,603	8,868,529	
15		8889215	20,706	8,889,235	
16		8897225	8,010	8,897,245	
17		8904871	7,646	8,904,891	
18		8922927	18,056	8,922,947	
19		8939009	16,082	8,939,029	
20		8989436	50,427	8,989,456	17:45 inhibit
21		9037847	48,411	9,037,867	
22		9157675	119,828	9,157,695	7:31 enable
23		9307805	150,130	9,307,825	
24		9428376	120,571	9,428,396	
25		9451537	23,161	9,451,557	
26		9465259	13,722	9,465,279	
27		9479814	14,555	9,479,834	
28		9489955	10,141	9,489,975	
29					
30					
31					
		1,095,949	1,095,949	1,095,949	



**February  
2014**



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

April 10, 2014

Mr. William R. Pugh, P.E.  
Town Engineer  
Town of Cheektowaga

Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

Enclosed for your review, please find a copy of the March 2014 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", is written over the typed name and title.

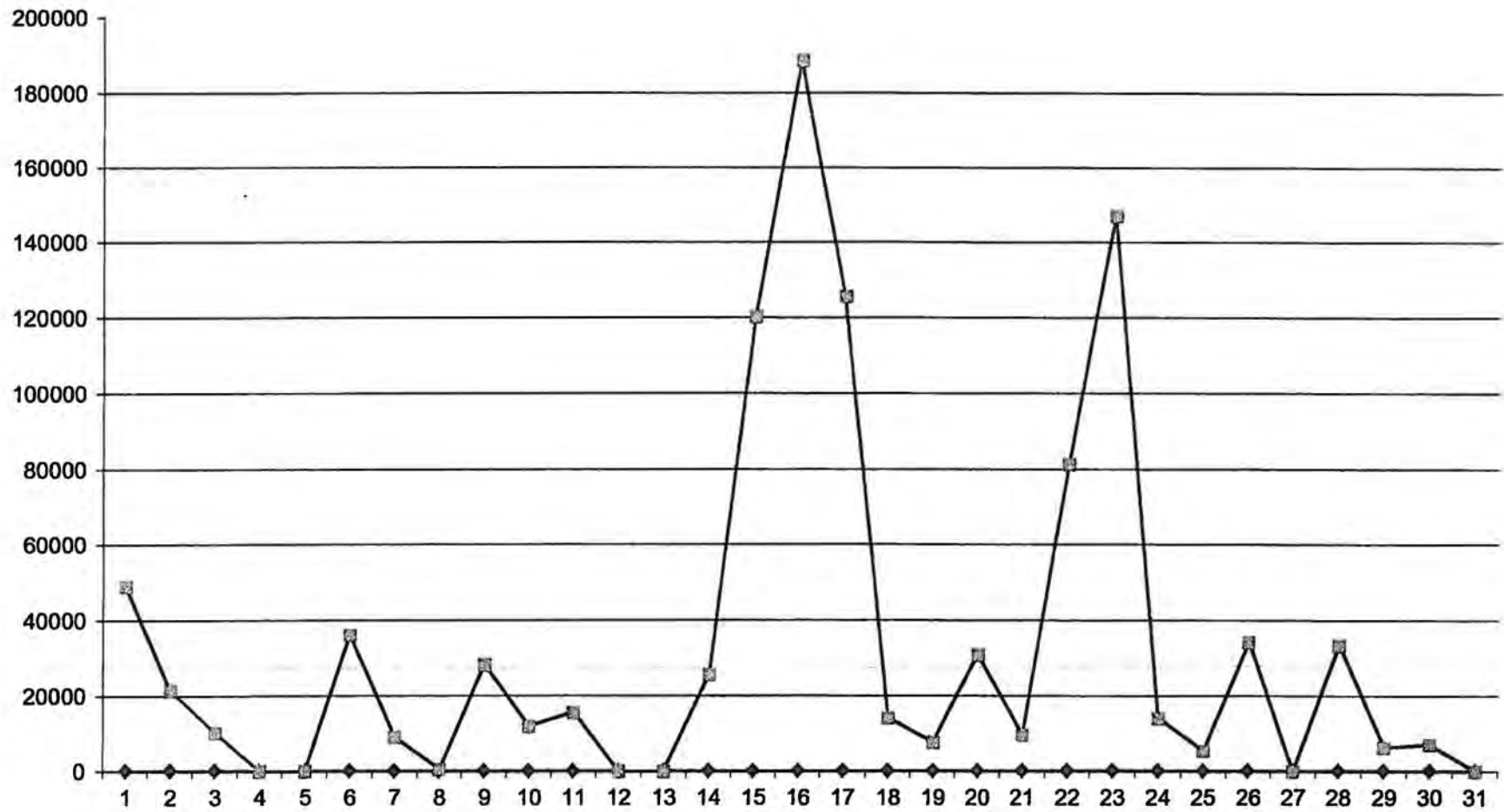
Jon W. Nichy  
Superintendent  
Main Pump Station

## Direct Discharge Flow Data

2/28/2014

		9489955	10,141	94,989,975	
<b>Mar-14</b>	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		9538885	48,930	95,038,905	
2		9560300	21,415	95,060,320	
3		9570596	10,296	95,070,616	
4		9570596	0	95,070,616	
5		9570596	0	95,070,616	
6		9606733	36,137	95,106,753	
7		9615870	9,137	95,115,890	
8		9616467	597	95,116,487	
9		9644649	28,182	95,144,669	
10		9656608	11,959	95,156,628	
11		9672269	15,661	95,172,289	
12		9672269	0	95,172,289	
13		9672269	0	95,172,289	
14		9697909	25,640	95,197,929	
15		9818231	120,322	95,318,251	
16		10006772	188,541	95,506,792	
17		10132381	125,609	95,632,401	
18		10146564	14,183	95,646,584	
19		10154273	7,709	95,654,293	
20		10185087	30,814	95,685,107	
21		10194819	9,732	95,694,839	
22		10276159	81,340	95,776,179	
23		10423241	147,082	95,923,261	
24		10437386	14,145	95,937,406	
25		10442884	5,498	95,942,904	
26		10477113	34,229	95,977,133	
27		10477113	0	95,977,133	
28		10510508	33,395	96,010,528	
29		10516813	6,305	96,016,833	
30		10523988	7,175	96,024,008	
31		10523988	0	96,024,008	
		<b>1,034,033</b>	<b>1,034,033</b>	<b>1,034,033</b>	

March  
2014



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

May 7, 2014

Mr. William R. Pugh, P.E.  
Town Engineer  
Town of Cheektowaga

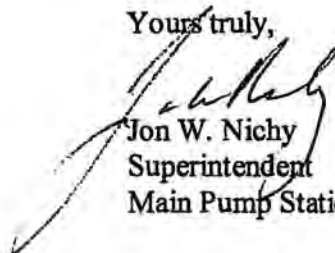
Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

Enclosed for your review, please find a copy of the April 2014 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

3/31/2014

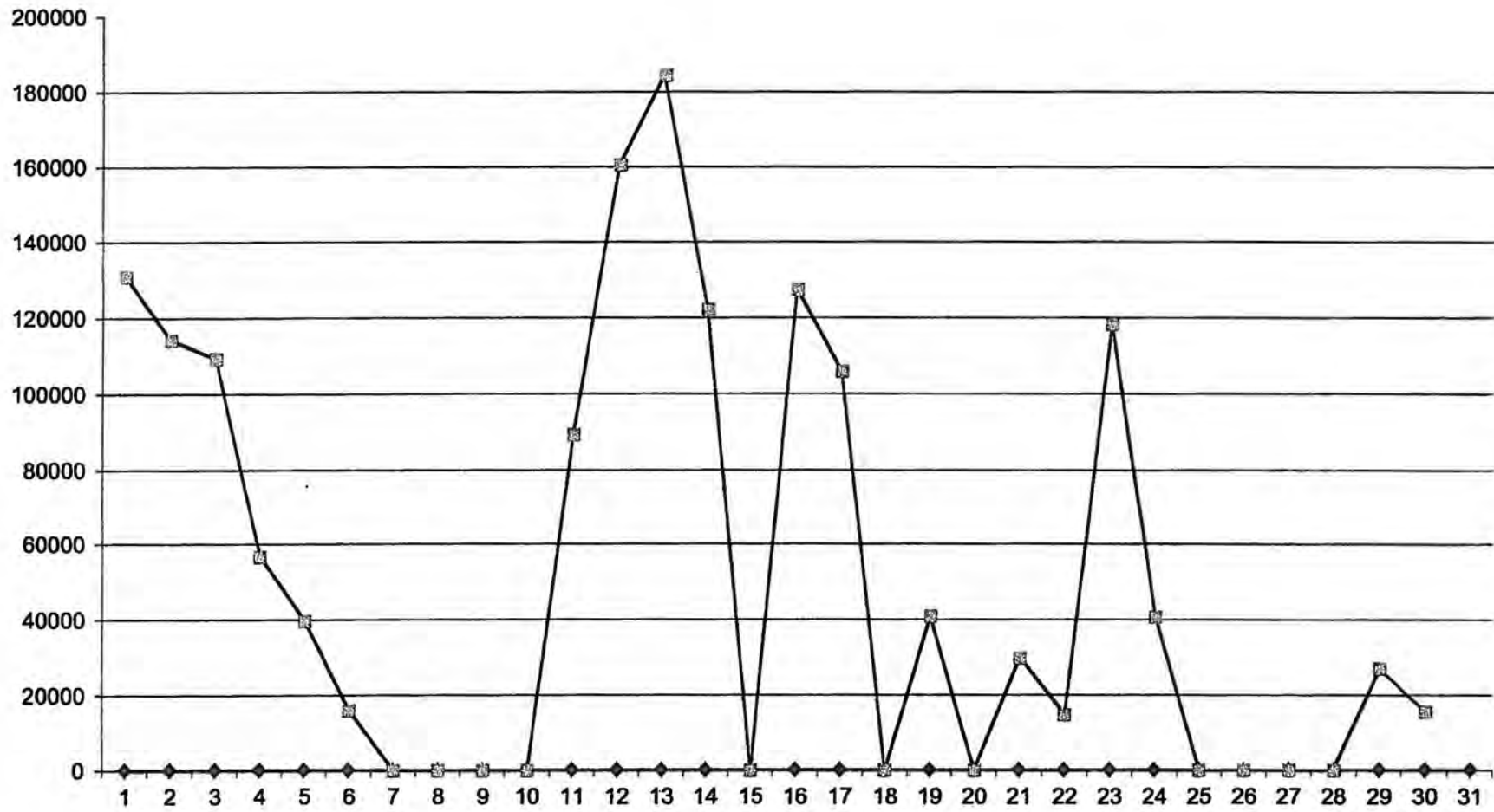
10523988

0

10,524,008

Apr-14	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		10354950	130,962	10,654,970	
2		10769222	114,272	10,769,242	
3		10878654	109,432	10,878,674	
4		10935338	56,684	10,935,358	14:44 inhibit
5		10975013	39,675	10,975,033	10:01 enable
6		10991107	16,094	10,991,127	
7		10991107	0	10,991,127	17:33 inhibit
8		10991107	0	10,991,127	
9		10991107	0	10,991,127	
10		10991107	0	10,991,127	
11		11080525	89,418	11,080,545	06:25 enable
12		11241030	160,505	11,241,050	
13		11425350	184,320	11,425,370	
14		11547507	122,157	11,547,527	
15		11547507	0	11,547,527	18:45 inhibit
16		11674945	127,438	11,674,965	23:54 enable
17		11781070	106,125	11,781,090	
18		11781070	0	11,781,090	
19		11821970	40,900	11,821,990	
20		11821970	0	11,821,990	
21		11851801	29,831	11,851,821	
22		11866662	14,861	11,866,682	11:01inhibit 14:51enable
23		11985005	118,343	11,985,025	
24		12125679	40,674	12,025,699	
25		12125679	0	12,025,699	21:25inhibit
26		12125679	0	12,025,699	
27		12125679	0	12,025,699	
28		12125679	0	12,025,699	
29		12052692	27,013	12,052,712	06:25enable 11:32inhibit
30		12068322	15,630	12,068,342	07:57enable 10:56inhibit
31					
		1,544,334	1,544,334	1,544,334	

April  
2014



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

June 17, 2014

Mr. William R. Pugh, P.E.  
Town Engineer  
Town of Cheektowaga

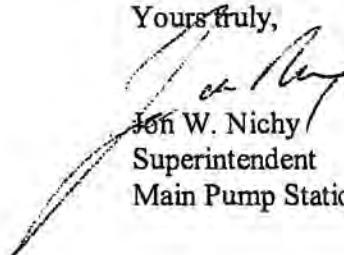
Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

Enclosed for your review, please find a copy of the May 2014 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

4/30/2014

		12068322	15,630	12,068,342	
May-14	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Dally Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		12068322	0	12,068,342	07:19enable
2		12158008	89,686	12,158,028	
3		12315367	157,359	12,315,387	
4		12499584	184,217	12,499,604	
5		12631939	132,355	12,631,959	
6		12636678	4,739	12,636,698	
7		12648352	11,674	12,648,372	
8		12649117	765	12,649,137	04:18inhibit 19:22enable
9		12688741	39,624	12,688,761	
10		12688741	0	12,688,761	
11		12727005	38,264	12,727,025	
12		12731176	4,171	12,731,196	
13		12757748	26,572	12,757,768	08:58inhibit
14		12771647	13,899	12,771,667	
15		12857004	85,357	12,857,024	
16		12918732	61,728	12,918,752	15:34enable
17		13102526	183,794	13,102,546	
18		13237505	134,979	13,237,525	
19		13271962	34,457	13,271,982	
20		13274137	2,175	13,274,157	
21		13332293	58,156	13,332,313	12:04inhibit 08:55enable
22		13346080	13,787	13,346,100	
23		13346080	0	13,346,100	
24		13415561	69,481	13,415,581	
25		13415561	0	13,415,581	
26		13419926	4,365	13,419,946	
27		13480598	60,672	13,480,618	20:19inhibit
28		13480598	0	13,480,618	
29		13480598	0	13,480,618	
30		13480598	0	13,480,618	
31		13480598	0	13,480,618	
		1,412,276	1,412,276	1,412,276	

## Direct Discharge Flow Data

4/30/2014

		12068322	15,630	12,068,342	
<b>May-14</b>	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		12068322	0	12,068,342	07:19enable
2		12158008	89,686	12,158,028	
3		12315367	157,359	12,315,387	
4		12499584	184,217	12,499,604	
5		12631939	132,355	12,631,959	
6		12636678	4,739	12,636,698	
7		12648352	11,674	12,648,372	
8		12649117	765	12,649,137	04:18inhibit 19:22enable
9		12688741	39,624	12,688,761	
10		12688741	0	12,688,761	
11		12727005	38,264	12,727,025	
12		12731176	4,171	12,731,196	
13		12757748	26,572	12,757,768	08:58inhibit
14		12771647	13,899	12,771,667	
15		12857004	85,357	12,857,024	
16		12918732	61,728	12,918,752	15:34enable
17		13102526	183,794	13,102,546	
18		13237505	134,979	13,237,525	
19		13271962	34,457	13,271,982	
20		13274137	2,175	13,274,157	
21		13332293	58,156	13,332,313	12:04inhibit 08:55enable
22		13346080	13,787	13,346,100	
23		13346080	0	13,346,100	
24		13415561	69,481	13,415,581	
25		13415561	0	13,415,581	
26		13419926	4,365	13,419,946	
27		13480598	60,672	13,480,618	20:19inhibit
28		13480598	0	13,480,618	
29		13480598	0	13,480,618	
30		13480598	0	13,480,618	
31		13480598	0	13,480,618	
		<b>1,412,276</b>	<b>1,412,276</b>	<b>1,412,276</b>	

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

July 1, 2014

Mr. William R. Pugh, P.E.  
Town Engineer  
Town of Cheektowaga

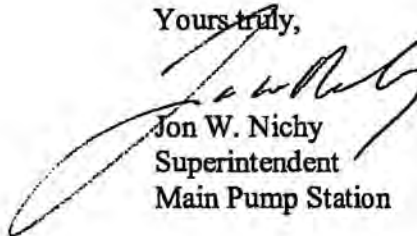
Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

Enclosed for your review, please find a copy of the June 2014 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,



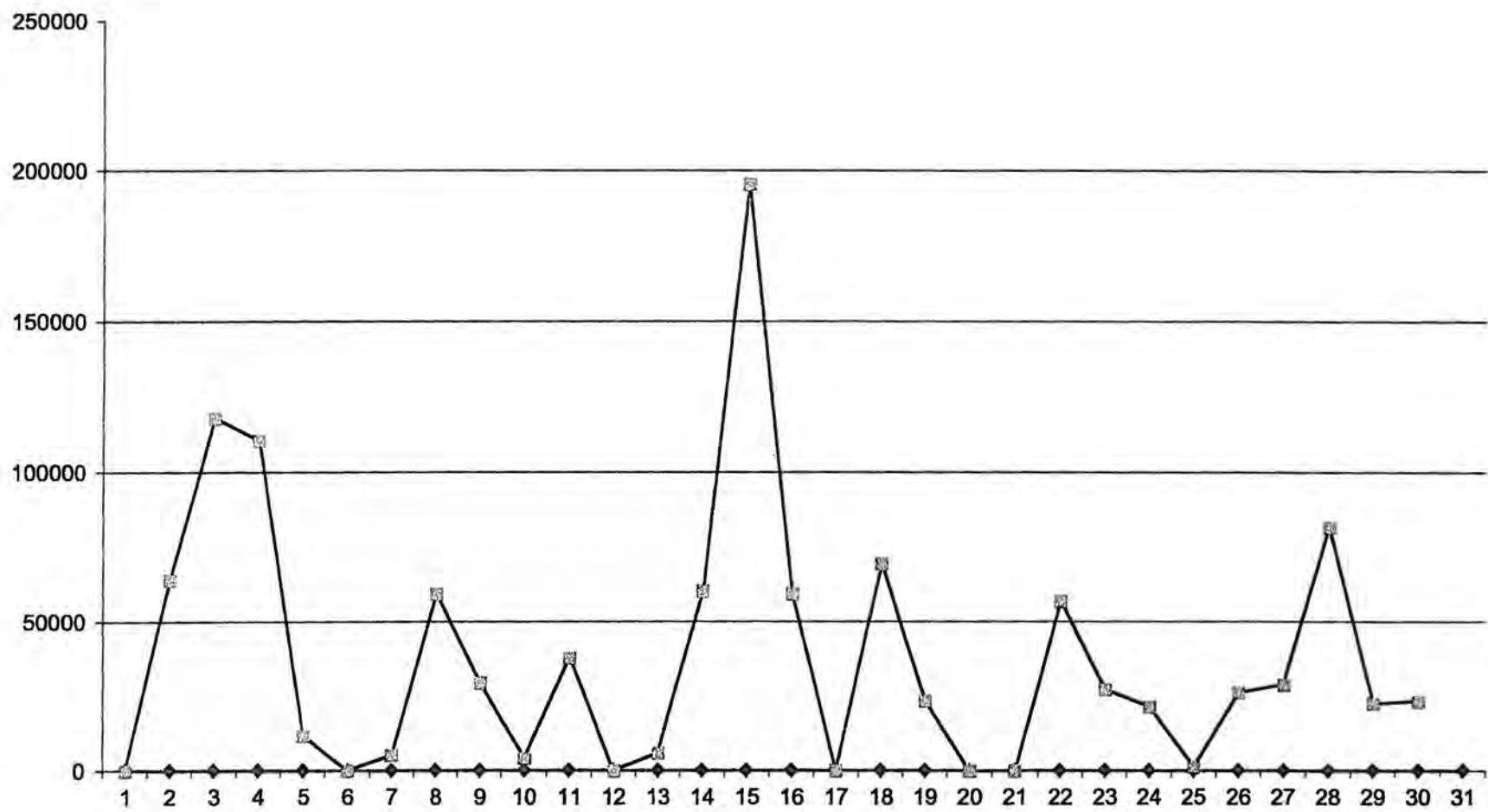
Jon W. Nichy  
Superintendent  
Main Pump Station

## Direct Discharge Flow Data

5/31/2014

		13480598	0	12,068,342	
<b>Jun-14</b>	<b>Time; 11:58pm unless otherwise stated</b>	<b>Totalizer Reading (Gallons)</b>	<b>Daily Total Discharge (Gallons)</b>	<b>Total Direct Discharge (Gallons)</b>	<b>Notes</b>
1		13480598	0	12,068,342	
2		13544313	63,715	12,132,057	14:33 enable
3		13662148	117,835	12,249,892	02:12 inhibit 13:00 enable
4		13772561	110,413	12,360,305	
5		13784470	11,909	12,372,214	
6		13784470	0	12,372,214	
7		13789717	5,247	12,377,461	
8		13849013	59,296	12,436,757	16:43 inhibit
9		13878466	29,453	12,466,210	12:39 enable
10		13882834	4,368	12,470,578	
11		13920663	37,829	12,508,407	
12		13920663	0	12,508,407	18:36 inhibit
13		13926672	6,009	12,514,416	
14		13986854	60,182	12,574,598	16:22 enable
15		14182259	195,405	12,770,003	
16		14241486	59,227	12,829,230	
17		14241486	0	12,829,230	
18		14310731	69,245	12,898,475	
19		14334166	23,435	12,921,910	
20		14334166	0	12,921,910	
21		14334166	0	12,921,910	
22		14390963	56,797	12,978,707	
23		14418169	27,206	13,005,913	
24		14439726	21,557	13,027,470	04:35 inhibit 19:11 enable
25		14441166	1,440	13,028,910	02:07 inhibit 13:19 enable
26		14467388	26,222	13,055,132	
27		14496253	28,865	13,083,997	
28		14577795	81,542	13,165,539	
29		14600260	22,465	13,188,004	
30		14623538	23,278	13,211,282	
31					
		<b>1,142,940</b>	<b>1,142,940</b>	<b>1,142,940</b>	

June  
2014



# **APPENDIX C**

## **HYDRAULIC MONITORING TABLES**

**TABLE 1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JANUARY - JUNE 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	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	3/20/2014 1447	1.88	694.24	0.00	694.24	
							5/21/2014 1001	2.49	693.63	0.00	693.63	
							6/18/2014 0912	2.95	693.17	0.00	693.17	
GW-01S MNW	1073087.779	1117961.500	694.53	NM	696.19	S	3/20/2014 1447	2.08	694.11	0.00	694.11	
							5/21/2014 1001	3.33	692.86	0.00	692.86	
							6/18/2014 0911	3.75	692.44	0.00	692.44	
GW-03D MNW	1073819.106	1114602.426	692.35	NM	693.88	D	3/20/2014 1344	1.48	692.40	0.00	692.40	
							5/21/2014 0902	1.73	692.15	0.00	692.15	
							6/18/2014 0831	2.05	691.83	0.00	691.83	
GW-03S MNW	1073812.622	1114605.762	692.61	NM	693.80	S	3/20/2014 1344	1.90	691.90	0.00	691.90	
							5/21/2014 0901	2.08	691.72	0.00	691.72	
							6/18/2014 0830	3.07	690.73	0.00	690.73	
GW-04D MNW	1072289.432	1114685.625	690.89	NM	692.75	D	3/20/2014 1457	12.47	680.28	0.00	680.28	
							5/21/2014 1010	12.40	680.35	0.00	680.35	
							6/18/2014 0943	12.83	679.92	0.00	679.92	
GW-04S MNW	1072284.456	1114685.127	690.76	NM	692.72	S	3/20/2014 1458	4.82	687.90	0.00	687.90	
							5/21/2014 1009	4.15	688.57	0.00	688.57	
							6/18/2014 0942	4.45	688.27	0.00	688.27	
GW-07D MNW	1071242.458	1117669.925	697.15	NM	699.94	D	3/20/2014 1431	49.78	650.16	0.00	650.16	
							5/21/2014 0956	45.67	654.27	0.00	654.27	
							6/18/2014 0904	57.35	642.59	0.00	642.59	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-07S</b>	1071238.157	1117666.265	697.47	NM	699.51	S						
MNW							3/20/2014 1430	4.03	695.48	0.00	695.48	
MNW							5/21/2014 0954	4.11	695.40	0.00	695.40	
MNW							6/18/2014 0906	5.11	694.40	0.00	694.40	
<b>GW-08D</b>	1073713.617	1116795.328	695.28	NM	697.79	D						
MNW							3/20/2014 1354	5.40	692.39	0.00	692.39	
MNW							5/21/2014 0918	5.70	692.09	0.00	692.09	
MNW							6/18/2014 0841	6.04	691.75	0.00	691.75	
<b>GW-08SR</b>	1073714.172	1116786.343	695.08	NM	697.50	S						
MNW							3/20/2014 1354	4.90	692.60	0.00	692.60	
MNW							5/21/2014 0917	5.16	692.34	0.00	692.34	
MNW							6/18/2014 0841	5.25	692.25	0.00	692.25	
<b>GW-26D</b>	1071698.573	1115997.470	696.01	NM	698.50	D						
MNW							3/20/2014 1420	6.28	692.22	0.00	692.22	
MNW							5/21/2014 0945	6.54	691.96	0.00	691.96	
MNW							6/18/2014 0932	6.90	691.60	0.00	691.60	
<b>GW-28S</b>	1073129.479	1117648.927	698.60	NM	700.95	S						
MNW							3/20/2014 1401	8.56	692.39	0.00	692.39	
MNW							5/21/2014 0924	8.29	692.66	0.00	692.66	
MNW							6/18/2014 0856	9.26	691.69	0.00	691.69	
<b>GW-29S</b>	1072552.638	1117761.993	697.50	NM	699.63	S						
MNW							3/20/2014 1409	7.80	691.83	0.00	691.83	
MNW							5/21/2014 0933	7.27	692.36	0.00	692.36	
MNW							6/18/2014 0921	8.58	691.05	0.00	691.05	
<b>GW-30S</b>	1072096.109	1117743.563	693.67	NM	696.58	S						
MNW							3/20/2014 1411	7.04	689.54	0.00	689.54	
MNW							5/21/2014 0936	7.78	688.80	0.00	688.80	
MNW							6/18/2014 0923	8.02	688.56	0.00	688.56	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-31S</b>	1071786.280	1117191.441	695.84	NM	698.62	S						
MNW							3/20/2014 1415	2.90	695.72	0.00	695.72	
MNW							5/21/2014 0939	2.55	696.07	0.00	696.07	
MNW							6/18/2014 0927	4.03	694.59	0.00	694.59	
<b>GW-32S</b>	1071613.793	1116364.200	696.19	NM	698.37	S						
MNW							3/20/2014 1418	2.51	695.86	0.00	695.86	
MNW							5/21/2014 0942	2.46	695.91	0.00	695.91	
MNW							6/18/2014 0929	3.86	694.51	0.00	694.51	
<b>GW-33S</b>	1072165.625	1115561.866	695.94	NM	698.24	S						
MNW							3/20/2014 1423	4.22	694.02	0.00	694.02	
MNW							5/21/2014 0949	3.83	694.41	0.00	694.41	
MNW							6/18/2014 0933	4.25	693.99	0.00	693.99	
<b>GW-34S</b>	1072979.205	1114730.200	692.51	NM	694.77	S						
MNW							3/20/2014 1335	2.47	692.30	0.00	692.30	
MNW							5/21/2014 0851	2.58	692.19	0.00	692.19	
MNW							6/18/2014 0820	3.22	691.55	0.00	691.55	
<b>GW-35S</b>	1071701.925	1115985.585	696.19	NM	697.39	S						
MNW							3/20/2014 1420	3.31	694.08	0.00	694.08	
MNW							5/21/2014 0945	2.87	694.52	0.00	694.52	
MNW							6/18/2014 0936	4.91	692.48	0.00	692.48	
<b>MH-01</b>	1073806.665	1114810.501	698.62	NM	698.62	NA						
MH							3/20/2014 1336	9.69	688.93	0.00	688.93	
MH							5/21/2014 0855	10.87	687.75	0.00	687.75	
MH							6/18/2014 0825	11.03	687.59	0.00	687.59	
<b>MH-03</b>	1073736.789	1115259.334	699.40	NM	699.40	NA						
MH							3/20/2014 1346	10.56	688.84	0.00	688.84	
MH							5/21/2014 0908	11.24	688.16	0.00	688.16	
MH							6/18/2014 0834	11.26	688.14	0.00	688.14	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>MH-07</b> MH	1073838.229	1116243.757	696.82	NM	696.82	NA	3/20/2014 1349	8.78	688.04	0.00	688.04	
							5/21/2014 0910	9.45	687.37	0.00	687.37	
							6/18/2014 0837	9.47	687.35	0.00	687.35	
<b>MH-10</b> MH	1073540.729	1117381.524	703.01	NM	703.01	NA	3/20/2014 1356	14.44	688.57	0.00	688.57	
							5/21/2014 0921	14.45	688.56	0.00	688.56	
							6/18/2014 0853	14.44	688.57	0.00	688.57	
<b>MH-15</b> MH	1072531.567	1117761.125	699.02	NM	699.02	NA	3/20/2014 1409	14.89	684.13	0.00	684.13	
							5/21/2014 0932	14.56	684.46	0.00	684.46	
							6/18/2014 0920	14.70	684.32	0.00	684.32	
<b>MH-16</b> MH	1072133.714	1117748.238	698.57	NM	698.57	NA	3/20/2014 1410	14.52	684.05	0.00	684.05	
							5/21/2014 0935	14.23	684.34	0.00	684.34	
							6/18/2014 0923	14.31	684.26	0.00	684.26	
<b>MH-17</b> MH	1071813.137	1117180.019	702.16	NM	702.16	NA	3/20/2014 1413	18.14	684.02	0.00	684.02	
							5/21/2014 0938	17.98	684.18	0.00	684.18	
							6/18/2014 0926	18.04	684.12	0.00	684.12	
<b>MH-20</b> MH	1071756.395	1115997.024	706.20	NM	706.20	NA	3/20/2014 1419	19.72	686.48	0.00	686.48	
							5/21/2014 0943	19.73	686.47	0.00	686.47	
							6/18/2014 0931	19.75	686.45	0.00	686.45	
<b>MH-22</b> MH	1072158.023	1115589.309	698.05	NM	698.05	NA	3/20/2014 1424	8.99	689.06	0.00	689.06	
							5/21/2014 0949	8.98	689.07	0.00	689.07	
							6/18/2014 0935	9.02	689.03	0.00	689.03	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
MH-25 MH	1072483.928	1114820.313	698.17	NM	698.17	NA	3/20/2014 1329	9.20	688.97	0.00	688.97	
							5/21/2014 0845	10.44	687.73	0.00	687.73	
							6/18/2014 0815	10.59	687.58	0.00	687.58	
SG-01 SG	1073882.887	1114813.101	NM	NM	690.00	NA	3/20/2014 1340	-1.13	691.13	0.00	691.13	
							5/21/2014 0856	-0.72	690.72	0.00	690.72	
							6/18/2014 0827	NM	-	0.00	-	Dry
SG-02 SG	1073738.27	1116805.85	NM	NM	690.00	NA	3/20/2014 1354	-3.42	693.42	0.00	693.42	
							5/21/2014 0919	-3.20	693.20	0.00	693.20	
							6/18/2014 0851	-3.1	693.10	0.00	693.10	
WW-01 MH	1073676.903	1115710.476	NM	NM	684.02	NA	3/20/2014 1310	-4.7	688.72	0.00	688.72	
							5/21/2014 0800	-3.9	687.92	0.00	687.92	
							6/18/2014 0700	-3.9	687.92	0.00	687.92	
WW-02 MH	1073684.724	1116792.311	NM	NM	684.18	NA	3/20/2014 1310	-4.7	688.88	0.00	688.88	
							5/21/2014 0800	-4.7	688.88	0.00	688.88	
							6/18/2014 0700	-4.7	688.88	0.00	688.88	
WW-03 MH	1073140.339	1117618.499	NM	NM	683.80	NA	3/20/2014 1310	-5.7	689.50	0.00	689.50	
							5/21/2014 0800	-5.6	689.40	0.00	689.40	
							6/18/2014 0700	-5.5	689.30	0.00	689.30	
WW-04 MH	1072057.563	1117610.508	NM	NM	676.62	NA	3/20/2014 1310	-6.9	683.52	0.00	683.52	
							5/21/2014 0800	-7.2	683.82	0.00	683.82	
							6/18/2014 0700	-7.1	683.72	0.00	683.72	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
WW-05 MH	1071661.368	1116370.876	NM	NM	676.14	NA	3/20/2014 1310	-6.5	682.64	0.00	682.64	
							5/21/2014 0800	-7.8	683.94	0.00	683.94	
							6/18/2014 0700	-6.6	682.74	0.00	682.74	
WW-06 MH	1072988.420	1114811.518	NM	NM	681.89	NA	3/20/2014 1310	-7.26	689.15	0.00	689.15	
							5/21/2014 0800	-6.3	688.19	0.00	688.19	
							6/18/2014 0700	-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)
3/20/2014	688.72	---	---	688.88	692.60	3.72	693.42	4.54
5/21/2014	687.92	---	---	688.88	692.34	3.46	693.20	4.32
6/18/2014	687.92	---	---	688.88	692.25	3.37	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)
3/20/2014	689.50	692.39	2.89	683.52	---	---
5/21/2014	689.40	692.66	3.26	683.82	---	---
6/18/2014	689.30	691.69	2.39	683.72	---	---

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)
3/20/2014	682.64	695.86	13.22	689.15	692.30	3.15
5/21/2014	683.94	695.91	11.97	688.19	692.19	4.00
6/18/2014	682.74	694.51	11.77	687.89	691.55	3.66

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)
3/20/2014	688.93	691.13	2.20	684.13	691.83	7.70
5/21/2014	687.75	690.72	2.97	684.46	692.36	7.90
6/18/2014	687.59	DRY	NA	684.32	691.05	6.73

WELL PAIR:	MH-16	GW-30S	Level	MH-17	GW-31S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/20/2014	684.05	689.54	5.49	684.02	695.72	11.70
5/21/2014	684.34	688.80	4.46	684.18	696.07	11.89
6/18/2014	684.26	688.56	4.30	684.12	694.59	10.47

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)
3/20/2014	686.48	694.08	7.60	689.06	694.02	4.96
5/21/2014	686.47	694.52	8.05	689.07	694.41	5.34
6/18/2014	686.46	692.48	6.02	689.03	693.99	4.96

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: 5/23/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.65'	Depth to Well Bottom:	14.94'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.0	Estimated Purge Volume (liters):	11.0
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Sample ID:	GW-1S	Sample Time:	13:05	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

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

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/23/2014 Sampling Personnel: Rob Murphy, Kevin McGovern Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.75'	Depth to Well Bottom:	39.65'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	91.1	Estimated Purge Volume (liters):	52.8
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Sample ID:	GW-1D	Sample Time:	14:21	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Sulfur odor

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:15	7.32	10.30	1.06	0.00	5.3	-93	800	2.75
13:20	7.47	10.35	1.06	0.00	0.5	-112	800	2.80
13:25	7.51	10.20	1.06	0.00	0.0	-120	800	2.80
13:30	7.55	10.12	1.06	0.00	0.2	-127	800	2.80
13:35	7.55	10.06	1.06	0.00	0.0	-137	800	2.80
13:40	7.55	10.05	1.06	0.00	0.0	-154	800	2.80
13:45	7.55	10.00	1.05	0.00	0.0	-171	800	2.80
13:50	7.55	10.02	1.05	0.00	0.0	-189	800	2.80
13:55	7.53	10.03	1.05	0.00	0.0	-195	800	2.80
14:00	7.52	9.78	1.05	0.00	0.0	-204	800	2.80
14:05	7.52	9.90	1.05	0.00	0.0	-216	800	2.80
14:10	7.47	9.99	1.05	0.00	0.0	-222	800	2.80
14:15	7.48	9.96	1.05	0.00	0.0	-232	800	2.80
14:18	7.49	9.94	1.05	0.00	0.0	-237	800	2.80
14:21	7.48	10.00	1.05	0.00	0.0	-241	800	2.80
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 ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )



## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/21/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.05'	Depth to Well Bottom:	13.22'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.9	Estimated Purge Volume (liters):	6.8
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Sample ID:	GW-3S	Sample Time:	11:25	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

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

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/21/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	1.75'	Depth to Well Bottom:	35.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	83.9	Estimated Purge Volume (liters):	57.0
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Sample ID:	GW-3D	Sample Time:	12:36	QA/QC:	MS/MSD
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
 \_\_\_\_\_  
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## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
11:36	7.11	10.66	1.53	0.00	22.1	-39	950	1.75
11:41	7.17	10.10	1.53	0.00	0.0	-67	950	1.75
11:46	7.14	10.05	1.53	0.00	0.0	-76	950	1.75
11:51	7.11	10.04	1.53	0.00	0.0	-77	950	1.75
11:56	7.19	9.98	1.53	0.00	8.8	-84	950	1.75
12:01	7.16	9.99	1.53	0.00	1.8	-85	950	1.75
12:06	7.16	9.99	1.53	0.00	1.3	-85	950	1.75
12:11	7.14	10.00	1.53	0.00	0.1	-85	950	1.75
12:16	7.18	9.94	1.53	0.00	0.0	-88	950	1.75
12:21	7.18	9.93	1.53	0.00	0.0	-89	950	1.75
12:26	7.17	9.91	1.53	0.00	0.0	-89	950	1.75
12:31	7.17	9.92	1.53	0.00	0.0	-89	950	1.75
12:36	7.17	9.95	1.53	0.00	0.0	-89	950	1.75
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/22/2014 Sampling Personnel: Rob Murphy, Kevin McGovern Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.15'	Depth to Well Bottom:	16.23'	Well Diameter:	2"	Screen Length:	
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.5	Estimated Purge Volume (liters):	15.0
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Sample ID:	GW-4S	Sample Time:	10:45 VOCs/ 12:20 SVOCs & Metals	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 3/20/14, sampled VOCs from PDB at 10:45 on 5/22/14.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 12:20.

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:56	8.35	15.86	0.479	0.19	5.2	81	Initial	4.15
10:59	8.49	12.18	0.480	2.65	52.0	75	2 Gal. Purged	-
11:01	8.47	11.16	0.426	1.52	323	-11	4 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 ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

# LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/22/2014 Sampling Personnel: Rob Murphy, Kevin McGovern 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: 12.33' Depth to Well Bottom: 45.57' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 82.1 Estimated Purge Volume (liters): 9.6

Sample ID: GW-4D Sample Time: 12:10 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:10	7.95	16.60	1.44	0.00	68.9	-82	160	12.33
11:15	7.51	15.10	1.49	0.00	19.9	-153	160	12.65
11:20	7.47	14.41	1.51	0.00	12.7	-187	160	12.91
11:25	7.46	14.23	1.51	0.00	15.8	-208	160	13.00
11:30	7.46	14.32	1.51	0.00	14.2	-231	160	13.18
11:35	7.45	14.60	1.50	0.00	13.8	-256	160	13.34
11:40	7.44	14.00	1.53	0.00	11.7	-271	160	13.48
11:45	7.43	13.94	1.53	0.00	13.0	-281	160	13.58
11:50	7.41	13.38	1.55	0.00	13.4	-280	160	13.63
11:55	7.41	13.56	1.56	0.00	9.3	-287	160	13.73
12:00	7.40	13.48	1.58	0.00	9.1	-291	160	13.80
12:05	7.40	13.72	1.57	0.00	10.3	-291	160	13.84
12:10	7.40	13.94	1.56	0.00	10.1	-294	160	13.86
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft (vol<sub>cyt</sub> =  $\pi r^2 h$ )

# WELL PURGING LOG

**URS Corporation**

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-7S
PROJECT NO.:	11175616.00000		
STAFF:	Rob Murphy, Kevin McGovern		
DATE(S):	5/21/14, 5/22/14		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	35.04	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	4.11	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	30.93	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	5.26	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	8.0	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Initial	2	4	6	8					
pH	8.46	8.43	8.41	8.28	8.21					
SPEC. COND. (mS/cm)	0.570	0.586	0.588	0.588	0.589					
DO (mg/l)	0.49	0.38	0.00	1.77	1.72					
TEMPERATURE (°C)	12.63	11.96	12.17	12.97	13.25					
TURBIDITY (NTU)	3.5	5.4	4.8	42.7	93.3					
ORP (millivolts)	-92	-72	-57	-17	-2					
TIME	16:38	16:41	16:43	16:48	16:53					

COMMENTS: 15:45 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/20/14  
 16:37 - Begin hand bailing well.  
 16:53 - Well dry after removing 8 gallons.

5/22/2014 15:45 - Return to well, depth to water = 4.30 feet.  
 15:55 - 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, Kevin McGovern		
DATE(S):	5/21/14, 5/22/14		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	60.45	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	45.63	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	14.82	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.66	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	9.78	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	9.8	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	Init	2	4	6	8	9.8				
pH	8.00	8.20	7.98	7.86	7.95	8.10				
SPEC. COND. (mS/cm)	0.643	0.640	0.705	0.757	0.807	0.815				
DO (mg/l)	8.25	0.81	0.98	1.08	3.85	9.49				
TEMPERATURE (°C)	22.66	16.94	15.75	15.69	15.08	15.43				
TURBIDITY (NTU)	15.3	12.0	25.0	20.9	19.1	43.1				
ORP (millivolts)	-42	-80	-90	-169	-135	-110				
TIME	15:53	16:02	16:10	16:19	16:28	16:36				

COMMENTS: 15:40 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/20/14  
 15:46 - Begin hand bailing well.  
 16:36 - Well dry after removing 9.8 gallons  
 5/22/2014 15:45 - return to well, depth to water = 59.20 feet.  
 15:50 - Collect sample for SVOCs and Metals.

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/21/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.15'	Depth to Well Bottom:	13.02'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.9	Estimated Purge Volume (liters):	6.0
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Sample ID:	GW-8SR	Sample Time:	15:05	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

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

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/21/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.70'	Depth to Well Bottom:	36.54'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	76.2	Estimated Purge Volume (liters):	61.8
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Sample ID:	GW-8D	Sample Time:	14:15	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

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

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
13:10	7.31	11.62	1.95	0.00	>800	-57	950	5.70
13:15	7.25	11.17	1.95	0.00	6.4	11	950	5.70
13:20	7.21	11.05	1.95	0.00	4.1	26	950	5.70
13:25	7.19	10.90	1.96	0.00	3.4	32	950	5.70
13:30	7.21	10.81	1.96	0.00	3.4	35	950	5.70
13:35	7.20	10.87	1.97	0.00	2.2	37	950	5.70
13:40	7.19	10.82	1.97	0.00	1.5	39	950	5.70
13:45	7.18	10.98	1.97	0.00	1.7	42	950	5.70
13:50	7.19	10.87	1.97	0.00	0.5	43	950	5.70
13:55	7.19	10.91	1.97	0.00	1.3	42	950	5.70
14:00	7.18	10.98	1.97	0.00	0.7	45	950	5.70
14:05	7.19	11.05	1.97	0.00	0.2	46	950	5.70
14:15	7.18	11.01	1.97	0.00	0.3	49	950	5.70
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

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



# LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/22/2014 Sampling Personnel: Rob Murphy, Kevin McGovern 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>6.61'</u>	Depth to Well Bottom:	<u>40.70'</u>	Well Diameter:	<u>4"</u>	Screen Length:
Casing Type:	<u>Stainless Steel</u>		Volume in 1 Well Casing (liters):	<u>84.2</u>		Estimated Purge Volume (liters):	<u>60.0</u>	

Sample ID: GW-26D Sample Time: 14:14 QA/QC: Duplicate (FD-052214)

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Occasional pulses of iron stained particulates in purge water.

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:14	6.82	12.54	1.91	0.00	25.8	-154	1,000	6.61
13:19	7.02	12.20	1.96	0.00	39.6	-167	1,000	6.61
13:24	7.03	12.21	1.95	0.00	10.8	-169	1,000	6.61
13:29	7.02	12.25	1.95	0.00	3.0	-168	1,000	6.61
13:34	7.00	12.34	1.96	0.00	2.4	-167	1,000	6.61
13:39	6.99	12.33	1.95	0.00	4.0	-165	1,000	6.61
13:44	7.02	12.34	1.95	0.00	0.0	-166	1,000	6.61
13:49	7.02	12.36	1.96	0.00	0.0	-166	1,000	6.61
13:54	7.02	12.35	1.95	0.00	0.0	-165	1,000	6.61
13:59	7.01	12.41	1.95	0.00	0.0	-164	1,000	6.61
14:04	7.00	12.37	1.95	0.00	0.0	-164	1,000	6.61
14:09	7.02	12.31	1.95	0.00	0.0	-163	1,000	6.61
14:14	7.02	12.31	1.95	0.00	0.0	-162	1,000	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 ( $\text{vol}_{\text{cyl}} = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/22/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	8.43'	Depth to Well Bottom:	15.52'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.4	Estimated Purge Volume (liters):	4.3
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Sample ID:	GW-28S	Sample Time:	10:10	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

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

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
9:45	7.70	12.90	0.558	0.00	40.4	74	190	8.43
9:50	7.44	11.68	0.565	0.00	14.2	47	190	9.54
9:55	7.40	11.66	0.540	0.00	15.5	31	160	9.77
10:00	7.39	11.51	0.540	0.00	13.5	31	160	9.85
10:05	7.38	11.75	0.545	0.00	14.1	32	160	9.92
10:10	7.37	11.36	0.554	0.00	13.1	31	160	9.98
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/22/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	7.56'	Depth to Well Bottom:	20.04'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.7	Estimated Purge Volume (liters):	7.7
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Sample ID:	GW-29S	Sample Time:	15:25	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Orange iron particulates at start of purge

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/23/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	7.88'	Depth to Well Bottom:	17.97'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.2	Estimated Purge Volume (liters):	30.0
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Sample ID:	GW-30S	Sample Time:	9:20	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange tint to water, occasional orange particulates

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/23/2014 Sampling Personnel: Rob Murphy, Kevin McGovern Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.75'	Depth to Well Bottom:	9.57'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.2	Estimated Purge Volume (liters):	6.7
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Sample ID:	GW-31S	Sample Time:	10:22	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Visually appears less turbid than instrument readings indicate.

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-32S

Date: 5/23/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.92'	Depth to Well Bottom:	9.93'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.3	Estimated Purge Volume (liters):	5.8
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Sample ID:	GW-32S	Sample Time:	11:03	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

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

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-33S

Date: 5/23/2014 Sampling Personnel: Rob Murphy, Kevin McGovern Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.58'	Depth to Well Bottom:	8.21'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.2	Estimated Purge Volume (liters):	4.8
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Sample ID:	GW-33S	Sample Time:	11:59	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
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## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/22/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.60'	Depth to Well Bottom:	10.01'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.6	Estimated Purge Volume (liters):	5.4
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Sample ID:	GW-34S	Sample Time:	9:12	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: \_\_\_\_\_  
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## PURGE PARAMETERS

[illegible]

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



## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/22/2014      Sampling Personnel: Rob Murphy, Kevin McGovern      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.98'	Depth to Well Bottom:	7.46'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.8	Estimated Purge Volume (liters):	5.8
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Sample ID:	GW-35S	Sample Time:	13:05	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

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

## PURGE PARAMETERS

[illegible]

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

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, K. McGovern Supervisor: J. Sundquist

Date of Sampling: May 21, 2014

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-3S	GW-03S	6.9	6.8	11:25	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-3D	GW-03D	83.9	57.0	12:36	Groundwater		Not Applicable
GW-3D-MS	GW-03D	83.9	57.0	12:36	Matrix Spike		Not Applicable
GW-3D-MSD	GW-03D	83.9	57.0	12:36	Matrix Spike Duplicate		Not Applicable
GW-8D	GW-08D	76.2	61.8	14:15	Groundwater		Not Applicable
GW-8SR	GW-08SR	4.9	6.0	15:05	Groundwater		Not Applicable
TB-052114	---	---	---	---	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, K. McGovern Supervisor: J. Sundquist

Date of Sampling: May 21, 2013

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-7D	GW-07D	36.6	PDB	15:40	Groundwater	VOCs	Not Applicable
GW-7S	GW-07S	19.1	PDB	15:45	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 22, 2014.

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, K. McGovern Supervisor: J. Sundquist

Date of Sampling: May 22, 2014

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-34S	GW-34S	4.6	5.4	9:12	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-28S	GW-28S	4.4	4.3	10:10	Groundwater		Not Applicable
GW-4S	GW-04S	7.5	15.0	10:45 & 12:20	Groundwater		Not Applicable
GW-4D	GW-04D	82.1	9.6	12:10	Groundwater		Not Applicable
GW-35S	GW-35S	2.8	5.8	13:05	Groundwater		Not Applicable
GW-26D	GW-26D	84.2	60.0	14:14	Groundwater		Not Applicable
FD-052214	GW-26D	84.2	60.0	14:14	Duplicate		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.

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, K. McGovern

Supervisor: J. Sundquist

Date of Sampling: May 22, 2014

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-29S	GW-29S	7.7	7.7	15:25	Groundwater	VOCs/SVOCs/ Metals	
GW-7D	GW-07D	36.6	36.6	15:50	Groundwater	SVOCs/Metals	Not Applicable
GW-7S	GW-07S	19.1	30.3	15:55	Groundwater		Not Applicable
TB-052214	---	---	---	---	Trip Blank	VOCs	Not Applicable

Additional Comments:

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, K. McGovern Supervisor: J. Sundquist

Date of Sampling: May 23, 2014

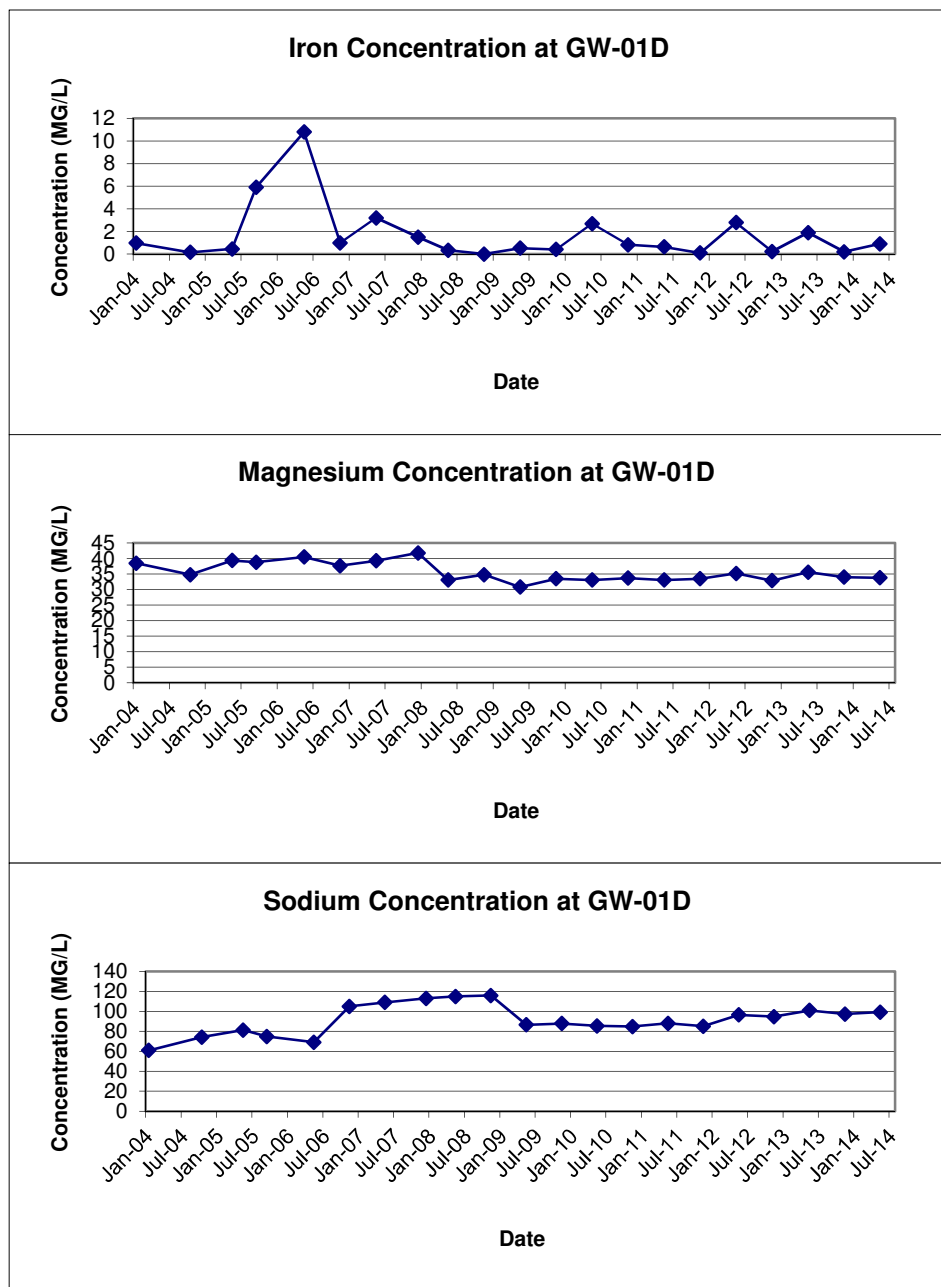
<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-30S	GW-30S	6.2	30.0	9:20	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-31S	GW-31S	4.2	6.7	10:22	Groundwater		Not Applicable
GW-32S	GW-32S	4.3	5.8	11:03	Groundwater		Not Applicable
GW-33S	GW-33S	2.2	4.8	11:59	Groundwater		Not Applicable
GW-01S	GW-01S	7.0	11.0	13:05	Groundwater		Not Applicable
GW-01D	GW-01D	91.1	52.8	14:21	Groundwater		Not Applicable
TB-052314	---	---	---	---	Trip Blank	VOCs	Not Applicable

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

# **APPENDIX E**

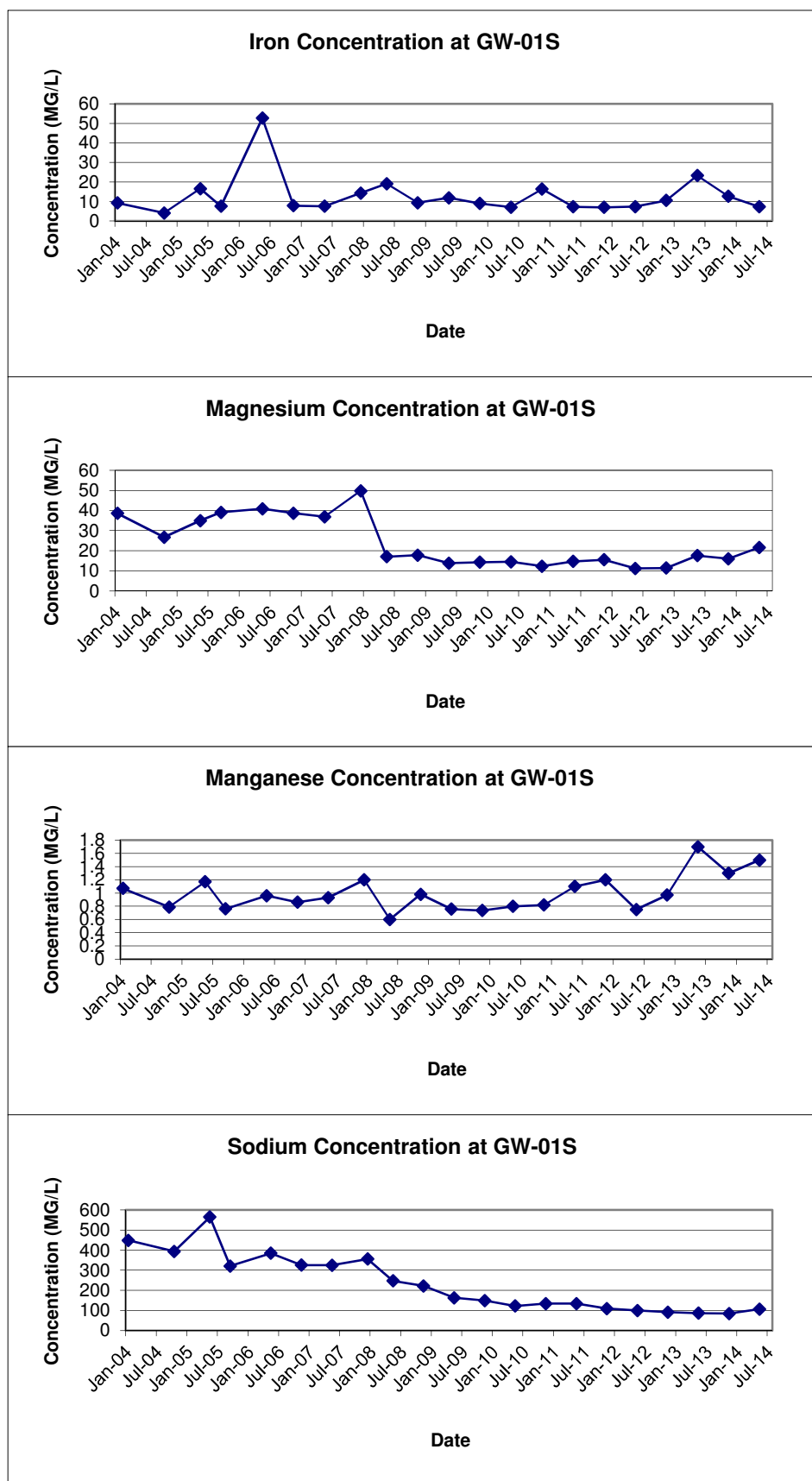
## **GROUNDWATER TREND ANALYSIS**

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

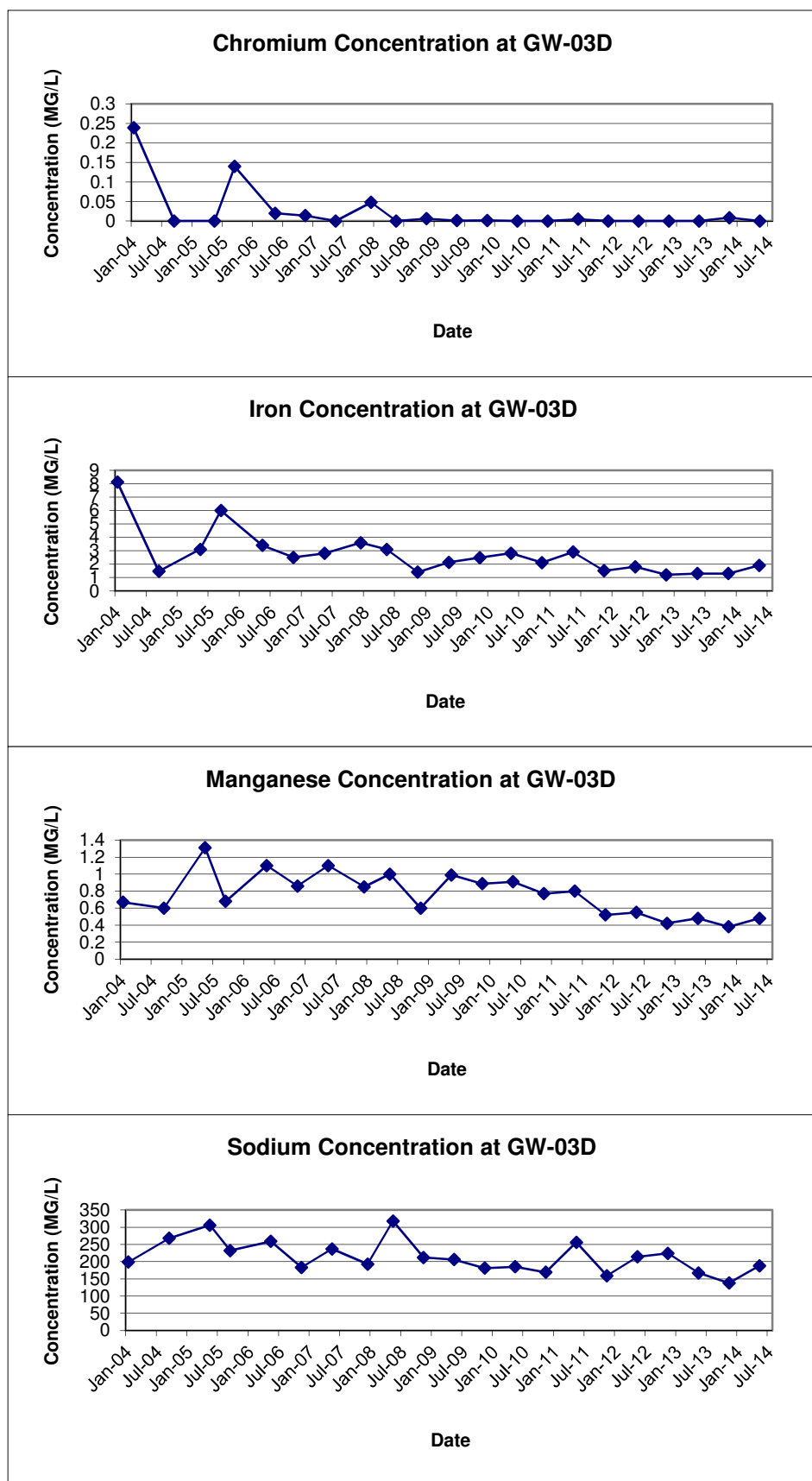




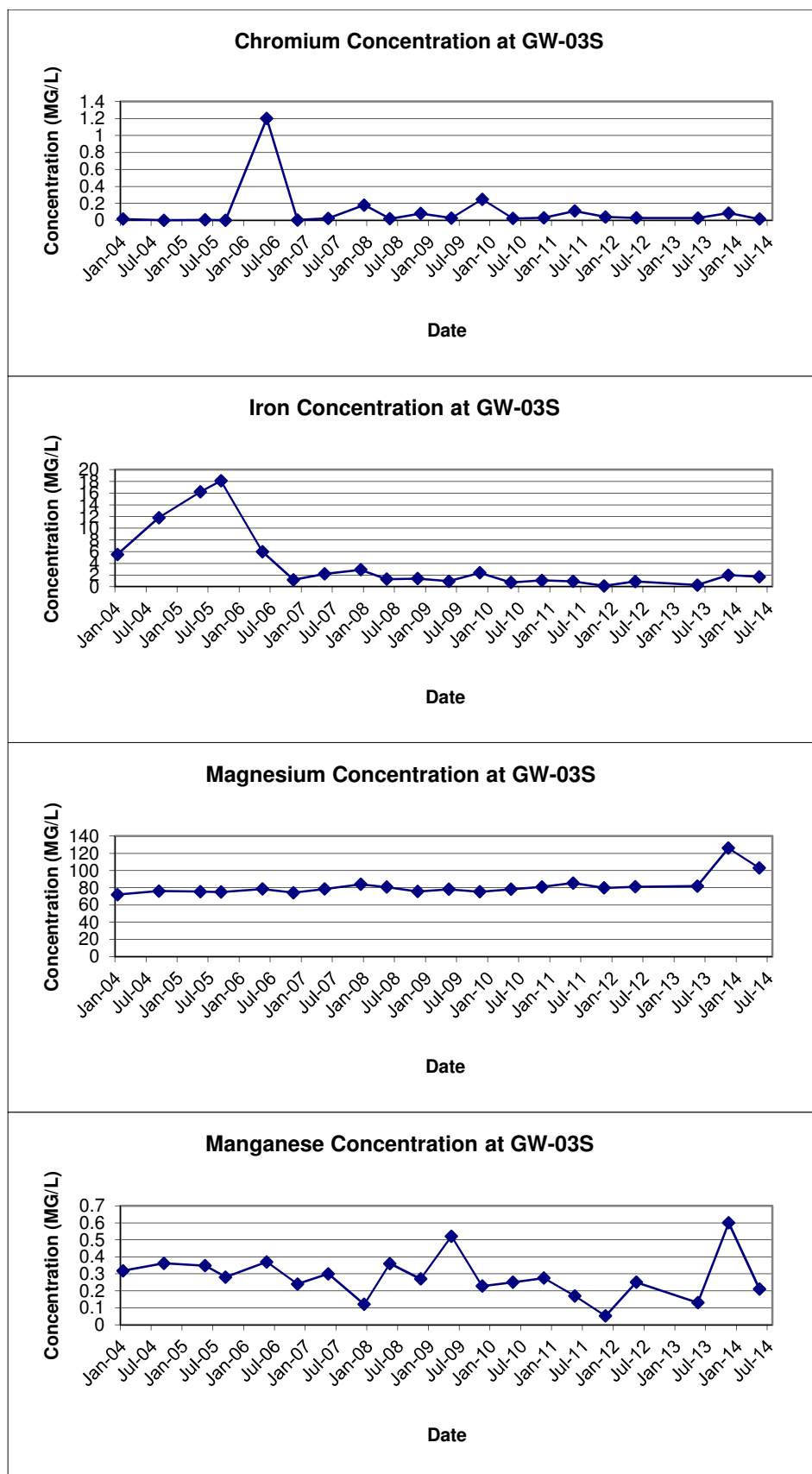
**FIGURE E-2**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-1S**



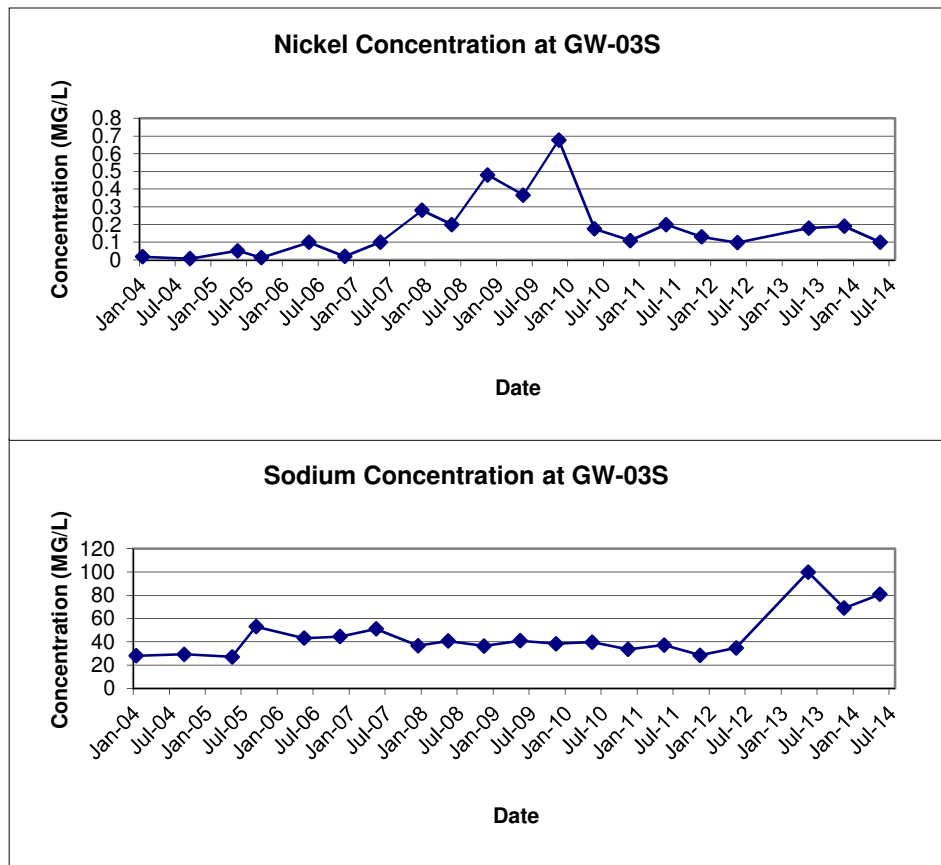
**FIGURE E-3**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-3D**



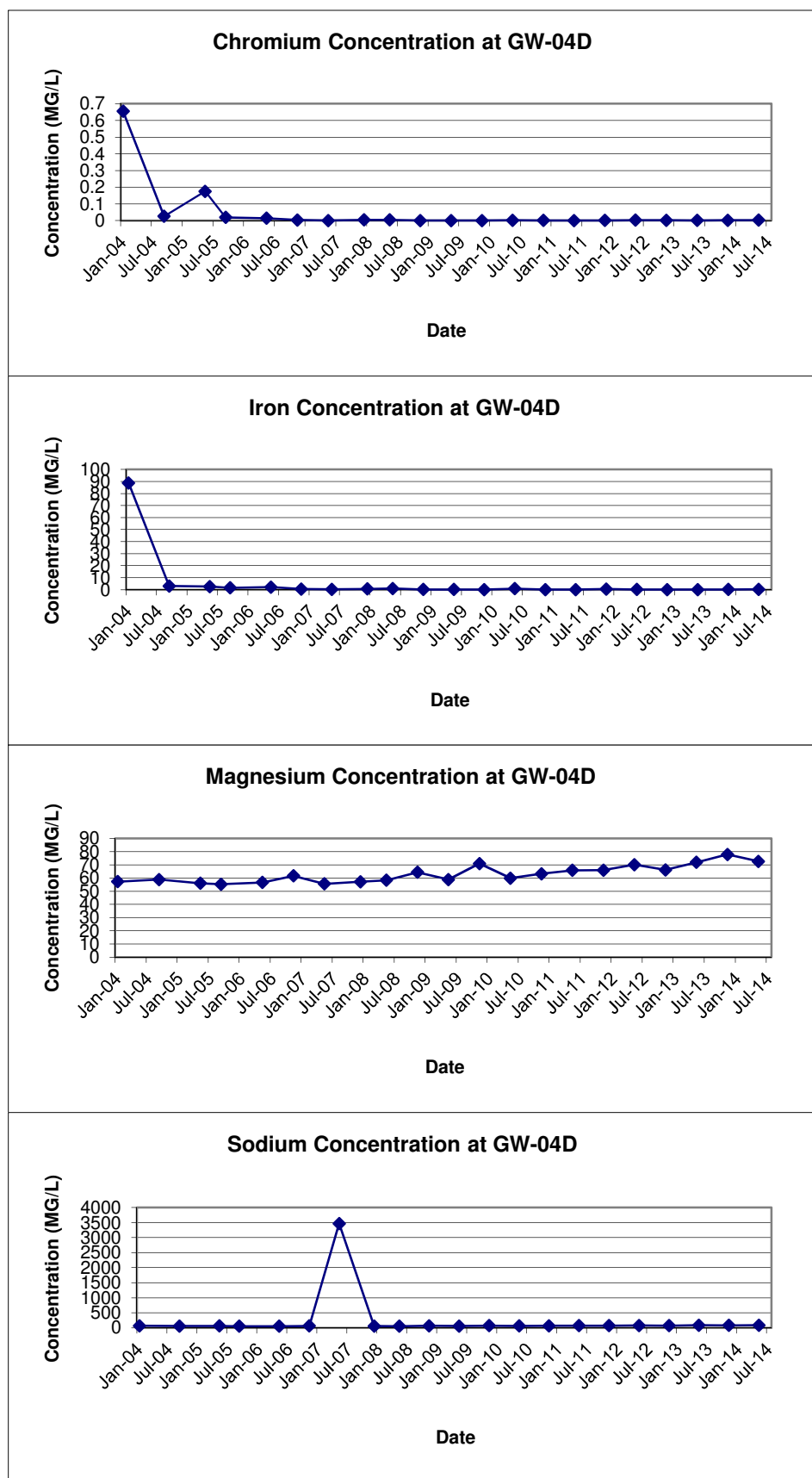
**FIGURE E-4**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-3S**



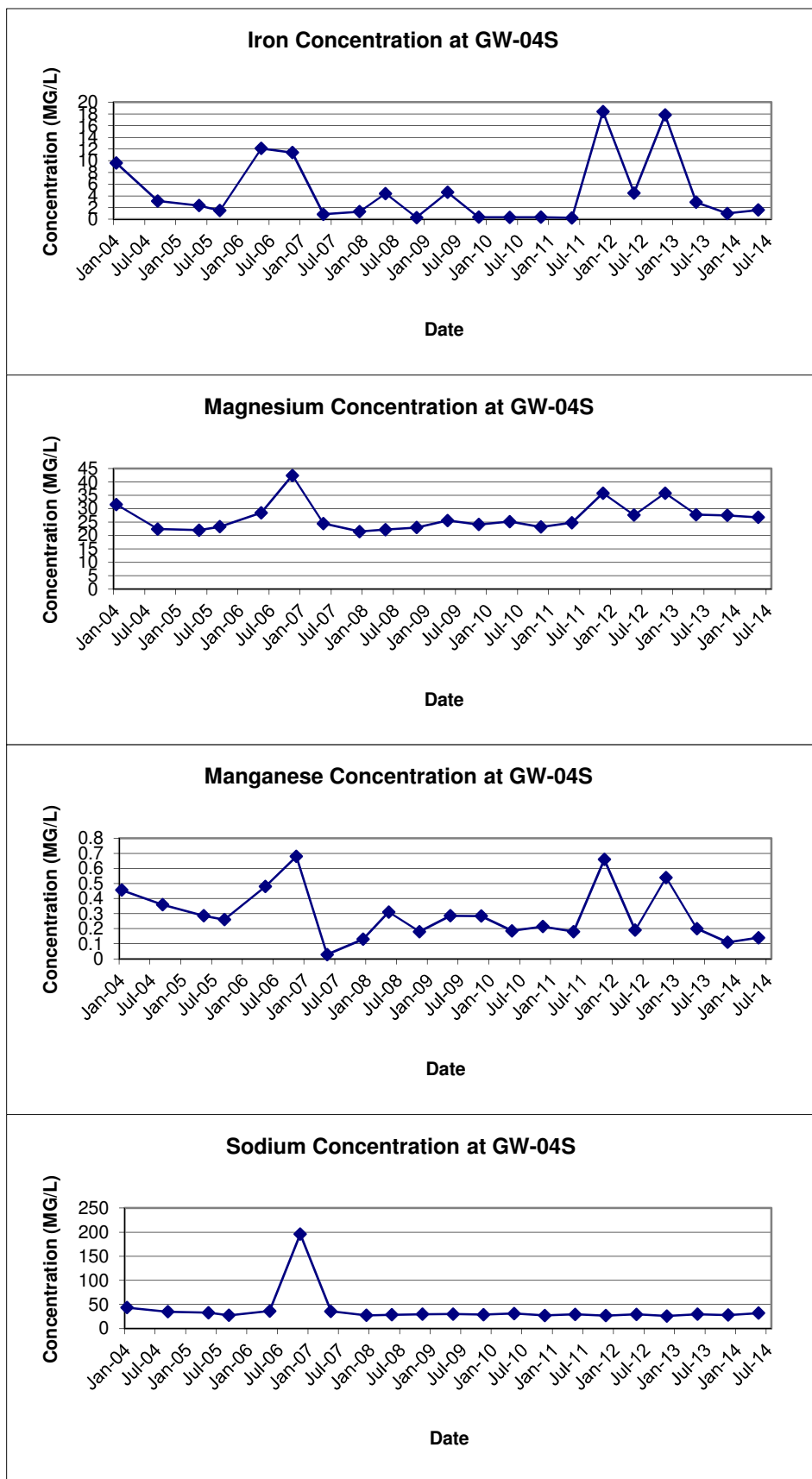
**FIGURE E-4**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-3S**



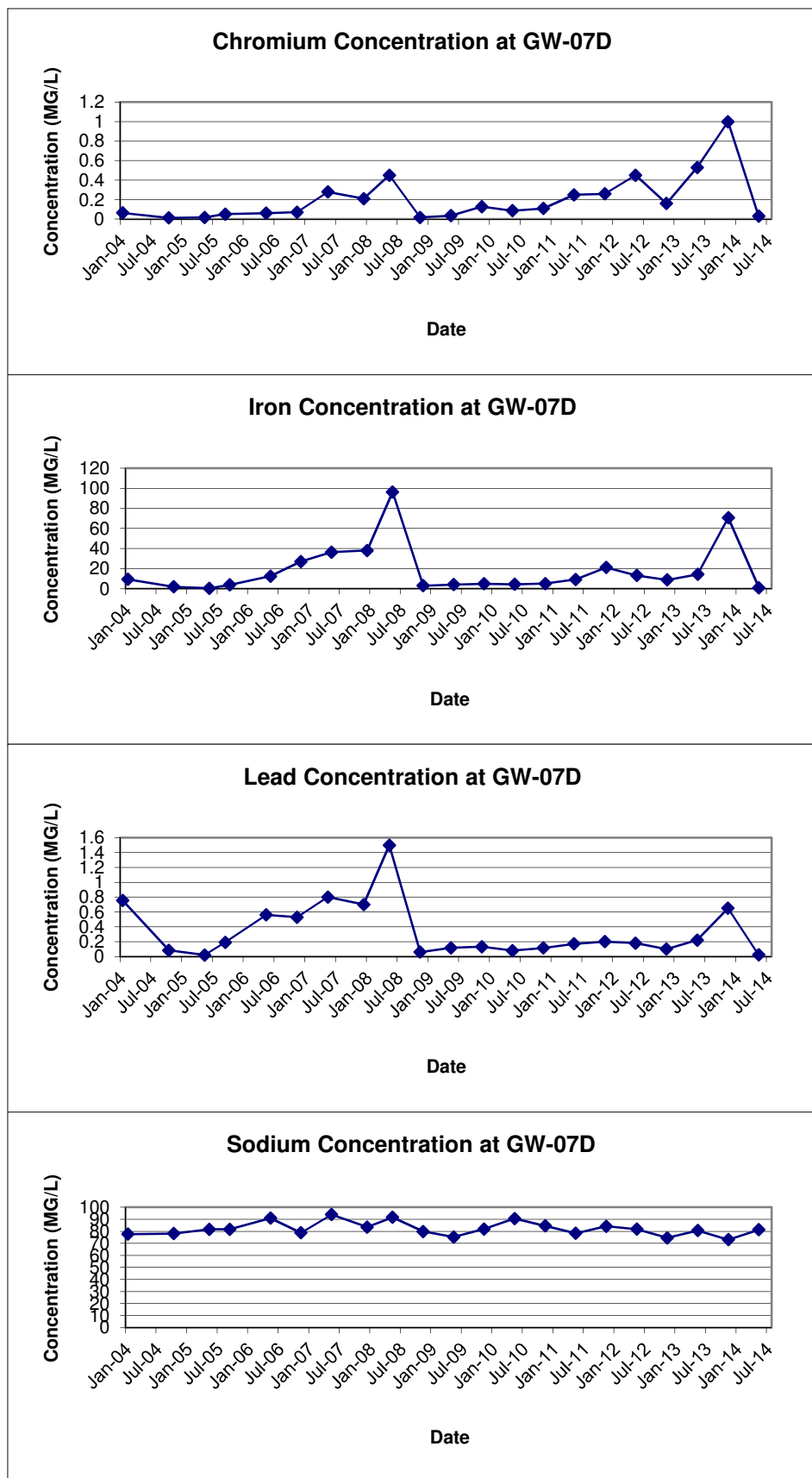
**FIGURE E-5**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-04D**



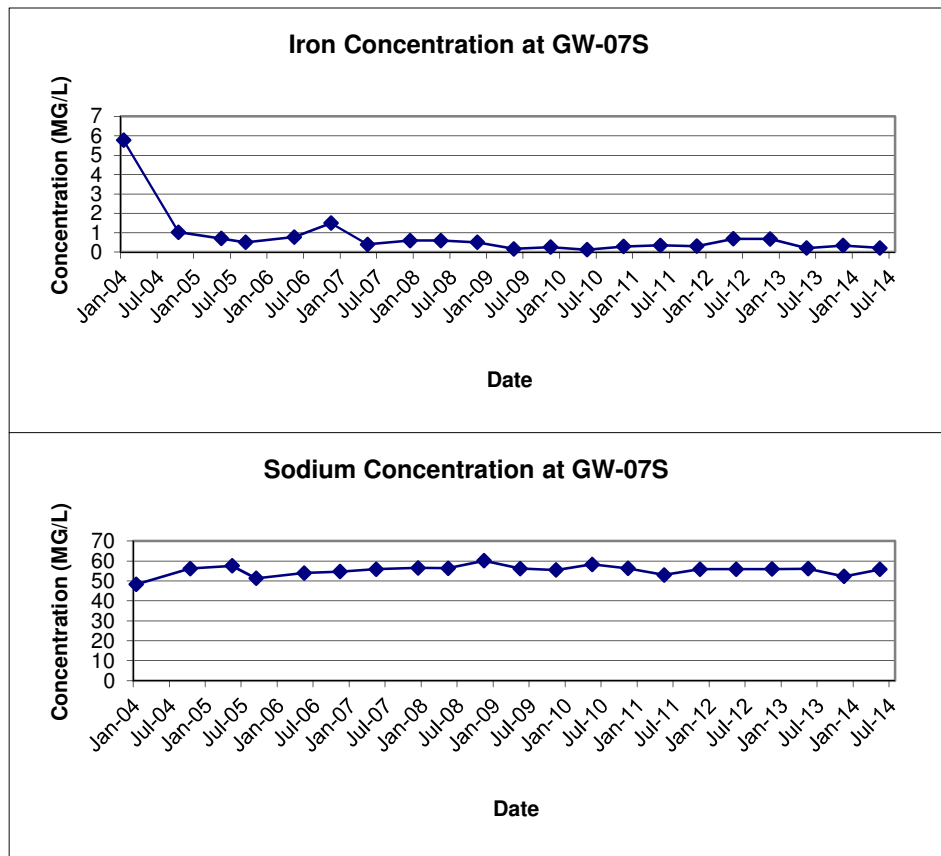
**FIGURE E-6**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-4S**



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

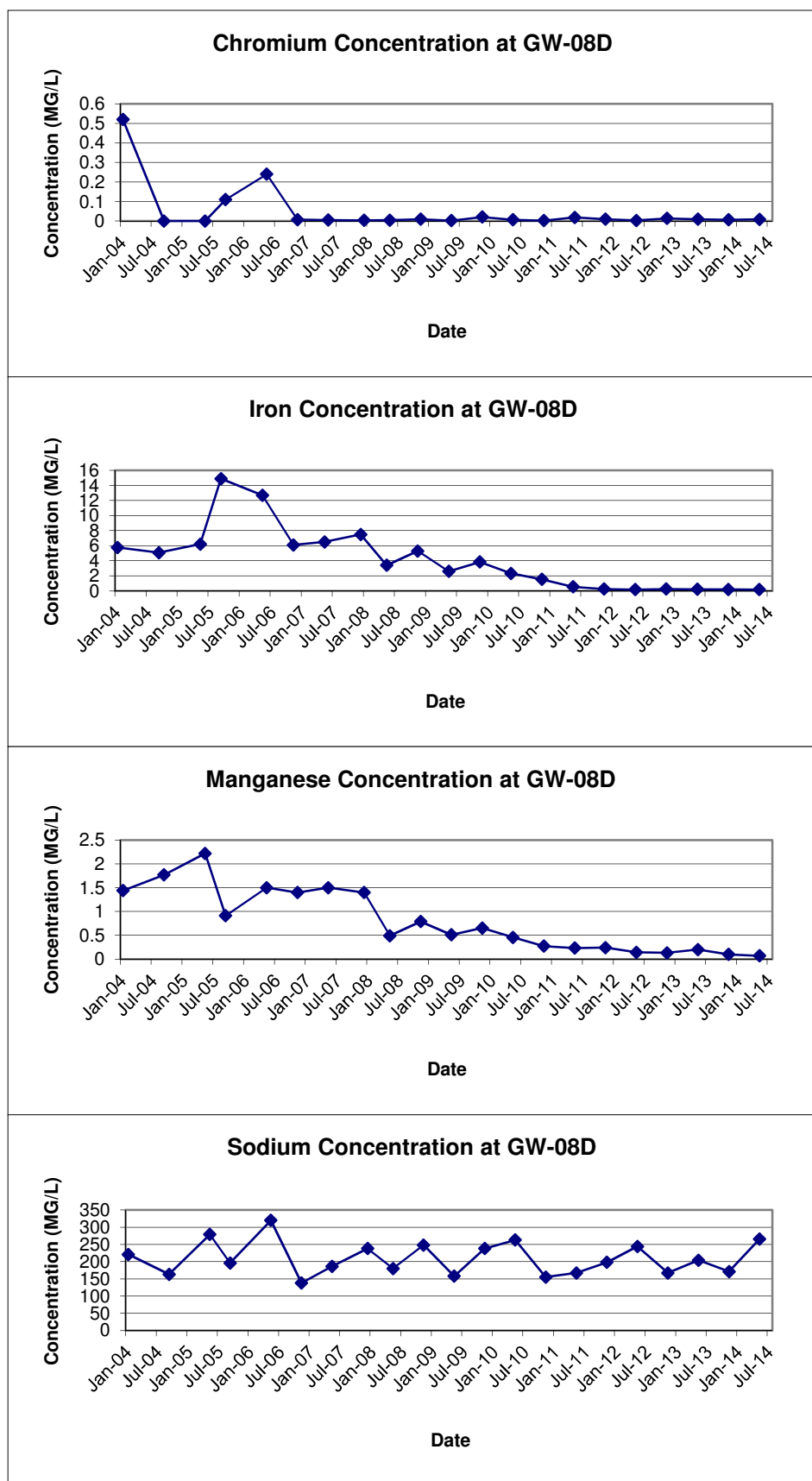


**FIGURE E-8**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-7S**

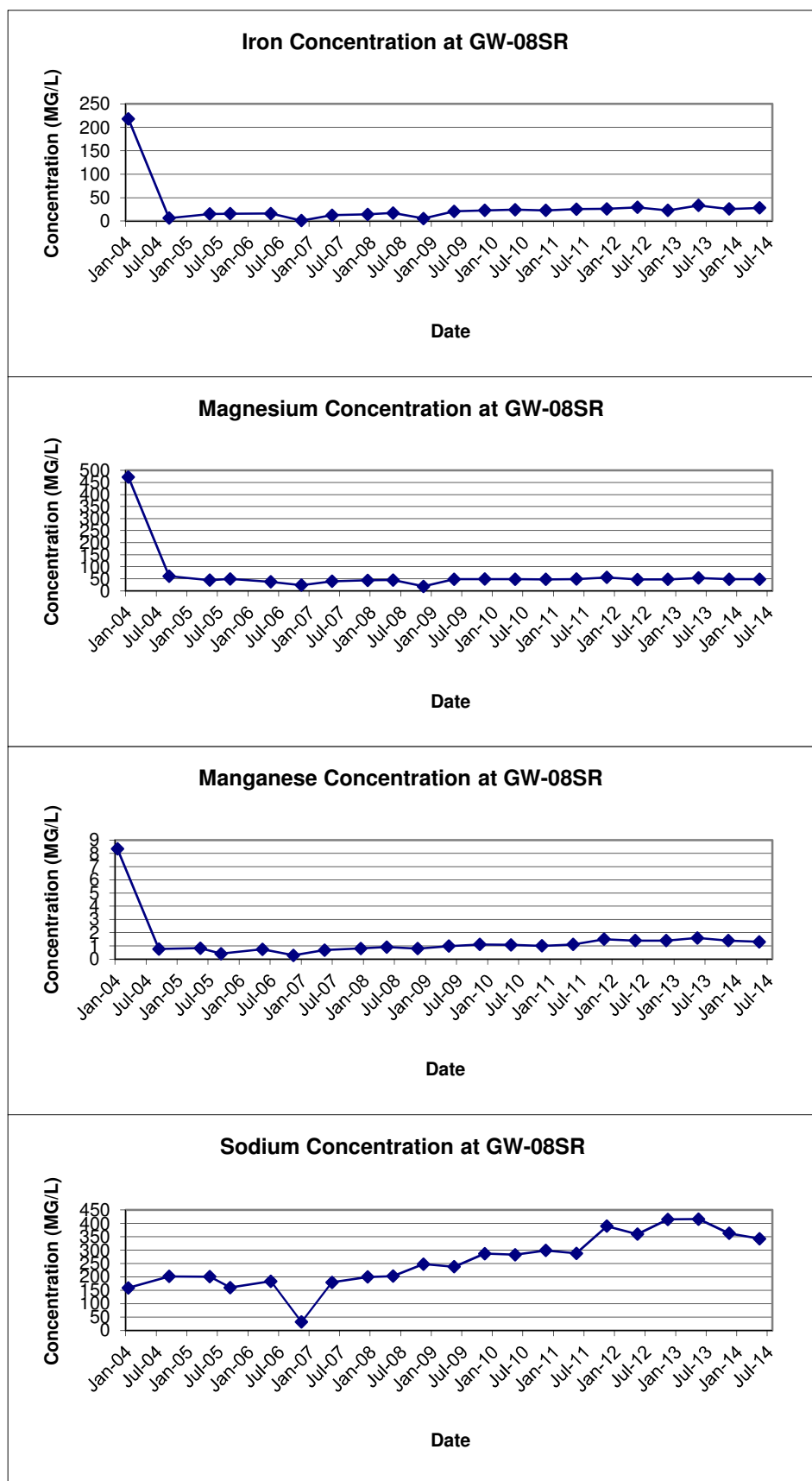




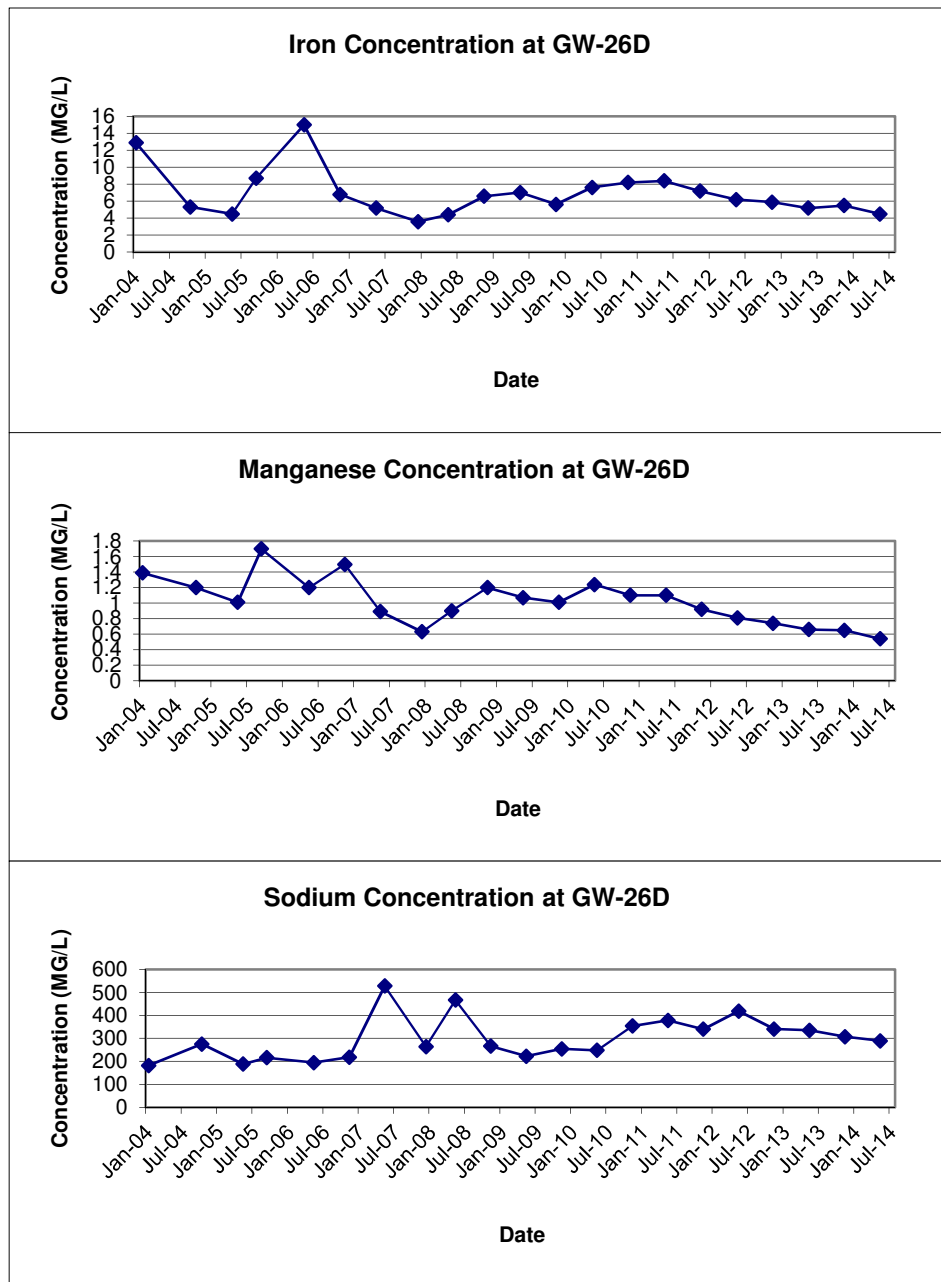
**FIGURE E-9**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-8D**



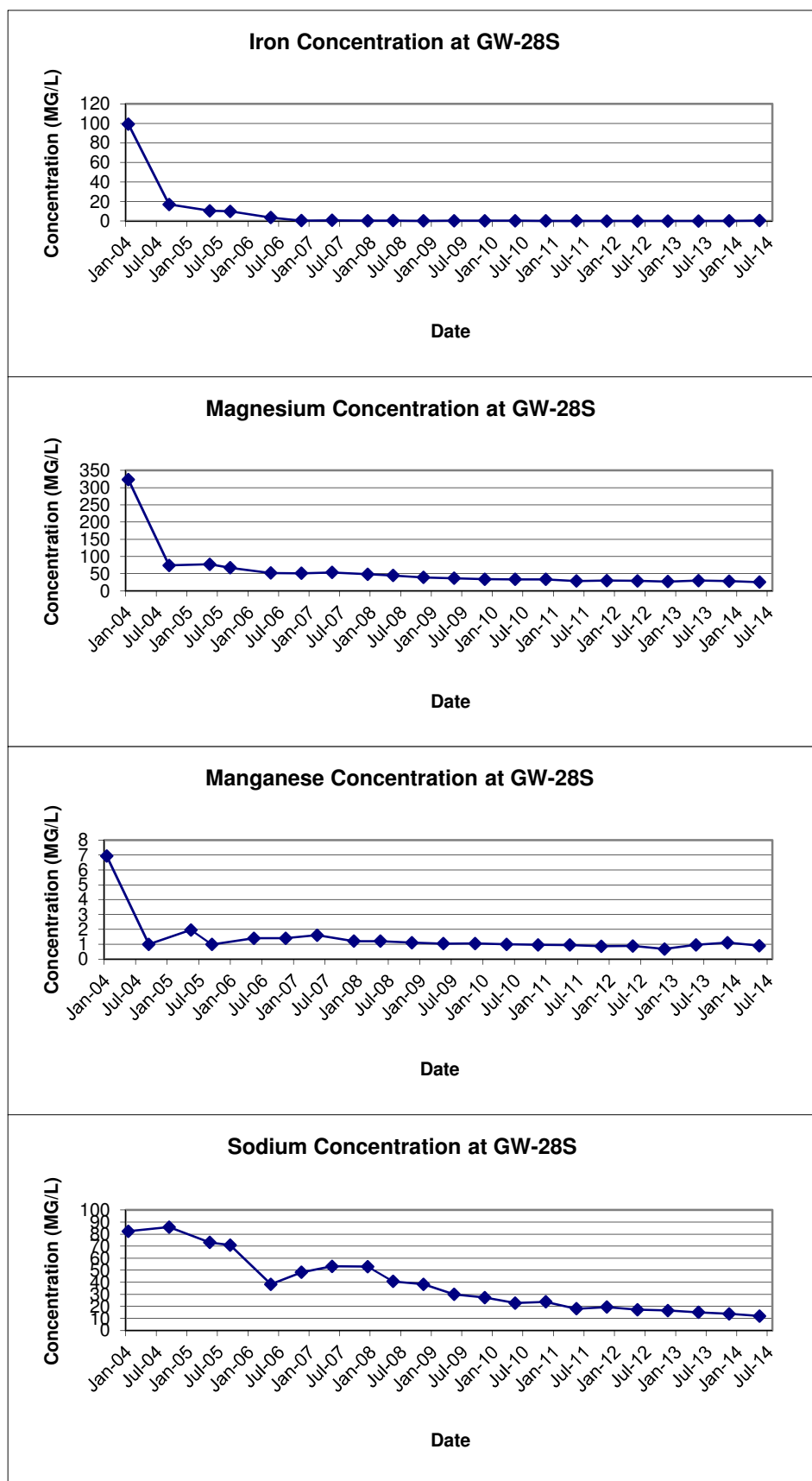
**FIGURE E-10**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-08SR**



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



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



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

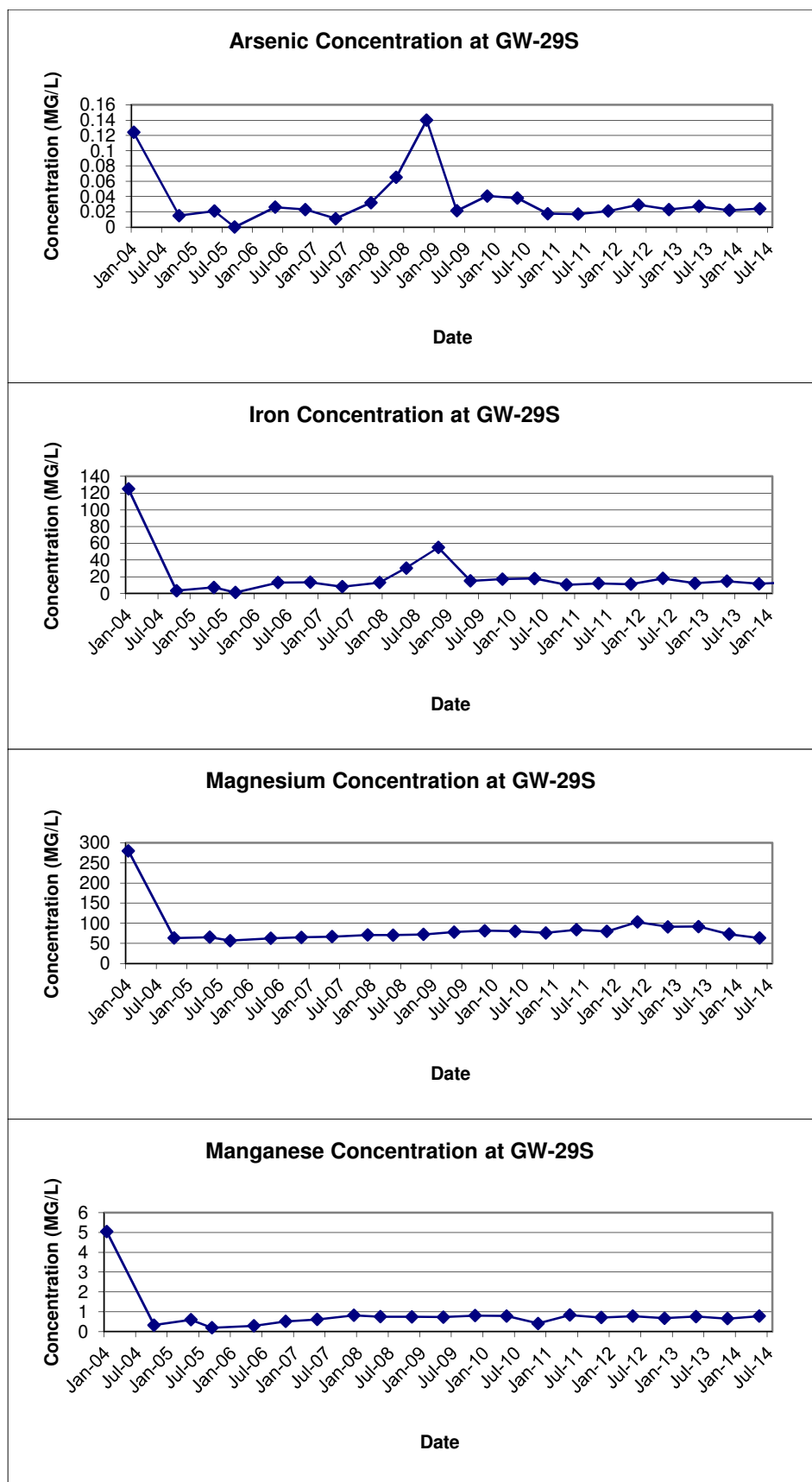
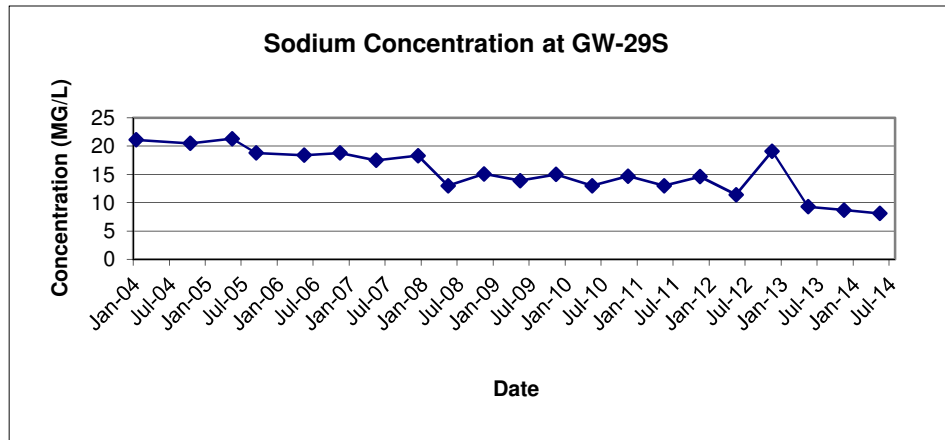
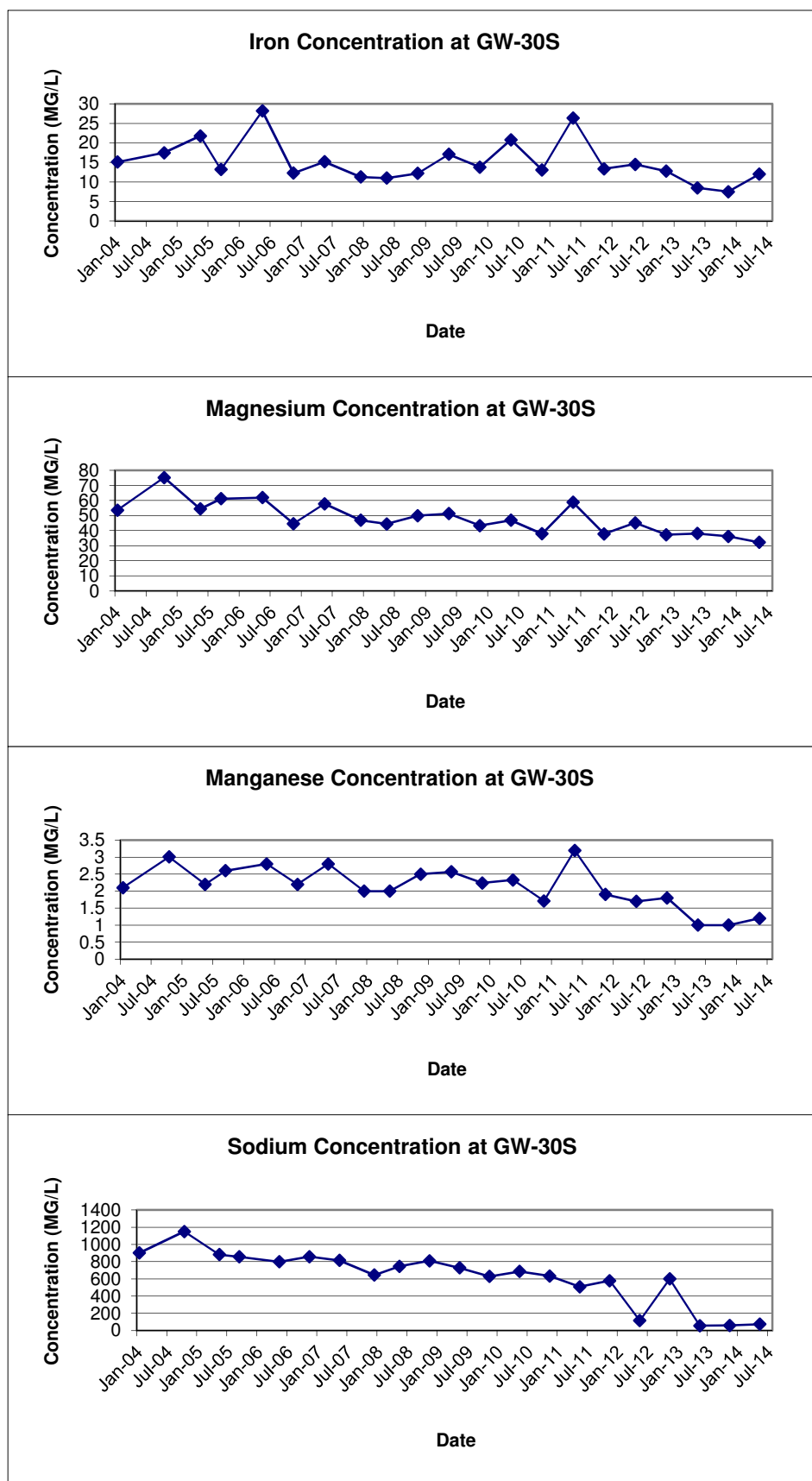


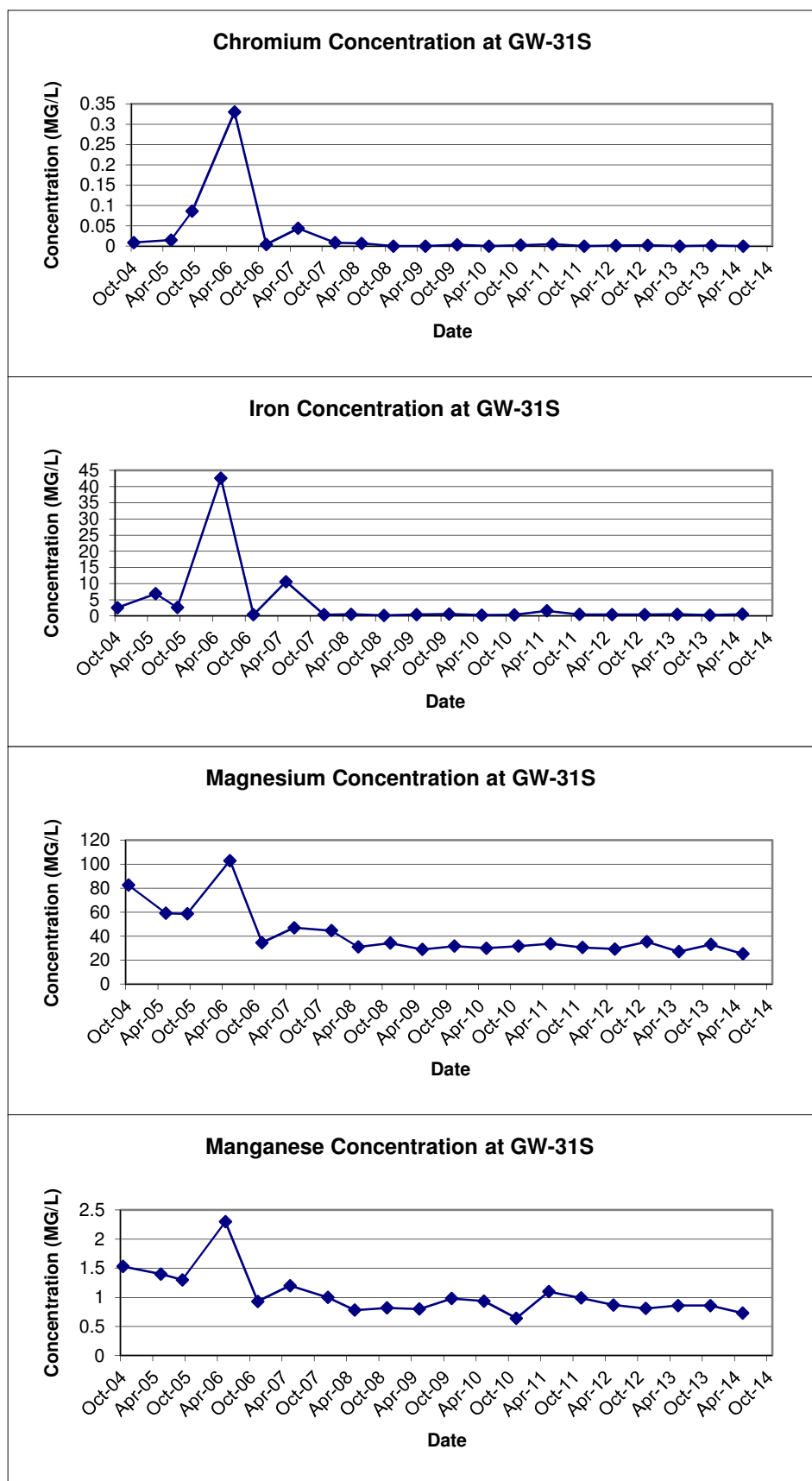
FIGURE E-13  
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS  
IN MONITORING WELL GW-29S



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



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





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

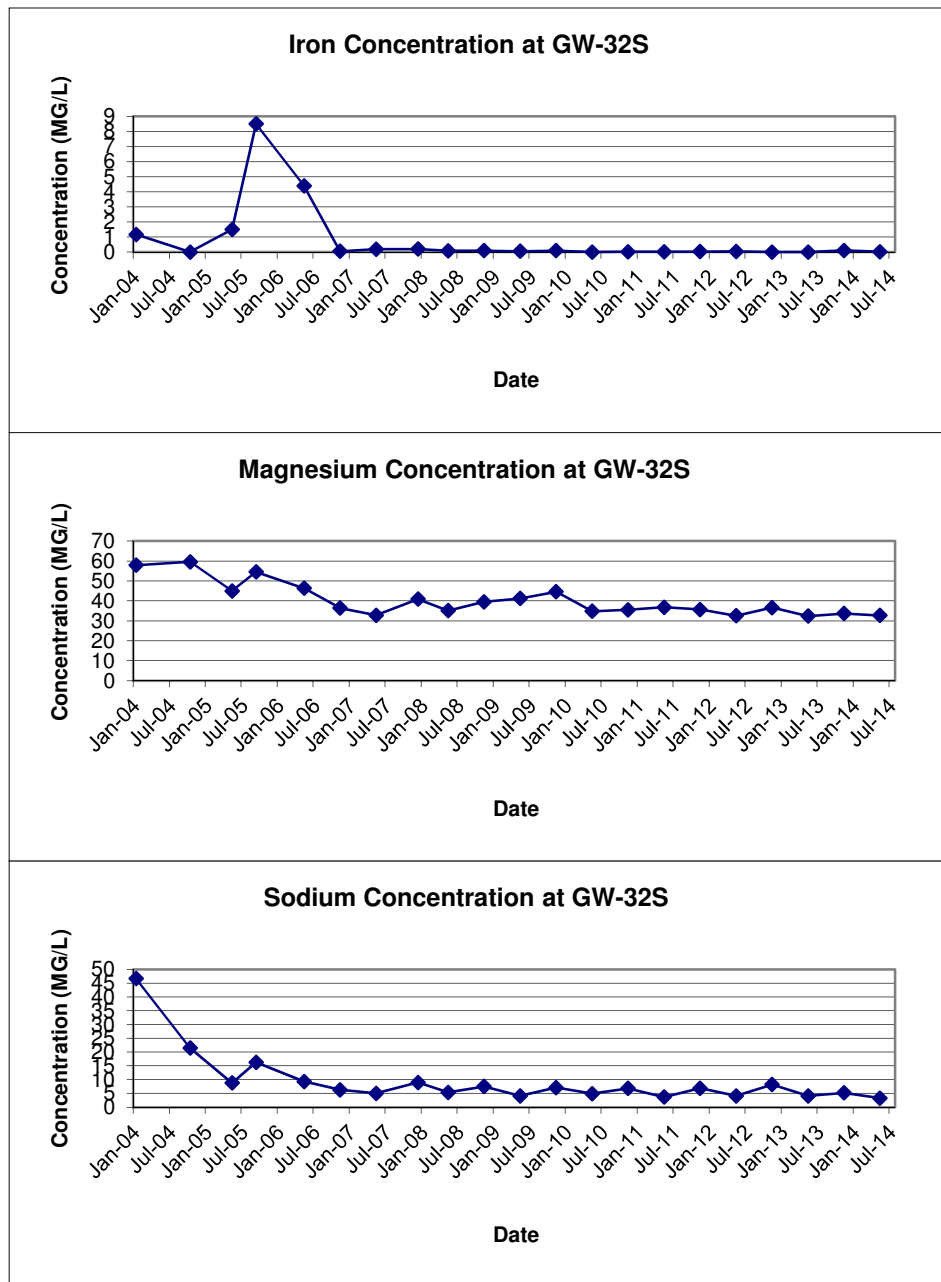
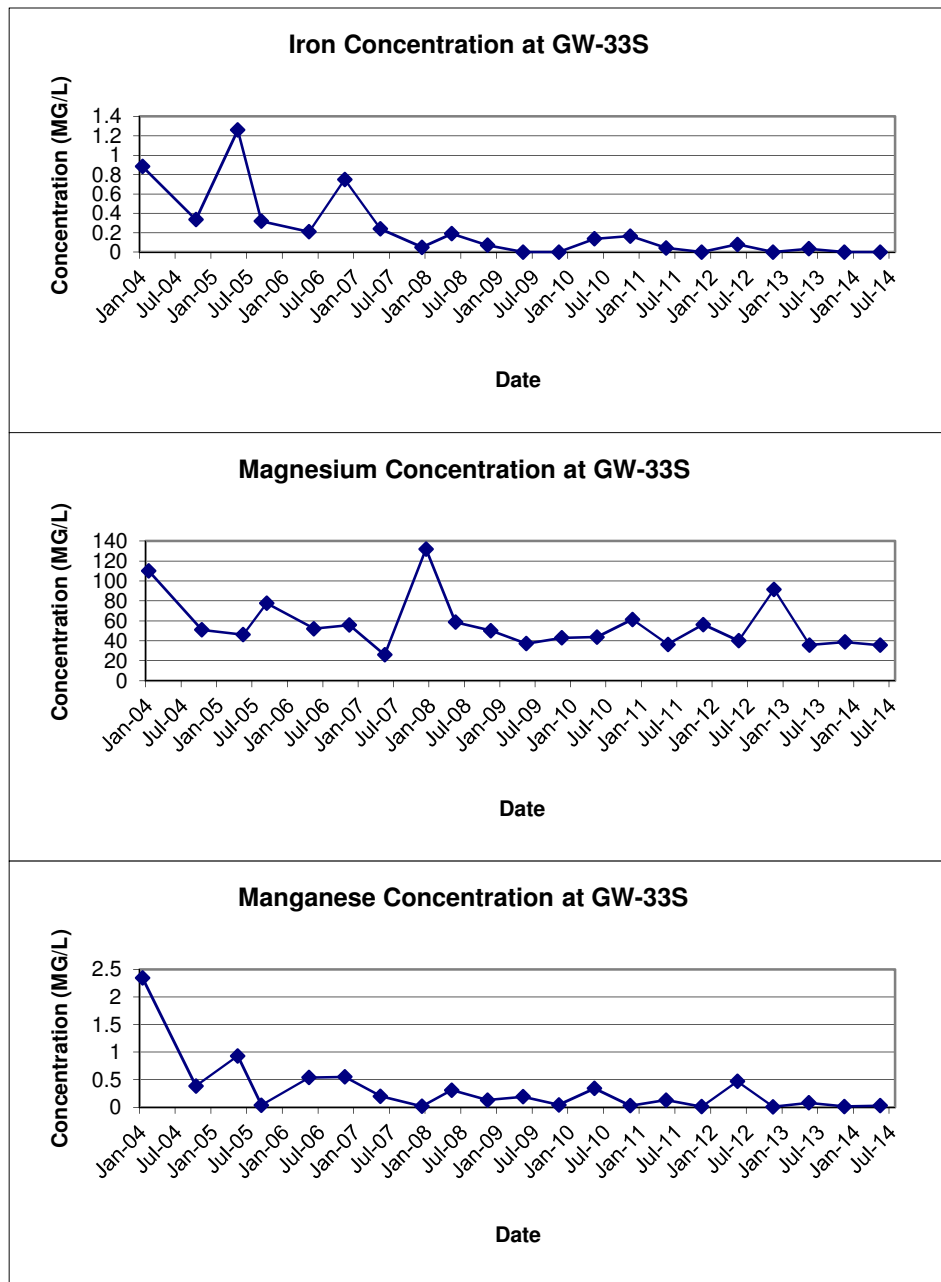
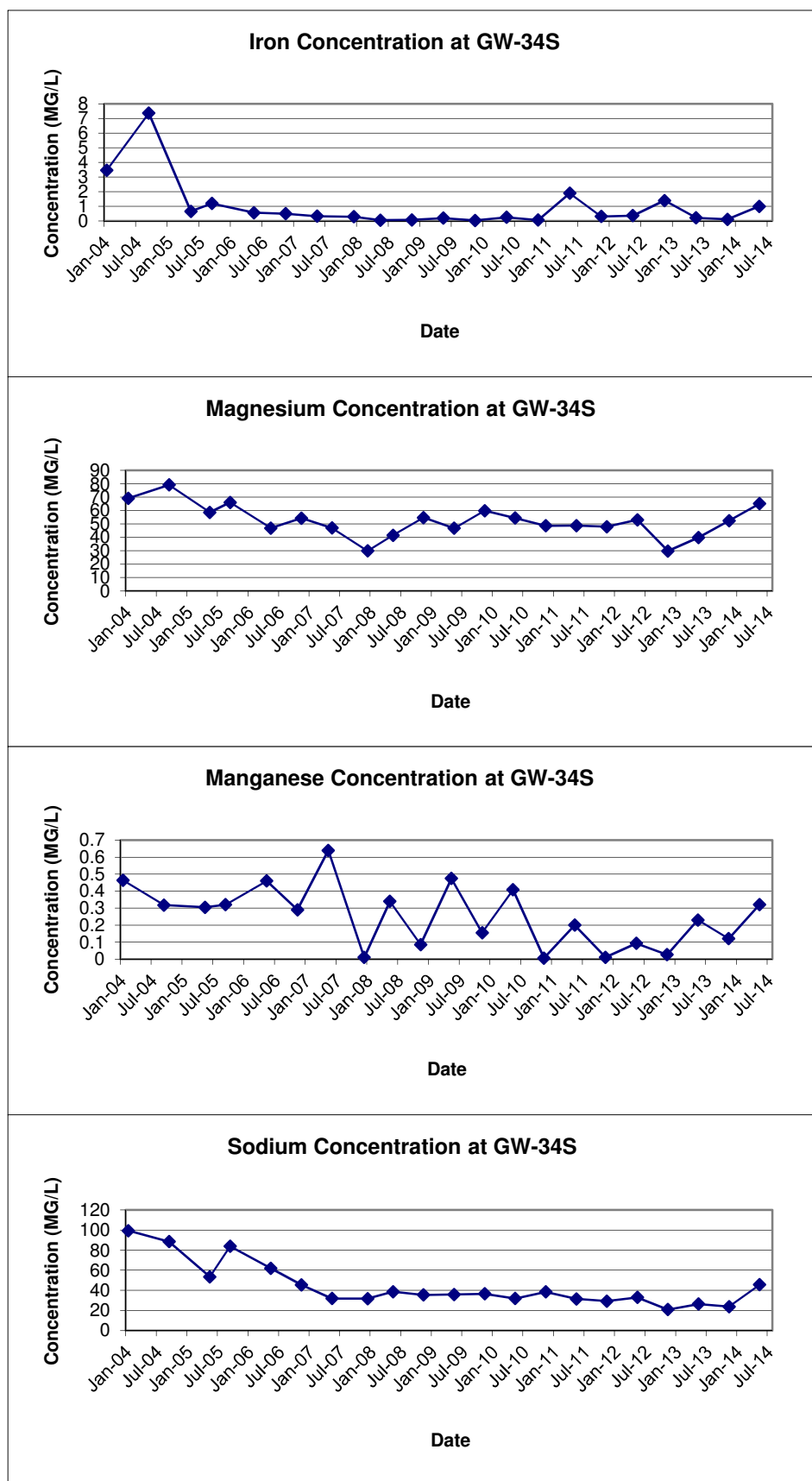


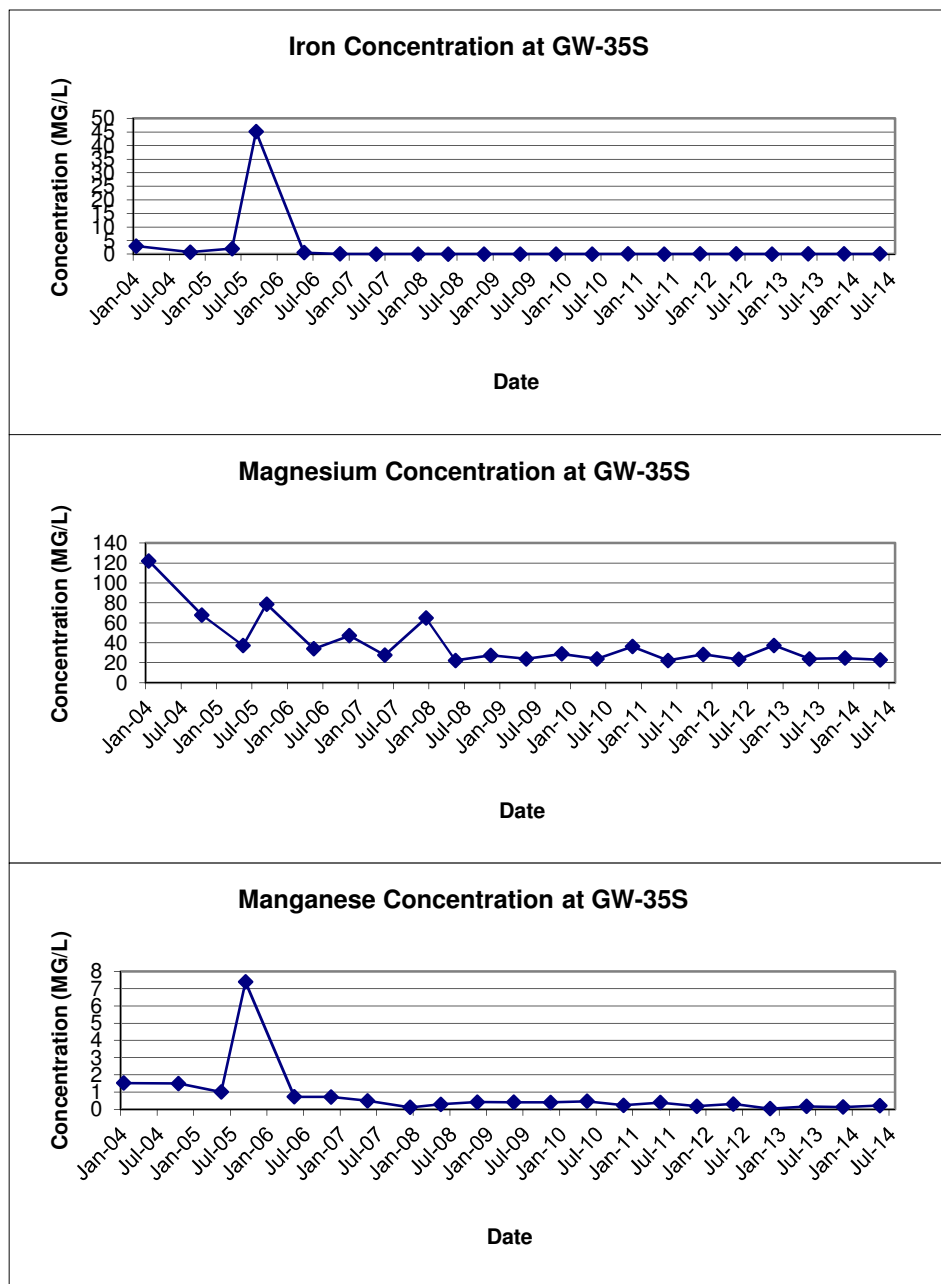
FIGURE E-17  
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS  
IN MONITORING WELL GW-33S



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



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



## **APPENDIX F**

### **BSA PERMIT 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

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**

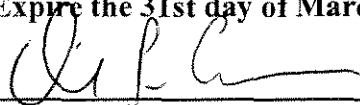
**CHEEKTOWAGA, NEW YORK 14225**

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<sup>day</sup> of April, 2013**

**To Expire the 31st day of March, 2016**

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

Signed this 12<sup>th</sup> 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 <sup>(1)</sup>		Sampling Requirements	
		Daily Max		Period	Type
001	pH	5.0 – 12.0 S.U.		1 day	Composite <sup>2</sup>
	Total Cadmium	1.17 lbs.		1 day	Composite <sup>2</sup>
	Total Chromium	1.17 lbs.		1 day	Composite <sup>2</sup>
	Total Copper	3.74 lbs.		1 day	Composite <sup>2</sup>
	Total Lead	1.17 lbs.		1 day	Composite <sup>2</sup>
	Total Nickel	3.27 lbs.		1 day	Composite <sup>2</sup>
	Total Zinc	5.84 lbs.		1 day	Composite <sup>2</sup>
	Total Barium	2.34 lbs.		1 day	Composite <sup>2</sup>
	Total Suspended Solids <sup>5</sup>	250 mg/l		1 day	Composite <sup>2</sup>
	Total Flow	140,100 gallons <sup>6</sup>		1 day	Discharge meter reading

Footnotes are explained on page 5.



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

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

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

Footnotes are explained on page 5.

## PART I: SPECIFIC CONDITIONS

**B. DISCHARGE MONITORING REPORTING REQUIREMENTS**

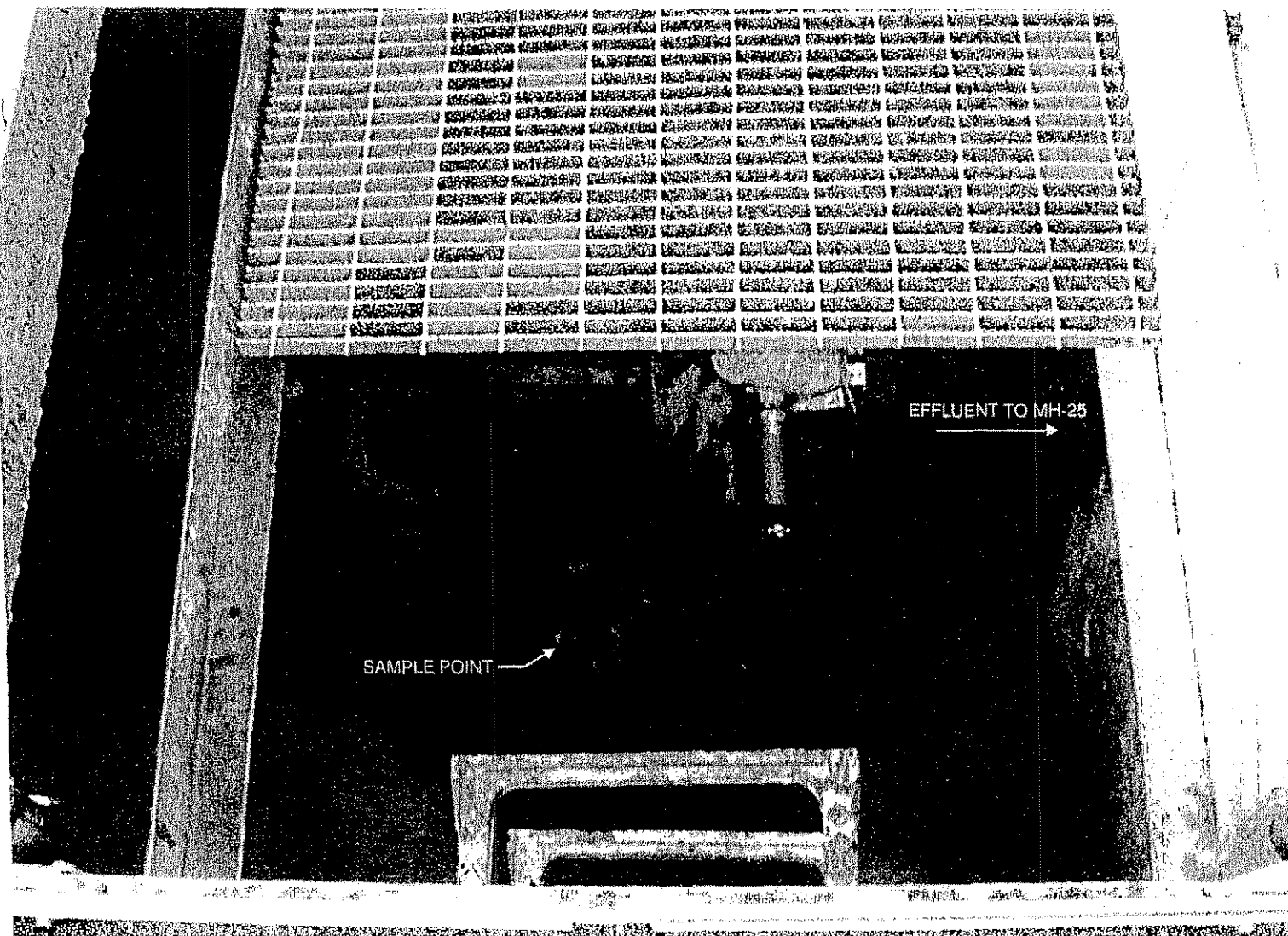
During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	March 31, 2011	Every March 31 <sup>st</sup> , June 30 <sup>th</sup> , September 30 <sup>th</sup> and December 31 <sup>st</sup>
	USEPA Test Methods 608, 624 and 625 & T Mercury	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: Bill Pugh, P.E. Phone: 716-897-7288

**Installation:**

Sample Point: SP-001

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

Date: 3/20/14 Crew: R. Murphy, T. Ifkovich, K. McGovern

Weather: 34° F, Overcast

Sampling Device: NA

Time of Installation: 13:25 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: WW-05 was running at the time of sample set-up.  
PLC display volumes: WW-01 (1,548,082 gals), WW-02 (-20,625 gals), WW-03 (311,038 gals),  
WW-04 (863,284 gals), WW-05 (3,477,469 gals), WW-06 (3,617,182 gals) & MH-25 (10,161,833 gals).

Date: 3/21/14 Crew: R. Murphy, T. Ifkovich, K. McGovern

Weather: 38° F, Mostly Clear

Time of Collection: 13:40

**Field Measurements:**

13:40/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10  
(time/initial)  
pH Measurement: 7.85  
Temperature: 9.0°C

Identification: EFF-032114

Physical Observations: \_\_\_\_\_

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.  
PLC display volumes: WW-01 (1,548,082 gals), WW-02 (-20,625 gals), WW-03 (311,038 gals),  
WW-04 (863,284 gals), WW-05 (3,501,628 gals), WW-06 (3,617,182 gals) & MH-25 (10,186,719 gals).

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_  
(Supervisor)

**TABLE 1**

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING  
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS  
MARCH 2014**

<b>Sample ID</b>	<b>EFF-032114</b>			
<b>Matrix</b>	<b>Effluent Water</b>			
<b>Date Sampled</b>	<b>3/21/2014</b>			
<b>Parameter</b>	<b>Result</b>	<b>Mass Loading</b>	<b>Discharge Limitation</b>	<b>Violations</b>
	<b>(mg/L)</b>	<b>(lbs/day)</b>	<b>(lbs/day)</b>	<b>(Y/N)</b>
Total Barium	0.22	0.05	2.34	No
Total Cadmuim	< <sup>(1)</sup> 0.0005	< 0.00010	1.17	No
Total Chromium	< 0.0010	< 0.0002	1.17	No
Total Copper	0.0086	0.002	3.74	No
Total Lead	< 0.003	< 0.0006	1.17	No
Total Nickel	0.0039	0.0008	3.27	No
Total Zinc	0.042	0.01	5.84	No
Total Suspended Solids	< 4.0	NA <sup>(2)</sup>	250 <sup>(3)</sup>	No
pH <sup>(4)</sup>	7.85	NA	5.0 - 12.0	No
Total Flow <sup>(5)</sup>		24,886	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: Bill Pugh, P.E. Phone: 716-897-7288

**Installation:**

Sample Point: SP-001

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

Date: 6/18/14 Crew: R. Murphy, T. Urban, R. Frears

Weather: 67° F, Cloudy

Sampling Device: NA

Time of Installation: 07:45 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: WW-05 was running at the time of sample set-up.

PLC display volumes: WW-01 (2,221,883 gals), WW-02 (-20,624 gals), WW-03 (311,201 gals),  
WW-04 (1,123,594 gals), WW-05 (5,028,806 gals), WW-06 (5,051,109 gals) & MH-25 (14,266,172 gals).

Date: 6/19/14 Crew: R. Murphy, T. Urban, R. Frears

Weather: 67° F, Clear

Time of Collection: 07:45

**Field Measurements:**

07:45/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10  
(time/initial)

pH Measurement: 7.64

Temperature: 16.9°C

Identification: EFF-061914

Physical Observations: \_\_\_\_\_

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.

PLC display volumes: WW-01 (2,221,883 gals), WW-02 (-20,624 gals), WW-03 (311,201 gals),  
WW-04 (1,106,576 gals), WW-05 (5,078,876 gals), WW-06 (5,051,109 gals) & MH-25 (14,316,203 gals).

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_  
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING  
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS  
JUNE 2014**

<b>Sample ID</b>	<b>EFF-061914</b>			
<b>Matrix</b>	<b>Effluent Water</b>			
<b>Date Sampled</b>	<b>6/19/2014</b>			
<b>Parameter</b>	<b>Result</b>	<b>Mass Loading</b>	<b>Discharge Limitation</b>	<b>Violations</b>
	<b>(mg/L)</b>	<b>(lbs/day)</b>	<b>(lbs/day)</b>	<b>(Y/N)</b>
Total Barium	0.21	0.09	2.34	No
Total Cadmuim	< <sup>(1)</sup> 0.0005	< 0.00021	1.17	No
Total Chromium	< 0.0010	< 0.0004	1.17	No
Total Copper	0.014	0.006	3.74	No
Total Lead	< 0.003	< 0.0013	1.17	No
Total Nickel	0.0044	0.0018	3.27	No
Total Zinc	0.11	0.05	5.84	No
Total Suspended Solids	< 4.0	NA <sup>(2)</sup>	250 <sup>(3)</sup>	No
pH <sup>(4)</sup>	7.64	NA	5.0 - 12.0	No
Total Flow <sup>(5)</sup>		50,031	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, K. McGovern Supervisor: J. Sundquist

Date(s) of Inspection: May 21, 2014

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-01S	OK	OK	OK	Bulged	3.33	14.94	
GW-01D	OK	OK	OK	Bulged	2.49	39.65	
GW-03S	OK	OK	OK	OK	2.08	13.22	
GW-03D	OK	OK	OK	OK	1.73	35.70	
GW-04S	OK	OK	OK	OK	4.15	16.23	
GW-04D	OK	OK	OK	OK	12.40	45.57	
GW-07S	OK	OK	OK	OK	4.11	35.04	
GW-07D	OK	OK	OK	Damaged	45.67	60.45	

Additional Comments:

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## WELL INSPECTION SUMMARY

Project Name:

Pfohl Brothers Landfill

Project Number: 11175616.00000

Inspection Crew Members:

R. Murphy, K. McGovern

Supervisor: J. Sundquist

Date(s) of Inspection:

May 21, 2014

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-08SR	OK	OK	OK	OK	5.16	13.02	
GW-08D	OK	OK	OK	OK	5.70	36.54	
GW-26D	OK	OK	OK	OK	6.54	40.70	
GW-28S	OK	OK	OK	OK	8.29	15.52	
GW-29S	OK	OK	OK	OK	7.27	20.04	
GW-30S	OK	OK	OK	OK	7.78	17.97	
GW-31S	OK	OK	OK	OK	2.55	9.57	
GW-32S	OK	OK	OK	OK	2.46	9.93	

Additional Comments:

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## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, K. McGovern Supervisor: J. Sundquist

Date(s) of Inspection: May 21, 2014

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-33S	OK	OK	OK	OK	3.83	8.21	
GW-34S	OK	OK	OK	OK	2.58	10.01	
GW-35S	OK	OK	OK	OK	2.87	7.46	

Additional Comments:

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**DATA APPLICABILITY REPORT**

**SEMI-ANNUAL GROUNDWATER MONITORING  
AT  
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**

**AUGUST 2014**

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## TABLES

(Following Text)

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

## APPENDICES

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

## **I. INTRODUCTION**

This Data Applicability Report (DAR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 2B-Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, May 2010. This DAR discusses the usability of the analytical data for groundwater samples collected during the May 2014 semi-annual monitoring program at the Pfohl Brothers Landfill Site.

## **II. ANALYTICAL METHODOLOGIES AND DATA VALIDATION PROCEDURES**

The data being evaluated are from the May 21-23, 2014 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 is 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 8260B, Semivolatile Organic Compounds (SVOCs) by USEPA Method 8270C, and metals by USEPA Method 6010B/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-08-01, June 2008.
- *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-10-011, January 2010.

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-7D and GW-7S, the VOC aliquots were collected on 05/21/14, while the SVOC/metals aliquots were collected on 05/22/14. All aliquots of sample GW-4S were collected on 05/22/14, however the VOCs were collected at 10:45 am and the SVOC/metals were collected at 12:20 pm.

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

The SVOC laboratory method blank exhibited contamination for bis(2-ethylhexyl)phthalate at a concentration less than the reporting limit (RL). The result for this compound in associated sample GW-7D was qualified 'U' at the RL since it was less than the RL.

The metals method blank exhibited contamination for copper (Cu), sodium (Na), and zinc (Zn) at a concentration less than the RL. The laboratory qualified the detected result 'B' for Na in associated sample GW-3D. Since the sample result was greater than five times the concentration in the method blank, and also greater than the RL, the 'B' qualifier was removed during the data validation. On the other hand, the Cu and/or Zn results for associated samples

GW-3S, GW-4D, GW-4S, GW-7D, GW-7S, GW-8D, GW-8SR, GW-26D, FD-052214 (GW-26D), GW-28S, GW-29S, GW-34S, and GW-35S were qualified 'U' at the RL since they were less than five times the value detected in the method blank, or 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'.

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' during the limited data review are considered non-detect. 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:** 8/18/14

**Reviewed by:** Peter R. Fairbanks, Senior Chemist



**Date:** 8/18/14



## **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-01D	GW-01S	GW-03D	GW-03S
Sample ID		GW-1D	GW-1D	GW-1S	GW-3D	GW-3S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/23/14	05/23/14	05/23/14	05/21/14	05/21/14
Parameter	Units	(1-2)				
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	NA	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	NA	10 U	10 U	10 U	10 U
Benzene	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	NA	9.5 U	9.9 U	1.1 J	10 U
1,4-Dichlorobenzene	UG/L	NA	9.5 U	9.9 U	1.7 J	10 U
bis(2-Ethylhexyl)phthalate	UG/L	NA	4.8 U	5.0 U	4.7 U	5.0 U
Phenol	UG/L	NA	4.8 U	5.0 U	4.7 U	5.0 U
<b>Metals</b>						
Antimony	MG/L	NA	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	NA	0.010 U	0.0068 J	0.010 U	0.010 U
Barium	MG/L	NA	0.071	0.17	0.091	0.14
Cadmium	MG/L	NA	0.0010 U	0.0013	0.0010 U	0.00085 J
Chromium	MG/L	NA	0.0017 J	0.0040 U	0.0040 U	0.016
Copper	MG/L	NA	0.010 U	0.010 U	0.010 U	0.0031 J
Iron	MG/L	NA	0.91	7.3	1.9	1.7
Lead	MG/L	NA	0.0050 U	0.0050 U	0.0050 U	0.0030 J
Magnesium	MG/L	NA	33.8	21.6	18.6	103
Manganese	MG/L	0.019	NA	1.5	0.48	0.21
Mercury	MG/L	NA	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	NA	0.010 U	0.0013 J	0.0036 J	0.10

Flags assigned during chemistry validation are shown.

MADE BY: AMK 7/29/14  
 CHECKED BY: PF 8/12/14

Detection Limits shown are PQL

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

Location ID		GW-01D	GW-01D	GW-01S	GW-03D	GW-03S
Sample ID		GW-1D	GW-1D	GW-1S	GW-3D	GW-3S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/23/14	05/23/14	05/23/14	05/21/14	05/21/14
Parameter	Units	(1-2)				
Metals						
Silver	MGL	NA	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	NA	99.3	106	188	80.8
Zinc	MGL	NA	0.010 U	0.0029 J	0.0021 J	0.021 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 7/29/14

CHECKED BY: PF 8/12/14

Detection Limits shown are PQL

Advanced Selection: AMK-TEMP  
J:\Projects\1172705.0000\GIS\GISProgram\EQMS.mxd  
Printed: 9/18/2014 11:32:24 AM  
[LOGDATE] BETWEEN #05/01/14# AND #05/30/14# AND ([SACODE] = 'N' OR [SACODE] = 'FD')

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

Location ID		GW-04D	GW-04S	GW-07D	GW-07D	GW-07S
Sample ID		GW-4D	GW-4S	GW-7D	GW-7D	GW-7S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/22/14	05/22/14	05/21/14	05/22/14	05/21/14
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	NA	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	NA	2.0 U
Acetone	UG/L	10 U	10 U	10 U	NA	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	NA	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	NA	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	9.8 U	9.2 U	NA	9.5 U	NA
1,4-Dichlorobenzene	UG/L	9.8 U	9.2 U	NA	9.5 U	NA
bis(2-Ethylhexyl)phthalate	UG/L	4.9 U	4.6 U	NA	4.7 U	NA
Phenol	UG/L	4.9 U	4.6 U	NA	4.7 U	NA
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	NA	0.020 U	NA
Arsenic	MG/L	0.010 U	0.010 U	NA	0.010 U	NA
Barium	MG/L	0.079	0.10	NA	0.067	NA
Cadmium	MG/L	0.0010 U	0.00080 J	NA	0.0010 U	NA
Chromium	MG/L	0.0025 J	0.0056	NA	0.031	NA
Copper	MG/L	0.010 U	0.010 U	NA	0.010 U	NA
Iron	MG/L	0.32	1.6	NA	0.96	NA
Lead	MG/L	0.0050 U	0.0050 U	NA	0.021	NA
Magnesium	MG/L	72.6	26.8	NA	32.9	NA
Manganese	MG/L	0.025	0.14	NA	0.034	NA
Mercury	MG/L	0.00020 U	0.00020 U	NA	0.00020 U	NA
Nickel	MG/L	0.0014 J	0.0071 J	NA	0.022	NA

Flags assigned during chemistry validation are shown.

MADE BY: AMK 7/29/14

CHECKED BY: PF 8/12/14

Detection Limits shown are PQL

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

Location ID		GW-04D	GW-04S	GW-07D	GW-07D	GW-07S
Sample ID		GW-4D	GW-4S	GW-7D	GW-7D	GW-7S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/22/14	05/22/14	05/21/14	05/22/14	05/21/14
Parameter	Units					
<b>Metals</b>						
Silver	MG/L	0.0030 U	0.0030 U	NA	0.0030 U	NA
Sodium	MG/L	84.1	31.9	NA	81.3	NA
Zinc	MG/L	0.0024 J	0.012	NA	0.015	NA

Flags assigned during chemistry validation are shown

MADE BY: AMK 7/29/14  
 CHECKED BY: PF 8/12/14

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-7S	GW-8D	GW-8SR	FD-052214	GW-26D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/22/14	05/21/14	05/21/14	05/22/14	05/22/14
Parameter	Units				Field Duplicate (1-1)	
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	NA	2.0 U	2.0 U	1.4 J	1.5 J
Acetone	UG/L	NA	10 U	10 U	10 U	10 U
Benzene	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	NA	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	9.5 U	9.3 U	9.6 U	9.5 U	9.7 U
1,4-Dichlorobenzene	UG/L	9.5 U	9.3 U	9.6 U	9.5 U	9.7 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	2.0 J	4.8 U	4.7 U	4.8 U
Phenol	UG/L	4.8 U	4.7 U	4.8 U	4.7 U	4.8 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.0086 J	0.010 U	0.0059 J
Barium	MG/L	0.29	0.11	0.38	0.12	0.12
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0055	0.0089	0.0030 J	0.0040 U	0.0040 U
Copper	MG/L	0.010 U	0.0031 J	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.22	0.18	28.1	4.4	4.5
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	36.2	19.5	48.4	17.3	17.5
Manganese	MG/L	0.10	0.069	1.3	0.53	0.54
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.012	0.0042 J	0.0054 J	0.0020 J	0.0016 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 7/29/14

CHECKED BY: PF 8/12/14

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-7S	GW-8D	GW-8SR	FD-052214	GW-26D
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/22/14	05/21/14	05/21/14	05/22/14	05/22/14
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	55.8	266	343	286	289
Zinc	MG/L	0.0092 J	0.010 U	0.010 U	0.010 U	0.010 U

Flags assigned during chemistry validation are shown:

MADE BY: AMK 7/29/14  
 CHECKED BY: PF 8/12/14

Detection Limits shown are PQL

Advanced Selection: AMK-TEMP  
 J:\Projects\11172700 000000\GIS\B\Program\EDMS.mde  
 Printed: 8/18/2014 11:32:25 AM  
 (LOGDATE) BETWEEN #05/01/14 AND #05/30/14 AND ( [SACODE] = 'N' OR [SACODE] = 'FD' )



**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		05/22/14	05/22/14	05/23/14	05/23/14	05/23/14
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	9.6 U	9.6 U	9.3 U	9.8 U	9.7 U
1,4-Dichlorobenzene	UG/L	9.6 U	9.6 U	9.3 U	9.8 U	9.7 U
bis(2-Ethylhexyl)phthalate	UG/L	4.8 U	4.8 U	4.6 U	2.7 J	4.8 U
Phenol	UG/L	4.8 U	4.8 U	4.6 U	4.9 U	4.8 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.024	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.076	0.18	0.12	0.048	0.056
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0018 J	0.0017 J	0.0040 U	0.0040 U	0.0040 U
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.0022 J	0.010 U
Iron	MG/L	0.47	13.2	12.0	0.58	0.029 J
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	25.6	63.2	32.2	25.3	32.7
Manganese	MG/L	0.90	0.78	1.2	0.73	0.53
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0028 J	0.0015 J	0.010 U	0.0036 J	0.0017 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 7/29/14  
 CHECKED BY: PF 8/12/14

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		05/22/14	05/22/14	05/23/14	05/23/14	05/23/14
Parameter	Units					
<b>Metals</b>						
Silver	MGL	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MGL	12.0	8.1	72.7	3.7	3.3
Zinc	MGL	0.0074 J	0.0048 J	0.0018 J	0.0081 J	0.0037 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 7/29/14  
 CHECKED BY: PF 8/12/14

Detection Limits shown are PQL

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

Location ID		GW-33S	GW-33S	GW-34S	GW-35S
Sample ID		GW-33S	GW-33S	GW-34S	GW-35S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-
Date Sampled		05/23/14	05/23/14	05/22/14	05/22/14
Parameter	Units		(1-2)		
<b>Volatile Organic Compounds</b>					
1,1,2-Trichloroethane	UG/L	1.0 U	NA	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	NA	2.0 U	2.0 U
Acetone	UG/L	10 U	NA	10 U	10 U
Benzene	UG/L	1.0 U	NA	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	NA	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>					
1,3-Dichlorobenzene	UG/L	10 U	NA	9.5 U	9.4 U
1,4-Dichlorobenzene	UG/L	10 U	NA	9.5 U	9.4 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0 U	NA	4.7 U	4.7 U
Phenol	UG/L	5.0 U	NA	4.7 U	4.7 U
<b>Metals</b>					
Antimony	MG/L	0.020 U	NA	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	NA	0.010 U	0.010 U
Barium	MG/L	0.032	NA	0.12	0.084
Cadmium	MG/L	0.0010 U	NA	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	NA	0.0035 J	0.0040 U
Copper	MG/L	0.010 U	NA	0.010 U	0.010 U
Iron	MG/L	0.050 U	NA	1.0	0.071
Lead	MG/L	0.0050 U	NA	0.0050 U	0.0050 U
Magnesium	MG/L	35.5	NA	65.2	22.9
Manganese	MG/L	NA	0.028	0.32	0.21
Mercury	MG/L	0.00020 U	NA	0.00020 U	0.00020 U
Nickel	MG/L	0.0013 J	NA	0.0086 J	0.0013 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 7/29/14  
 CHECKED BY: PF 8/12/14

Detection Limits shown are PQL

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

Location ID		GW-33S	GW-33S	GW-34S	GW-35S
Sample ID		GW-33S	GW-33S	GW-34S	GW-35S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-
Date Sampled		05/23/14	05/23/14	05/22/14	05/22/14
Parameter	Units		(1-2)		
<b>Metals</b>					
Silver	MG/L	0.0030 U	NA	0.0030 U	0.0030 U
Sodium	MG/L	3.4	NA	45.6	2.5
Zinc	MG/L	0.0035 J	NA	0.0041 J	0.0037 J

Flags assigned during chemistry validation are shown:

MADE BY: AMK 7/29/14

CHECKED BY: PF 8/12/14

Detection Limits shown are PQL

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

Location ID		FIELDQC	FIELDQC	FIELDQC
Sample ID		TB-052114	TB-052214	TB-052314
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		05/21/14	05/22/14	05/23/14
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: AMK 7/29/14  
 CHECKED BY: PF 8/12/14

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: 480-60314-1

Client Sample ID: GW-3S

Lab Sample ID: 480-60314-1

Date Collected: 05/21/14 11:25

Matrix: Water

Date Received: 05/21/14 17:57

## 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			05/27/14 22:42	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			05/27/14 22:42	1
Acetone	ND		10	3.0	ug/L			05/27/14 22:42	1
Benzene	ND		1.0	0.41	ug/L			05/27/14 22:42	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/27/14 22:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		66 - 137		05/27/14 22:42	1
Toluene-d8 (Surr)	94		71 - 126		05/27/14 22:42	1
4-Bromofluorobenzene (Surr)	89		73 - 120		05/27/14 22:42	1
Dibromofluoromethane (Surr)	99		60 - 140		05/27/14 22:42	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		05/23/14 06:20	05/31/14 12:47	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/23/14 06:20	05/31/14 12:47	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		05/23/14 06:20	05/31/14 12:47	1
Phenol	ND		5.0	0.39	ug/L		05/23/14 06:20	05/31/14 12:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	95	*	52 - 132	05/23/14 06:20	05/31/14 12:47	1
2-Fluorobiphenyl	86		48 - 120	05/23/14 06:20	05/31/14 12:47	1
2-Fluorophenol	43		20 - 120	05/23/14 06:20	05/31/14 12:47	1
Nitrobenzene-d5	79		46 - 120	05/23/14 06:20	05/31/14 12:47	1
Phenol-d5	31		16 - 120	05/23/14 06:20	05/31/14 12:47	1
p-Terphenyl-d14	84		67 - 150	05/23/14 06:20	05/31/14 12:47	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/22/14 09:25	05/27/14 16:54	1
Arsenic	ND		0.010	0.0056	mg/L		05/22/14 09:25	05/27/14 16:54	1
Barium	0.14		0.0020	0.00070	mg/L		05/22/14 09:25	05/27/14 16:54	1
Cadmium	0.00085	J	0.0010	0.00050	mg/L		05/22/14 09:25	05/27/14 16:54	1
Chromium	0.016		0.0040	0.0010	mg/L		05/22/14 09:25	05/27/14 16:54	1
Copper	0.0031	J	0.010	0.0016	mg/L		05/22/14 09:25	05/27/14 16:54	1
Iron	1.7		0.050	0.019	mg/L		05/22/14 09:25	05/27/14 16:54	1
Lead	0.0030	J	0.0050	0.0030	mg/L		05/22/14 09:25	05/27/14 16:54	1
Magnesium	103		0.20	0.043	mg/L		05/22/14 09:25	05/27/14 16:54	1
Manganese	0.21		0.0030	0.00040	mg/L		05/22/14 09:25	05/27/14 16:54	1
Nickel	0.10		0.010	0.0013	mg/L		05/22/14 09:25	05/27/14 16:54	1
Silver	ND		0.0030	0.0017	mg/L		05/22/14 09:25	05/27/14 16:54	1
Sodium	80.8		1.0	0.32	mg/L		05/22/14 09:25	05/27/14 16:54	1
Zinc	0.021		0.010	0.0015	mg/L		05/22/14 09:25	05/27/14 16:54	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.00012	mg/L		05/22/14 12:00	05/22/14 18:19	1



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-3D

Lab Sample ID: 480-60314-2

Date Collected: 05/21/14 12:36

Matrix: Water

Date Received: 05/21/14 17:57

## 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			05/27/14 23:05	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			05/27/14 23:05	1
Acetone	ND		10	3.0	ug/L			05/27/14 23:05	1
Benzene	ND		1.0	0.41	ug/L			05/27/14 23:05	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/27/14 23:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 137		05/27/14 23:05	1
Toluene-d8 (Surr)	96		71 - 126		05/27/14 23:05	1
4-Bromofluorobenzene (Surr)	94		73 - 120		05/27/14 23:05	1
Dibromofluoromethane (Surr)	101		60 - 140		05/27/14 23:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	1.1	J	9.5	0.46	ug/L		05/23/14 06:20	06/02/14 14:19	1
1,4-Dichlorobenzene	1.7	J	9.5	0.44	ug/L		05/23/14 06:20	06/02/14 14:19	1
Bis(2-ethylhexyl) phthalate	ND		4.7	1.7	ug/L		05/23/14 06:20	06/02/14 14:19	1
Phenol	ND		4.7	0.37	ug/L		05/23/14 06:20	06/02/14 14:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	106		52 - 132	05/23/14 06:20	06/02/14 14:19	1
2-Fluorobiphenyl	92		48 - 120	05/23/14 06:20	06/02/14 14:19	1
2-Fluorophenol	46		20 - 120	05/23/14 06:20	06/02/14 14:19	1
Nitrobenzene-d5	88		46 - 120	05/23/14 06:20	06/02/14 14:19	1
Phenol-d5	33		16 - 120	05/23/14 06:20	06/02/14 14:19	1
p-Terphenyl-d14	109		67 - 150	05/23/14 06:20	06/02/14 14:19	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/14 09:30	05/28/14 18:14	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/14 09:30	05/28/14 18:14	1
Barium	0.091		0.0020	0.00070	mg/L		05/27/14 09:30	05/28/14 18:14	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/14 09:30	05/28/14 18:14	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/14 09:30	05/28/14 18:14	1
Copper	ND		0.010	0.0016	mg/L		05/27/14 09:30	05/28/14 18:14	1
Iron	1.9		0.050	0.019	mg/L		05/27/14 09:30	05/28/14 18:14	1
Lead	ND		0.0050	0.0030	mg/L		05/27/14 09:30	05/28/14 18:14	1
Magnesium	18.6		0.20	0.043	mg/L		05/27/14 09:30	05/28/14 18:14	1
Manganese	0.48		0.0030	0.00040	mg/L		05/27/14 09:30	05/28/14 18:14	1
Nickel	0.0036	J	0.010	0.0013	mg/L		05/27/14 09:30	05/28/14 18:14	1
Silver	ND		0.0030	0.0017	mg/L		05/27/14 09:30	05/28/14 18:14	1
Sodium	188		1.0	0.32	mg/L		05/27/14 09:30	05/28/14 18:14	1
Zinc	0.0021	J	0.010	0.0015	mg/L		05/27/14 09:30	05/28/14 18:14	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/22/14 12:00	05/22/14 18:21	1

*Handwritten signature/initials in red ink.*

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-8D

Lab Sample ID: 480-60314-3

Date Collected: 05/21/14 14:15

Matrix: Water

Date Received: 05/21/14 17:57

## 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			05/27/14 23:28	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/27/14 23:28	1
Acetone	ND		10	3.0	ug/L			05/27/14 23:28	1
Benzene	ND		1.0	0.41	ug/L			05/27/14 23:28	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/27/14 23:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		66 - 137		05/27/14 23:28	1
Toluene-d8 (Surr)	96		71 - 126		05/27/14 23:28	1
4-Bromofluorobenzene (Surr)	93		73 - 120		05/27/14 23:28	1
Dibromofluoromethane (Surr)	101		60 - 140		05/27/14 23:28	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		05/23/14 06:20	05/31/14 14:23	1
1,4-Dichlorobenzene	ND		9.3	0.43	ug/L		05/23/14 06:20	05/31/14 14:23	1
Bis(2-ethylhexyl) phthalate	2.0	J	4.7	1.7	ug/L		05/23/14 06:20	05/31/14 14:23	1
Phenol	ND		4.7	0.36	ug/L		05/23/14 06:20	05/31/14 14:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	91		52 - 132	05/23/14 06:20	05/31/14 14:23	1
2-Fluorobiphenyl	86		48 - 120	05/23/14 06:20	05/31/14 14:23	1
2-Fluorophenol	44		20 - 120	05/23/14 06:20	05/31/14 14:23	1
Nitrobenzene-d5	80		46 - 120	05/23/14 06:20	05/31/14 14:23	1
Phenol-d5	31		16 - 120	05/23/14 06:20	05/31/14 14:23	1
p-Terphenyl-d14	89		67 - 150	05/23/14 06:20	05/31/14 14:23	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/22/14 09:25	05/27/14 17:11	1
Arsenic	ND		0.010	0.0056	mg/L		05/22/14 09:25	05/27/14 17:11	1
Barium	0.11		0.0020	0.00070	mg/L		05/22/14 09:25	05/27/14 17:11	1
Cadmium	ND		0.0010	0.00050	mg/L		05/22/14 09:25	05/27/14 17:11	1
Chromium	0.0089		0.0040	0.0010	mg/L		05/22/14 09:25	05/27/14 17:11	1
Copper	0.0031	J	0.010	0.0016	mg/L		05/22/14 09:25	05/27/14 17:11	1
Iron	0.18		0.050	0.019	mg/L		05/22/14 09:25	05/27/14 17:11	1
Lead	ND		0.0050	0.0030	mg/L		05/22/14 09:25	05/27/14 17:11	1
Magnesium	19.5		0.20	0.043	mg/L		05/22/14 09:25	05/27/14 17:11	1
Manganese	0.069		0.0030	0.00040	mg/L		05/22/14 09:25	05/27/14 17:11	1
Nickel	0.0042	J	0.010	0.0013	mg/L		05/22/14 09:25	05/27/14 17:11	1
Silver	ND		0.0030	0.0017	mg/L		05/22/14 09:25	05/27/14 17:11	1
Sodium	266		1.0	0.32	mg/L		05/22/14 09:25	05/27/14 17:11	1
Zinc	0.0070	J B	0.010	0.0046	mg/L		05/22/14 09:25	05/27/14 17:11	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/22/14 12:00	05/22/14 18:32	1

QUICK  
2/25/14

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-8SR

Lab Sample ID: 480-60314-4

Date Collected: 05/21/14 15:05

Matrix: Water

Date Received: 05/21/14 17:57

## 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			05/27/14 23:51	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/27/14 23:51	1
Acetone	ND		10	3.0	ug/L			05/27/14 23:51	1
Benzene	ND		1.0	0.41	ug/L			05/27/14 23:51	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/27/14 23:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		66 - 137		05/27/14 23:51	1
Toluene-d8 (Surr)	96		71 - 126		05/27/14 23:51	1
4-Bromofluorobenzene (Surr)	93		73 - 120		05/27/14 23:51	1
Dibromofluoromethane (Surr)	102		60 - 140		05/27/14 23:51	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		05/23/14 06:20	06/02/14 17:07	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/23/14 06:20	06/02/14 17:07	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/23/14 06:20	06/02/14 17:07	1
Phenol	ND		4.8	0.37	ug/L		05/23/14 06:20	06/02/14 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	116		52 - 132	05/23/14 06:20	06/02/14 17:07	1
2-Fluorobiphenyl	91		48 - 120	05/23/14 06:20	06/02/14 17:07	1
2-Fluorophenol	49		20 - 120	05/23/14 06:20	06/02/14 17:07	1
Nitrobenzene-d5	85		46 - 120	05/23/14 06:20	06/02/14 17:07	1
Phenol-d5	37		16 - 120	05/23/14 06:20	06/02/14 17:07	1
p-Terphenyl-d14	80		67 - 150	05/23/14 06:20	06/02/14 17:07	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0088	mg/L		05/22/14 09:25	05/27/14 17:14	1
Arsenic	0.0086	J	0.010	0.0056	mg/L		05/22/14 09:25	05/27/14 17:14	1
Barium	0.38		0.0020	0.00070	mg/L		05/22/14 09:25	05/27/14 17:14	1
Cadmium	ND		0.0010	0.00050	mg/L		05/22/14 09:25	05/27/14 17:14	1
Chromium	0.0030	J	0.0040	0.0010	mg/L		05/22/14 09:25	05/27/14 17:14	1
Copper	ND		0.010	0.0016	mg/L		05/22/14 09:25	05/27/14 17:14	1
Iron	28.1		0.050	0.019	mg/L		05/22/14 09:25	05/27/14 17:14	1
Lead	ND		0.0050	0.0030	mg/L		05/22/14 09:25	05/27/14 17:14	1
Magnesium	48.4		0.20	0.043	mg/L		05/22/14 09:25	05/27/14 17:14	1
Manganese	1.3		0.0030	0.00040	mg/L		05/22/14 09:25	05/27/14 17:14	1
Nickel	0.0054	J	0.010	0.0013	mg/L		05/22/14 09:25	05/27/14 17:14	1
Silver	ND		0.0030	0.0017	mg/L		05/22/14 09:25	05/27/14 17:14	1
Sodium	343		1.0	0.32	mg/L		05/22/14 09:25	05/27/14 17:14	1
Zinc	0.0022	J-B	0.010	0.0016	mg/L		05/22/14 09:25	05/27/14 17:14	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/22/14 12:00	05/22/14 18:33	1

*Check 7/14/14*

TestAmerica Buffalo

## Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-7D

Lab Sample ID: 480-60314-5

Date Collected: 05/21/14 15:40

Matrix: Water

Date Received: 05/21/14 17:57

### 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			05/28/14 00:14	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/28/14 00:14	1
Acetone	ND		10	3.0	ug/L			05/28/14 00:14	1
Benzene	ND		1.0	0.41	ug/L			05/28/14 00:14	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/28/14 00:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		66 - 137		05/28/14 00:14	1
Toluene-d8 (Surr)	95		71 - 126		05/28/14 00:14	1
4-Bromofluorobenzene (Surr)	94		73 - 120		05/28/14 00:14	1
Dibromofluoromethane (Surr)	100		60 - 140		05/28/14 00:14	1

Client Sample ID: GW-7S

Lab Sample ID: 480-60314-6

Date Collected: 05/21/14 15:45

Matrix: Water

Date Received: 05/21/14 17:57

### 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			05/28/14 00:37	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/28/14 00:37	1
Acetone	ND		10	3.0	ug/L			05/28/14 00:37	1
Benzene	ND		1.0	0.41	ug/L			05/28/14 00:37	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/28/14 00:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 137		05/28/14 00:37	1
Toluene-d8 (Surr)	94		71 - 126		05/28/14 00:37	1
4-Bromofluorobenzene (Surr)	91		73 - 120		05/28/14 00:37	1
Dibromofluoromethane (Surr)	102		60 - 140		05/28/14 00:37	1

Client Sample ID: TB-052114

Lab Sample ID: 480-60314-7

Date Collected: 05/21/14 00:00

Matrix: Water

Date Received: 05/21/14 17:57

### 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			05/28/14 01:00	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/28/14 01:00	1
Acetone	ND		10	3.0	ug/L			05/28/14 01:00	1
Benzene	ND		1.0	0.41	ug/L			05/28/14 01:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/28/14 01:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 137		05/28/14 01:00	1
Toluene-d8 (Surr)	95		71 - 126		05/28/14 01:00	1
4-Bromofluorobenzene (Surr)	92		73 - 120		05/28/14 01:00	1
Dibromofluoromethane (Surr)	102		60 - 140		05/28/14 01:00	1

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-34S

Lab Sample ID: 480-60410-1

Date Collected: 05/22/14 09:12

Matrix: Water

Date Received: 05/22/14 16:58

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/29/14 21:46	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/29/14 21:46	1
Acetone	ND		10	3.0	ug/L			05/29/14 21:46	1
Benzene	ND		1.0	0.41	ug/L			05/29/14 21:46	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/29/14 21:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	126		66 - 137		05/29/14 21:46	1
Toluene-d8 (Surr)	103		71 - 126		05/29/14 21:46	1
4-Bromofluorobenzene (Surr)	97		73 - 120		05/29/14 21:46	1
Dibromofluoromethane (Surr)	115		60 - 140		05/29/14 21:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		9.5	0.45	ug/L		05/28/14 06:55	06/02/14 20:18	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/28/14 06:55	06/02/14 20:18	1
Bis(2-ethylhexyl) phthalate	ND		4.7	1.7	ug/L		05/28/14 06:55	06/02/14 20:18	1
Phenol	ND		4.7	0.37	ug/L		05/28/14 06:55	06/02/14 20:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	104		52 - 132	05/28/14 06:55	06/02/14 20:18	1
2-Fluorobiphenyl	107		48 - 120	05/28/14 06:55	06/02/14 20:18	1
2-Fluorophenol	63		20 - 120	05/28/14 06:55	06/02/14 20:18	1
Nitrobenzene-d5	95		46 - 120	05/28/14 06:55	06/02/14 20:18	1
Phenol-d5	47		16 - 120	05/28/14 06:55	06/02/14 20:18	1
p-Terphenyl-d14	80		67 - 150	05/28/14 06:55	06/02/14 20:18	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 22:23	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 22:23	1
Barium	0.12		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 22:23	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 22:23	1
Chromium	0.0035 J		0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 22:23	1
Copper	0.0029 J B		0.010	0.0016	mg/L		05/23/14 10:00	05/23/14 22:23	1
Iron	1.0		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 22:23	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 22:23	1
Magnesium	65.2		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 22:23	1
Manganese	0.32		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 22:23	1
Nickel	0.0086 J		0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 22:23	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 22:23	1
Sodium	45.6		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 22:23	1
Zinc	0.0041 J		0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 22:23	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:21	1

CLAS  
7/14/14

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-28S

Lab Sample ID: 480-60410-2

Date Collected: 05/22/14 10:10

Matrix: Water

Date Received: 05/22/14 16:58

## 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			05/29/14 22:10	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/29/14 22:10	1
Acetone	ND		10	3.0	ug/L			05/29/14 22:10	1
Benzene	ND		1.0	0.41	ug/L			05/29/14 22:10	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/29/14 22:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127		66 - 137		05/29/14 22:10	1
Toluene-d8 (Surr)	105		71 - 126		05/29/14 22:10	1
4-Bromofluorobenzene (Surr)	94		73 - 120		05/29/14 22:10	1
Dibromofluoromethane (Surr)	117		60 - 140		05/29/14 22:10	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		05/28/14 06:55	06/02/14 20:42	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/28/14 06:55	06/02/14 20:42	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/28/14 06:55	06/02/14 20:42	1
Phenol	ND		4.8	0.38	ug/L		05/28/14 06:55	06/02/14 20:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	106		52 - 132	05/28/14 06:55	06/02/14 20:42	1
2-Fluorobiphenyl	100		48 - 120	05/28/14 06:55	06/02/14 20:42	1
2-Fluorophenol	60		20 - 120	05/28/14 06:55	06/02/14 20:42	1
Nitrobenzene-d5	89		46 - 120	05/28/14 06:55	06/02/14 20:42	1
Phenol-d5	44		16 - 120	05/28/14 06:55	06/02/14 20:42	1
p-Terphenyl-d14	93		67 - 150	05/28/14 06:55	06/02/14 20:42	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 22:45	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 22:45	1
Barium	0.076		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 22:45	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 22:45	1
Chromium	0.0018	J	0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 22:45	1
Copper	0.0026	J B	0.010	0.0016	mg/L		05/23/14 10:00	05/23/14 22:45	1
Iron	0.47		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 22:45	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 22:45	1
Magnesium	25.6		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 22:45	1
Manganese	0.90		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 22:45	1
Nickel	0.0028	J	0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 22:45	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 22:45	1
Sodium	12.0		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 22:45	1
Zinc	0.0074	J	0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 22:45	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:23	1

CHUCK  
7/14/14

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-4S

Lab Sample ID: 480-60410-3

Date Collected: 05/22/14 10:45

Matrix: Water

Date Received: 05/22/14 16:58

## 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			05/29/14 22:34	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/29/14 22:34	1
Acetone	ND		10	3.0	ug/L			05/29/14 22:34	1
Benzene	ND		1.0	0.41	ug/L			05/29/14 22:34	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/29/14 22:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		66 - 137		05/29/14 22:34	1
Toluene-d8 (Surr)	100		71 - 126		05/29/14 22:34	1
4-Bromofluorobenzene (Surr)	91		73 - 120		05/29/14 22:34	1
Dibromofluoromethane (Surr)	116		60 - 140		05/29/14 22:34	1

Client Sample ID: GW-4D

Lab Sample ID: 480-60410-4

Date Collected: 05/22/14 12:10

Matrix: Water

Date Received: 05/22/14 16:58

## 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			05/29/14 22:57	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/29/14 22:57	1
Acetone	ND		10	3.0	ug/L			05/29/14 22:57	1
Benzene	ND		1.0	0.41	ug/L			05/29/14 22:57	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/29/14 22:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127		66 - 137		05/29/14 22:57	1
Toluene-d8 (Surr)	105		71 - 126		05/29/14 22:57	1
4-Bromofluorobenzene (Surr)	96		73 - 120		05/29/14 22:57	1
Dibromofluoromethane (Surr)	121		60 - 140		05/29/14 22:57	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		05/28/14 06:55	06/02/14 21:06	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		05/28/14 06:55	06/02/14 21:06	1
Bis(2-ethylhexyl) phthalate	ND		4.9	1.8	ug/L		05/28/14 06:55	06/02/14 21:06	1
Phenol	ND		4.9	0.38	ug/L		05/28/14 06:55	06/02/14 21:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	104		52 - 132	05/28/14 06:55	06/02/14 21:06	1
2-Fluorobiphenyl	98		48 - 120	05/28/14 06:55	06/02/14 21:06	1
2-Fluorophenol	70		20 - 120	05/28/14 06:55	06/02/14 21:06	1
Nitrobenzene-d5	90		46 - 120	05/28/14 06:55	06/02/14 21:06	1
Phenol-d5	54		16 - 120	05/28/14 06:55	06/02/14 21:06	1
p-Terphenyl-d14	104		67 - 150	05/28/14 06:55	06/02/14 21:06	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 22:48	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 22:48	1
Barium	0.079		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 22:48	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 22:48	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-4D

Lab Sample ID: 480-60410-4

Date Collected: 05/22/14 12:10

Matrix: Water

Date Received: 05/22/14 16:58

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.0025	J	0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 22:48	1
Copper	<del>0.0029</del> JB	NO	0.010	<del>0.0016</del>	mg/L		05/23/14 10:00	05/23/14 22:48	1
Iron	0.32		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 22:48	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 22:48	1
Magnesium	72.6	*	0.20	0.043	mg/L		05/23/14 10:00	05/23/14 22:48	1
Manganese	0.025		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 22:48	1
Nickel	0.0014	J	0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 22:48	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 22:48	1
Sodium	84.1		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 22:48	1
Zinc	0.0024	J	0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 22:48	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:31	1

Client Sample ID: GW-4S

Lab Sample ID: 480-60410-5

Date Collected: 05/22/14 12:20

Matrix: Water

Date Received: 05/22/14 16:58

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.2	0.44	ug/L		05/28/14 06:55	06/02/14 21:30	1
1,4-Dichlorobenzene	ND		9.2	0.42	ug/L		05/28/14 06:55	06/02/14 21:30	1
Bis(2-ethylhexyl) phthalate	ND		4.6	1.7	ug/L		05/28/14 06:55	06/02/14 21:30	1
Phenol	ND		4.6	0.36	ug/L		05/28/14 06:55	06/02/14 21:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	64		52 - 132	05/28/14 06:55	06/02/14 21:30	1
2-Fluorobiphenyl	87		48 - 120	05/28/14 06:55	06/02/14 21:30	1
2-Fluorophenol	35		20 - 120	05/28/14 06:55	06/02/14 21:30	1
Nitrobenzene-d5	85		46 - 120	05/28/14 06:55	06/02/14 21:30	1
Phenol-d5	38		16 - 120	05/28/14 06:55	06/02/14 21:30	1
p-Terphenyl-d14	75		67 - 150	05/28/14 06:55	06/02/14 21:30	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 22:51	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 22:51	1
Barium	0.10		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 22:51	1
Cadmium	0.00080	J	0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 22:51	1
Chromium	0.0056		0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 22:51	1
Copper	<del>0.0046</del> JB	NO	0.010	<del>0.0016</del>	mg/L		05/23/14 10:00	05/23/14 22:51	1
Iron	1.6		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 22:51	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 22:51	1
Magnesium	26.8	*	0.20	0.043	mg/L		05/23/14 10:00	05/23/14 22:51	1
Manganese	0.14		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 22:51	1
Nickel	0.0071	J	0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 22:51	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 22:51	1
Sodium	31.9		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 22:51	1
Zinc	0.012		0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 22:51	1

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-4S

Date Collected: 05/22/14 12:20

Date Received: 05/22/14 16:58

Lab Sample ID: 480-60410-5

Matrix: Water

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:33	1

Client Sample ID: GW-35S

Date Collected: 05/22/14 13:05

Date Received: 05/22/14 16:58

Lab Sample ID: 480-60410-6

Matrix: Water

## 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			05/29/14 23:21	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			05/29/14 23:21	1
Acetone	ND		10	3.0	ug/L			05/29/14 23:21	1
Benzene	ND		1.0	0.41	ug/L			05/29/14 23:21	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/29/14 23:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	125		66 - 137		05/29/14 23:21	1
Toluene-d8 (Surr)	102		71 - 126		05/29/14 23:21	1
4-Bromofluorobenzene (Surr)	92		73 - 120		05/29/14 23:21	1
Dibromofluoromethane (Surr)	115		60 - 140		05/29/14 23:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.4	0.45	ug/L		05/28/14 06:55	06/02/14 21:54	1
1,4-Dichlorobenzene	ND		9.4	0.43	ug/L		05/28/14 06:55	06/02/14 21:54	1
Bis(2-ethylhexyl) phthalate	ND		4.7	1.7	ug/L		05/28/14 06:55	06/02/14 21:54	1
Phenol	ND		4.7	0.37	ug/L		05/28/14 06:55	06/02/14 21:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	91		52 - 132	05/28/14 06:55	06/02/14 21:54	1
2-Fluorobiphenyl	99		48 - 120	05/28/14 06:55	06/02/14 21:54	1
2-Fluorophenol	59		20 - 120	05/28/14 06:55	06/02/14 21:54	1
Nitrobenzene-d5	90		46 - 120	05/28/14 06:55	06/02/14 21:54	1
Phenol-d5	47		16 - 120	05/28/14 06:55	06/02/14 21:54	1
p-Terphenyl-d14	89		67 - 150	05/28/14 06:55	06/02/14 21:54	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 22:54	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 22:54	1
Barium	0.084		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 22:54	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 22:54	1
Chromium	ND		0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 22:54	1
Copper	0.0030	J	0.010	0.0010	mg/L		05/23/14 10:00	05/23/14 22:54	1
Iron	0.071		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 22:54	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 22:54	1
Magnesium	22.9		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 22:54	1
Manganese	0.21		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 22:54	1
Nickel	0.0013	J	0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 22:54	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 22:54	1
Sodium	2.5		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 22:54	1
Zinc	0.0037	J	0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 22:54	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-35S

Lab Sample ID: 480-60410-6

Date Collected: 05/22/14 13:05

Matrix: Water

Date Received: 05/22/14 16:58

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:38	1

Client Sample ID: GW-26D

Lab Sample ID: 480-60410-7

Date Collected: 05/22/14 14:14

Matrix: Water

Date Received: 05/22/14 16:58

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			05/29/14 23:44	1
1,2-Dichloroethene, Total	1.5	J	2.0	0.81	ug/L			05/29/14 23:44	1
Acetone	ND		10	3.0	ug/L			05/29/14 23:44	1
Benzene	ND		1.0	0.41	ug/L			05/29/14 23:44	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/29/14 23:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	128		86 - 137		05/29/14 23:44	1
Toluene-d8 (Surr)	101		71 - 126		05/29/14 23:44	1
4-Bromofluorobenzene (Surr)	92		73 - 120		05/29/14 23:44	1
Dibromofluoromethane (Surr)	119		60 - 140		05/29/14 23:44	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		05/28/14 06:55	06/02/14 22:18	1
1,4-Dichlorobenzene	ND		9.7	0.44	ug/L		05/28/14 06:55	06/02/14 22:18	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/28/14 06:55	06/02/14 22:18	1
Phenol	ND		4.8	0.38	ug/L		05/28/14 06:55	06/02/14 22:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	105		52 - 132	05/28/14 06:55	06/02/14 22:18	1
2-Fluorobiphenyl	100		48 - 120	05/28/14 06:55	06/02/14 22:18	1
2-Fluorophenol	64		20 - 120	05/28/14 06:55	06/02/14 22:18	1
Nitrobenzene-d5	90		46 - 120	05/28/14 06:55	06/02/14 22:18	1
Phenol-d5	48		16 - 120	05/28/14 06:55	06/02/14 22:18	1
p-Terphenyl-d14	78		67 - 150	05/28/14 06:55	06/02/14 22:18	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 22:57	1
Arsenic	0.0059	J	0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 22:57	1
Barium	0.12		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 22:57	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 22:57	1
Chromium	ND		0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 22:57	1
Copper	0.0023	J	0.010	0.0046	mg/L		05/23/14 10:00	05/23/14 22:57	1
Iron	4.5		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 22:57	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 22:57	1
Magnesium	17.5		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 22:57	1
Manganese	0.54		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 22:57	1
Nickel	0.0016	J	0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 22:57	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 22:57	1
Sodium	289		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 22:57	1
Zinc	ND		0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 22:57	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-26D

Date Collected: 05/22/14 14:14

Date Received: 05/22/14 16:58

Lab Sample ID: 480-60410-7

Matrix: Water

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:39	1

Client Sample ID: FD-052214

Date Collected: 05/22/14 00:00

Date Received: 05/22/14 16:58

Lab Sample ID: 480-60410-8

Matrix: Water

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			05/30/14 00:08	1
1,2-Dichloroethene, Total	1.4	J	2.0	0.81	ug/L			05/30/14 00:08	1
Acetone	ND		10	3.0	ug/L			05/30/14 00:08	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 00:08	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 00:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	127		66 - 137		05/30/14 00:08	1
Toluene-d8 (Surr)	100		71 - 126		05/30/14 00:08	1
4-Bromofluorobenzene (Surr)	91		73 - 120		05/30/14 00:08	1
Dibromofluoromethane (Surr)	119		60 - 140		05/30/14 00:08	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		05/28/14 06:55	06/02/14 22:42	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/28/14 06:55	06/02/14 22:42	1
Bis(2-ethylhexyl) phthalate	ND		4.7	1.7	ug/L		05/28/14 06:55	06/02/14 22:42	1
Phenol	ND		4.7	0.37	ug/L		05/28/14 06:55	06/02/14 22:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	109		52 - 132	05/28/14 06:55	06/02/14 22:42	1
2-Fluorobiphenyl	106		48 - 120	05/28/14 06:55	06/02/14 22:42	1
2-Fluorophenol	65		20 - 120	05/28/14 06:55	06/02/14 22:42	1
Nitrobenzene-d5	95		46 - 120	05/28/14 06:55	06/02/14 22:42	1
Phenol-d5	52		16 - 120	05/28/14 06:55	06/02/14 22:42	1
p-Terphenyl-d14	77		67 - 150	05/28/14 06:55	06/02/14 22:42	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 23:00	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 23:00	1
Barium	0.12		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 23:00	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 23:00	1
Chromium	ND		0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 23:00	1
Copper	0.0024	J-B	0.010	0.0046	mg/L		05/23/14 10:00	05/23/14 23:00	1
Iron	4.4		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 23:00	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 23:00	1
Magnesium	17.3		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 23:00	1
Manganese	0.53		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 23:00	1
Nickel	0.0020	J	0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 23:00	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 23:00	1
Sodium	286		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 23:00	1
Zinc	ND		0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 23:00	1

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: FD-052214

Date Collected: 05/22/14 00:00

Date Received: 05/22/14 16:58

GW-260

Lab Sample ID: 480-60410-8

Matrix: Water

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:41	1

Client Sample ID: GW-29S

Date Collected: 05/22/14 15:25

Date Received: 05/22/14 16:58

Lab Sample ID: 480-60410-9

Matrix: Water

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			05/30/14 00:32	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			05/30/14 00:32	1
Acetone	ND		10	3.0	ug/L			05/30/14 00:32	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 00:32	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 00:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	131		66 - 137		05/30/14 00:32	1
Toluene-d8 (Surr)	102		71 - 126		05/30/14 00:32	1
4-Bromofluorobenzene (Surr)	95		73 - 120		05/30/14 00:32	1
Dibromofluoromethane (Surr)	120		60 - 140		05/30/14 00:32	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		05/28/14 06:55	06/02/14 23:06	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		05/28/14 06:55	06/02/14 23:06	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/28/14 06:55	06/02/14 23:06	1
Phenol	ND		4.8	0.38	ug/L		05/28/14 06:55	06/02/14 23:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	99		52 - 132	05/28/14 06:55	06/02/14 23:06	1
2-Fluorobiphenyl	99		48 - 120	05/28/14 06:55	06/02/14 23:06	1
2-Fluorophenol	65		20 - 120	05/28/14 06:55	06/02/14 23:06	1
Nitrobenzene-d5	89		46 - 120	05/28/14 06:55	06/02/14 23:06	1
Phenol-d5	49		18 - 120	05/28/14 06:55	06/02/14 23:06	1
p-Terphenyl-d14	79		67 - 150	05/28/14 06:55	06/02/14 23:06	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 23:03	1
Arsenic	0.024		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 23:03	1
Barium	0.18		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 23:03	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 23:03	1
Chromium	0.0017	J	0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 23:03	1
Copper	0.0024	JB ND	0.010	0.0016	mg/L		05/23/14 10:00	05/23/14 23:03	1
Iron	13.2		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 23:03	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 23:03	1
Magnesium	63.2		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 23:03	1
Manganese	0.78		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 23:03	1
Nickel	0.0015	J	0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 23:03	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 23:03	1
Sodium	8.1		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 23:03	1
Zinc	0.0048	J	0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 23:03	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-29S

Lab Sample ID: 480-60410-9

Date Collected: 05/22/14 15:25

Matrix: Water

Date Received: 05/22/14 16:58

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:43	1

Client Sample ID: GW-7D

Lab Sample ID: 480-60410-10

Date Collected: 05/22/14 15:50

Matrix: Water

Date Received: 05/22/14 16:58

## 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		05/28/14 06:55	06/02/14 23:30	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/28/14 06:55	06/02/14 23:30	1
Bis(2-ethylhexyl) phthalate	2.7 JB	ND	4.7	1.7	ug/L		05/28/14 06:55	06/02/14 23:30	1
Phenol	ND		4.7	0.37	ug/L		05/28/14 06:55	06/02/14 23:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	100		52 - 132	05/28/14 06:55	06/02/14 23:30	1
2-Fluorobiphenyl	97		48 - 120	05/28/14 06:55	06/02/14 23:30	1
2-Fluorophenol	62		20 - 120	05/28/14 06:55	06/02/14 23:30	1
Nitrobenzene-d5	90		46 - 120	05/28/14 06:55	06/02/14 23:30	1
Phenol-d5	47		16 - 120	05/28/14 06:55	06/02/14 23:30	1
p-Terphenyl-d14	74		67 - 150	05/28/14 06:55	06/02/14 23:30	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 23:05	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 23:05	1
Barium	0.067		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 23:05	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 23:05	1
Chromium	0.031		0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 23:05	1
Copper	0.0087 JB	ND	0.010	0.0016	mg/L		05/23/14 10:00	05/23/14 23:05	1
Iron	0.96		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 23:05	1
Lead	0.021		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 23:05	1
Magnesium	32.9		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 23:05	1
Manganese	0.034		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 23:05	1
Nickel	0.022		0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 23:05	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 23:05	1
Sodium	81.3		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 23:05	1
Zinc	0.015		0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 23:05	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:44	1

Client Sample ID: GW-7S

Lab Sample ID: 480-60410-11

Date Collected: 05/22/14 15:55

Matrix: Water

Date Received: 05/22/14 16:58

## 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		05/28/14 06:55	06/03/14 17:46	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/28/14 06:55	06/03/14 17:46	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/28/14 06:55	06/03/14 17:46	1

TestAmerica Buffalo

## Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-7S

Lab Sample ID: 480-60410-11

Date Collected: 05/22/14 15:55

Matrix: Water

Date Received: 05/22/14 16:58

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		4.8	0.37	ug/L		05/28/14 06:55	06/03/14 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	123		52 - 132				05/28/14 06:55	06/03/14 17:46	1
2-Fluorobiphenyl	102		48 - 120				05/28/14 06:55	06/03/14 17:46	1
2-Fluorophenol	68		20 - 120				05/28/14 06:55	06/03/14 17:46	1
Nitrobenzene-d5	93		46 - 120				05/28/14 06:55	06/03/14 17:46	1
Phenol-d5	55		16 - 120				05/28/14 06:55	06/03/14 17:46	1
p-Terphenyl-d14	116		67 - 150				05/28/14 06:55	06/03/14 17:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 23:08	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 23:08	1
Barium	0.29		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 23:08	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 23:08	1
Chromium	0.0055		0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 23:08	1
Copper	0.0035 JB ND		0.010	0.0016	mg/L		05/23/14 10:00	05/23/14 23:08	1
Iron	0.22		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 23:08	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 23:08	1
Magnesium	36.2		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 23:08	1
Manganese	0.10		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 23:08	1
Nickel	0.012		0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 23:08	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 23:08	1
Sodium	55.8		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 23:08	1
Zinc	0.0092 J		0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 23:08	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/29/14 09:30	05/29/14 13:46	1

Client Sample ID: TB-052214

Lab Sample ID: 480-60410-12

Date Collected: 05/22/14 00:00

Matrix: Water

Date Received: 05/22/14 16:58

### 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			05/30/14 00:56	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/30/14 00:56	1
Acetone	ND		10	3.0	ug/L			05/30/14 00:56	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 00:56	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 00:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	129		66 - 137					05/30/14 00:56	1
Toluene-d8 (Surr)	102		71 - 126					05/30/14 00:56	1
4-Bromofluorobenzene (Surr)	90		73 - 120					05/30/14 00:56	1
Dibromofluoromethane (Surr)	119		60 - 140					05/30/14 00:56	1

Check Toluene

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-30S

Lab Sample ID: 480-60504-1

Date Collected: 05/23/14 09:20

Matrix: Water

Date Received: 05/23/14 16:48

## 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			05/30/14 14:40	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/30/14 14:40	1
Acetone	ND		10	3.0	ug/L			05/30/14 14:40	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 14:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 14:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		05/30/14 14:40	1
Toluene-d8 (Surr)	98		71 - 126		05/30/14 14:40	1
4-Bromofluorobenzene (Surr)	102		73 - 120		05/30/14 14:40	1
Dibromofluoromethane (Surr)	104		60 - 140		05/30/14 14:40	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		05/28/14 14:19	07/07/14 18:40	1
1,4-Dichlorobenzene	ND		9.3	0.43	ug/L		05/28/14 14:19	07/07/14 18:40	1
Bis(2-ethylhexyl) phthalate	ND		4.6	1.7	ug/L		05/28/14 14:19	07/07/14 18:40	1
Phenol	ND		4.6	0.36	ug/L		05/28/14 14:19	07/07/14 18:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	113		52 - 132	05/28/14 14:19	07/07/14 18:40	1
2-Fluorobiphenyl	106		48 - 120	05/28/14 14:19	07/07/14 18:40	1
2-Fluorophenol	72		20 - 120	05/28/14 14:19	07/07/14 18:40	1
Nitrobenzene-d5	109		46 - 120	05/28/14 14:19	07/07/14 18:40	1
Phenol-d5	58		18 - 120	05/28/14 14:19	07/07/14 18:40	1
p-Terphenyl-d14	100		67 - 150	05/28/14 14:19	07/07/14 18:40	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/14 09:25	05/28/14 16:48	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/14 09:25	05/28/14 16:48	1
Barium	0.12		0.0020	0.00070	mg/L		05/27/14 09:25	05/28/14 16:48	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/14 09:25	05/28/14 16:48	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/14 09:25	05/28/14 16:48	1
Copper	ND		0.010	0.0016	mg/L		05/27/14 09:25	05/28/14 16:48	1
Iron	12.0		0.050	0.019	mg/L		05/27/14 09:25	05/28/14 16:48	1
Lead	ND		0.0050	0.0030	mg/L		05/27/14 09:25	05/28/14 16:48	1
Magnesium	32.2	J	0.20	0.043	mg/L		05/27/14 09:25	05/28/14 16:48	1
Manganese	1.2	J	0.0030	0.00040	mg/L		05/27/14 09:25	05/28/14 16:48	1
Nickel	ND		0.010	0.0013	mg/L		05/27/14 09:25	05/28/14 16:48	1
Silver	ND		0.0030	0.0017	mg/L		05/27/14 09:25	05/28/14 16:48	1
Sodium	72.7		1.0	0.32	mg/L		05/27/14 09:25	05/28/14 16:48	1
Zinc	0.0018	J	0.010	0.0015	mg/L		05/27/14 09:25	05/28/14 16:48	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/27/14 11:45	05/28/14 11:34	1

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TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-31S

Lab Sample ID: 480-60504-2

Date Collected: 05/23/14 10:22

Matrix: Water

Date Received: 05/23/14 16:48

## 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			05/30/14 15:03	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/30/14 15:03	1
Acetone	ND		10	3.0	ug/L			05/30/14 15:03	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 15:03	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 15:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		66 - 137		05/30/14 15:03	1
Toluene-d8 (Surr)	99		71 - 126		05/30/14 15:03	1
4-Bromofluorobenzene (Surr)	103		73 - 120		05/30/14 15:03	1
Dibromofluoromethane (Surr)	104		60 - 140		05/30/14 15:03	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		05/28/14 14:19	07/07/14 19:04	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		05/28/14 14:19	07/07/14 19:04	1
Bis(2-ethylhexyl) phthalate	2.7	J	4.9	1.8	ug/L		05/28/14 14:19	07/07/14 19:04	1
Phenol	ND		4.9	0.38	ug/L		05/28/14 14:19	07/07/14 19:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	107		52 - 132	05/28/14 14:19	07/07/14 19:04	1
2-Fluorobiphenyl	110		48 - 120	05/28/14 14:19	07/07/14 19:04	1
2-Fluorophenol	74		20 - 120	05/28/14 14:19	07/07/14 19:04	1
Nitrobenzene-d5	111		46 - 120	05/28/14 14:19	07/07/14 19:04	1
Phenol-d5	60		16 - 120	05/28/14 14:19	07/07/14 19:04	1
p-Terphenyl-d14	119		67 - 150	05/28/14 14:19	07/07/14 19:04	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/14 09:25	05/28/14 16:51	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/14 09:25	05/28/14 16:51	1
Barium	0.048		0.0020	0.00070	mg/L		05/27/14 09:25	05/28/14 16:51	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/14 09:25	05/28/14 16:51	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/14 09:25	05/28/14 16:51	1
Copper	0.0022	J	0.010	0.0016	mg/L		05/27/14 09:25	05/28/14 16:51	1
Iron	0.58		0.050	0.019	mg/L		05/27/14 09:25	05/28/14 16:51	1
Lead	ND		0.0050	0.0030	mg/L		05/27/14 09:25	05/28/14 16:51	1
Magnesium	25.3	/	0.20	0.043	mg/L		05/27/14 09:25	05/28/14 16:51	1
Manganese	0.73	/	0.0030	0.00040	mg/L		05/27/14 09:25	05/28/14 16:51	1
Nickel	0.0036	J	0.010	0.0013	mg/L		05/27/14 09:25	05/28/14 16:51	1
Silver	ND		0.0030	0.0017	mg/L		05/27/14 09:25	05/28/14 16:51	1
Sodium	3.7		1.0	0.32	mg/L		05/27/14 09:25	05/28/14 16:51	1
Zinc	0.0081	J	0.010	0.0015	mg/L		05/27/14 09:25	05/28/14 16:51	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/27/14 11:45	05/28/14 11:36	1

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TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-32S

Lab Sample ID: 480-60504-3

Date Collected: 05/23/14 11:03

Matrix: Water

Date Received: 05/23/14 16:48

## 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			05/30/14 15:28	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/30/14 15:28	1
Acetone	ND		10	3.0	ug/L			05/30/14 15:28	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 15:28	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 15:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		05/30/14 15:28	1
Toluene-d8 (Surr)	96		71 - 126		05/30/14 15:28	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/30/14 15:28	1
Dibromofluoromethane (Surr)	105		60 - 140		05/30/14 15:28	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		05/28/14 14:19	07/07/14 19:29	1
1,4-Dichlorobenzene	ND		9.7	0.45	ug/L		05/28/14 14:19	07/07/14 19:29	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/28/14 14:19	07/07/14 19:29	1
Phenol	ND		4.8	0.38	ug/L		05/28/14 14:19	07/07/14 19:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	106		52 - 132	05/28/14 14:19	07/07/14 19:29	1
2-Fluorobiphenyl	107		48 - 120	05/28/14 14:19	07/07/14 19:29	1
2-Fluorophenol	67		20 - 120	05/28/14 14:19	07/07/14 19:29	1
Nitrobenzene-d5	106		46 - 120	05/28/14 14:19	07/07/14 19:29	1
Phenol-d5	59		16 - 120	05/28/14 14:19	07/07/14 19:29	1
p-Terphenyl-d14	126		67 - 150	05/28/14 14:19	07/07/14 19:29	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/14 09:25	05/28/14 16:54	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/14 09:25	05/28/14 16:54	1
Barium	0.056		0.0020	0.00070	mg/L		05/27/14 09:25	05/28/14 16:54	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/14 09:25	05/28/14 16:54	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/14 09:25	05/28/14 16:54	1
Copper	ND		0.010	0.0016	mg/L		05/27/14 09:25	05/28/14 16:54	1
Iron	0.029	J	0.050	0.019	mg/L		05/27/14 09:25	05/28/14 16:54	1
Lead	ND		0.0050	0.0030	mg/L		05/27/14 09:25	05/28/14 16:54	1
Magnesium	32.7	A	0.20	0.043	mg/L		05/27/14 09:25	05/28/14 16:54	1
Manganese	0.53	A	0.0030	0.00040	mg/L		05/27/14 09:25	05/28/14 16:54	1
Nickel	0.0017	J	0.010	0.0013	mg/L		05/27/14 09:25	05/28/14 16:54	1
Silver	ND		0.0030	0.0017	mg/L		05/27/14 09:25	05/28/14 16:54	1
Sodium	3.3		1.0	0.32	mg/L		05/27/14 09:25	05/28/14 16:54	1
Zinc	0.0037	J	0.010	0.0015	mg/L		05/27/14 09:25	05/28/14 16:54	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/27/14 11:45	05/28/14 11:38	1

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TOTAL

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-33S

Lab Sample ID: 480-60504-4

Date Collected: 05/23/14 11:59

Matrix: Water

Date Received: 05/23/14 16:48

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/30/14 15:52	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/30/14 15:52	1
Acetone	ND		10	3.0	ug/L			05/30/14 15:52	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 15:52	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 15:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 137		05/30/14 15:52	1
Toluene-d8 (Surr)	100		71 - 126		05/30/14 15:52	1
4-Bromofluorobenzene (Surr)	103		73 - 120		05/30/14 15:52	1
Dibromofluoromethane (Surr)	105		60 - 140		05/30/14 15:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/28/14 14:19	07/07/14 19:53	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/28/14 14:19	07/07/14 19:53	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		05/28/14 14:19	07/07/14 19:53	1
Phenol	ND		5.0	0.39	ug/L		05/28/14 14:19	07/07/14 19:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	DII Fac
2,4,6-Tribromophenol	93		52 - 132	05/28/14 14:19	07/07/14 19:53	1
2-Fluorobiphenyl	111		48 - 120	05/28/14 14:19	07/07/14 19:53	1
2-Fluorophenol	70		20 - 120	05/28/14 14:19	07/07/14 19:53	1
Nitrobenzene-d5	114		46 - 120	05/28/14 14:19	07/07/14 19:53	1
Phenol-d5	63		16 - 120	05/28/14 14:19	07/07/14 19:53	1
p-Terphenyl-d14	124		67 - 150	05/28/14 14:19	07/07/14 19:53	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/14 09:25	05/28/14 16:56	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/14 09:25	05/28/14 16:56	1
Barium	0.032		0.0020	0.00070	mg/L		05/27/14 09:25	05/28/14 16:56	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/14 09:25	05/28/14 16:56	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/14 09:25	05/28/14 16:56	1
Copper	ND		0.010	0.0016	mg/L		05/27/14 09:25	05/28/14 16:56	1
Iron	ND		0.050	0.019	mg/L		05/27/14 09:25	05/28/14 16:56	1
Lead	ND		0.0050	0.0030	mg/L		05/27/14 09:25	05/28/14 16:56	1
Magnesium	35.5		0.20	0.043	mg/L		05/27/14 09:25	05/28/14 16:56	1
Manganese	0.028		0.0030	0.00040	mg/L		05/27/14 09:25	05/30/14 13:36	1
Nickel	0.0013	J	0.010	0.0013	mg/L		05/27/14 09:25	05/28/14 16:56	1
Silver	ND		0.0030	0.0017	mg/L		05/27/14 09:25	05/28/14 16:56	1
Sodium	3.4		1.0	0.32	mg/L		05/27/14 09:25	05/28/14 16:56	1
Zinc	0.0035	J	0.010	0.0015	mg/L		05/27/14 09:25	05/28/14 16:56	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Mercury	ND		0.00020	0.00012	mg/L		05/27/14 11:45	05/28/14 11:39	1

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TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-1S

Lab Sample ID: 480-60504-5

Date Collected: 05/23/14 13:05

Matrix: Water

Date Received: 05/23/14 16:48

## 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			05/30/14 16:16	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/30/14 16:16	1
Acetone	ND		10	3.0	ug/L			05/30/14 16:16	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 16:16	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 16:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 137		05/30/14 16:16	1
Toluene-d8 (Surr)	95		71 - 126		05/30/14 16:16	1
4-Bromofluorobenzene (Surr)	104		73 - 120		05/30/14 16:16	1
Dibromofluoromethane (Surr)	107		60 - 140		05/30/14 16:16	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	0.48	ug/L		05/28/14 14:19	07/07/14 20:17	1
1,4-Dichlorobenzene	ND		9.9	0.46	ug/L		05/28/14 14:19	07/07/14 20:17	1
Bis(2-ethylhexyl) phthalate	ND		5.0	1.8	ug/L		05/28/14 14:19	07/07/14 20:17	1
Phenol	ND		5.0	0.39	ug/L		05/28/14 14:19	07/07/14 20:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	106		52 - 132	05/28/14 14:19	07/07/14 20:17	1
2-Fluorobiphenyl	113		48 - 120	05/28/14 14:19	07/07/14 20:17	1
2-Fluorophenol	75		20 - 120	05/28/14 14:19	07/07/14 20:17	1
Nitrobenzene-d5	114		46 - 120	05/28/14 14:19	07/07/14 20:17	1
Phenol-d5	62		16 - 120	05/28/14 14:19	07/07/14 20:17	1
p-Terphenyl-d14	103		67 - 150	05/28/14 14:19	07/07/14 20:17	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/14 09:25	05/28/14 16:59	1
Arsenic	0.0068	J	0.010	0.0056	mg/L		05/27/14 09:25	05/28/14 16:59	1
Barium	0.17		0.0020	0.00070	mg/L		05/27/14 09:25	05/28/14 16:59	1
Cadmium	0.0013		0.0010	0.00050	mg/L		05/27/14 09:25	05/28/14 16:59	1
Chromium	ND		0.0040	0.0010	mg/L		05/27/14 09:25	05/28/14 16:59	1
Copper	ND		0.010	0.0016	mg/L		05/27/14 09:25	05/28/14 16:59	1
Iron	7.3		0.050	0.019	mg/L		05/27/14 09:25	05/28/14 16:59	1
Lead	ND		0.0050	0.0030	mg/L		05/27/14 09:25	05/28/14 16:59	1
Magnesium	21.6		0.20	0.043	mg/L		05/27/14 09:25	05/28/14 16:59	1
Manganese	1.5		0.0030	0.00040	mg/L		05/27/14 09:25	05/28/14 16:59	1
Nickel	0.0013	J	0.010	0.0013	mg/L		05/27/14 09:25	05/28/14 16:59	1
Silver	ND		0.0030	0.0017	mg/L		05/27/14 09:25	05/28/14 16:59	1
Sodium	106		1.0	0.32	mg/L		05/27/14 09:25	05/28/14 16:59	1
Zinc	0.0029	J	0.010	0.0015	mg/L		05/27/14 09:25	05/28/14 16:59	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/27/14 11:45	05/28/14 11:41	1

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TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: GW-1D

Lab Sample ID: 480-60504-6

Date Collected: 05/23/14 14:21

Matrix: Water

Date Received: 05/23/14 16:48

## 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			05/30/14 16:40	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/30/14 16:40	1
Acetone	ND		10	3.0	ug/L			05/30/14 16:40	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 16:40	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 16:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		05/30/14 16:40	1
Toluene-d8 (Surr)	97		71 - 126		05/30/14 16:40	1
4-Bromofluorobenzene (Surr)	104		73 - 120		05/30/14 16:40	1
Dibromofluoromethane (Surr)	107		60 - 140		05/30/14 16:40	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		05/28/14 14:19	07/07/14 20:42	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		05/28/14 14:19	07/07/14 20:42	1
Bis(2-ethylhexyl) phthalate	ND		4.8	1.7	ug/L		05/28/14 14:19	07/07/14 20:42	1
Phenol	ND		4.8	0.37	ug/L		05/28/14 14:19	07/07/14 20:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	113		52 - 132	05/28/14 14:19	07/07/14 20:42	1
2-Fluorobiphenyl	114		48 - 120	05/28/14 14:19	07/07/14 20:42	1
2-Fluorophenol	71		20 - 120	05/28/14 14:19	07/07/14 20:42	1
Nitrobenzene-d5	112		46 - 120	05/28/14 14:19	07/07/14 20:42	1
Phenol-d5	59		16 - 120	05/28/14 14:19	07/07/14 20:42	1
p-Terphenyl-d14	107		67 - 150	05/28/14 14:19	07/07/14 20:42	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		05/27/14 09:25	05/28/14 17:02	1
Arsenic	ND		0.010	0.0056	mg/L		05/27/14 09:25	05/28/14 17:02	1
Barium	0.071		0.0020	0.00070	mg/L		05/27/14 09:25	05/28/14 17:02	1
Cadmium	ND		0.0010	0.00050	mg/L		05/27/14 09:25	05/28/14 17:02	1
Chromium	0.0017	J	0.0040	0.0010	mg/L		05/27/14 09:25	05/28/14 17:02	1
Copper	ND		0.010	0.0016	mg/L		05/27/14 09:25	05/28/14 17:02	1
Iron	0.91		0.050	0.019	mg/L		05/27/14 09:25	05/28/14 17:02	1
Lead	ND		0.0050	0.0030	mg/L		05/27/14 09:25	05/28/14 17:02	1
Magnesium	33.8		0.20	0.043	mg/L		05/27/14 09:25	05/28/14 17:02	1
Manganese	0.019		0.0030	0.00040	mg/L		05/27/14 09:25	05/30/14 13:48	1
Nickel	ND		0.010	0.0013	mg/L		05/27/14 09:25	05/28/14 17:02	1
Silver	ND		0.0030	0.0017	mg/L		05/27/14 09:25	05/28/14 17:02	1
Sodium	99.3		1.0	0.32	mg/L		05/27/14 09:25	05/28/14 17:02	1
Zinc	ND		0.010	0.0015	mg/L		05/27/14 09:25	05/28/14 17:02	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		05/27/14 11:45	05/28/14 11:43	1

*Handwritten signature/initials in red ink.*

TestAmerica Buffalo

## Client Sample Results

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

TestAmerica Job ID: 480-60314-1

Client Sample ID: TB-052314

Lab Sample ID: 480-60504-7

Date Collected: 05/23/14 00:00

Matrix: Water

Date Received: 05/23/14 16:48

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

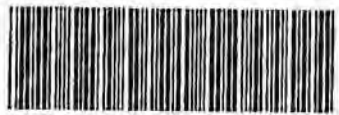
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			05/30/14 17:04	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			05/30/14 17:04	1
Acetone	ND		10	3.0	ug/L			05/30/14 17:04	1
Benzene	ND		1.0	0.41	ug/L			05/30/14 17:04	1
Vinyl chloride	ND		1.0	0.90	ug/L			05/30/14 17:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 137		05/30/14 17:04	1
Toluene-d8 (Surr)	98		71 - 126		05/30/14 17:04	1
4-Bromofluorobenzene (Surr)	101		73 - 120		05/30/14 17:04	1
Dibromofluoromethane (Surr)	106		60 - 140		05/30/14 17:04	1


## **APPENDIX B**

### **SUPPORT DOCUMENTATION**



CHAIN OF CUSTODY RECORD							TESTS				URS								
PROJECT NO. 11175616.00000				SITE NAME PFOAL BROTHERS CAMPZLL			<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TEL VOCs</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TEL SVOCs</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Metals</div> </div>				LAB <u>TEST America</u>								
SAMPLERS (PRINT/SIGNATURE) ROB MURPHY / <i>Rob Murphy</i>				KVIN McLOVERN											COOLER <u>1</u> of <u>1</u>				
DELIVERY SERVICE: <u>DROP OFF</u> AIRBILL NO.: _____							BOTTLE TYPE AND PRESERVATIVE				PAGE <u>1</u> of <u>1</u>								
LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO. # OF CONTAINERS	40ml vial	HCL	750ml Amber glass	250ml plastic	HNO3	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO. # (SRIMS)			
GW-3S	5/21/14	1125	G	GW-3S	WG	6	3	2	1				N <sub>1</sub>						
GW-3D	5/21/14	1236	G	GW-3D	WG	6	3	2	1				N <sub>1</sub>						
GW-3D	5/21/14	<del>1236</del>	G	GW-3D MS	WG	6	3	2	1				MS <sub>1</sub>						
GW-3D	5/21/14	<del>1236</del>	G	GW-3D MSD	WG	6	3	2	1				SD <sub>1</sub>						
GW-8D	5/21/14	1415	G	GW-8D	WG	6	3	2	1				N <sub>1</sub>						
GW-8SR	5/21/14	1505	G	GW-8SR	WG	6	3	2	1				N <sub>1</sub>						
GW-7D	5/21/14	1540	G	GW-7D	WG	6	3	2	1				N <sub>1</sub>						
GW-7S	5/21/14	1545	G	GW-7S	WG	6	3	2	1				N <sub>1</sub>						
TRIP BLANK	5/21/14	—	G	TB-052114	NQ	1	1						TB <sub>1</sub>						
 480-60314 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		
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)								
RELINQUISHED BY (SIGNATURE) <i>Rob Murphy</i>		DATE 5/21/14	TIME 1157	RECEIVED BY (SIGNATURE) <i>RECEIVED</i>		DATE 5-21-14	TIME 1757	SPECIAL INSTRUCTIONS STANDARD TAT. SAMPLES REPT + DELIVERED ON ICE. CALL Anne Marie Krapavitch 856-5636 w/ Any Questions											
RELINQUISHED BY (SIGNATURE)		DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)		DATE	TIME												
Distribution: Original accompanies shipment, copy to coordinator field files Temp 4.4 #1																			

CHAIN OF CUSTODY RECORD						TESTS				URS						
PROJECT NO. 11175616			SITE NAME PFOHL BROS LANDFILL			<div style="display: flex; justify-content: space-between;"> <div>VOCS</div> <div>SVOCS</div> <div>Metals</div> </div>				LAB <u>TEST AMERICA</u>						
SAMPLERS (PRINT/SIGNATURE) Rob Murphy / Kevin McCann						COOLER <u>1</u> of <u>1</u>				PAGE <u>1</u> of <u>1</u>						
DELIVERY SERVICE: <u>Drop off</u> AIRBILL NO.: <u>          </u>						BOTTLE TYPE AND PRESERVATIVE				REMARKS						
LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO. OF CONTAINERS	40ml vial HCL	250ml glass 250ml plastic	250ml plastic HNO3				SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LAB NO. # (RPMIS)
GW-34S	5/22/14	0912	G	GW-34S	WG	6	3	2	1				N <sub>1</sub>			
GW-28S	5/22/14	1010	G	GW-28S	WG	6	3	2	1				N <sub>1</sub>			
GW-4S	5/22/14	1045	G	GW-4S	WG	3	3						N <sub>1</sub>			
GW-4D	5/22/14	1210	G	GW-4D	WG		3	2	1				N <sub>1</sub>			
GW-4S	5/22/14	1220	G	GW-4S	WG	3		2	1				N <sub>1</sub>			
GW-35S	5/22/14	1305	G	GW-35S	WG	6	3	2	1				N <sub>1</sub>			
GW-26D	5/22/14	1414	G	GW-26D	WG	6	3	2	1				N <sub>1</sub>			
DUPLICATE	5/22/14	—	G	FD-052214	WG	6	3	2	1	GW-26D			FR			
GW-29S	5/22/14	1525	G	GW-29S	WG	6	3	2	1				N <sub>1</sub>			
GW-7D	5/22/14	1550	G	GW-7D	WG	3		2	1				N <sub>1</sub>			
GW-7S	5/22/14	1555	G	GW-7S	WG	3		2	1				N <sub>1</sub>			
TRIP BLANK	5/22/14	—	G	TR-052214	WG	1	1						TD			

  
 480-60410 Chain of Custody

<b>MATRIX CODES</b>	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
<b>SAMPLE TYPE CODES</b>	TB# - TRIP BLANK SD# - MATRIX SPIKE DUPLICATE	RB# - RINSE BLANK FR# - FIELD REPLICATE	N# - NORMAL ENVIRONMENTAL SAMPLE (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY) MS# - MATRIX SPIKE			

RELINQUISHED BY (SIGNATURE) <i>Rob Murphy</i>	DATE 5/22/14	TIME 1650	RECEIVED BY (SIGNATURE) <i>Kevin McCann</i>	DATE 5/22/14	TIME 1658	SPECIAL INSTRUCTIONS STANDARD CAT CALL ANN MARIE KROPOVITCH W/ QUESTIONS (856-5636)
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME	

Distribution: Original accompanies shipment, copy to coordinator field files Temp 5.2 5.8 #1





## Case Narrative

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

TestAmerica Job ID: 480-60314-1

Job ID: 480-60314-1

Laboratory: TestAmerica Buffalo

### Narrative

#### Job Narrative 480-60314-1

#### Receipt

The samples were received on 5/21/2014 5:57 PM, 5/22/2014 4:58 PM and 5/23/2014 4:48 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 3.6° C, 4.4° C, 5.2° C and 5.8° C.

#### Except:

The following samples requested tcl vocs, tcl svocs, and metals: GW-7D (480-60314-5), GW-7S (480-60314-6). However the lab only received 3 40ml hcl preserved voa vials for vocs. Information listed on other containers corresponded with what was listed on the coc. Methods were not added pending client/pm resolution.

#### GC/MS VOA

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

#### GC/MS Semi VOA

Method(s) 8270D: Internal standard response for the following samples exceeded the lower control limit: GW-3S (480-60314-1). As such, the sample results may be biased high. The analytes associated with the failing internal standards were below the reporting limit, therefore the data has been qualified and reported.

Method(s) 8270D: The method blank for batch 184279 contained Bis(2-ethylhexyl) phthalate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8270D: Surrogate recovery for the following Method Blank (MB) associated with batch 184424 was outside the upper control limit: (MB 480-184424/1-A). This mb did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8270D: Surrogate recovery for the following Method Blank (MB) associated with batch 184424 was outside the upper control limit: (MB 480-184424/1-A). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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

#### Metals

Method(s) 6010C: The continuing calibration blank (CCB) for analytical batch 184548 contained calcium, magnesium, and manganese above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method(s) 6010C: The method blank for batch 184088 contained sodium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 6010C: The Method Blank for batch 183487 contained total zinc above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples GW-3S (480-60314-1), GW-8D (480-60314-3), GW-8SR (480-60314-4) was not performed.

Method(s) 6010C: The method blank for batch 480-183731 contained copper above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples FD-052214 (480-60410-8), GW-26D (480-60410-7), GW-28S (480-60410-2), GW-29S (480-60410-9), GW-34S (480-60410-1), GW-35S (480-60410-6), GW-4D (480-60410-4), GW-4S (480-60410-5), GW-7D (480-60410-10), GW-7S (480-60410-11) was not performed.

Method(s) 6010C: The continuing calibration blank (CCB) for analytical batch 480-184071 contained magnesium above the reporting limit (RL). All reported samples associated with this CCB contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples (480-60410-1 MS), (480-60410-1 MSD), (480-60410-1 PDS), (480-60410-1 SD), FD-052214 (480-60410-8), GW-26D (480-60410-7), GW-28S (480-60410-2), GW-29S (480-60410-9), GW-34S (480-60410-1), GW-35S (480-60410-6), GW-4D (480-60410-4), GW-4S (480-60410-5), GW-7D (480-60410-10), GW-7S (480-60410-11) was not performed.



## Case Narrative

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

TestAmerica Job ID: 480-60314-1

Job ID: 480-60314-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

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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.

## QC Sample Results

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

TestAmerica Job ID: 480-60314-1

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

Lab Sample ID: 480-60314-2 MSD

Matrix: Water

Analysis Batch: 184939

Client Sample ID: GW-3D

Prep Type: Total/NA

Prep Batch: 183716

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,4-Dichlorobenzene	1.7	J	30.7	24.3		ug/L		74	32 - 120	14	36
Bis(2-ethylhexyl) phthalate	ND		30.7	16.3	F2	ug/L		53	53 - 158	18	15
Phenol	ND		30.7	12.1		ug/L		39	17 - 120	13	34

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol	108		52 - 132
2-Fluorobiphenyl	91		48 - 120
2-Fluorophenol	49		20 - 120
Nitrobenzene-d5	83		46 - 120
Phenol-d5	38		16 - 120
p-Terphenyl-d14	68		67 - 150

Lab Sample ID: MB 480-184279/1-A

Matrix: Water

Analysis Batch: 185154

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 184279

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		10	0.48	ug/L		05/28/14 06:55	06/02/14 14:43	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		05/28/14 06:55	06/02/14 14:43	1
Bis(2-ethylhexyl) phthalate	3.11	J	5.0	1.8	ug/L		05/28/14 06:55	06/02/14 14:43	1
Phenol	ND		5.0	0.39	ug/L		05/28/14 06:55	06/02/14 14:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	80		52 - 132	05/28/14 06:55	06/02/14 14:43	1
2-Fluorobiphenyl	86		48 - 120	05/28/14 06:55	06/02/14 14:43	1
2-Fluorophenol	55		20 - 120	05/28/14 06:55	06/02/14 14:43	1
Nitrobenzene-d5	86		46 - 120	05/28/14 06:55	06/02/14 14:43	1
Phenol-d5	46		16 - 120	05/28/14 06:55	06/02/14 14:43	1
p-Terphenyl-d14	124		67 - 150	05/28/14 06:55	06/02/14 14:43	1

Lab Sample ID: LCS 480-184279/2-A

Matrix: Water

Analysis Batch: 185154

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 184279

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	32.0	25.1		ug/L		79	32 - 120
Bis(2-ethylhexyl) phthalate	32.0	32.1		ug/L		100	53 - 158
Phenol	32.0	19.2		ug/L		60	17 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	117		52 - 132
2-Fluorobiphenyl	90		48 - 120
2-Fluorophenol	70		20 - 120
Nitrobenzene-d5	91		46 - 120
Phenol-d5	58		16 - 120
p-Terphenyl-d14	111		67 - 150

TestAmerica Buffalo

## QC Sample Results

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

TestAmerica Job ID: 480-60314-1

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

Lab Sample ID: MB 480-183487/1-A  
Matrix: Water  
Analysis Batch: 185244

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 183487

Analyte	MB MB Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	ND	0.010	0.0013	mg/L		05/22/14 09:25	05/27/14 16:40	1
Silver	ND	0.0030	0.0017	mg/L		05/22/14 09:25	05/27/14 16:40	1
Sodium	ND	1.0	0.32	mg/L		05/22/14 09:25	05/27/14 16:40	1
Zinc	0.00632 J	0.010	0.0015	mg/L		05/22/14 09:25	05/27/14 16:40	1

Lab Sample ID: LCS 480-183487/2-A  
Matrix: Water  
Analysis Batch: 185244

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 183487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.200	0.199		mg/L		99	80 - 120
Arsenic	0.200	0.199		mg/L		99	80 - 120
Barium	0.200	0.215		mg/L		107	80 - 120
Cadmium	0.200	0.202		mg/L		101	80 - 120
Chromium	0.200	0.204		mg/L		102	80 - 120
Copper	0.200	0.203		mg/L		101	80 - 120
Iron	10.0	9.98		mg/L		100	80 - 120
Lead	0.200	0.198		mg/L		99	80 - 120
Magnesium	10.0	10.22		mg/L		102	80 - 120
Manganese	0.200	0.200		mg/L		100	80 - 120
Nickel	0.200	0.192		mg/L		96	80 - 120
Silver	0.0500	0.0525		mg/L		105	80 - 120
Sodium	10.0	9.80		mg/L		98	80 - 120
Zinc	0.200	0.194		mg/L		97	80 - 120

Lab Sample ID: 480-60314-2 MS  
Matrix: Water  
Analysis Batch: 185244

Client Sample ID: GW-3D  
Prep Type: Total/NA  
Prep Batch: 183487

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.200	0.201		mg/L		101	75 - 125
Arsenic	ND		0.200	0.209		mg/L		105	75 - 125
Barium	0.093		0.200	0.295		mg/L		101	75 - 125
Cadmium	0.00075		0.200	0.204		mg/L		102	75 - 125
Chromium	0.0021		0.200	0.196		mg/L		97	75 - 125
Copper	ND		0.200	0.201		mg/L		100	75 - 125
Iron	1.8		10.0	11.50		mg/L		97	75 - 125
Lead	ND		0.200	0.200		mg/L		100	75 - 125
Magnesium	18.8		10.0	28.10		mg/L		94	75 - 125
Manganese	0.48		0.200	0.656		mg/L		89	75 - 125
Nickel	0.0039		0.200	0.198		mg/L		97	75 - 125
Silver	ND		0.0500	0.0529		mg/L		106	75 - 125
Sodium	186		10.0	193.4	4	mg/L		75	75 - 125
Zinc	0.0021		0.200	0.196		mg/L		97	75 - 125

TestAmerica Buffalo

## QC Sample Results

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

TestAmerica Job ID: 480-60314-1

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

Lab Sample ID: 480-60314-2 MSD

Matrix: Water

Analysis Batch: 185244

Client Sample ID: GW-3D

Prep Type: Total/NA

Prep Batch: 183487

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Antimony	ND		0.200	0.199		mg/L		99	75 - 125	1	20
Arsenic	ND		0.200	0.209		mg/L		104	75 - 125	0	20
Barium	0.093		0.200	0.297		mg/L		102	75 - 125	1	20
Cadmium	0.00075		0.200	0.203		mg/L		101	75 - 125	0	20
Chromium	0.0021		0.200	0.199		mg/L		99	75 - 125	2	20
Copper	ND		0.200	0.201		mg/L		101	75 - 125	0	20
Iron	1.8		10.0	11.52		mg/L		97	75 - 125	0	20
Lead	ND		0.200	0.201		mg/L		101	75 - 125	0	20
Magnesium	18.8		10.0	28.38		mg/L		96	75 - 125	1	20
Manganese	0.48		0.200	0.664		mg/L		93	75 - 125	1	20
Nickel	0.0039		0.200	0.197		mg/L		97	75 - 125	0	20
Silver	ND		0.0500	0.0541		mg/L		108	75 - 125	2	20
Sodium	186		10.0	192.9	4	mg/L		71	75 - 125	0	20
Zinc	0.0021		0.200	0.198		mg/L		98	75 - 125	1	20

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Lab Sample ID: MB 480-183731/1-A

Matrix: Water

Analysis Batch: 184071

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 183731

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
	Result	Qualifier							
Antimony	ND		0.020	0.0068	mg/L		05/23/14 10:00	05/23/14 21:50	1
Arsenic	ND		0.010	0.0056	mg/L		05/23/14 10:00	05/23/14 21:50	1
Barium	ND		0.0020	0.00070	mg/L		05/23/14 10:00	05/23/14 21:50	1
Cadmium	ND		0.0010	0.00050	mg/L		05/23/14 10:00	05/23/14 21:50	1
Chromium	ND		0.0040	0.0010	mg/L		05/23/14 10:00	05/23/14 21:50	1
Copper	0.00168	J	0.010	0.0016	mg/L		05/23/14 10:00	05/23/14 21:50	1
Iron	ND		0.050	0.019	mg/L		05/23/14 10:00	05/23/14 21:50	1
Lead	ND		0.0050	0.0030	mg/L		05/23/14 10:00	05/23/14 21:50	1
Magnesium	ND		0.20	0.043	mg/L		05/23/14 10:00	05/23/14 21:50	1
Manganese	ND		0.0030	0.00040	mg/L		05/23/14 10:00	05/23/14 21:50	1
Nickel	ND		0.010	0.0013	mg/L		05/23/14 10:00	05/23/14 21:50	1
Silver	ND		0.0030	0.0017	mg/L		05/23/14 10:00	05/23/14 21:50	1
Sodium	ND		1.0	0.32	mg/L		05/23/14 10:00	05/23/14 21:50	1
Zinc	ND		0.010	0.0015	mg/L		05/23/14 10:00	05/23/14 21:50	1

Lab Sample ID: LCS 480-183731/2-A

Matrix: Water

Analysis Batch: 184071

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 183731

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec.
	Added	Result	Qualifier				Limits
Antimony	0.200	0.206		mg/L		103	80 - 120
Arsenic	0.200	0.209		mg/L		105	80 - 120
Barium	0.200	0.211		mg/L		106	80 - 120
Cadmium	0.200	0.210		mg/L		105	80 - 120
Chromium	0.200	0.213		mg/L		106	80 - 120
Copper	0.200	0.217		mg/L		108	80 - 120
Iron	10.0	10.19		mg/L		102	80 - 120
Lead	0.200	0.202		mg/L		101	80 - 120

TestAmerica Buffalo

## QC Sample Results

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

TestAmerica Job ID: 480-60314-1

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

Lab Sample ID: MB 480-184088/1-A  
Matrix: Water  
Analysis Batch: 184550

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 184088

Analyte	MB MB Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND	0.20	0.043	mg/L		05/27/14 09:30	05/28/14 18:09	1
Manganese	ND	0.0030	0.00040	mg/L		05/27/14 09:30	05/28/14 18:09	1
Nickel	ND	0.010	0.0013	mg/L		05/27/14 09:30	05/28/14 18:09	1
Silver	ND	0.0030	0.0017	mg/L		05/27/14 09:30	05/28/14 18:09	1
Sodium	0.390 J	1.0	0.32	mg/L		05/27/14 09:30	05/28/14 18:09	1
Zinc	ND	0.010	0.0015	mg/L		05/27/14 09:30	05/28/14 18:09	1

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Lab Sample ID: LCS 480-184088/2-A  
Matrix: Water  
Analysis Batch: 184550

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 184088

Analyte	Spike Added	LCS LCS Result Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.200	0.208	mg/L		104	80 - 120
Arsenic	0.200	0.209	mg/L		105	80 - 120
Barium	0.200	0.210	mg/L		105	80 - 120
Cadmium	0.200	0.209	mg/L		105	80 - 120
Chromium	0.200	0.214	mg/L		107	80 - 120
Copper	0.200	0.215	mg/L		107	80 - 120
Iron	10.0	10.55	mg/L		105	80 - 120
Lead	0.200	0.204	mg/L		102	80 - 120
Magnesium	10.0	10.84	mg/L		108	80 - 120
Manganese	0.200	0.212	mg/L		106	80 - 120
Nickel	0.200	0.204	mg/L		102	80 - 120
Silver	0.0500	0.0516	mg/L		103	80 - 120
Sodium	10.0	10.59	mg/L		106	80 - 120
Zinc	0.200	0.212	mg/L		106	80 - 120

Lab Sample ID: 480-60314-2 MS  
Matrix: Water  
Analysis Batch: 184550

Client Sample ID: GW-3D  
Prep Type: Total/NA  
Prep Batch: 184088

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS Result Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.200	0.208	mg/L		104	75 - 125
Arsenic	ND		0.200	0.218	mg/L		109	75 - 125
Barium	0.091		0.200	0.295	mg/L		102	75 - 125
Cadmium	ND		0.200	0.213	mg/L		106	75 - 125
Chromium	ND		0.200	0.212	mg/L		106	75 - 125
Copper	ND		0.200	0.219	mg/L		110	75 - 125
Iron	1.9		10.0	12.13	mg/L		102	75 - 125
Lead	ND		0.200	0.205	mg/L		102	75 - 125
Magnesium	18.6		10.0	28.45	mg/L		98	75 - 125
Manganese	0.48		0.200	0.663	mg/L		93	75 - 125
Nickel	0.0036 J		0.200	0.211	mg/L		104	75 - 125
Silver	ND		0.0500	0.0522	mg/L		104	75 - 125
Sodium	188 B		10.0	192.5 4	mg/L		40	75 - 125
Zinc	0.0021 J		0.200	0.212	mg/L		105	75 - 125

TestAmerica Buffalo

**ATTACHMENT B**

**July 2014 – December 2014**

**Semi Annual Report**

**And**

**Data Applicability Report**

**SEMI ANNUAL REPORT  
OPERATION AND MAINTENANCE  
JULY 2014 TO DECEMBER 2014  
PFOHL BROTHERS LANDFILL  
CHEEKTOWAGA, NY**

**Submitted to:**

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

**Prepared by:**

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

**Prepared for:**

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

**APRIL  
2015**

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## **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-second 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 2014 through December 2014 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 2014 through December 2014, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shutdown during wet weather flow conditions throughout the year to reduce hydraulic loading to the sewer. Such actions were only taken upon request of the Buffalo Sewer Authority 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 wet wells.
- Replaced surge suppressors and fuses as needed for pump station instrumentation equipment.
- Mowed entire cap and trimmed along perimeter chain link fence.
- Replaced desktop computer located in the control building which failed on August 29, 2014 and reprogrammed system software.

### **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-second 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 this 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-second semi-annual round of groundwater sampling was conducted between November 12, 2014 and November 14, 2014. 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 29, 2014. The PDBs were removed from the wells during the sampling event and their contents were analyzed for volatile organic compounds (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 TestAmerica 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 (this 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 semivolatile organic compound (SVOC) bis(2-ethylhexyl)phthalate was detected slightly above Class GA water quality standards at 17 of 19 well locations in November 2014. This is the first time it has been detected in this many wells during a single sampling event. Since O&M sampling began in 2004, bis(2-ethylhexyl)phthalate has only been detected above Class GA standards in two wells (i.e., GW-07D and GW-31S). This SVOC is a known laboratory contaminant, and the bis(2-ethylhexyl)phthalate results for wells GW-01D, GW-01S, GW-30S, GW-31S, GW-32S, and GW-33S were qualified as biased high due to blank contamination. The presence of this SVOC will be closely monitored during the May 2015 sampling event. 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.

## 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-two 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-one sampling events. Figure E-3 for GW-03D indicates a downward trend for manganese. Figure E-4 indicates an upward trend for magnesium 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 two 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. Figure E-18 also shows the recent upward trend in magnesium concentrations in GW-34S appears to have leveled off at concentrations consistent with those historically observed.

## Laboratory Report

The groundwater analytical data package was prepared by TestAmerica in accordance with NYSDEC Category A deliverable requirements. It was reviewed for compliance with analytical method requirements and the following guidelines: USEPA *Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA-540-R-99-008, October 1999; USEPA *CLP National Functional Guidelines for Inorganic Data Review*, EPA-540-R-01-008, July 2002; and USEPA *Region II Data Validation SOP for SW-846 Method 8290, PCDDs and PCDFs by High Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS)*, SOP No. HW-19, Revision 1, October 1994. 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 2014 is submitted separately from this report.

### **3.3 Groundwater Discharge Monitoring**

URS completed two quarterly sampling events (September 2014 and December 2014) 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 2014 and December 2014, 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 2014 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-third round of groundwater sampling will be conducted in May 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**  
**NOVEMBER 2014**

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			11/14/14	11/14/14	11/12/14	11/12/14	11/13/14
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5					
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3			0.99 J		
1,4-Dichlorobenzene	UG/L	3			1.4 J		
bis(2-Ethylhexyl)phthalate	UG/L	5	5.5 J+	5.8 J+	5.4	5.4	4.6 J
<b>Metals</b>							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.079	0.17	0.079	0.10	0.081
Cadmium	MG/L	0.005		0.0013			
Chromium	MG/L	0.05	0.0019 J	0.0012 J	0.0047	0.0042	0.0019 J
Copper	MG/L	0.2					
Iron	MG/L	0.3	0.028 J	4.8	1.6	0.13	0.081
Lead	MG/L	0.025					
Magnesium	MG/L	35	34.6	19.4	15.9	129	75.6
Manganese	MG/L	0.3	0.017	1.2	0.39	0.077	0.019
Nickel	MG/L	0.1			0.0024 J	0.050	
Sodium	MG/L	20	88.9	82.6	170	43.4	76.0
Zinc	MG/L	2				0.019	

\* - 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.

J+ - The analyte was positively identified, the quantitation is an estimation with possible high bias.

NA - Not Analyzed.


Only Detected Results Reported.

**TABLE 3-1**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2014**

Location ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/13/14	11/12/14	11/13/14	11/12/14	11/13/14
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5			NA		NA
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
bis(2-Ethylhexyl)phthalate	UG/L	5	6.2	NA	6.6	NA	5.9
<b>Metals</b>							
Arsenic	MG/L	0.025		NA		NA	
Barium	MG/L	1	0.14	NA	0.074	NA	0.29
Cadmium	MG/L	0.005		NA		NA	
Chromium	MG/L	0.05	0.0098	NA	0.038	NA	0.0071
Copper	MG/L	0.2	0.0040 J	NA	0.0048 J	NA	
Iron	MG/L	0.3	4.1	NA	1.1	NA	0.24
Lead	MG/L	0.025		NA	0.024	NA	
Magnesium	MG/L	35	28.0	NA	35.9	NA	37.1
Manganese	MG/L	0.3	0.37	NA	0.055	NA	0.089
Nickel	MG/L	0.1	0.0088 J	NA	0.022	NA	0.013
Sodium	MG/L	20	27.4	NA	77.1	NA	52.6
Zinc	MG/L	2	0.027	NA	0.020	NA	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.

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**TABLE 3-1**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2014**

Location ID			GW-08D	GW-08SR	GW-26D	GW-26D	GW-28S
Sample ID			GW-08D	GW-08SR	FD-111314	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/12/14	11/12/14	11/13/14	11/13/14	11/13/14
Parameter	Units	*			Field Duplicate (1-1)		
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5			0.97 J	1.0 J	
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5	5.9	6.1	5.7	5.9	5.5
<b>Metals</b>							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.12	0.36	0.17	0.17	0.086
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.016	0.0054			0.0013 J
Copper	MG/L	0.2	0.0029 J				
Iron	MG/L	0.3	0.24	22.1	5.3	5.3	0.22
Lead	MG/L	0.025					
Magnesium	MG/L	35	20.4	48.5	24.1	23.9	28.2
Manganese	MG/L	0.3	0.066	1.3	0.63	0.62	0.89
Nickel	MG/L	0.1	0.0050 J	0.0052 J	0.0061 J	0.0062 J	0.0020 J
Sodium	MG/L	20	260	343	362	366	11.0
Zinc	MG/L	2	0.012				

\* - 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.



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Only Detected Results Reported.

**TABLE 3-1**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2014**

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			11/13/14	11/14/14	11/14/14	11/14/14	11/14/14
Parameter	Units	*					
<b>Volatile Organic Compounds</b>							
1,2-Dichloroethene (total)	UG/L	5		0.97 J			
<b>Semivolatile Organic Compounds</b>							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5	5.0	6.1 J+	5.9 J+	5.5 J+	6.0 J+
<b>Metals</b>							
Arsenic	MG/L	0.025	0.016				
Barium	MG/L	1	0.23	0.30	0.084	0.068	0.049
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05		0.0014 J	0.0030 J	0.0024 J	0.0019 J
Copper	MG/L	0.2					
Iron	MG/L	0.3	11.8	17.3	0.48	0.050	0.021 J
Lead	MG/L	0.025					
Magnesium	MG/L	35	84.7	45.4	27.2	36.9	38.6
Manganese	MG/L	0.3	0.67	2.2	0.72	0.19	0.024
Nickel	MG/L	0.1			0.0077 J	0.0015 J	
Sodium	MG/L	20	8.9	407	4.7	6.2	3.3
Zinc	MG/L	2			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.

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Only Detected Results Reported.

**TABLE 3-1**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**PFOHL BROTHERS LANDFILL SITE**  
**NOVEMBER 2014**

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			11/13/14	11/13/14
Parameter	Units	*		
<b>Volatile Organic Compounds</b>				
1,2-Dichloroethene (total)	UG/L	5		
<b>Semivolatile Organic Compounds</b>				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
bis(2-Ethylhexyl)phthalate	UG/L	5	5.3	5.7
<b>Metals</b>				
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.15	0.11
Cadmium	MG/L	0.005		
Chromium	MG/L	0.05	0.0027 J	
Copper	MG/L	0.2		
Iron	MG/L	0.3	0.069	
Lead	MG/L	0.025		
Magnesium	MG/L	35	58.3	28.8
Manganese	MG/L	0.3	0.16	0.16
Nickel	MG/L	0.1	0.0051 J	
Sodium	MG/L	20	24.0	3.1
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

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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**

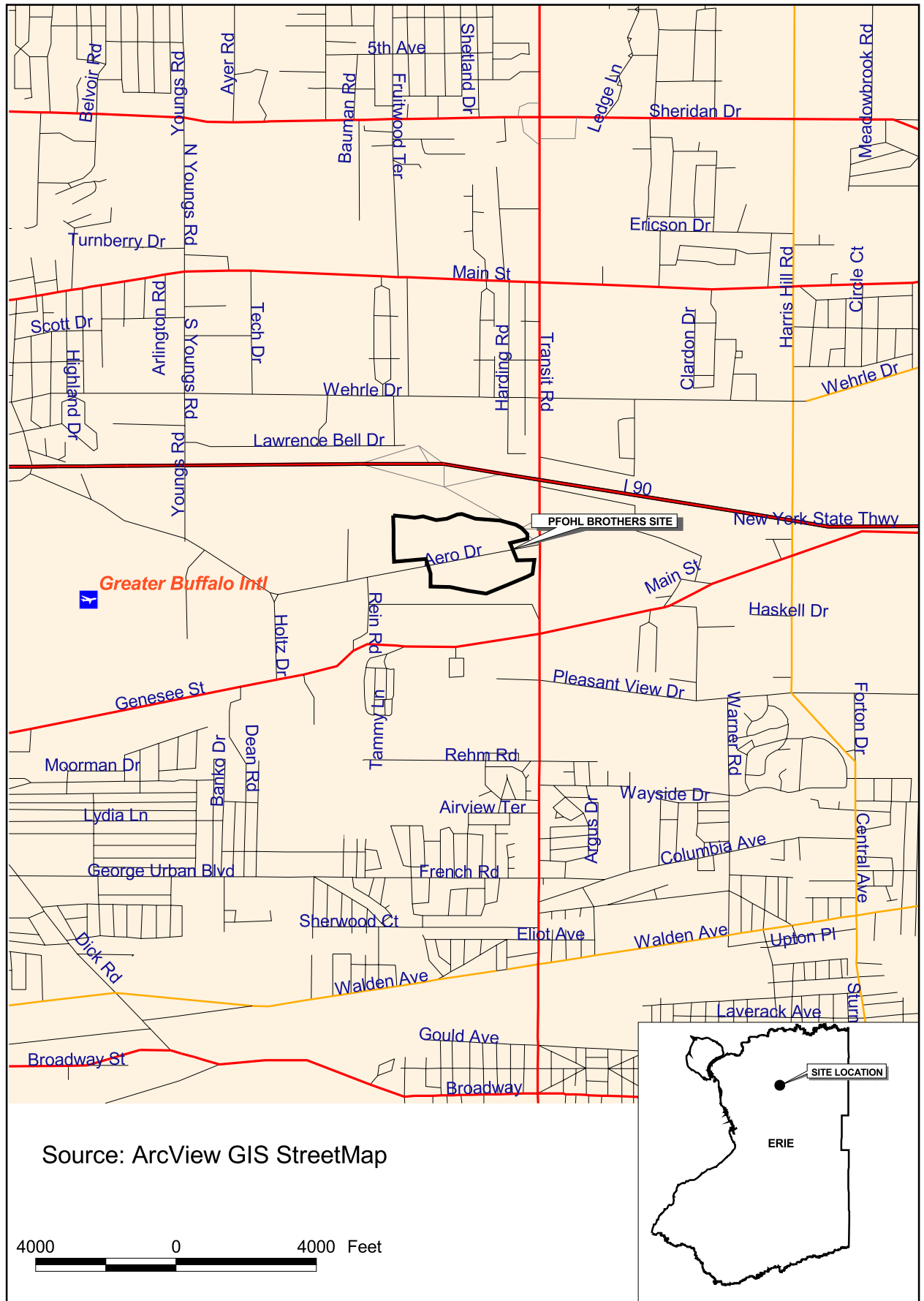
**GROUNDWATER SAMPLING SUMMARY  
OPERATION AND MAINTENANCE PLAN  
PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK**

**PARAMETERS (cont'd)**

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



## **FIGURES**





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



**Legend**

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

400 0 400 Feet

PFOHL BROTHERS LANDFILL  
MONITORING LOCATIONS

**URS**

FIGURE 3-1



**APPENDIX A**

**EXAMPLE DAILY INSPECTION SHEETS**

# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

9/27/14

Weather conditions

Clear

Time

10:22

Read by:

JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	5.5	0	0	2758
WW-2	4.7	0	77	144
WW-1	3.9	0	211584	4037
WW-6	6.4	0	770513	112210
WW-4	7.2	0	19667	6497
WW-5	7.8	0	955315	13010

Flow Totalizer at Meter chamber

2061438

Heat Trace

Outside temp T =

6.9

Set point SP =

40

Current A =

8

Surge Suppressor events

415782

Motor Control Center

Volts

480

volts

Which WW was running?

Amps

3

amps

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐

Filter

Checked ☒

Changed ☐

Comments and/or Current Conditions

DATA ✓

# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 11/12/14  
Time 0700

Weather conditions OVERCAST 40° F  
Read by: RJM(URS)

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	5.4	0	0	2758
WW-2	4.6	0	77	144
WW-1	4.0	0	389873	4120
WW-6	6.9	0	1453362	11419
WW-4	6.9	0	83936	6536
WW-5	6.7	0	1675431	13266

Flow Totalizer at Meter chamber 0 | 3707270

Heat Trace

Outside temp T = 39  
Current A = 2.11

Set point SP = 40

Surge Suppressor events 415808

Motor Control Center

Volts 430 volts  
Amps 5 amps

Which WW was running?

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ None ☒

Filter Checked ☐ Changed ☐

Comments and/or Current Conditions

URS ONSITE FOR SEMIANNUAL GW SAMPLING.

# Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 12/4/14  
Time 2:15

Weather conditions Sunny 35°  
Read by: W. PUGH

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	5.0	0	0	2758
WW-2	4.6	0	77	144
WW-1	4.3	0	501,215	4176
WW-6	7.3	0	1,942,637	11,566
WW-4	7.0	0	166,700	6,591
WW-5	6.9	47.1	2,005,158	13,403

Flow Totalizer at Meter chamber 4,721,002

Heat Trace

Outside temp T = 35°  
Current A = 2.3

Set point SP = 40°

Surge Suppressor events 415,829

Motor Control Center

Volts 480 volts  
Amps 7 amps

Which WW was running?

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☒ 6 ☐

Filter Checked ☐ Changed ☐

Comments and/or Current Conditions

NO SNOW COVER

WW 3 ALARM - PUMP OFF AT PANEL

**APPENDIX B**

**MONTHLY FLOW SUMMARIES**  
**JULY 2014 – DECEMBER 2014**



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

August 1, 2014

Mr. William R. Pugh, P.E.  
Town Engineer  
Town of Cheektowaga

Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

Enclosed for your review, please find a copy of the July 2014 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

On July 1, 2014 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,

A handwritten signature in black ink, appearing to read "Jon W. Nichy", is written over the typed name and title.

Jon W. Nichy  
Superintendent  
Main Pump Station

**RECEIVED**

AUG - 5 2014

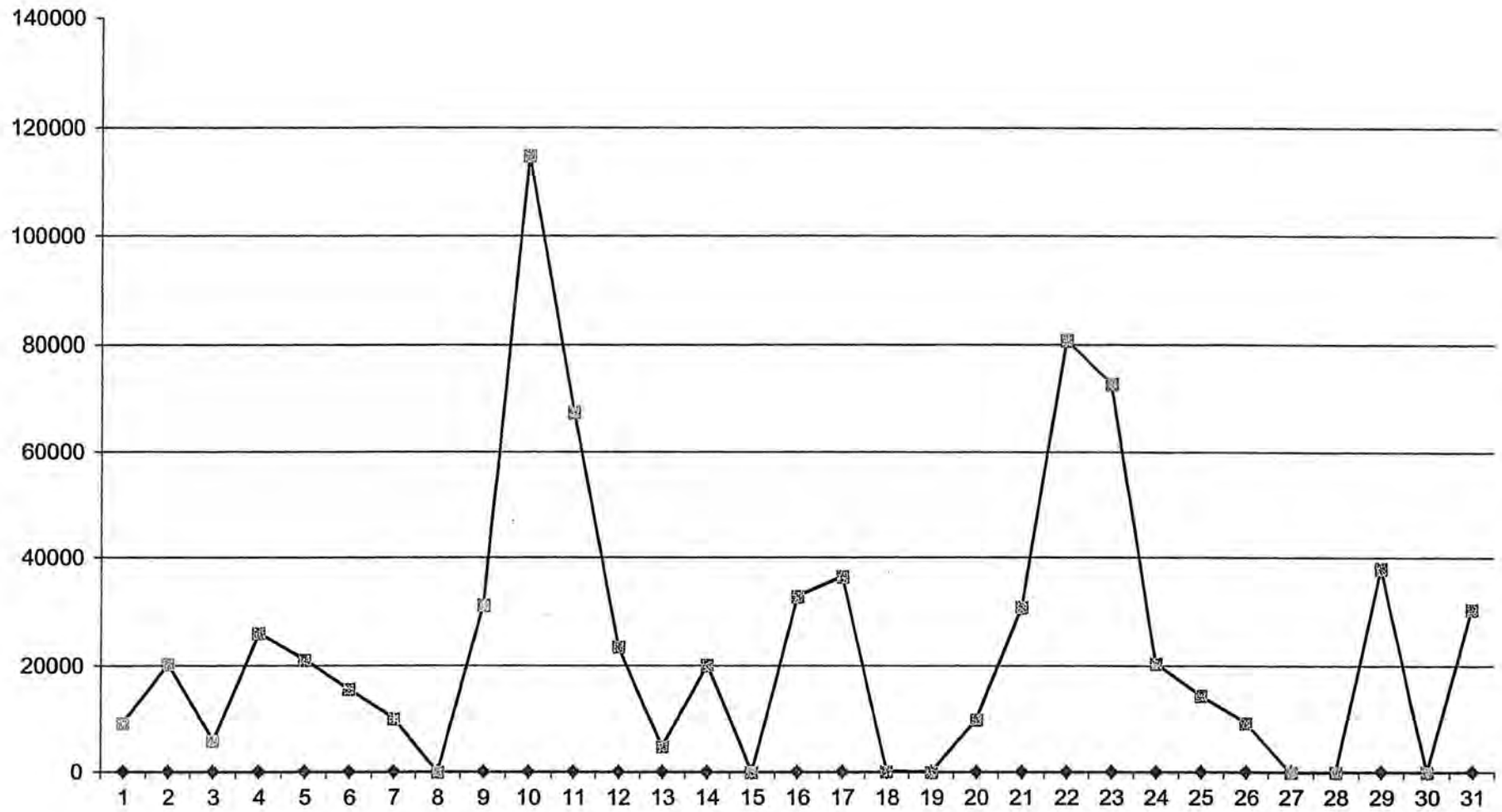
ENGINEERING DEPT.

# Direct Discharge Flow Data

6/3/2014

		14623538	23,278	13,211,282	
Jul-14	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		9280	9,280	9,280	
2		29500	20,300	29,580	
3		35488	5,907	35,487	
4		61534	26,046	61,533	
5		82638	21,104	82,637	
6		98268	15,630	98,267	
7		108370	10,102	108,369	04:48 inhibit
8		108370	0	108,369	
9		139688	31,318	139,687	19:22 enable
10		254445	114,758	254,445	
11		321826	67,381	321,826	
12		345336	23,511	345,337	
13		350143	4,807	350,144	13:12inhibit 22:27enable
14		370282	20,138	370,282	
15		370282	0	370,282	
16		403184	32,902	403,184	
17		439731	36,548	439,732	
18		439883	151	439,883	
19		439883	0	439,883	16:36 inhibit
20		449720	9,838	449,721	20:35 enable
21		480644	30,923	480,644	
22		561418	80,775	561,419	
23		634223	72,804	634,223	
24		654649	20,426	654,649	
25		669031	14,382	669,031	
26		678348	9,317	678,348	
27		678348	0	678,348	03:26inhibit 17:49enable
28		678348	0	678,348	03:19inhibit 21:02enable
29		716340	37,992	716,340	
30		716340	0	716,340	03:30inhibit 19:17enable
31		746884	30,544	746,884	00:17inhibit 19:09enable
		746,884	746,884	746,884	

July  
2014



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

December 6, 2014

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

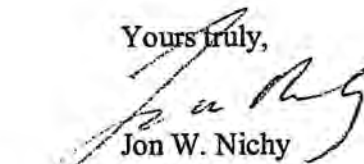
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the November 2014 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

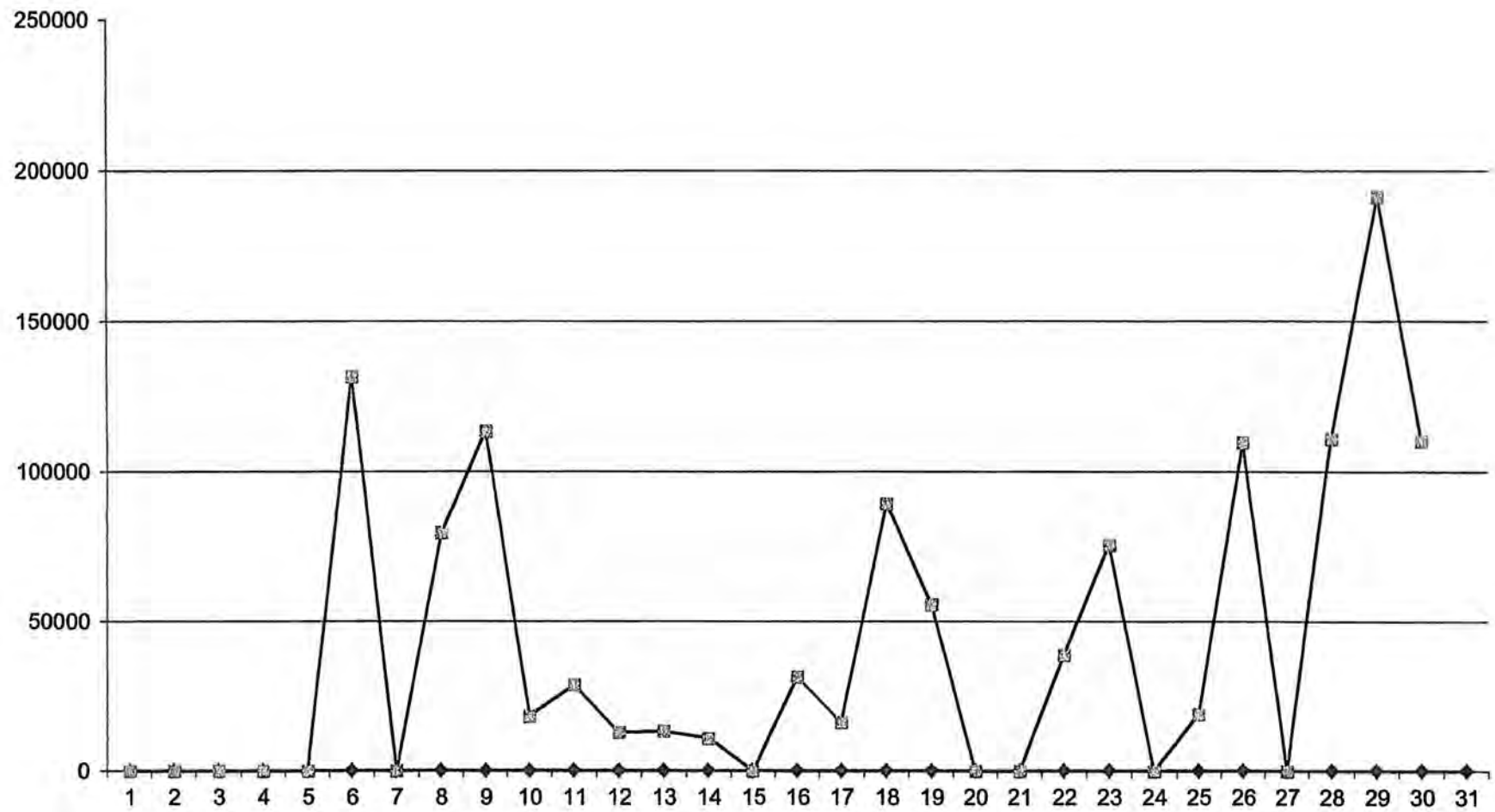
10/31/2014

3314397

0

<b>Nov-14</b>	<b>Time; 11:58pm unless otherwise stated</b>	<b>Totalizer Reading (Gallons)</b>	<b>Daily Total Discharge (Gallons)</b>	<b>Total Direct Discharge (Gallons)</b>	<b>Notes</b>
1		0	0		
2		0	0		
3		0	0		
4		0	0		
5		0	0		
6		3445962	131,565		
7		3445962	0		
8		3525376	79,414		
9		3638719	113,344		
10		3656869	18,150		
11		3685510	28,641		
12		3698390	12,881		
13		3711591	13,201		
14		3722451	10,860		
15		3722451	0		
16		3753759	31,307		
17		3769932	16,174		
18		3859228	89,296		
19		3914771	55,544		
20		3914771	0		
21		3914771	0		
22		3953503	38,732		
23		4028915	75,412		
24		4028915	0		
25		4047989	19,074		
26		4157534	109,545		
27		4157534	0		
28		4268287	110,753		
29		4459727	191440		
30		4569856	110130		
31					
		<b>1,255,459</b>	<b>1,255,463</b>		

November  
2014



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

September 10, 2014

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

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

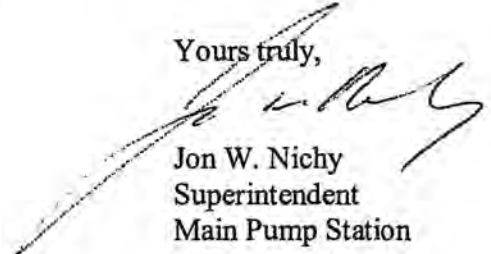
Enclosed for your review, please find a copy of the August 2014 Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Please note that the desktop monitoring computer located at this site failed on August 29, 2014.

No discharge will occur until I have rectified this problem.

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



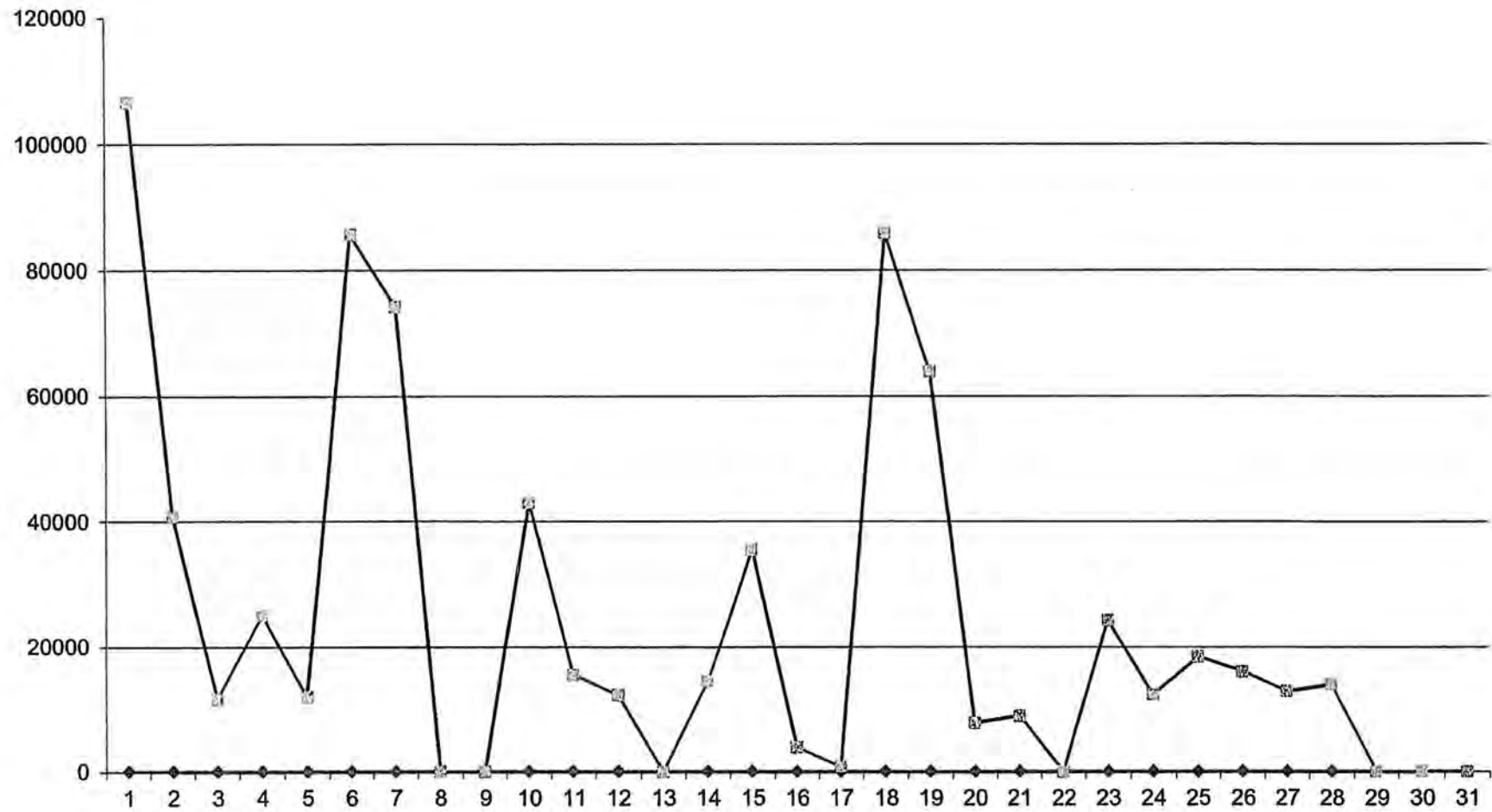
## Direct Discharge Flow Data

7/31/2014		746884	30,544	746,884	
Aug-14	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		853511	106,627	853,511	
2		894247	40,736	894,247	
3		905865	11,618	905,865	
4		930850	24,985	930,850	
5		942761	11,911	942,761	
6		1028493	85,732	1,028,493	
7		1102710	74,218	1,102,711	
8		1102710	0	1,102,711	
9		1102710	0	1,102,711	
10		1145754	43,044	1,145,755	
11		1161241	15,487	1,161,242	
12		1173467	12,226	1,173,468	
13		1173467	0	1,173,468	
14		1187935	14,468	1,187,936	
15		1223364	35,429	1,223,365	
16		1227314	3,950	1,227,315	
17		1228099	784	1,228,099	
18		1314075	85,976	1,314,075	
19		1378094	64,019	1,378,094	
20		1385844	7,751	1,385,845	
21		1394741	8,897	1,394,742	
22		1394741	0	1,394,742	
23		1419038	24,297	1,419,039	
24		1431354	12,315	1,431,354	
25		1449739	18,385	1,449,739	
26		1465713	15,975	1,465,714	
27		1478552	12,838	1,478,552	
28		1492486	13,935	1,492,487	
29		#####	#####	#####	
30		#####	#####	#####	
31		#####	#####	#####	
		745,602	745,603	745,603	

**##### Computer System failed on this date, no discharge occurred.**



August  
2014



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 7, 2015

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

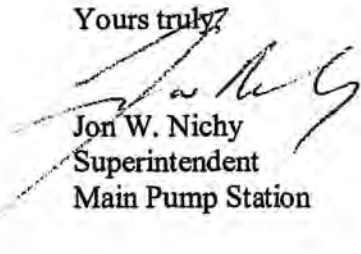
Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

Enclosed for your review, please find a copy of the December 2014 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,

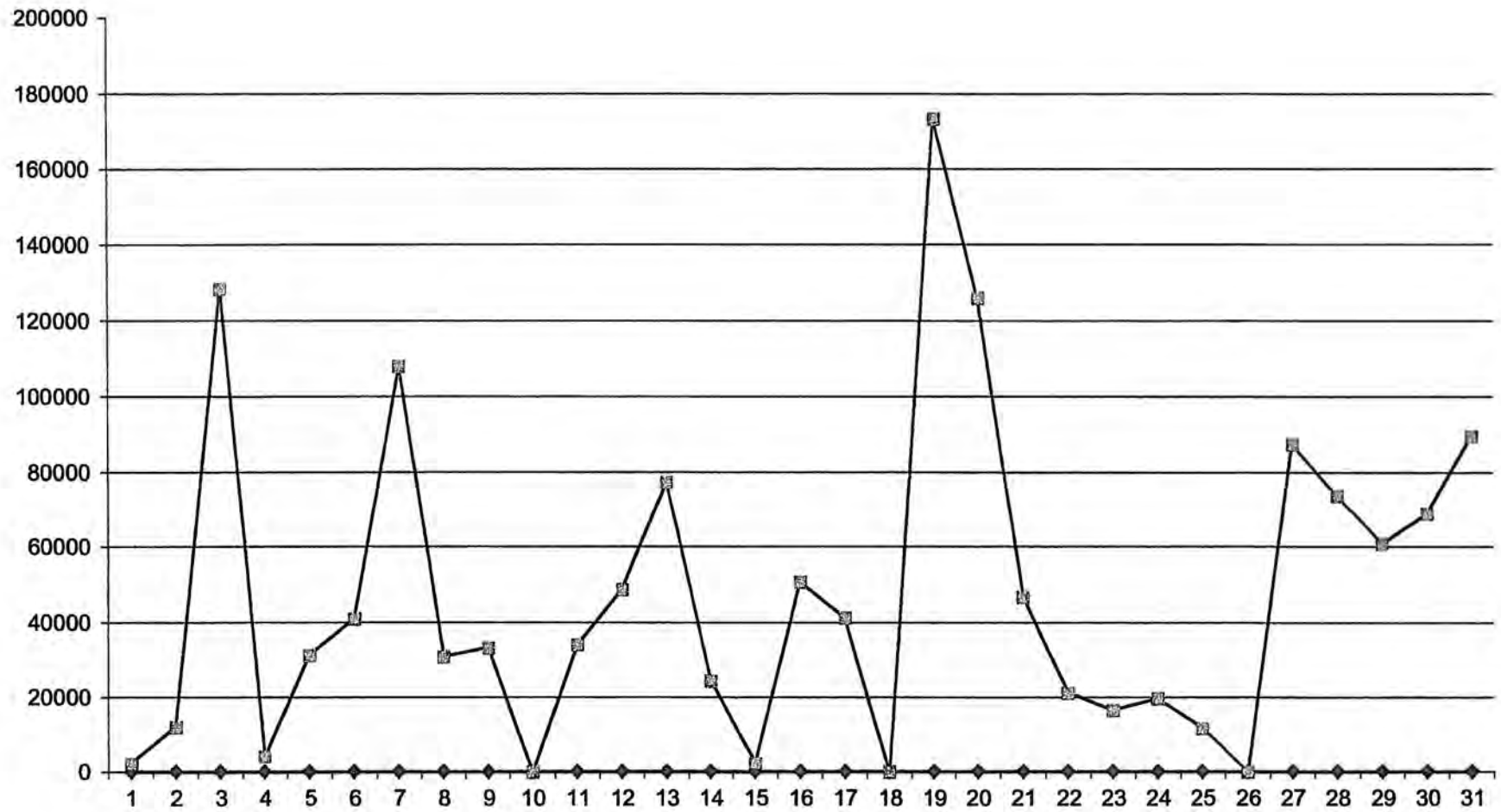
  
Jon W. Nichy  
Superintendent  
Main Pump Station

## Direct Discharge Flow Data

11/30/2015

		4569856	110,130		
<b>Dec-14</b>	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		4572175	2,319		00:00 enable
2		4584227	12,052		
3		4712665	128,438		
4		4716865	4,201		
5		4748108	31,243		
6		4789059	40,951		
7		4897094	108,035		
8		4927941	30,847		
9		4961197	33,256		
10		4961197	0		
11		4995256	34,060		
12		5043929	48,673		
13		5121182	77,253		
14		5145602	24,420		03:21inhibit 18:17 enable
15		5148051	2,450		
16		5198694	50,643		12:07 inhibit
17		5239883	41,189		
18		5239883	0		00:26 enable
19		5413211	173,328		
20		5539195	125,984		
21		5585861	46,667		
22		5607003	21,142		
23		5623539	16,536		
24		5643205	19,667		22:12 inhibit
25		5654923	11,718		
26		5654923	0		07:25 enable
27		5742453	87,530		
28		5816245	73,792		03:29 inhibit 15:39 enable
29		5877058	60813		
30		5945859	68802		
31		6035494	89635		
		<b>1,465,638</b>	<b>1,465,644</b>		

**December  
2014**



# **APPENDIX C**

## **HYDRAULIC MONITORING TABLES**

**TABLE 1**  
**PFOHL BROTHERS LANDFILL SITE**  
**GROUNDWATER ELEVATIONS**  
**JULY - DECEMBER 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-01D</b>	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								9/29/2014 0932	3.85	692.27	0.00	692.27	
MNW								11/12/2014 0946	3.40	692.72	0.00	692.72	
MNW								12/11/2014 1304	12.75	683.37	0.00	683.37	
<b>GW-01S</b>	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								9/29/2014 0932	4.80	691.39	0.00	691.39	
MNW								11/12/2014 0946	4.66	691.53	0.00	691.53	
MNW								12/11/2014 1305	4.25	691.94	0.00	691.94	
<b>GW-03D</b>	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								9/29/2014 0835	2.40	691.48	0.00	691.48	
MNW								11/12/2014 0836	2.06	691.82	0.00	691.82	
MNW								12/11/2014 1135	2.05	691.83	0.00	691.83	
<b>GW-03S</b>	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								9/29/2014 0835	9.20	684.60	0.00	684.60	
MNW								11/12/2014 0837	4.72	689.08	0.00	689.08	
MNW								12/11/2014 1132	2.11	691.69	0.00	691.69	
<b>GW-04D</b>	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								9/29/2014 0945	13.43	679.32	0.00	679.32	
MNW								11/12/2014 0939	13.33	679.42	0.00	679.42	
MNW								12/11/2014 1255	2.88	689.87	0.00	689.87	
<b>GW-04S</b>	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								9/29/2014 0945	5.54	687.18	0.00	687.18	
MNW								11/12/2014 0938	4.55	688.17	0.00	688.17	
MNW								12/11/2014 1256	4.18	688.54	0.00	688.54	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-07D</b>	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								9/29/2014 0925	49.56	650.38	0.00	650.38	
MNW								11/12/2014 1624	46.67	653.27	0.00	653.27	
MNW								12/11/2014 1246	57.45	642.49	0.00	642.49	
<b>GW-07S</b>	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								9/29/2014 0926	6.91	692.60	0.00	692.60	
MNW								11/12/2014 1623	6.19	693.32	0.00	693.32	
MNW								12/11/2014 1247	4.81	694.70	0.00	694.70	
<b>GW-08D</b>	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								9/29/2014 0848	6.40	691.39	0.00	691.39	
MNW								11/12/2014 0851	6.16	691.63	0.00	691.63	
MNW								12/11/2014 1147	6.01	691.78	0.00	691.78	
<b>GW-08SR</b>	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								9/29/2014 0848	5.66	691.84	0.00	691.84	
MNW								11/12/2014 0852	5.27	692.23	0.00	692.23	
MNW								12/11/2014 1146	5.23	692.27	0.00	692.27	
<b>GW-26D</b>	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								9/29/2014 0915	7.22	691.28	0.00	691.28	
MNW								11/12/2014 0929	7.00	691.50	0.00	691.50	
MNW								12/11/2014 1234	6.86	691.64	0.00	691.64	
<b>GW-28S</b>	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								9/29/2014 0854	10.53	690.42	0.00	690.42	
MNW								11/12/2014 0903	9.90	691.05	0.00	691.05	
MNW								12/11/2014 1159	8.80	692.15	0.00	692.15	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-29S</b>	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								9/29/2014 0902	10.12	689.51	0.00	689.51	
MNW								11/12/2014 0913	9.03	690.60	0.00	690.60	
MNW								12/11/2014 1219	7.81	691.82	0.00	691.82	
<b>GW-30S</b>	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								9/29/2014 0906	8.33	688.25	0.00	688.25	
MNW								11/12/2014 0917	8.18	688.40	0.00	688.40	
MNW								12/11/2014 1223	8.17	688.41	0.00	688.41	
<b>GW-31S</b>	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								9/29/2014 0909	6.33	692.29	0.00	692.29	
MNW								11/12/2014 0922	3.35	695.27	0.00	695.27	
MNW								12/11/2014 1226	2.70	695.92	0.00	695.92	
<b>GW-32S</b>	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								9/29/2014 0913	5.55	692.82	0.00	692.82	
MNW								11/12/2014 0926	3.50	694.87	0.00	694.87	
MNW								12/11/2014 1231	2.74	695.63	0.00	695.63	
<b>GW-33S</b>	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								9/29/2014 0919	6.16	692.08	0.00	692.08	
MNW								11/12/2014 0933	4.61	693.63	0.00	693.63	
MNW								12/11/2014 1238	3.77	694.47	0.00	694.47	
<b>GW-34S</b>	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								9/29/2014 0827	5.13	689.64	0.00	689.64	
MNW								11/12/2014 0828	2.69	692.08	0.00	692.08	
MNW								12/11/2014 1125	2.63	692.14	0.00	692.14	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>GW-35S</b>	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								9/29/2014 0915	5.90	691.49	0.00	691.49	
MNW								11/12/2014 0930	4.30	693.09	0.00	693.09	
MNW								12/11/2014 1235	3.35	694.04	0.00	694.04	
<b>MH-01</b>	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								9/29/2014 0832	10.44	688.18	0.00	688.18	
MH								11/12/2014 0833	10.37	688.25	0.00	688.25	
MH								12/11/2014 1130	10.03	688.59	0.00	688.59	
<b>MH-03</b>	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								9/29/2014 0840	11.25	688.15	0.00	688.15	
MH								11/12/2014 0841	11.20	688.20	0.00	688.20	
MH								12/11/2014 1207	11.34	688.06	0.00	688.06	
<b>MH-07</b>	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								9/29/2014 0845	9.48	687.34	0.00	687.34	
MH								11/12/2014 0845	9.42	687.40	0.00	687.40	
MH								12/11/2014 1145	9.08	687.74	0.00	687.74	
<b>MH-10</b>	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								9/29/2014 0852	14.50	688.51	0.00	688.51	
MH								11/12/2014 0859	14.51	688.50	0.00	688.50	
MH								12/11/2014 1152	14.50	688.51	0.00	688.51	
<b>MH-15</b>	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								9/29/2014 0902	14.88	684.14	0.00	684.14	
MH								11/12/2014 0911	14.78	684.24	0.00	684.24	
MH								12/11/2014 1218	14.65	684.37	0.00	684.37	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>MH-16</b>	1072133.714	1117748.238	698.57	NM	698.57	NA	1						
MH								9/29/2014 0906	14.51	684.06	0.00	684.06	
MH								11/12/2014 0917	14.51	684.06	0.00	684.06	
MH								12/11/2014 1222	14.50	684.07	0.00	684.07	
<b>MH-17</b>	1071813.137	1117180.019	702.16	NM	702.16	NA	1						
MH								9/29/2014 0909	18.10	684.06	0.00	684.06	
MH								11/12/2014 0921	18.11	684.05	0.00	684.05	
MH								12/11/2014 1227	18.10	684.06	0.00	684.06	
<b>MH-20</b>	1071756.395	1115997.024	706.20	NM	706.20	NA	1						
MH								9/29/2014 0915	19.75	686.45	0.00	686.45	
MH								11/12/2014 0928	19.75	686.45	0.00	686.45	
MH								12/11/2014 1233	19.78	686.42	0.00	686.42	
<b>MH-22</b>	1072158.023	1115589.309	698.05	NM	698.05	NA	1						
MH								9/29/2014 0918	9.00	689.05	0.00	689.05	
MH								11/12/2014 0932	9.00	689.05	0.00	689.05	
MH								12/11/2014 1237	9.01	689.04	0.00	689.04	
<b>MH-25</b>	1072483.928	1114820.313	698.17	NM	698.17	NA	1						
MH								9/29/2014 0824	10.01	688.16	0.00	688.16	
MH								11/12/2014 0824	9.92	688.25	0.00	688.25	
MH								12/11/2014 1117	9.54	688.63	0.00	688.63	
<b>SG-01</b>	1073882.887	1114813.101	NM	NM	690.00	NA	1						
SG								9/29/2014 0834	NM	-	NM	-	Dry
SG								11/12/2014 0834	NM	-	NM	-	Dry
SG								12/11/2014 1131	-0.70	690.70	0.00	690.70	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>SG-02</b>	1073738.27	1116805.85	NM	NM	690.00	NA	1						
SG								9/29/2014 0848	NM	-	NM	-	Dry
SG								11/12/2014 0850	-3.14	693.14	0.00	693.14	
SG								12/11/2014 1148	-3.16	693.16	0.00	693.16	
<b>WW-01</b>	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								9/29/2014 0700	-3.9	687.92	0.00	687.92	
MH								11/12/2014 0700	-4.0	688.02	0.00	688.02	
MH								12/11/2014 1030	-4.5	688.52	0.00	688.52	
<b>WW-02</b>	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								9/29/2014 0700	-4.7	688.88	0.00	688.88	
MH								11/12/2014 0700	-4.6	688.78	0.00	688.78	
MH								12/11/2014 1030	-4.6	688.78	0.00	688.78	
<b>WW-03</b>	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								9/29/2014 0700	-5.5	689.30	0.00	689.30	
MH								11/12/2014 0700	-5.4	689.20	0.00	689.20	
MH								12/11/2014 1030	-4.8	688.60	0.00	688.60	
<b>WW-04</b>	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								9/29/2014 0700	-6.9	683.52	0.00	683.52	
MH								11/12/2014 0700	-6.9	683.52	0.00	683.52	
MH								12/11/2014 1030	-6.9	683.52	0.00	683.52	
<b>WW-05</b>	1071661.368	1116370.876	NM	NM	676.14	NA	1						
MH								9/29/2014 0700	-7.6	683.74	0.00	683.74	
MH								11/12/2014 0700	-6.7	682.84	0.00	682.84	
MH								12/11/2014 1030	-7.4	683.54	0.00	683.54	

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 2014**

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
<b>WW-06</b>	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								9/29/2014 0700	-6.7	688.59	0.00	688.59	
MH								11/12/2014 0700	-6.9	688.79	0.00	688.79	
MH								12/11/2014 1030	-7.4	689.29	0.00	689.29	

**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)
9/29/2014	687.92	---	---	688.88	691.84	2.96	Dry	NA
11/12/2014	688.02	---	---	688.78	692.23	3.45	693.14	4.36
12/11/2014	688.52	---	---	688.78	692.27	3.49	693.16	4.38

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)
9/29/2014	689.30	690.42	1.12	683.52	---	---
11/12/2014	689.20	691.05	1.85	683.52	---	---
12/11/2014	688.60	692.15	3.55	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)
9/29/2014	683.74	692.82	9.08	688.59	689.64	1.05
11/12/2014	682.84	694.87	12.03	688.79	692.08	3.29
12/11/2014	683.54	695.63	12.09	689.29	692.14	2.85

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)
9/29/2014	688.18	Dry	NA	684.14	689.51	5.37
11/12/2014	688.25	Dry	NA	684.24	690.60	6.36
12/11/2014	688.59	690.70	2.11	684.37	691.82	7.45

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)
9/29/2014	684.06	688.25	4.19	684.06	692.29	8.23
11/12/2014	684.06	688.40	4.34	684.05	695.27	11.22
12/11/2014	684.07	688.41	4.34	684.06	695.92	11.86

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)
9/29/2014	686.45	691.49	5.04	689.05	692.08	3.03
11/12/2014	686.45	693.09	6.64	689.05	693.63	4.58
12/11/2014	686.42	694.04	7.62	689.04	694.47	5.43

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: 11/14/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.66'	Depth to Well Bottom:	14.94'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.3	Estimated Purge Volume (liters):	9.1
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Sample ID:	GW-1S	Sample Time:	12:39	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Riser pipe is bulged inwards, could not remove stainless steel bailer from within well, sampled around it. Orange floc & orange stain in water initially.

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/t; 1 inch diameter well = 154 ml/t; 2 inch diameter well = 617 ml/t;  
4 inch diameter well = 2470 ml/t ( $vql_w = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/14/2014 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.40'	Depth to Well Bottom:	39.65'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	89.5	Estimated Purge Volume (liters):	54.0
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Sample ID:	GW-1D	Sample Time:	13:54	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Sulfur odor

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
12:49	6.87	10.75	1.27	0.62	0.0	-69	830	3.40
12:54	7.11	10.79	1.27	0.43	0.0	-74	830	3.44
12:59	7.13	10.83	1.27	0.41	0.0	-76	830	3.44
13:04	7.17	10.88	1.28	0.41	0.0	-78	830	3.44
13:09	7.17	10.92	1.27	0.40	0.0	-80	830	3.44
13:14	7.17	11.00	1.26	0.39	0.0	-110	830	3.44
13:19	7.12	10.98	1.24	0.39	0.0	-130	830	3.44
13:24	7.12	11.00	1.24	0.43	0.0	-150	830	3.44
13:29	7.12	11.01	1.23	0.45	0.0	-170	830	3.44
13:34	7.12	11.07	1.23	0.46	0.0	-180	830	3.44
13:39	7.13	11.05	1.23	0.47	0.0	-190	830	3.44
13:44	7.14	11.08	1.23	0.45	0.0	-200	830	3.44
13:49	7.14	11.04	1.23	0.44	0.0	-206	830	3.44
13:54	7.15	11.08	1.23	0.44	0.0	-210	830	3.44
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

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



## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.72'	Depth to Well Bottom:	13.22'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	5.2	Estimated Purge Volume (liters):	8.7
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Sample ID:	GW-03S	Sample Time:	11:05	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.06'	Depth to Well Bottom:	35.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	83.1	Estimated Purge Volume (liters):	72.3
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Sample ID:	GW-03D	Sample Time:	12:37	QA/QC:	MS/MSD
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O <sub>2</sub> (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:17	7.19	11.15	1.40	0.88	37.5	64	890	2.06
11:22	7.28	11.30	1.41	0.58	0.0	22	890	2.15
11:27	7.30	11.33	1.41	0.55	0.0	11	890	2.15
11:32	7.33	11.35	1.40	0.52	0.0	-2	890	2.15
11:37	7.34	11.35	1.41	0.51	0.0	-7	890	2.15
11:42	7.34	11.35	1.41	0.50	0.0	-12	890	2.15
11:47	7.34	11.38	1.41	0.51	0.0	113	920	2.15
11:52	7.34	11.52	1.40	0.49	0.0	84	910	2.15
11:57	7.34	11.54	1.41	0.48	0.0	66	910	2.15
12:02	7.35	11.59	1.40	0.47	0.0	48	910	2.15
12:07	7.35	11.57	1.40	0.46	0.0	36	910	2.15
12:12	7.35	11.59	1.40	0.45	0.0	18	910	2.15
12:17	7.35	11.58	1.40	0.45	0.0	12	910	2.15
12:22	7.35	11.56	1.39	0.44	0.0	2	910	2.15
12:27	7.35	11.58	1.40	0.44	0.0	-5	910	2.15
12:32	7.35	11.57	1.40	0.44	0.0	-10	910	2.15
12:37	7.35	11.54	1.40	0.43	0.0	-14	910	2.15
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/t; 1 inch diameter well = 154 ml/t; 2 inch diameter well = 617 ml/t;  
4 inch diameter well = 2470 ml/t ( $vql_w = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.66'	Depth to Well Bottom:	16.23'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.1	Estimated Purge Volume (liters):	11.4
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Sample ID:	GW-04S	Sample Time:	9:45 & 11:15	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 9/29/14, sampled VOCs from PDB at 9:45 on 11/13/14.

Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 11:15.

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/t; 1 inch diameter well = 154 ml/t; 2 inch diameter well = 617 ml/t;  
4 inch diameter well = 2470 ml/t ( $vql_w = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	13.44'	Depth to Well Bottom:	45.57'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	79.4	Estimated Purge Volume (liters):	10.2
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Sample ID:	GW-04D	Sample Time:	11:05	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
10:05	7.24	9.66	1.65	1.55	1.7	-49	170	13.44
10:10	7.29	9.62	1.71	0.89	0.0	-139	170	13.80
10:15	7.33	9.78	1.75	0.97	0.0	-183	170	14.09
10:20	7.34	9.75	1.75	0.92	0.0	-193	170	14.20
10:25	7.36	9.77	1.76	0.89	0.0	-211	170	14.38
10:30	7.37	9.84	1.75	0.84	0.0	-223	170	14.51
10:35	7.38	9.81	1.78	0.80	0.0	-232	170	14.62
10:40	7.37	9.81	1.78	0.76	0.0	-240	170	14.74
10:45	7.37	9.80	1.78	0.74	0.0	-248	170	14.81
10:50	7.36	9.74	1.79	0.70	0.0	-259	170	14.91
10:55	7.34	9.74	1.78	0.79	0.0	-278	170	14.96
11:00	7.32	9.71	1.80	0.72	0.0	-271	170	15.01
11:05	7.31	9.73	1.80	0.71	0.0	-272	170	15.15
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

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

# WELL PURGING LOG

**URS Corporation**

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-7S
PROJECT NO.:	11175616.00000		
STAFF:	Rob Murphy, Tom Urban		
DATE(S):	11/12/14, 11/13/14		

			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>6.19</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	<u>28.85</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>4.90</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	8.12	8.13	8.15	8.01						
SPEC. COND. (mS/cm)	0.712	0.697	0.693	0.689						
DO (mg/l)	4.45	4.59	3.54	3.95						
TEMPERATURE (°C)	10.31	10.76	10.54	10.26						
TURBIDITY (NTU)	1.8	9.3	7.2	72.1						
ORP (millivolts)	-16	3	14	-112						
TIME	17:27	17:31	17:37	17:41						

COMMENTS: 16:45 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/29/14  
 17:27 - Begin hand bailing well.  
 17:41 - Well dry after removing 7 gallons.  
 11/13/2014 14:46 - Return to well, depth to water = 6.38 feet.  
 14:55 - 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, Tom Urban		
DATE(S):	11/12/14, 11/13/14		

			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>46.67</u>	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	<u>13.78</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>9.09</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)										
	Initial	3	6	9.1							
pH	7.91	7.85	7.87	7.90							
SPEC. COND. (mS/cm)	0.806	0.812	0.889	0.955							
DO (mg/l)	2.17	3.32	3.34	5.58							
TEMPERATURE (°C)	9.13	9.82	9.73	9.81							
TURBIDITY (NTU)	10.3	12.5	8.7	29.2							
ORP (millivolts)	-29	6	-45	-47							
TIME	16:50	17:00	17:10	17:20							

COMMENTS: 16:40 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 9/29/14  
 16:50 - Begin hand bailing well.  
 17:20 - Well dry after removing 9.1 gallons  
 11/13/2014 14:45 - return to well, depth to water = 59.40 feet.  
 14:50 - Collect sample for SVOCs and Metals.

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.27'	Depth to Well Bottom:	13.02'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.8	Estimated Purge Volume (liters):	8.0
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Sample ID:	GW-08SR	Sample Time:	15:07	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.16'	Depth to Well Bottom:	36.54'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	75.0	Estimated Purge Volume (liters):	54.0
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Sample ID:	GW-08D	Sample Time:	14:25	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

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



## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	7.04'	Depth to Well Bottom:	40.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	83.1	Estimated Purge Volume (liters):	51.0
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Sample ID:	GW-26D	Sample Time:	13:18	QA/QC:	Duplicate (FD-111314)
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	9.83'	Depth to Well Bottom:	15.52'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.5	Estimated Purge Volume (liters):	3.7
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Sample ID:	GW-28S	Sample Time:	9:20	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/t; 1 inch diameter well = 154 ml/t; 2 inch diameter well = 617 ml/t;  
4 inch diameter well = 2470 ml/t ( $vql_w = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	9.00'	Depth to Well Bottom:	20.04'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.8	Estimated Purge Volume (liters):	7.5
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Sample ID:	GW-29S	Sample Time:	14:29	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Orange iron particulates at start of purge

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/t; 1 inch diameter well = 154 ml/t; 2 inch diameter well = 617 ml/t;  
4 inch diameter well = 2470 ml/t ( $vql_w = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/14/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	8.20'	Depth to Well Bottom:	17.97'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.0	Estimated Purge Volume (liters):	14.4
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Sample ID:	GW-30S	Sample Time:	8:27	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange tint to water, occasional orange particulates

## PURGE PARAMETERS

[illegible]

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/t; 1 inch diameter well = 154 ml/t; 2 inch diameter well = 617 ml/t;  
4 inch diameter well = 2470 ml/t ( $vql_w = \pi r^2 h$ )

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/14/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.44'	Depth to Well Bottom:	9.57'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.8	Estimated Purge Volume (liters):	4.5
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Sample ID:	GW-31S	Sample Time:	9:30	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
9:00	7.75	8.29	0.787	1.50	0.6	-31	200	3.44
9:05	7.35	8.10	0.736	0.95	2.3	-10	140	4.86
9:10	7.27	8.18	0.733	0.88	3.1	1	140	5.37
9:15	7.23	8.45	0.733	0.85	6.6	6	140	5.61
9:20	7.18	8.72	0.737	0.80	3.9	11	140	6.00
9:25	7.15	8.78	0.737	0.82	3.5	10	140	6.22
9:30	7.12	8.93	0.745	0.78	3.5	7	140	6.44
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-32S

Date: 11/14/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.59'	Depth to Well Bottom:	9.93'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.9	Estimated Purge Volume (liters):	10.6
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Sample ID:	GW-32S	Sample Time:	10:35	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
10:00	7.37	8.55	0.781	4.76	6.1	70	310	3.59
10:05	7.30	9.38	0.767	0.51	4.4	69	300	4.35
10:10	7.29	9.97	0.753	2.67	0.3	63	300	4.42
10:15	7.23	10.27	0.735	1.66	0.0	51	300	4.48
10:20	7.20	10.36	0.735	1.55	0.0	47	300	4.47
10:25	7.18	10.54	0.733	1.29	0.0	47	300	4.50
10:30	7.18	10.83	0.725	1.34	0.0	46	300	4.50
10:35	7.16	10.76	0.724	1.21	0.0	46	300	4.50
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 11175616.00000 Site: Pfohl Brothers Well I.D.: GW-33S

Date: 11/14/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.74'	Depth to Well Bottom:	8.21'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	2.1	Estimated Purge Volume (liters):	6.9
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Sample ID:	GW-33S	Sample Time:	11:40	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

[illegible]

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

## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.78'	Depth to Well Bottom:	10.01'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.5	Estimated Purge Volume (liters):	8.7
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Sample ID:	GW-34S	Sample Time:	8:29	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
7:44	5.77	11.68	1.50	3.24	20.1	341	290	2.78
7:49	6.46	10.34	1.47	2.59	8.6	262	180	3.73
7:54	6.56	9.80	1.47	2.37	4.3	241	180	3.74
7:59	6.58	9.66	1.48	2.23	2.9	232	180	3.76
8:04	6.58	9.44	1.46	2.02	0.9	219	180	3.80
8:09	6.58	9.32	1.44	1.78	0.0	213	180	3.82
8:14	6.57	9.24	1.41	1.56	0.0	210	180	3.82
8:19	6.56	9.13	1.40	1.41	0.0	204	180	3.81
8:24	6.59	9.06	1.39	1.39	0.0	198	180	3.81
8:29	6.59	8.98	1.37	1.27	0.0	194	180	3.84
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

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



## LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2014      Sampling Personnel: Rob Murphy, Tom Urban      Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.30'	Depth to Well Bottom:	7.46'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	1.9	Estimated Purge Volume (liters):	8.9
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Sample ID:	GW-35S	Sample Time:	12:08	QA/QC:	None
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### Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

## PURGE PARAMETERS

<b>TIME</b>	<b>pH</b>	<b>TEMP (°C)</b>	<b>COND. (mS/cm)</b>	<b>DISS. O<sub>2</sub> (mg/l)</b>	<b>TURB. (NTU)</b>	<b>ORP (mV)</b>	<b>FLOW RATE (ml/min.)</b>	<b>DEPTH TO WATER (btor)</b>
11:38	8.06	9.21	0.782	5.09	4.0	-251	295	4.30
11:43	7.64	10.18	0.694	2.11	0.0	-218	295	5.02
11:48	7.48	10.32	0.692	1.50	0.0	-220	295	5.04
11:53	7.37	10.50	0.691	0.93	0.0	-221	295	5.06
11:58	7.30	10.53	0.691	0.79	0.0	-223	295	5.06
12:03	7.27	10.45	0.691	0.74	0.0	-225	295	5.08
12:08	7.23	10.55	0.690	0.71	0.0	-226	295	5.09
<b>Tolerance:</b>	<b>0.1</b>	<b>---</b>	<b>3%</b>	<b>10%</b>	<b>10%</b>	<b>+ or - 10</b>	<b>---</b>	

**Information:** WATER VOLUMES--0.75 inch diameter well = 87 ml/t; 1 inch diameter well = 154 ml/t; 2 inch diameter well = 617 ml/t;  
4 inch diameter well = 2470 ml/t ( $vql_w = \pi r^2 h$ )

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill

Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Urban

Supervisor: J. Sundquist

Date of Sampling: November 12, 2014

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-3S	GW-03S	8.7	5.2	11:05	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-3D	GW-03D	83.1	72.3	12:37	Groundwater		Not Applicable
GW-3D-MS	GW-03D	83.1	72.3	12:37	Matrix Spike		Not Applicable
GW-3D-MSD	GW-03D	83.1	72.3	12:37	Matrix Spike Duplicate		Not Applicable
GW-8D	GW-08D	75.0	54.0	14:25	Groundwater		Not Applicable
GW-8SR	GW-08SR	4.8	8.0	15:07	Groundwater		Not Applicable
TB-111214 + 111314	---	---	---	---	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. Urban

Supervisor: J. Sundquist

Date of Sampling: November 12, 2014

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-7D	GW-07D	34.4	PDB	16:40	Groundwater	VOCs	Not Applicable
GW-7S	GW-07S	18.5	PDB	16:45	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 13, 2014.

## GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers Landfill

Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Urban

Supervisor: J. Sundquist

Date of Sampling: November 13, 2014

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-34S	GW-34S	4.5	8.7	8:29	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-28S	GW-28S	3.5	3.7	9:20	Groundwater		Not Applicable
GW-4S	GW-04S	7.1	11.4	9:45 & 11:15	Groundwater		Not Applicable
GW-4D	GW-04D	79.4	10.2	11:05	Groundwater		Not Applicable
GW-35S	GW-35S	1.9	8.9	12:08	Groundwater		Not Applicable
GW-26D	GW-26D	83.1	51.0	13:18	Groundwater		Not Applicable
FD-111314	GW-26D	83.1	51.0	13:18	Duplicate		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.  
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. Urban

Supervisor: J. Sundquist

Date of Sampling: November 13, 2014

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-29S	GW-29S	6.8	7.5	14:29	Groundwater	VOCs/SVOCs/ Metals	
GW-7D	GW-07D	34.4	34.4	14:50	Groundwater	SVOCs/Metals	Not Applicable
GW-7S	GW-07S	18.5	26.5	14:55	Groundwater		Not Applicable
TB-111214 + 111314	---	---	---	---	Trip Blank	VOCs	Not Applicable

Additional Comments:

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. Urban

Supervisor: J. Sundquist

Date of Sampling: November 14, 2014

<b>Sample I.D. Number</b>	<b>Well Number</b>	<b>Well Volume (liters)</b>	<b>Volume Purged (liters)</b>	<b>Sample Time</b>	<b>Sample Description</b>	<b>Analysis Required</b>	<b>Chain-of-Custody Number</b>
GW-30S	GW-30S	6.0	14.4	8:27	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-31S	GW-31S	3.8	4.5	9:30	Groundwater		Not Applicable
GW-32S	GW-32S	3.9	10.6	10:35	Groundwater		Not Applicable
GW-33S	GW-33S	2.1	6.9	11:40	Groundwater		Not Applicable
GW-01S	GW-01S	6.3	9.1	12:39	Groundwater		Not Applicable
GW-01D	GW-01D	89.5	54.0	13:54	Groundwater		Not Applicable
TB-111414	---	---	---	---	Trip Blank	VOCs	Not Applicable

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

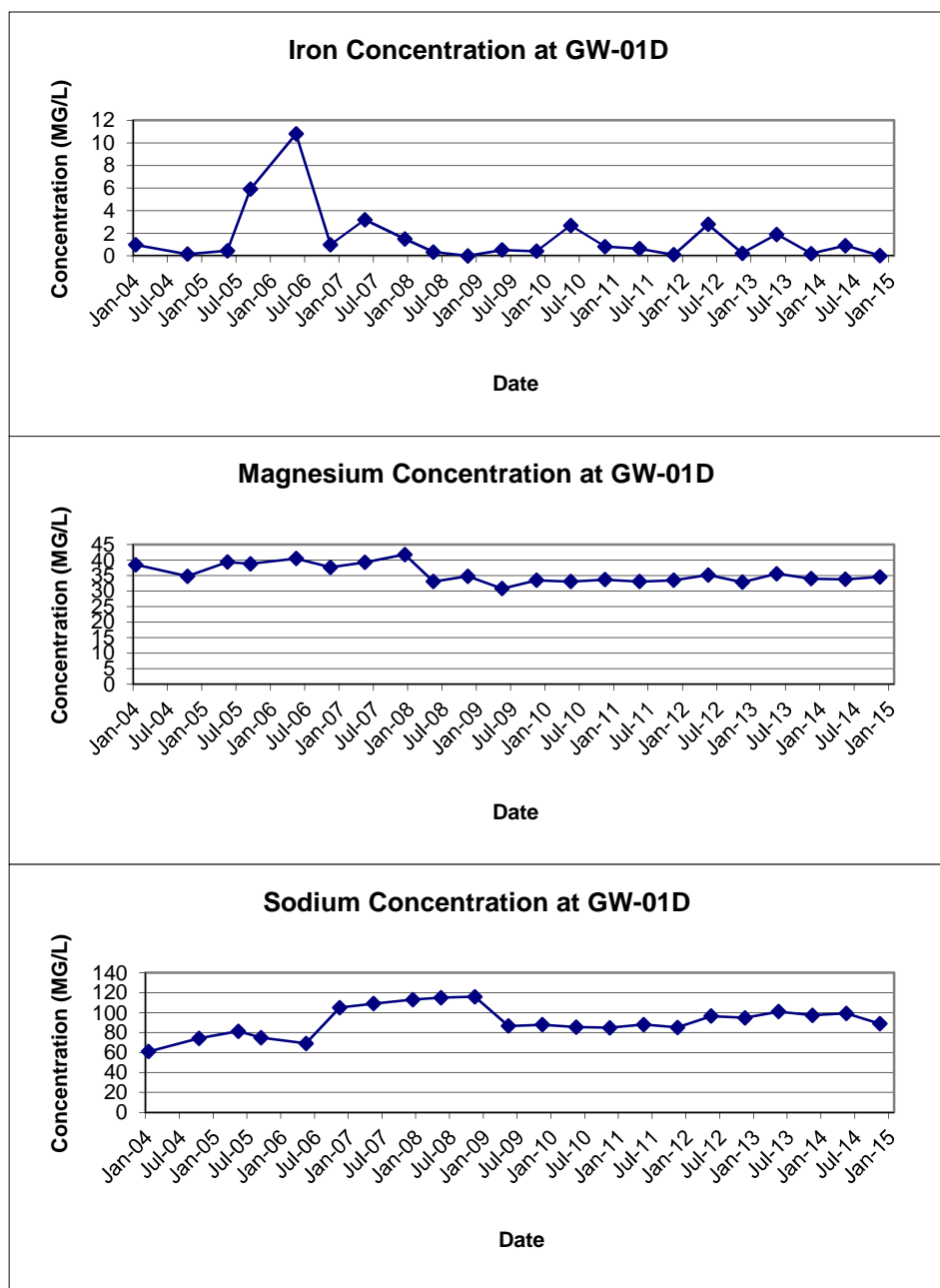
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# **APPENDIX E**

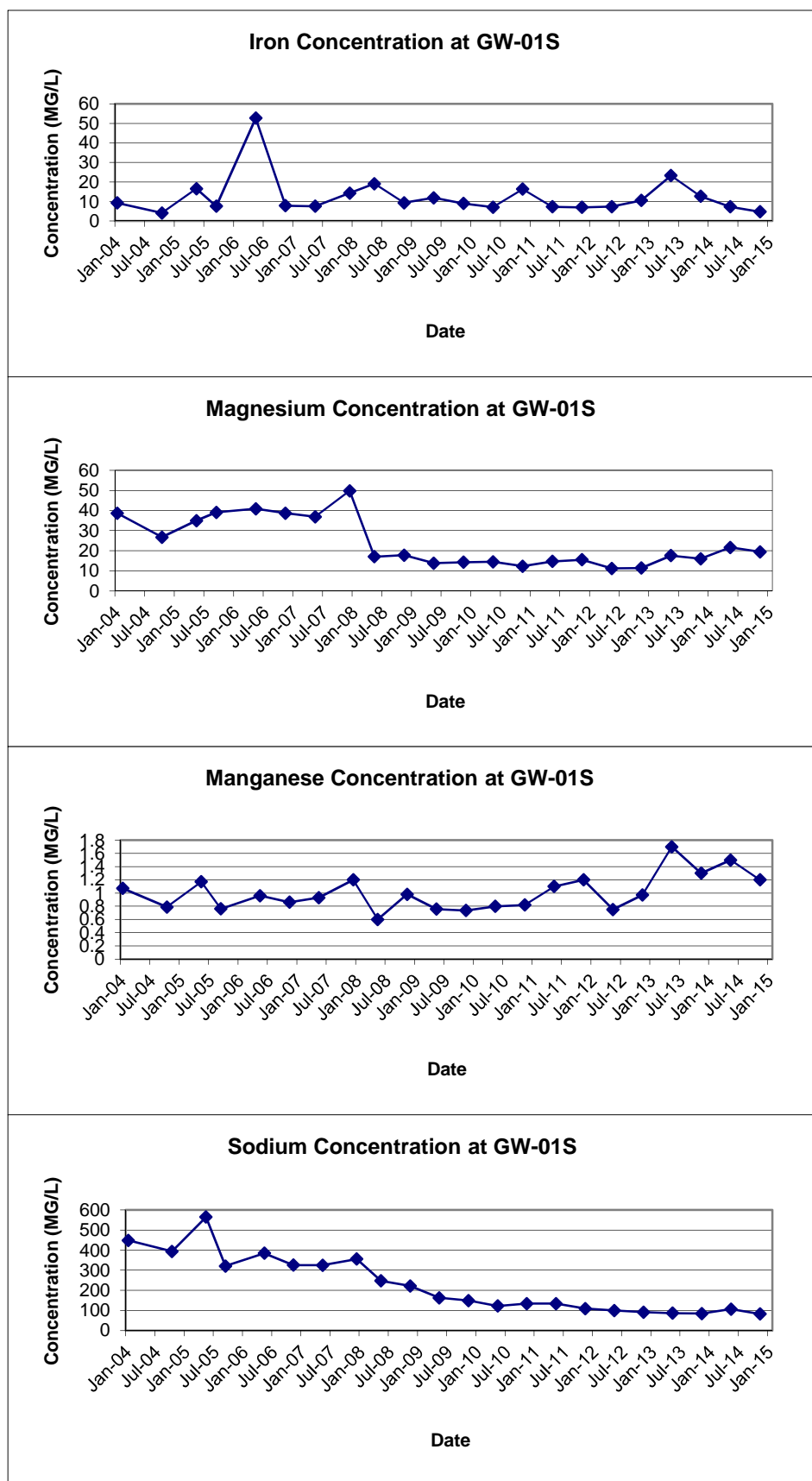
## **GROUNDWATER TREND ANALYSIS**

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

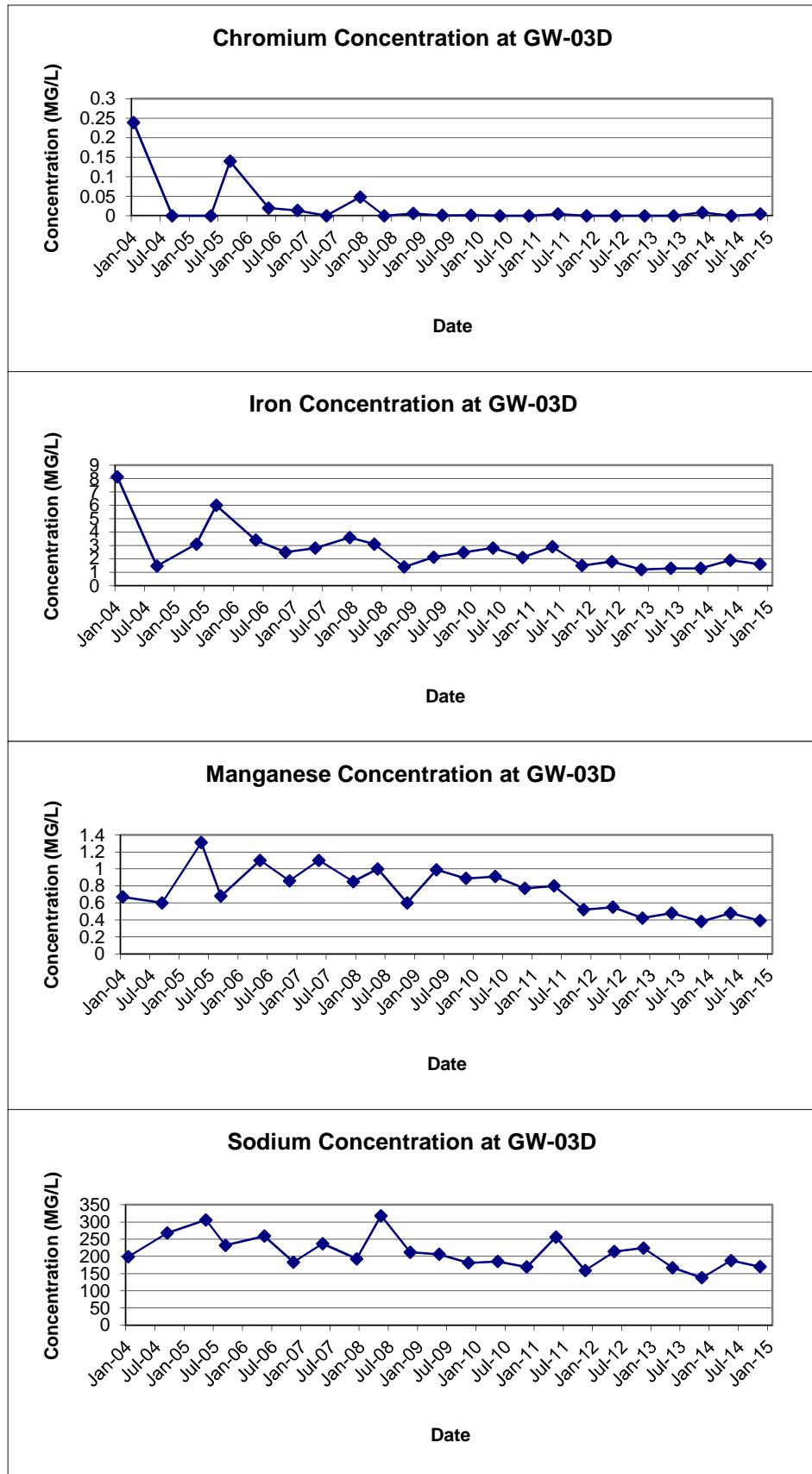




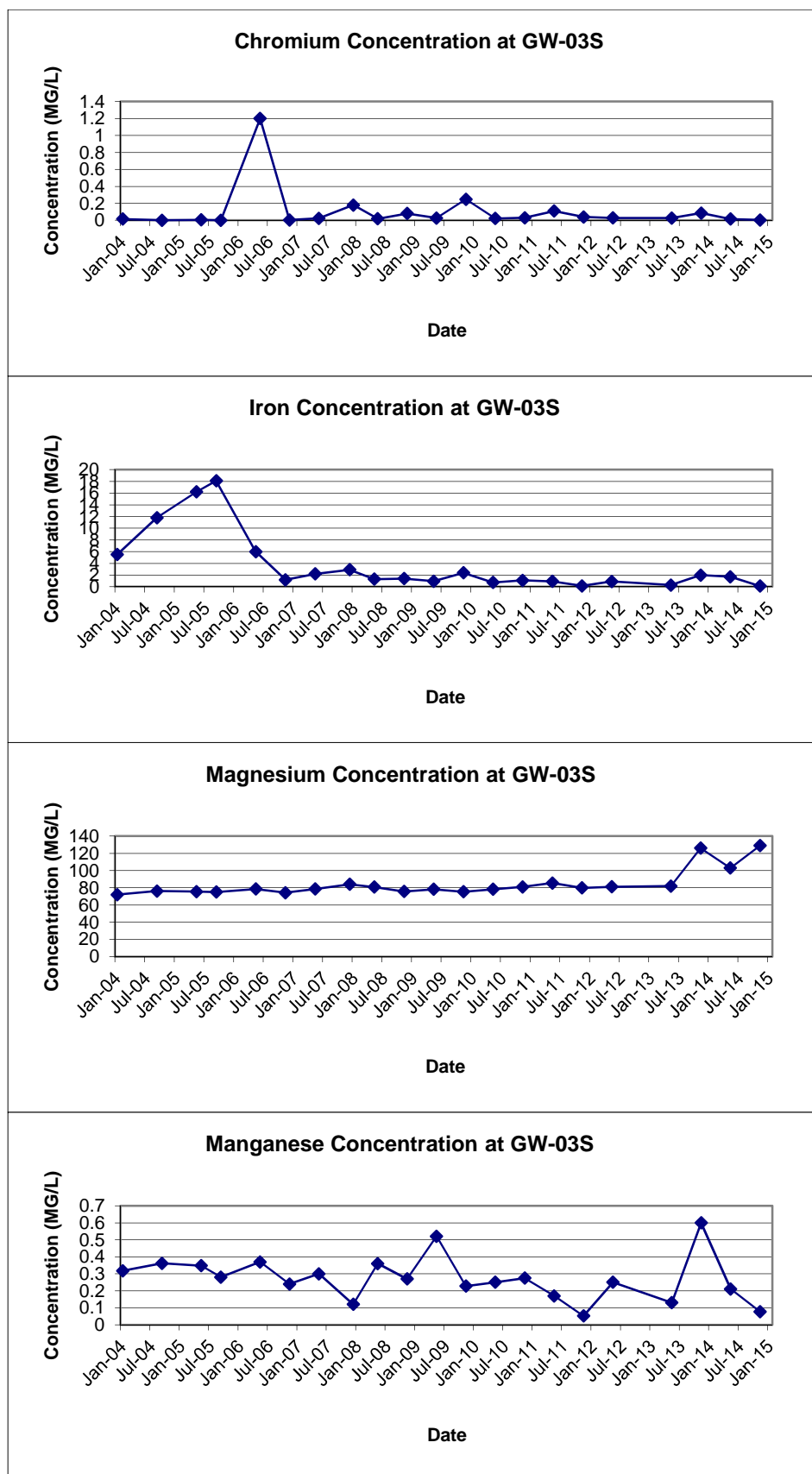
**FIGURE E-2**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-1S**



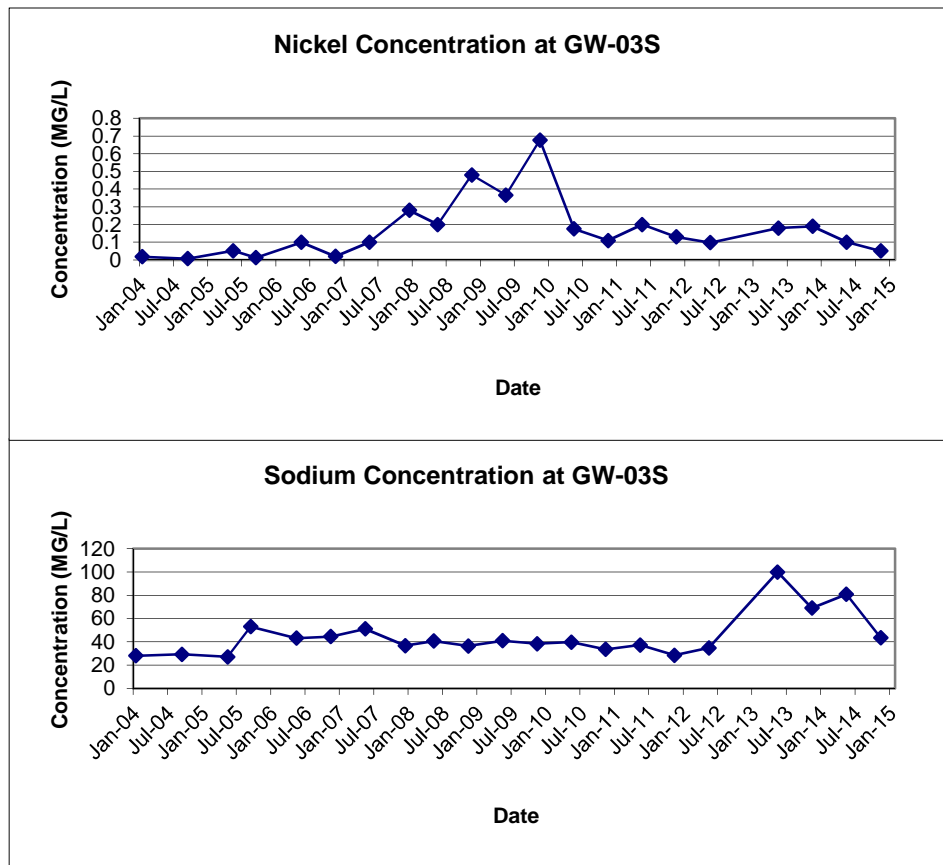
**FIGURE E-3**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-3D**



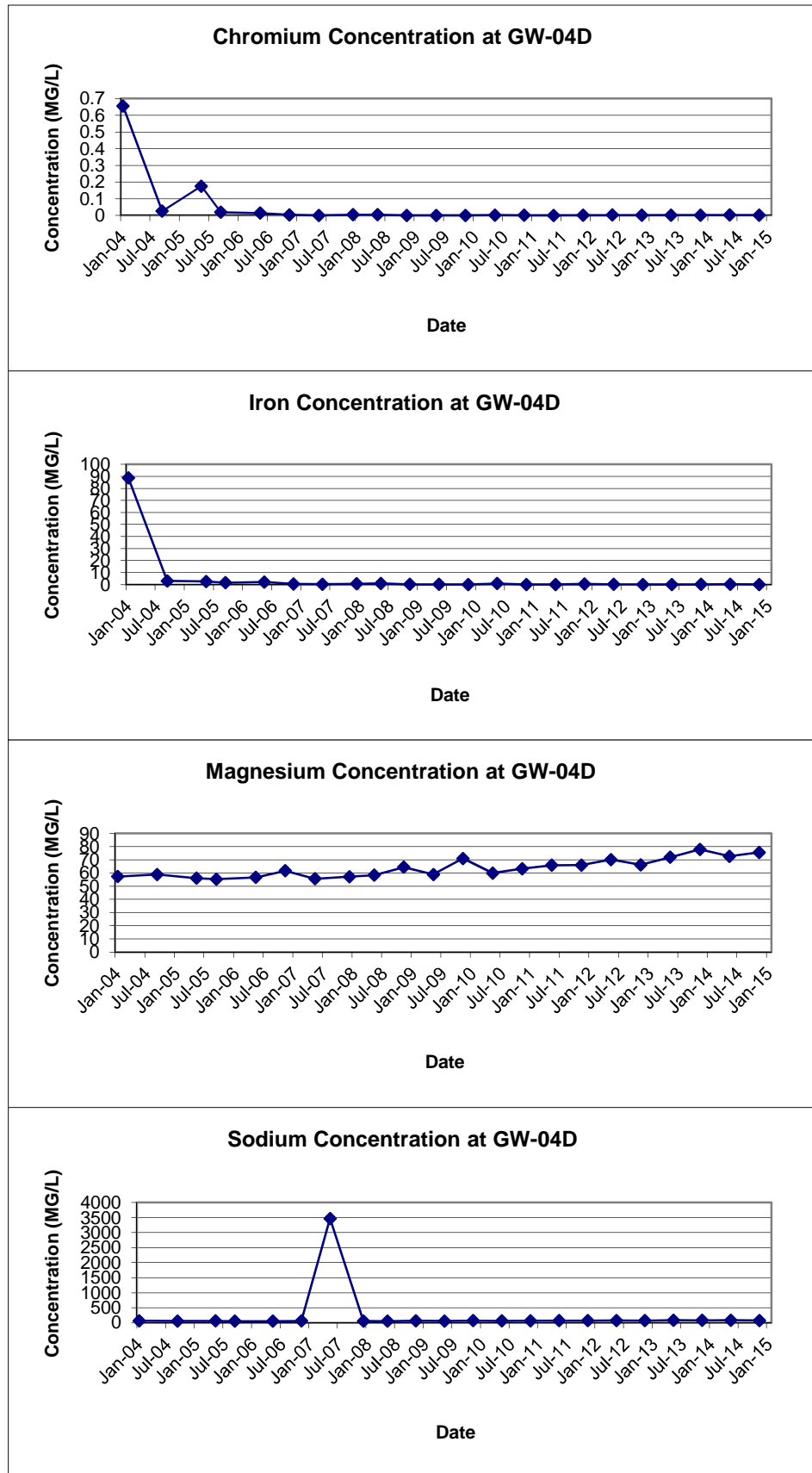
**FIGURE E-4**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-3S**



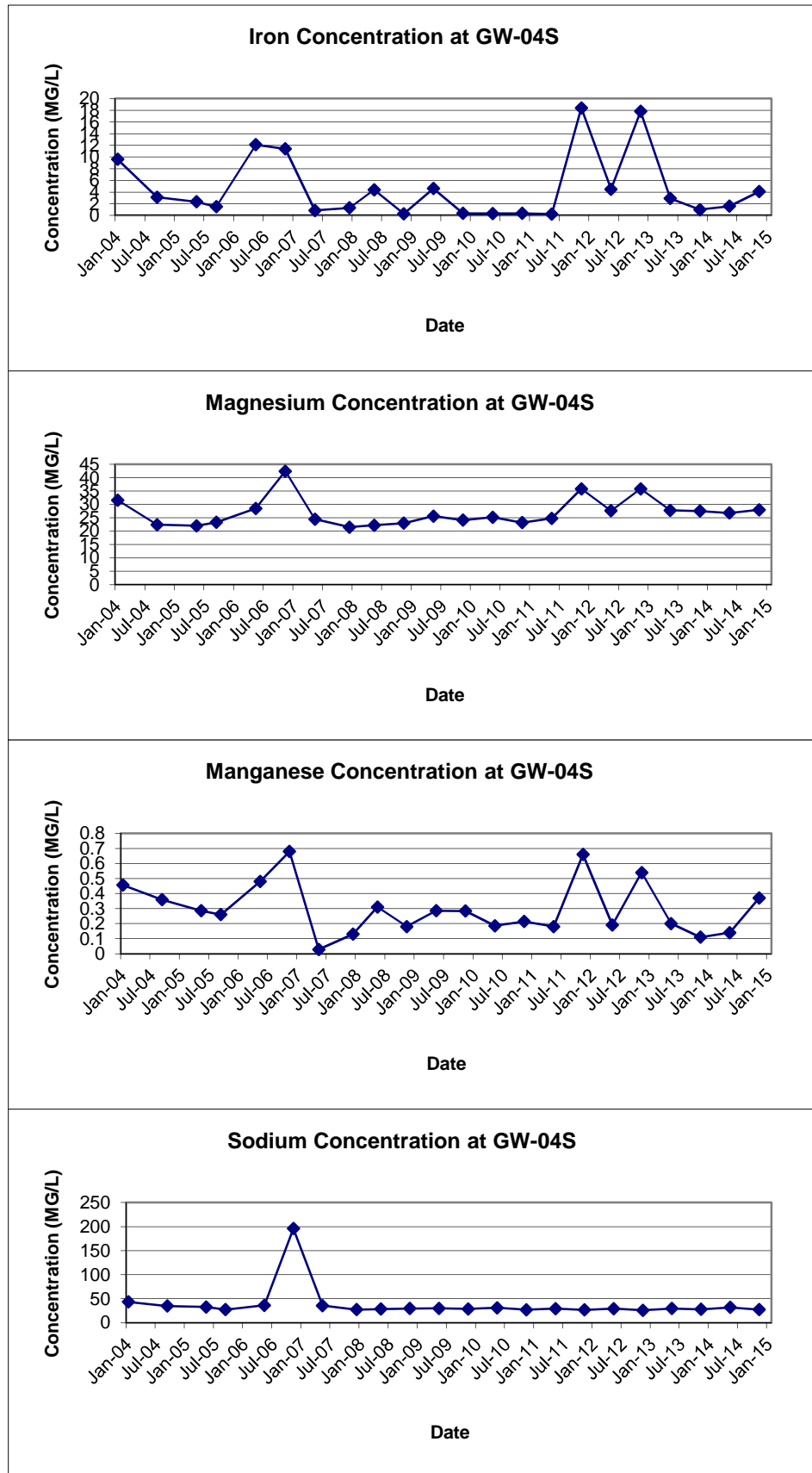
**FIGURE E-4**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-3S**



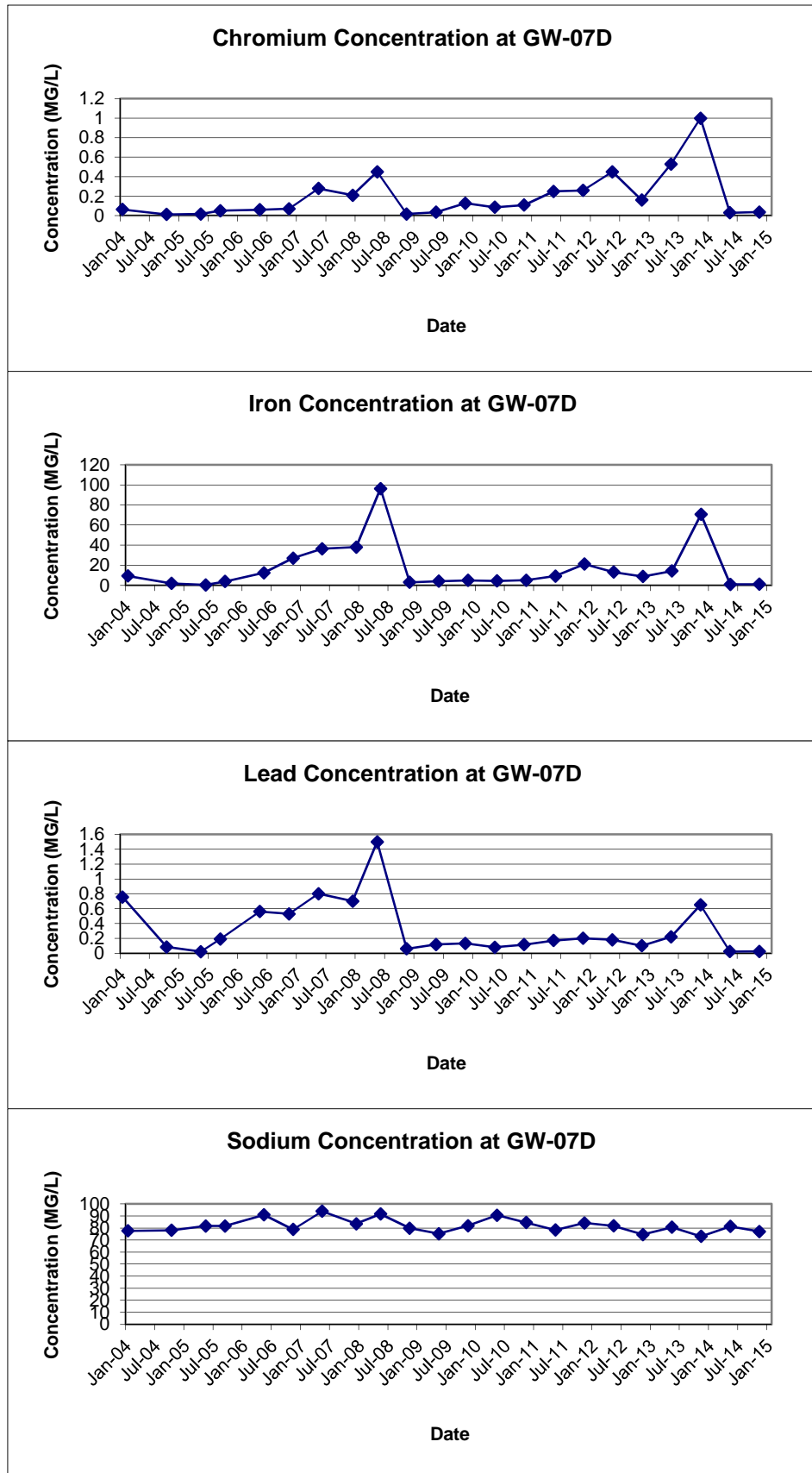
**FIGURE E-5**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-04D**



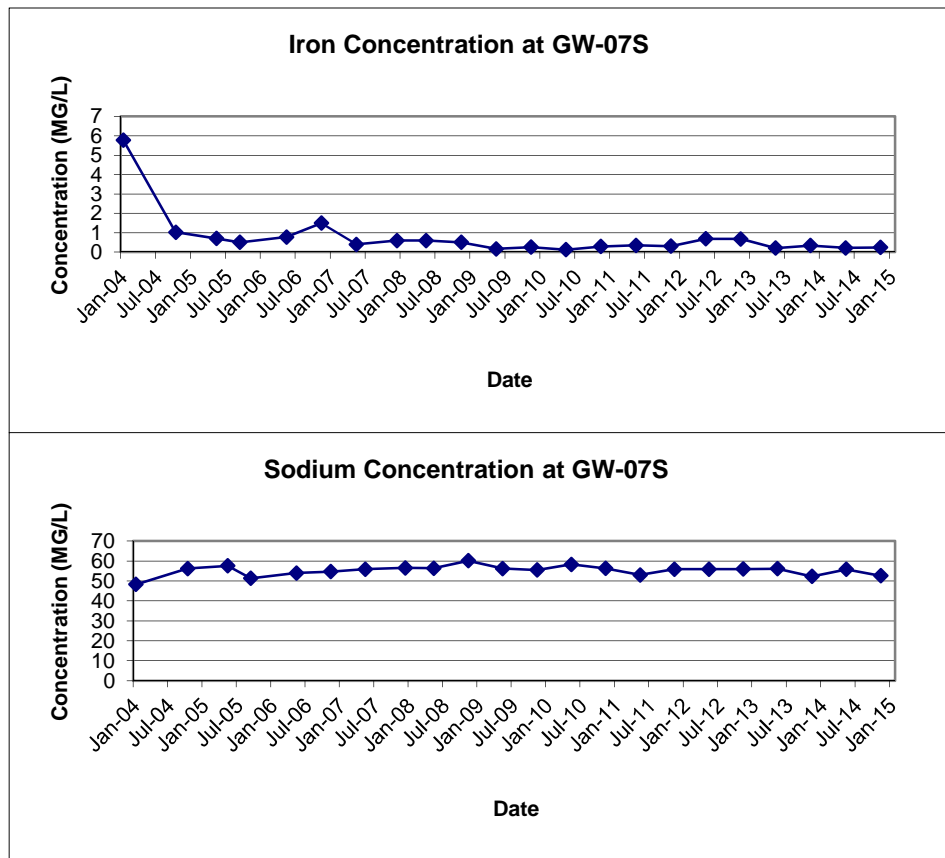
**FIGURE E-6**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-4S**



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

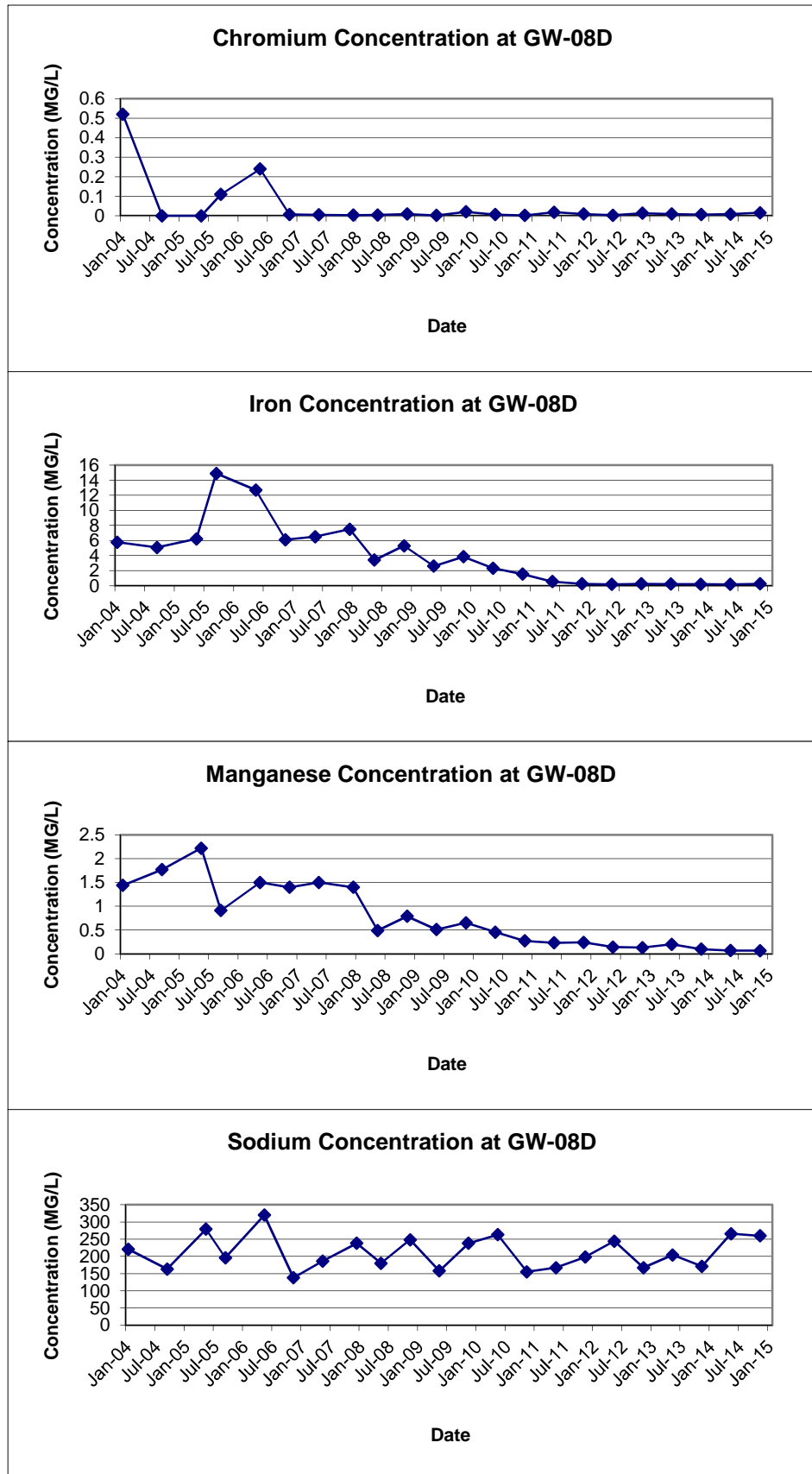


**FIGURE E-8**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-7S**

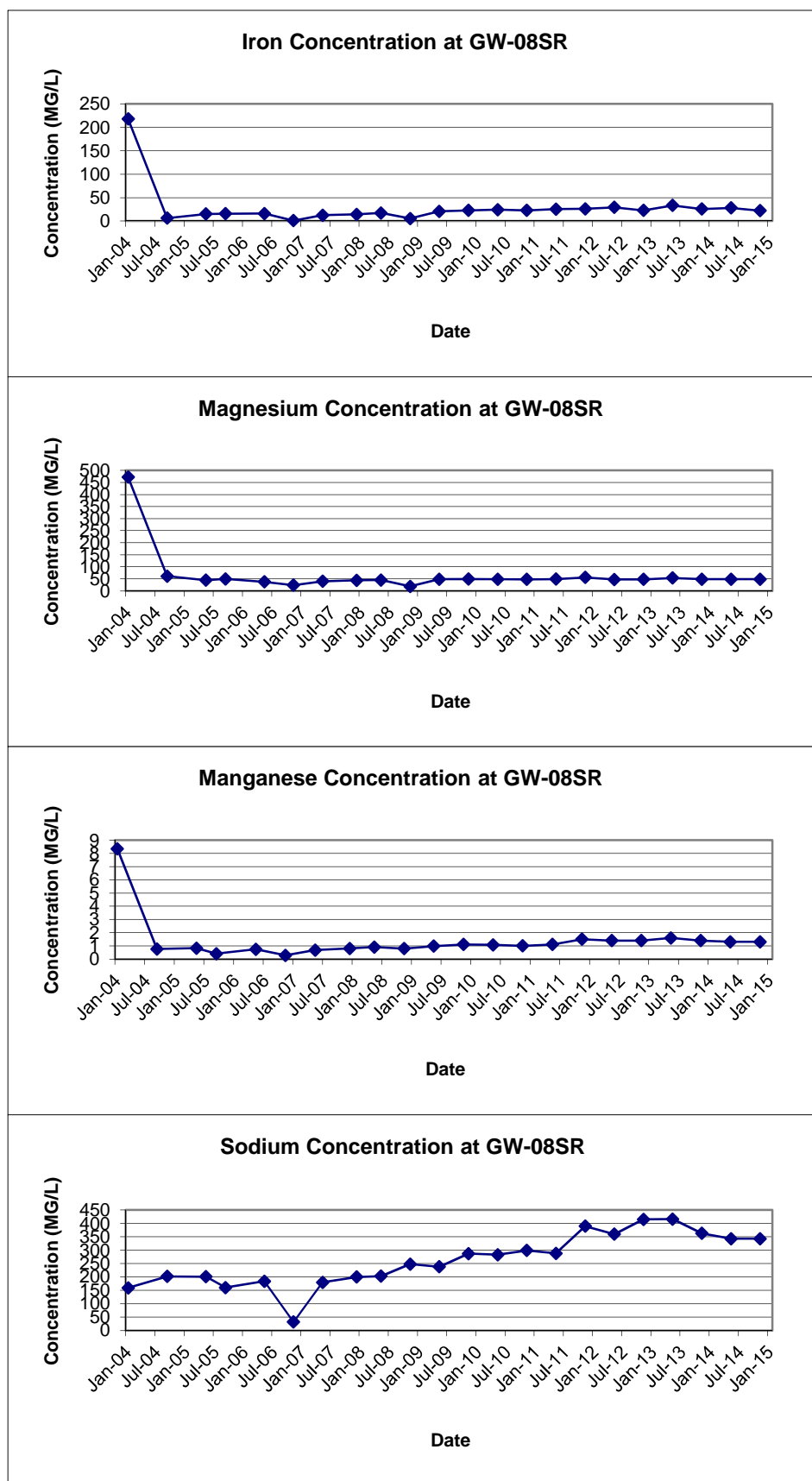




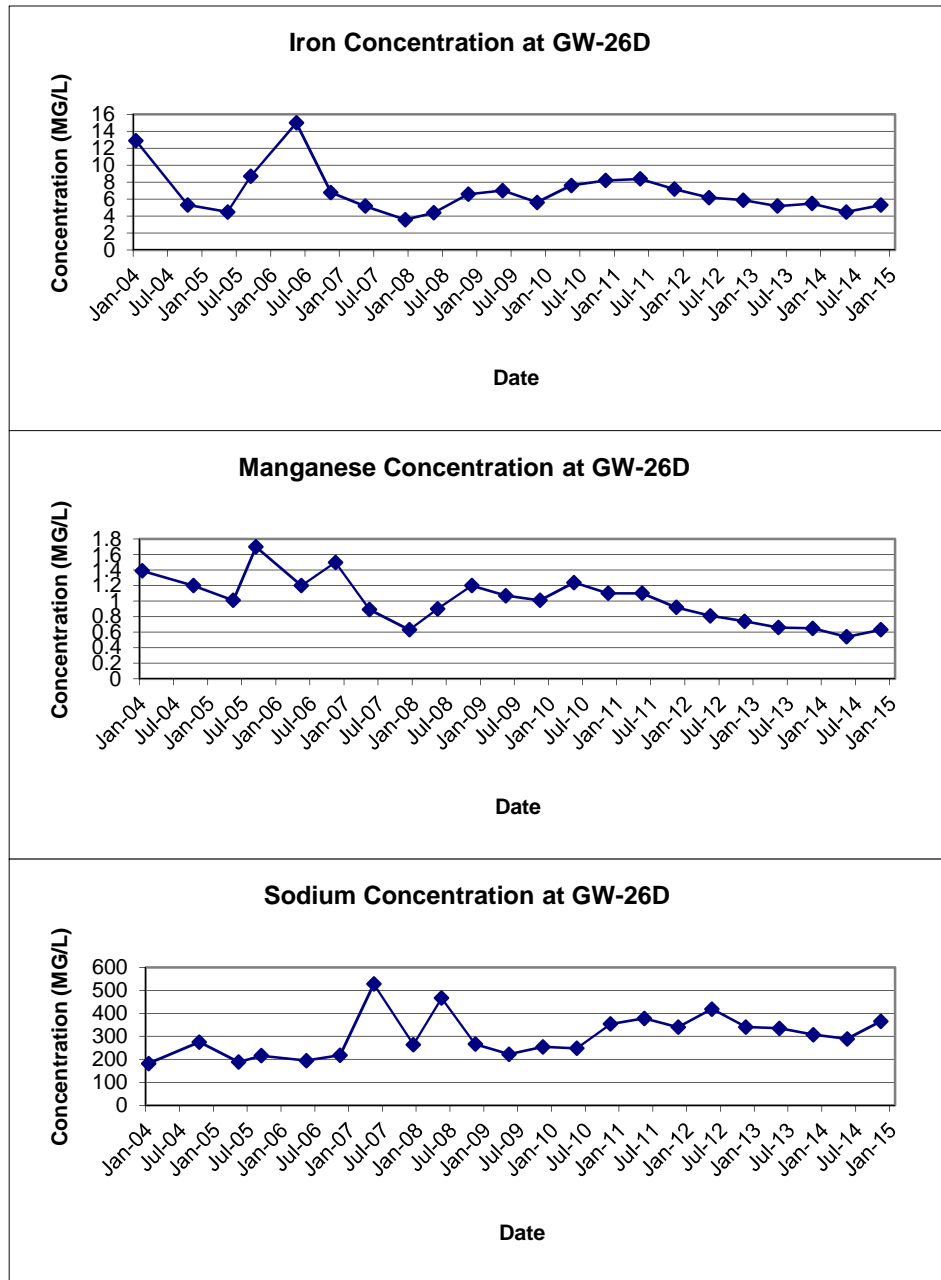
**FIGURE E-9**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-08D**



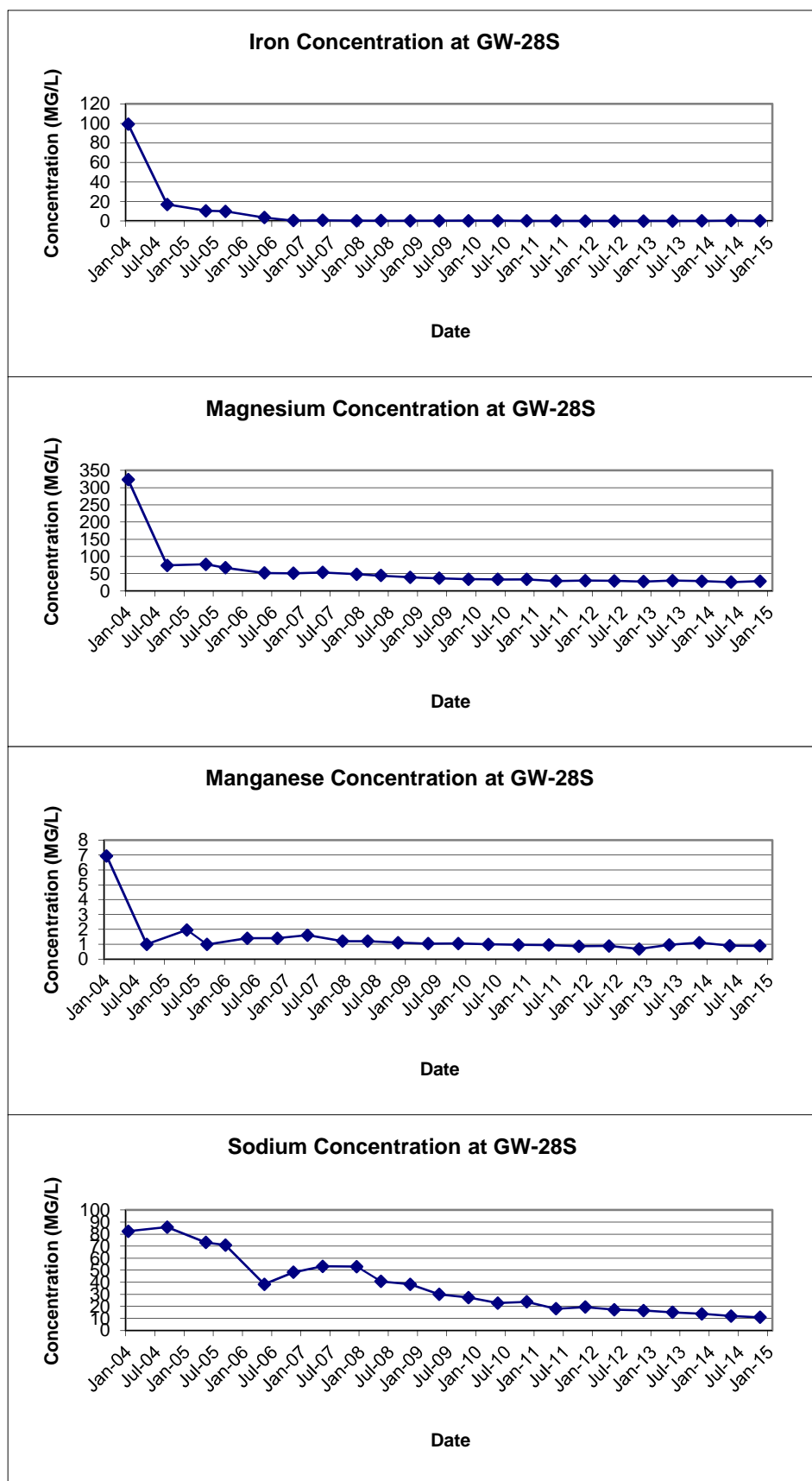
**FIGURE E-10**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-08SR**



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



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



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

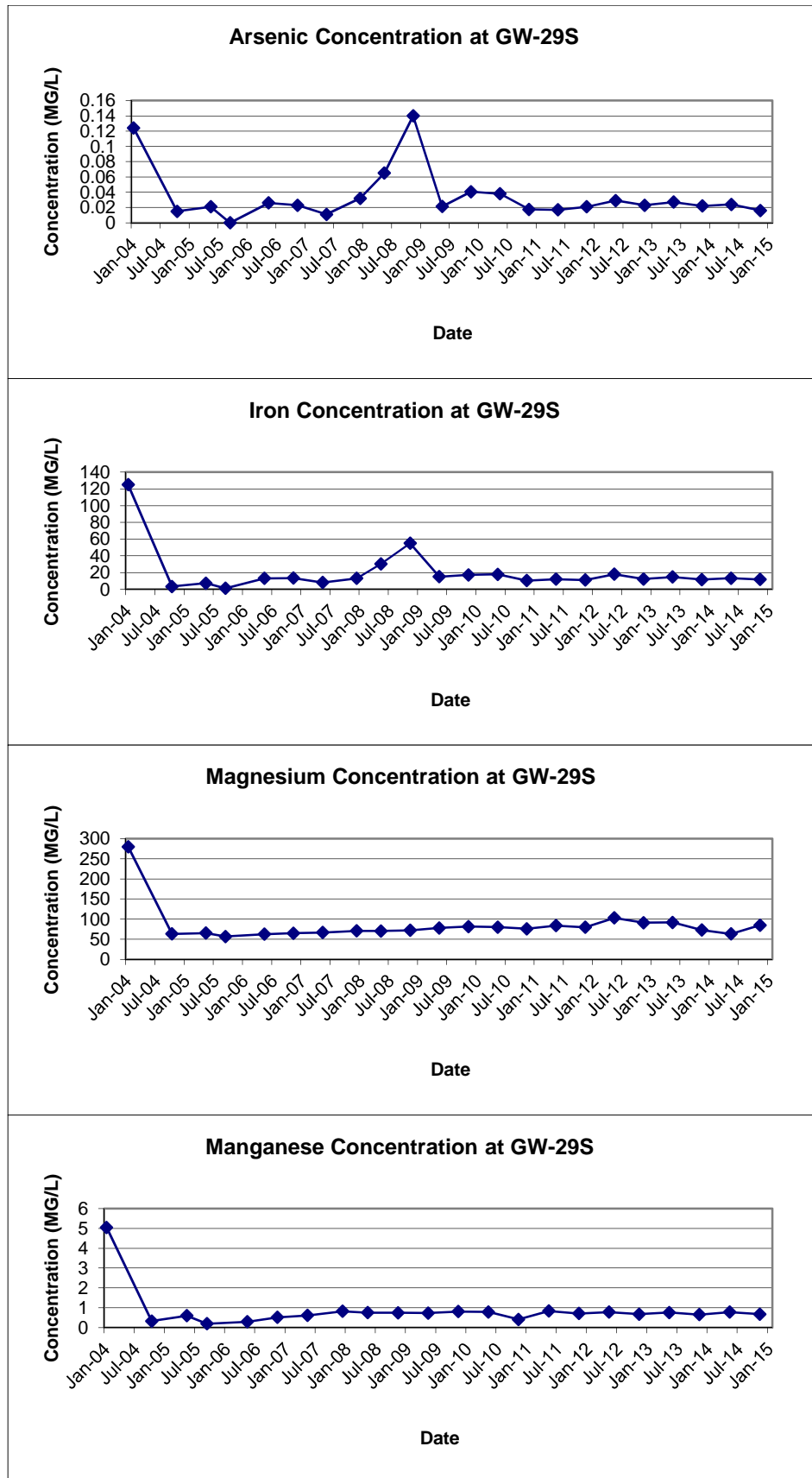
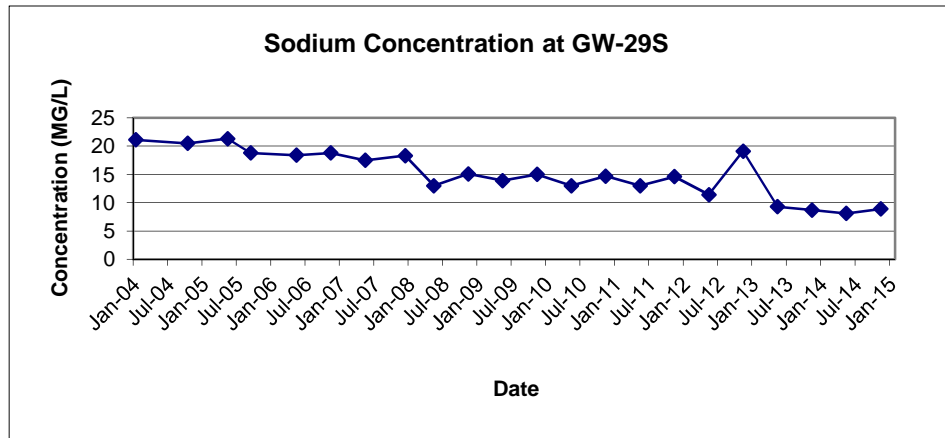
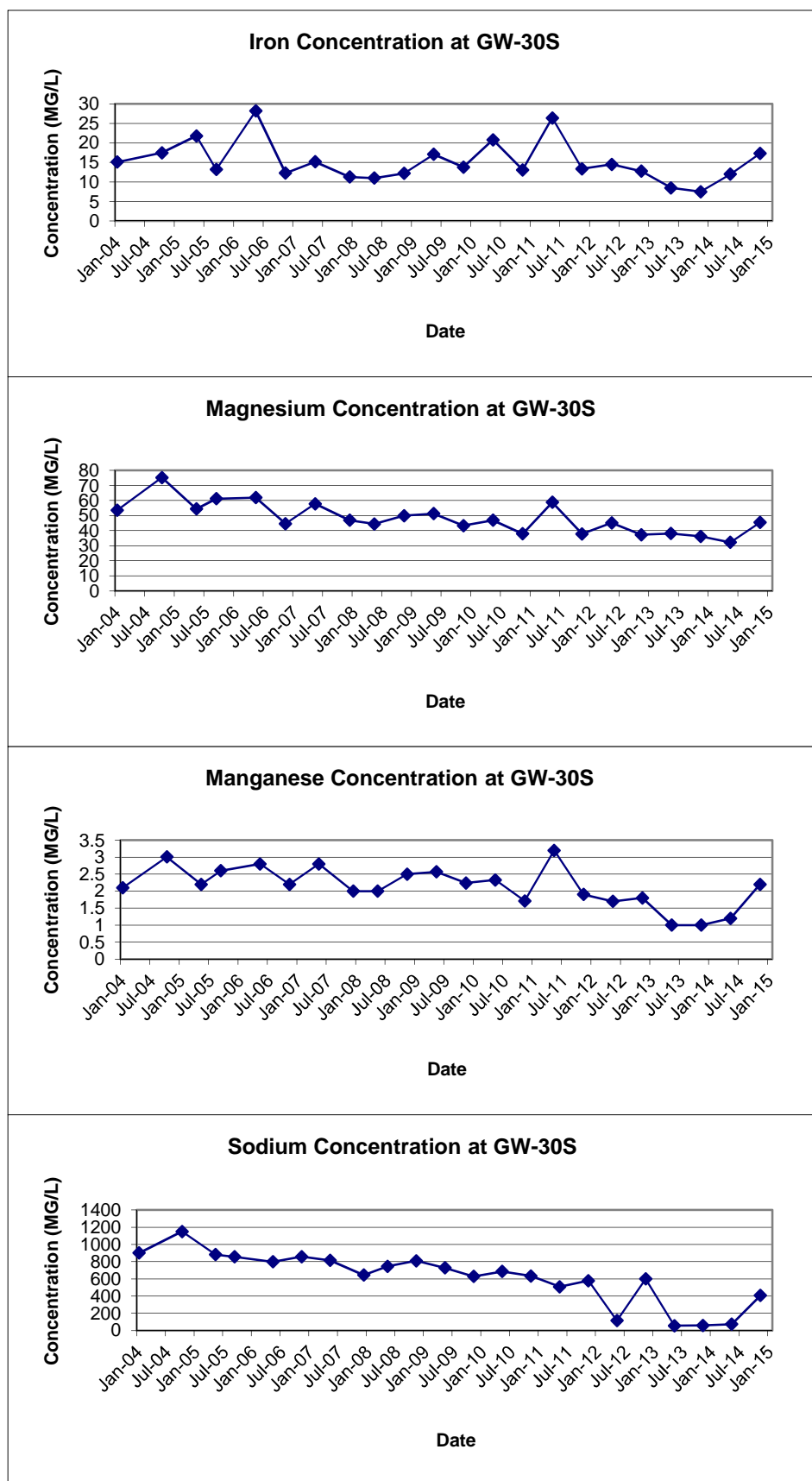


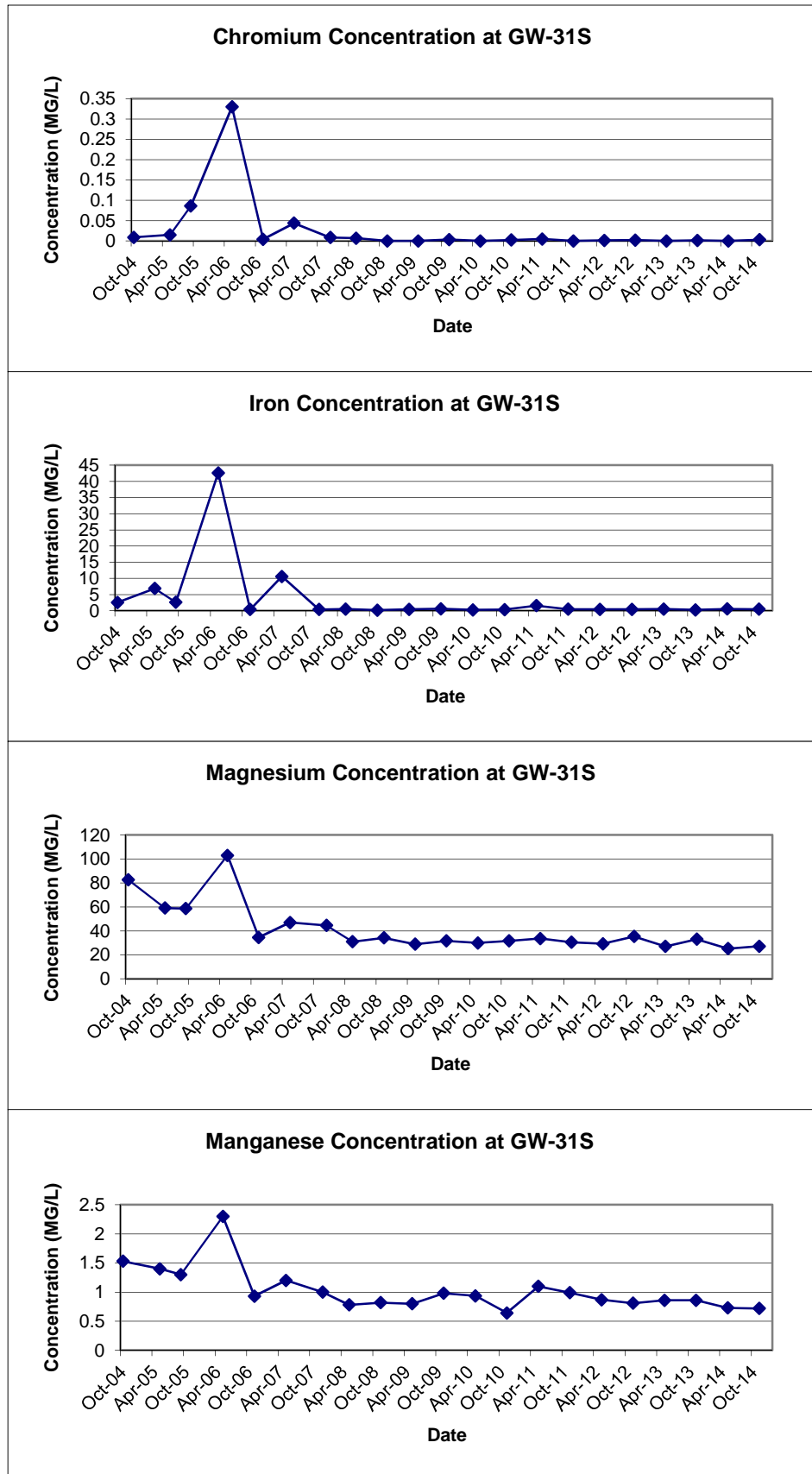
FIGURE E-13  
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS  
IN MONITORING WELL GW-29S



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

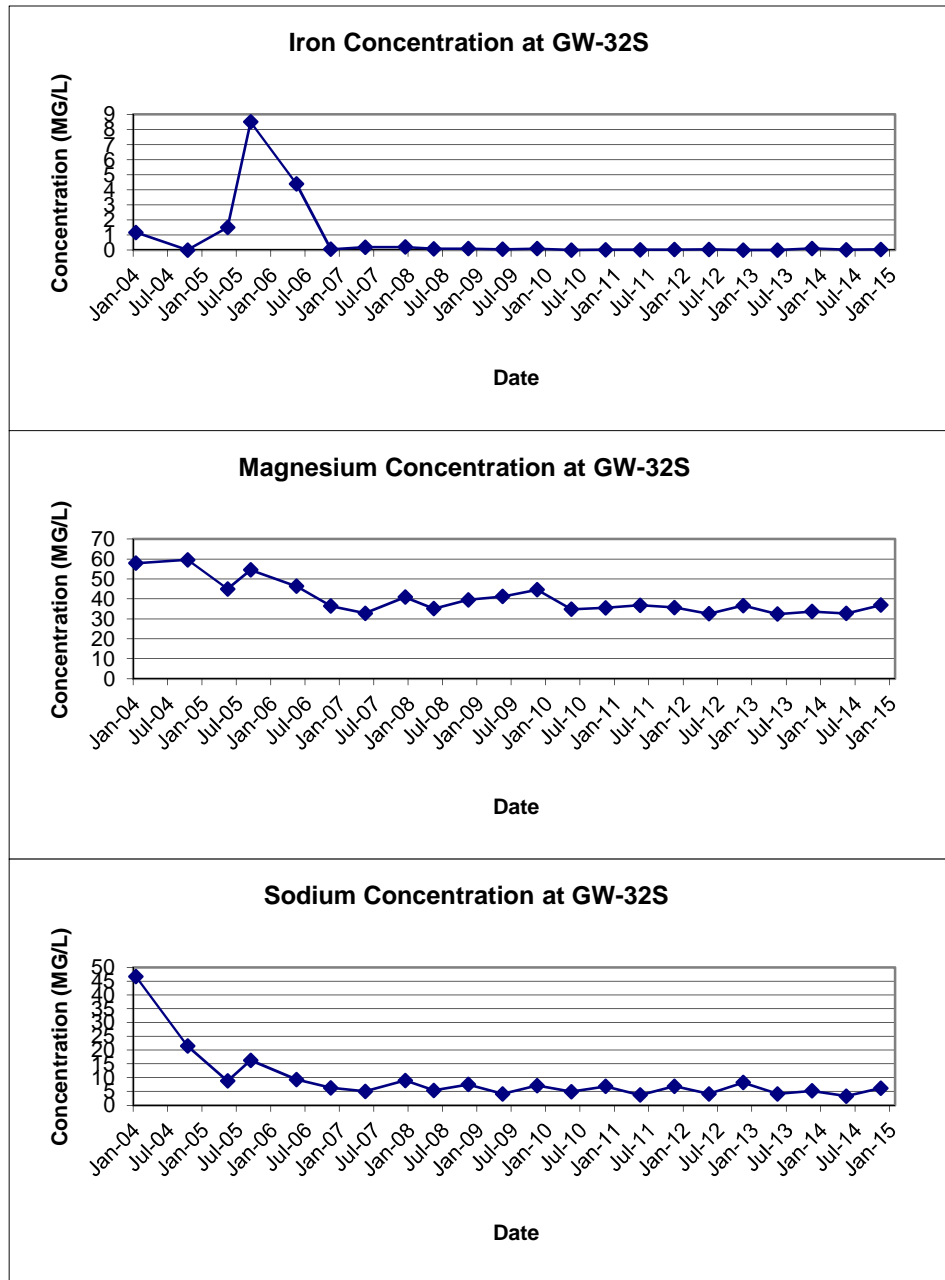


**FIGURE E-15**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-31S**

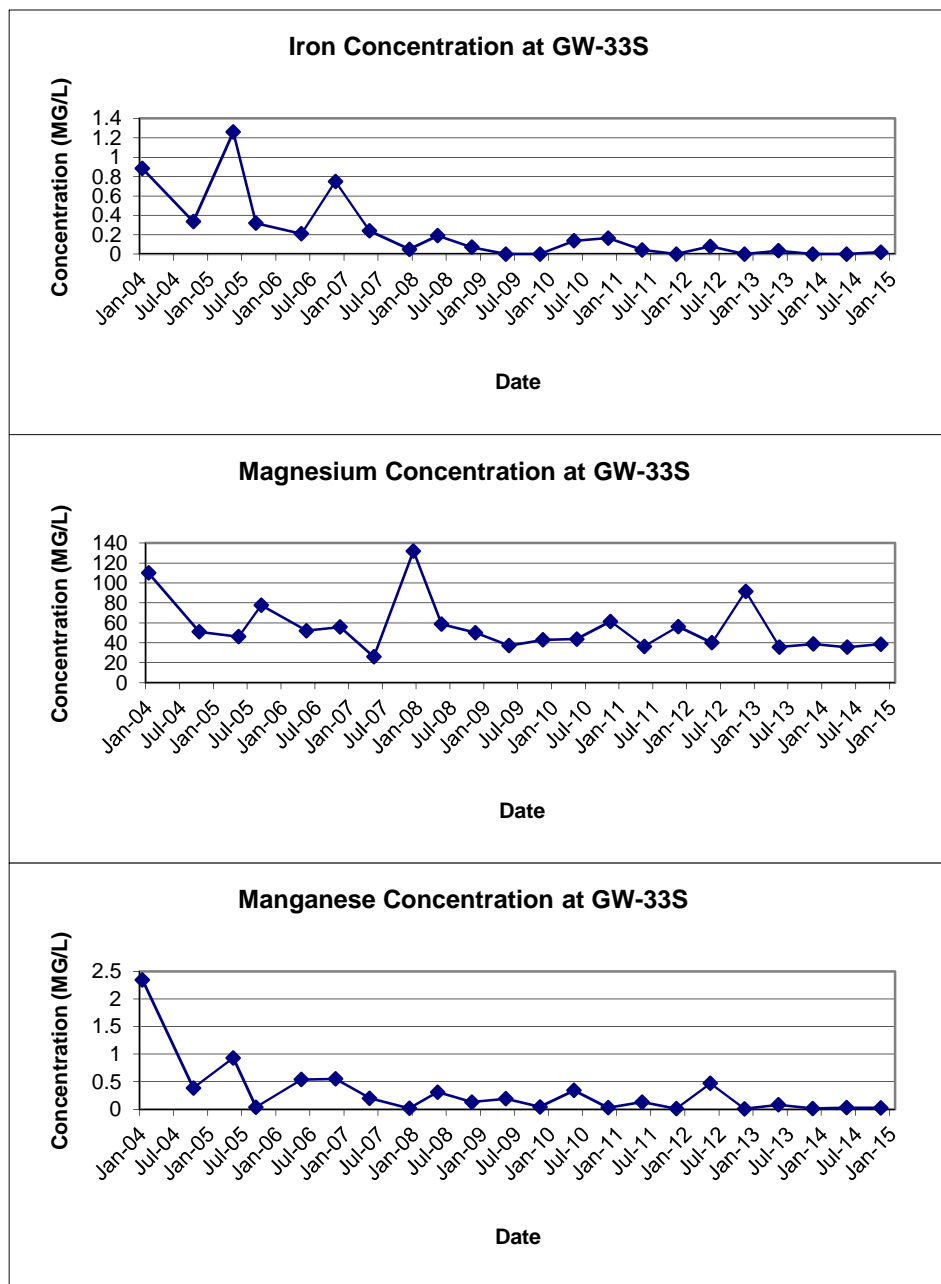




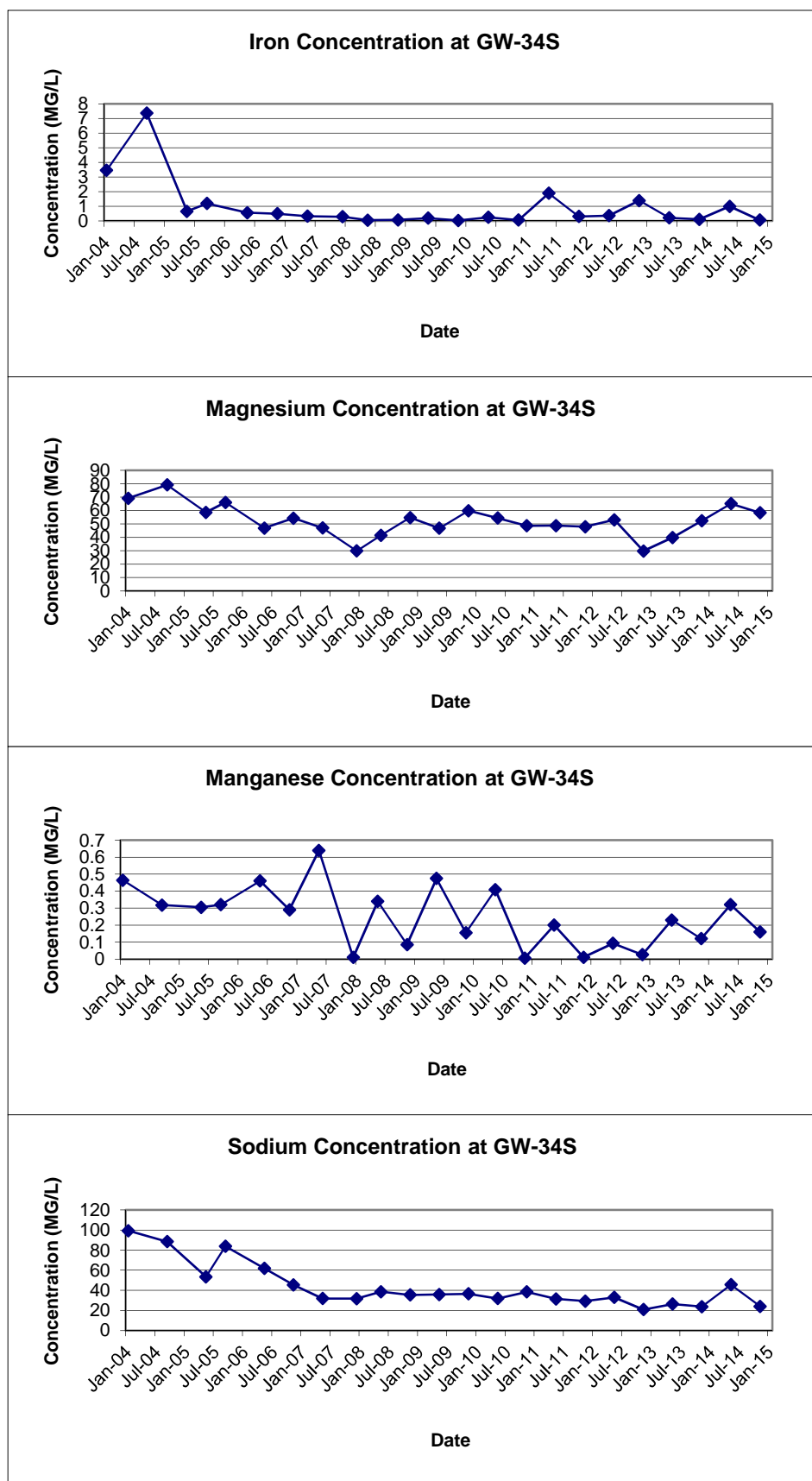
**FIGURE E-16**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-32S**



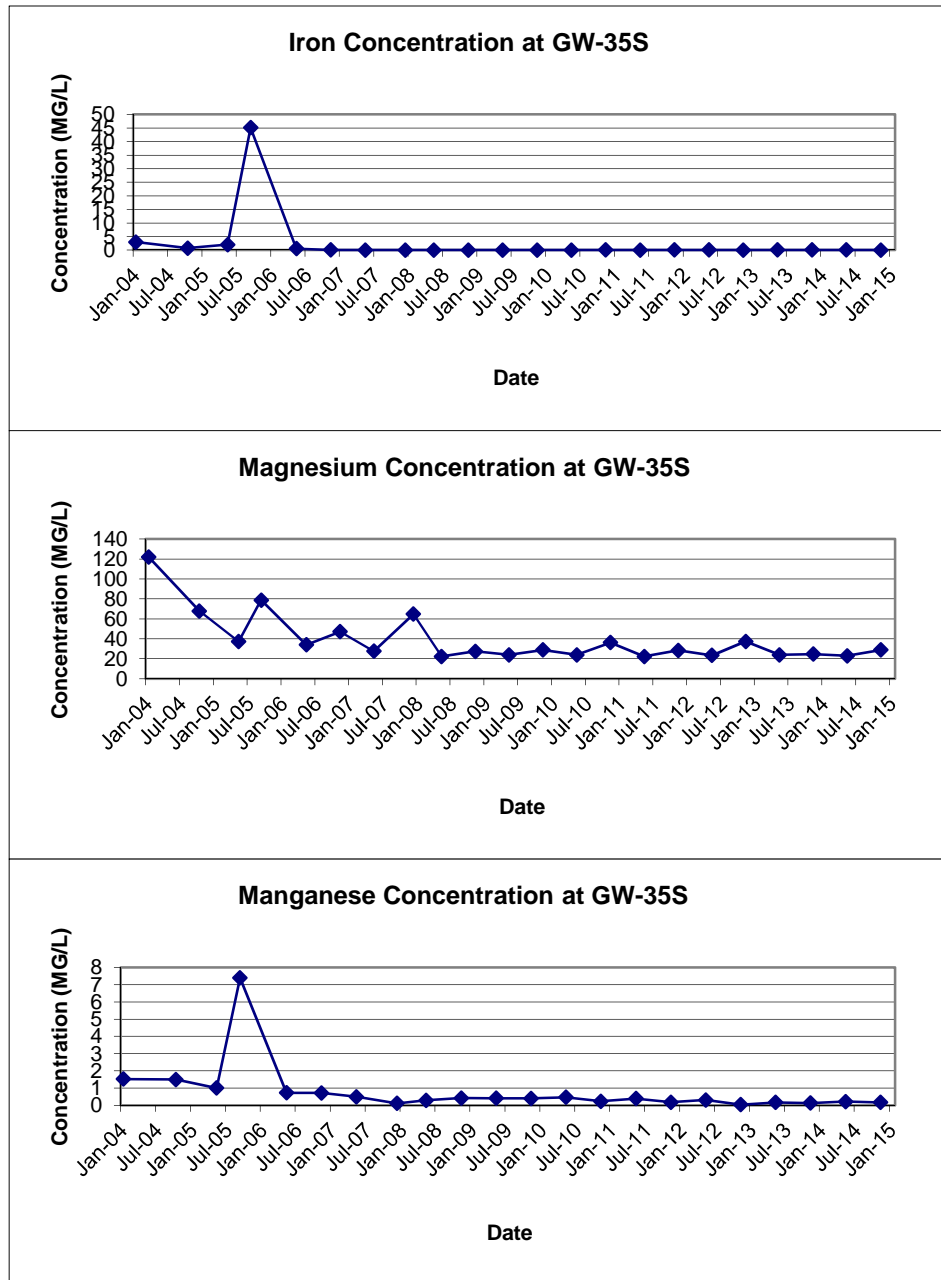
**FIGURE E-17**  
**TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS**  
**IN MONITORING WELL GW-33S**



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



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



## **APPENDIX F**

### **BSA PERMIT 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 dark ink, appearing to read "W. R. Pugh", is written over the printed name.

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<sup>day</sup> of April, 2013**

**To Expire the 31st day of March, 2016**

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

Signed this 12<sup>th</sup> 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 <sup>(1)</sup>	Sampling Requirements	
		Daily Max	Period	Type
001	pH	5.0 – 12.0 S.U.	1 day	Composite <sup>2</sup>
	Total Cadmium	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Chromium	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Copper	3.74 lbs.	1 day	Composite <sup>2</sup>
	Total Lead	1.17 lbs.	1 day	Composite <sup>2</sup>
	Total Nickel	3.27 lbs.	1 day	Composite <sup>2</sup>
	Total Zinc	5.84 lbs.	1 day	Composite <sup>2</sup>
	Total Barium	2.34 lbs.	1 day	Composite <sup>2</sup>
	Total Suspended Solids <sup>5</sup>	250 mg/l	1 day	Composite <sup>2</sup>
	Total Flow	140,100 gallons <sup>6</sup>	1 day	Discharge meter reading

Footnotes are explained on page 5.

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

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

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

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

**B. DISCHARGE MONITORING REPORTING REQUIREMENTS**

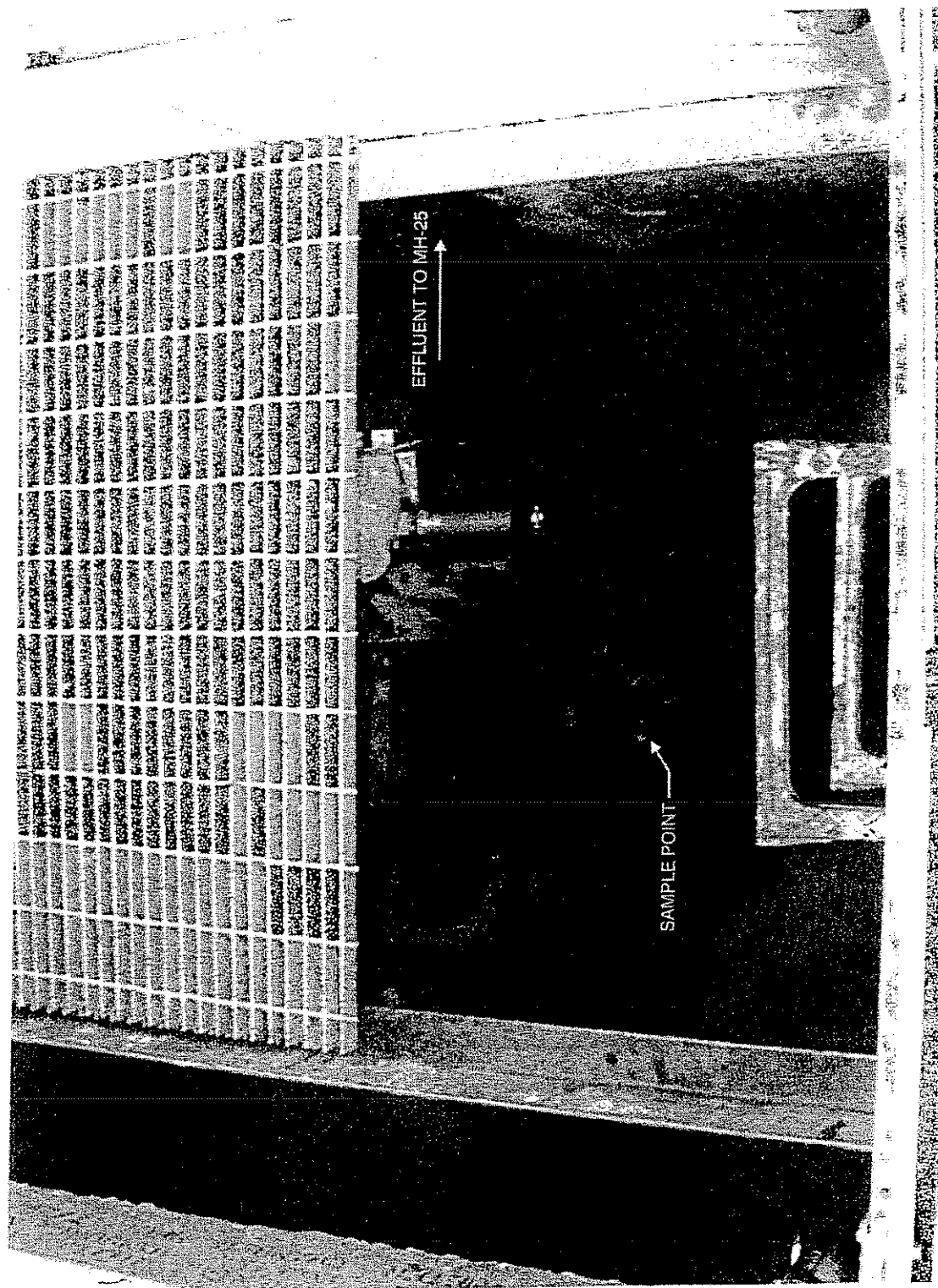
During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	March 31, 2011	Every March 31 <sup>st</sup> , June 30 <sup>th</sup> , September 30 <sup>th</sup> and December 31 <sup>st</sup>
	USEPA Test Methods 608, 624 and 625 & T Mercury	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: Bill Pugh, P.E. Phone: 716-897-7288

**Installation:**

Sample Point: SP-001

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

Date: 9/29/14 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 52° F, Partly Cloudy

Sampling Device: NA

Time of Installation: 07:25 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 (211,584 gals), WW-02 (77 gals), WW-03 (0 gals),  
WW-04 (19,667 gals), WW-05 (996,372 gals), WW-06 (770,513 gals) & MH-25 (2,102,450 gals).

Date: 6/19/14 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 52° F, Cloudy

Time of Collection: 07:25

**Field Measurements:**

07:25/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10  
(time/initial)

pH Measurement: 7.27

Temperature: 17.6°C

Identification: EFF-093014

Physical Observations: \_\_\_\_\_

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.  
PLC display volumes: WW-01 (211,584 gals), WW-02 (77 gals), WW-03 (0 gals),  
WW-04 (19,667 gals), WW-05 (1,005,115 gals), WW-06 (770,692 gals) & MH-25 (2,111,389 gals).

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_  
(Supervisor)

**TABLE 1**

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING  
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS  
SEPTEMBER 2014**

<b>Sample ID</b>	<b>EFF-093014</b>			
<b>Matrix</b>	<b>Effluent Water</b>			
<b>Date Sampled</b>	<b>9/30/2014</b>			
<b>Parameter</b>	<b>Result</b>	<b>Mass Loading</b>	<b>Discharge Limitation</b>	<b>Violations</b>
	<b>(mg/L)</b>	<b>(lbs/day)</b>	<b>(lbs/day)</b>	<b>(Y/N)</b>
Total Barium	0.33	0.02	2.34	No
Total Cadmuim	< <sup>(1)</sup> 0.0005	< 0.00004	1.17	No
Total Chromium	< 0.0010	< 0.0001	1.17	No
Total Copper	0.021	0.002	3.74	No
Total Lead	0.0041	0.0003	1.17	No
Total Nickel	0.0055	0.0004	3.27	No
Total Zinc	0.076	0.01	5.84	No
Total Suspended Solids	31.6	NA <sup>(2)</sup>	250 <sup>(3)</sup>	No
pH <sup>(4)</sup>	7.27	NA	5.0 - 12.0	No
Total Flow <sup>(5)</sup>		8,939	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: 12/11/14 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 30° F, Light Snow

Sampling Device: NA

Time of Installation: 11:00 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 (501,215 gals), WW-02 (77 gals), WW-03 (0 gals),  
WW-04 (166,700 gals), WW-05 (2,140,235 gals), WW-06 (2,083,854 gals) & MH-25 (4,997,330 gals).

Date: 12/12/14 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 33° F, Overcast

Time of Collection: 11:00

Field Measurements:

11:00/RJM pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10  
(time/initial)

pH Measurement: 7.78

Temperature: 10.4°C

Identification: EFF-121214

Physical Observations: \_\_\_\_\_

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.  
PLC display volumes: WW-01 (501,215 gals), WW-02 (77 gals), WW-03 (0 gals),  
WW-04 (166,700 gals), WW-05 (2,140,235 gals), WW-06 (2,170,697 gals) & MH-25 (5,084,279 gals).

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_  
(Supervisor)

**TABLE 1**

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING  
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS  
DECEMBER 2014**

<b>Sample ID</b>	<b>EFF-121214</b>			
<b>Matrix</b>	<b>Effluent Water</b>			
<b>Date Sampled</b>	<b>12/12/2014</b>			
<b>Parameter</b>	<b>Result</b>	<b>Mass Loading</b>	<b>Discharge Limitation</b>	<b>Violations</b>
	<b>(mg/L)</b>	<b>(lbs/day)</b>	<b>(lbs/day)</b>	<b>(Y/N)</b>
Total Barium	0.15	0.11	2.34	No
Total Cadmuim	< <sup>(1)</sup> 0.0005	< 0.0004	1.17	No
Total Chromium	< 0.0010	< 0.0007	1.17	No
Total Copper	0.0089	0.006	3.74	No
Total Lead	< 0.0030	< 0.002	1.17	No
Total Nickel	0.0018	0.001	3.27	No
Total Zinc	0.050	0.04	5.84	No
Total Suspended Solids	< 4.0	NA <sup>(2)</sup>	250 <sup>(3)</sup>	No
pH <sup>(4)</sup>	7.78	NA	5.0 - 12.0	No
Total Flow <sup>(5)</sup>		86,949	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. Urban

Supervisor: J. Sundquist

Date(s) of Inspection: November 12, 2014

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-01S	OK	OK	OK	Bulged	4.66	14.94	
GW-01D	OK	OK	OK	Bulged	3.40	39.65	
GW-03S	OK	OK	OK	OK	4.72	13.22	
GW-03D	OK	OK	OK	OK	2.06	35.70	
GW-04S	OK	OK	OK	OK	4.55	16.23	
GW-04D	OK	OK	OK	OK	13.33	45.57	
GW-07S	OK	OK	OK	OK	6.19	35.04	
GW-07D	OK	OK	OK	Damaged	46.67	60.45	

Additional Comments:

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## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Urban

Supervisor: J. Sundquist

Date(s) of Inspection: November 12, 2014

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-08SR	OK	OK	OK	OK	5.27	13.02	
GW-08D	OK	OK	OK	OK	6.16	36.54	
GW-26D	OK	OK	OK	OK	7.00	40.70	
GW-28S	OK	OK	OK	OK	9.90	15.52	
GW-29S	OK	OK	OK	OK	9.03	20.04	
GW-30S	OK	OK	OK	OK	8.18	17.97	
GW-31S	OK	OK	OK	OK	3.35	9.57	
GW-32S	OK	OK	OK	OK	3.50	9.93	

Additional Comments:

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## WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Urban

Supervisor: J. Sundquist

Date(s) of Inspection: November 12, 2014

<b>Well I.D. Number</b>	<b>Lock</b>	<b>Surface Seal</b>	<b>Protective Casing</b>	<b>Riser</b>	<b>Water Level (ft. BTOC)</b>	<b>Well Depth (ft. BTOC)</b>	<b>Other Comments</b>
GW-33S	OK	OK	OK	OK	4.61	8.21	
GW-34S	OK	OK	OK	OK	2.69	10.01	
GW-35S	OK	OK	OK	OK	4.30	7.46	

Additional Comments:

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**DATA APPLICABILITY REPORT**

**SEMI-ANNUAL GROUNDWATER MONITORING  
AT  
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 2014**

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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 2014 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 12-14, 2014 sampling of nineteen (19) groundwater samples, one (1) field duplicate, and one (1) matrix spike (MS)/matrix spike duplicate (MSD) pair. A total of two (2) 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-7D and GW-7S, the VOC aliquots were collected on 11/12/14, while the SVOC/metals aliquots were collected on 11/13/14. All aliquots of sample GW-04S were collected on 11/13/14, however the VOCs were collected at 09:45 am and the SVOC/metals were collected at 11:15 am.

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

The SVOC laboratory method blank exhibited contamination at a concentration less than the reporting limit (RL) for bis(2-ethylhexyl)phthalate. The results for this compound in associated samples GW-01D, GW-01S, GW-30S, GW-31S, GW-32S, and GW-33S were qualified 'J+' since they were greater than, but only slightly above, the RL.

The metals method blank exhibited contamination for iron (Fe), manganese (Mn), and zinc (Zn) at concentrations less than the RL. The laboratory qualified the detected results 'B' for Fe, Mn, and Zn in the associated samples, however if 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 results for associated samples GW-01S, GW-01D, GW-03D, GW-04D, GW-08SR, GW-26D, FD-111314 (GW-26D), GW-28S, GW-29S, GW-30S, GW-32S, GW-33S, GW-34S, and GW-35S and the Zn result for 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'.

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' during the limited data review are considered non-detect. Those results qualified 'J+' are considered estimated with a high bias. 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: 12/30/14

Reviewed by: Peter R. Fairbanks, Senior Chemist



Date: 12/30/14

## **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		11/14/14	11/14/14	11/12/14	11/12/14	11/13/14
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	9.6 U	9.6 U	0.99 J	9.4 U	9.5 U
1,4-Dichlorobenzene	UG/L	9.6 U	9.6 U	1.4 J	9.4 U	9.5 U
bis(2-Ethylhexyl)phthalate	UG/L	5.5 J+	5.8 J+	5.4	5.4	4.6 J
Phenol	UG/L	4.8 U	4.8 U	4.9 U	4.7 U	4.8 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.079	0.17	0.079	0.10	0.081
Cadmium	MG/L	0.0010 U	0.0013	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0019 J	0.0012 J	0.0047	0.0042	0.0019 J
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.028 J	4.8	1.6	0.13	0.081
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	34.6	19.4	15.9	129	75.6
Manganese	MG/L	0.017	1.2	0.39	0.077	0.019
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	0.0024 J	0.050	0.010 U

Flags assigned during chemistry validation are shown:

MADE BY: *chick* 12/17/14  
 CHECKED BY: *pp* 12/29/14

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		11/14/14	11/14/14	11/12/14	11/12/14	11/13/14
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	88.9	82.6	170	43.4	76.0
Zinc	MG/L	0.010 U	0.010 U	0.010 U	0.019	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: CHP 12/17/14  
 CHECKED BY: PE 12/29/14

Detection Limits shown are PQL



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

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/13/14	11/12/14	11/13/14	11/12/14	11/13/14
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	NA	2.0 U	NA
Acetone	UG/L	10 U	10 U	NA	10 U	NA
Benzene	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
Vinyl chloride	UG/L	1.0 U	1.0 U	NA	1.0 U	NA
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	9.5 U	NA	9.5 U	NA	9.5 U
1,4-Dichlorobenzene	UG/L	9.5 U	NA	9.5 U	NA	9.5 U
bis(2-Ethylhexyl)phthalate	UG/L	6.2	NA	6.6	NA	5.9
Phenol	UG/L	4.7 U	NA	4.8 U	NA	4.7 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	NA	0.020 U	NA	0.020 U
Arsenic	MG/L	0.010 U	NA	0.010 U	NA	0.010 U
Barium	MG/L	0.14	NA	0.074	NA	0.29
Cadmium	MG/L	0.0010 U	NA	0.0010 U	NA	0.0010 U
Chromium	MG/L	0.0098	NA	0.038	NA	0.0071
Copper	MG/L	0.0040 J	NA	0.0048 J	NA	0.010 U
Iron	MG/L	4.1	NA	1.1	NA	0.24
Lead	MG/L	0.0050 U	NA	0.024	NA	0.0050 U
Magnesium	MG/L	28.0	NA	35.9	NA	37.1
Manganese	MG/L	0.37	NA	0.055	NA	0.089
Mercury	MG/L	0.00020 U	NA	0.00020 U	NA	0.00020 U
Nickel	MG/L	0.0088 J	NA	0.022	NA	0.013

Flags assigned during chemistry validation are shown

MADE BY: CHL 12/17/14  
 CHECKED BY: PC 12/25/14

Detection Limits shown are PQL

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

Location ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID		GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/13/14	11/12/14	11/13/14	11/12/14	11/13/14
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	NA	0.0030 U	NA	0.0030 U
Sodium	MG/L	27.4	NA	77.1	NA	52.6
Zinc	MG/L	0.027	NA	0.020	NA	0.011

Flags assigned during chemistry validation are shown

MADE BY: *dmk* 12/17/14  
 CHECKED BY: *RF* 12/24/14

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-08D	GW-08SR	FD-111314	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/12/14	11/12/14	11/13/14	11/13/14	11/13/14
Parameter	Units			Field Duplicate (1-1)		
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U	0.97 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
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	9.9 U	10 U	9.8 U	9.7 U	9.7 U
1,4-Dichlorobenzene	UG/L	9.9 U	10 U	9.8 U	9.7 U	9.7 U
bis(2-Ethylhexyl)phthalate	UG/L	5.9	6.1	5.7	5.9	5.5
Phenol	UG/L	4.9 U	5.1 U	4.9 U	4.9 U	4.9 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.12	0.36	0.17	0.17	0.086
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.016	0.0054	0.0040 U	0.0040 U	0.0013 J
Copper	MG/L	0.0029 J	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	0.24	22.1	5.3	5.3	0.22
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	20.4	48.5	24.1	23.9	28.2
Manganese	MG/L	0.066	1.3	0.63	0.62	0.89
Mercury	MG/L	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
Nickel	MG/L	0.0050 J	0.0052 J	0.0061 J	0.0062 J	0.0020 J

Flags assigned during chemistry validation are shown

MADE BY: *CHM 12/1/14*  
 CHECKED BY: *DF 12/24/14*

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-08D	GW-08SR	FD-111314	GW-26D	GW-28S
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		11/12/14	11/12/14	11/13/14	11/13/14	11/13/14
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	260	343	362	366	11.0
Zinc	MG/L	0.012	0.010 U	0.010 U	0.010 U	0.010 U

Flags assigned during chemistry validation are shown

MADE BY: *SKP 12/17/14*  
 CHECKED BY: *PF-12/29/14*

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		11/13/14	11/14/14	11/14/14	11/14/14	11/14/14
Parameter	Units					
<b>Volatile Organic Compounds</b>						
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	0.97 J	2.0 U	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U	10 U	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>						
1,3-Dichlorobenzene	UG/L	9.6 U	9.5 U	9.7 U	9.4 U	10 U
1,4-Dichlorobenzene	UG/L	9.6 U	9.5 U	9.7 U	9.4 U	10 U
bis(2-Ethylhexyl)phthalate	UG/L	5.0	6.1 J+	5.9 J+	5.5 J+	6.0 J+
Phenol	UG/L	4.8 U	4.8 U	4.8 U	4.7 U	5.0 U
<b>Metals</b>						
Antimony	MG/L	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Arsenic	MG/L	0.016	0.010 U	0.010 U	0.010 U	0.010 U
Barium	MG/L	0.23	0.30	0.084	0.068	0.049
Cadmium	MG/L	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Chromium	MG/L	0.0040 U	0.0014 J	0.0030 J	0.0024 J	0.0019 J
Copper	MG/L	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Iron	MG/L	11.8	17.3	0.48	0.050	0.021 J
Lead	MG/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Magnesium	MG/L	84.7	45.4	27.2	36.9	38.6
Manganese	MG/L	0.67	2.2	0.72	0.19	0.024
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	0.0077 J	0.0015 J	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: *AKK 12/17/14*  
 CHECKED BY: *AC 12/23/14*

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		11/13/14	11/14/14	11/14/14	11/14/14	11/14/14
Parameter	Units					
Metals						
Silver	MG/L	0.0030 U	0.0030 U	0.0030 U	0.0030 U	0.0030 U
Sodium	MG/L	8.9	407	4.7	6.2	3.3
Zinc	MG/L	0.010 U	0.010 U	0.011	0.010 U	0.010 U

Flags assigned during chemistry validation are shown

MADE BY: OKK 12/17/14  
 CHECKED BY: RE 12/29/14

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		11/13/14	11/13/14
Parameter	Units		
<b>Volatile Organic Compounds</b>			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U
<b>Semivolatile Organic Compounds</b>			
1,3-Dichlorobenzene	UG/L	9.6 U	9.6 U
1,4-Dichlorobenzene	UG/L	9.6 U	9.6 U
bis(2-Ethylhexyl)phthalate	UG/L	5.3	5.7
Phenol	UG/L	4.8 U	4.8 U
<b>Metals</b>			
Antimony	MG/L	0.020 U	0.020 U
Arsenic	MG/L	0.010 U	0.010 U
Barium	MG/L	0.15	0.11
Cadmium	MG/L	0.0010 U	0.0010 U
Chromium	MG/L	0.0027 J	0.0040 U
Copper	MG/L	0.010 U	0.010 U
Iron	MG/L	0.069	0.050 U
Lead	MG/L	0.0050 U	0.0050 U
Magnesium	MG/L	58.3	28.8
Manganese	MG/L	0.16	0.16
Mercury	MG/L	0.00020 U	0.00020 U
Nickel	MG/L	0.0051 J	0.010 U

Flags assigned during chemistry validation are shown

MADE BY: *Chase* 12/13/14  
 CHECKED BY: *Pr* 12/29/14

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		11/13/14	11/13/14
Parameter	Units		
Metals			
Silver	MG/L	0.0030 U	0.0030 U
Sodium	MG/L	24.0	3.1
Zinc	MG/L	0.010 U	0.010 U

Flags assigned during chemistry validation are shown.

MADE BY: CHL 12/1/14  
 CHECKED BY: PC-12/29/14

Detection Limits shown are PQL



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

Location ID		FIELDQC	FIELDQC
Sample ID		TB-111214+111314	TB-111414
Matrix		Quality Control	Quality Control
Depth Interval (ft)		-	-
Date Sampled		11/13/14	11/14/14
Parameter	Units	Trip Blank (1-1)	Trip Blank (1-1)
Volatile Organic Compounds			
1,1,2-Trichloroethane	UG/L	1.0 U	1.0 U
1,2-Dichloroethene (total)	UG/L	2.0 U	2.0 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	1.0 U	1.0 U
Vinyl chloride	UG/L	1.0 U	1.0 U

Flags assigned during chemistry validation are shown

MADE BY: *[Signature]* 12/17/14  
 CHECKED BY: *[Signature]* 12/24/14

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: 480-71364-1

Client Sample ID: GW-03S

Lab Sample ID: 480-71364-1

Date Collected: 11/12/14 11:05

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 13:46	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/22/14 13:46	1
Acetone	ND		10	3.0	ug/L			11/22/14 13:46	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 13:46	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 13:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		66 - 137		11/22/14 13:46	1
Toluene-d8 (Surr)	99		71 - 126		11/22/14 13:46	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/22/14 13:46	1
Dibromofluoromethane (Surr)	101		60 - 140		11/22/14 13:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.4	0.45	ug/L		11/19/14 01:54	11/26/14 12:30	1
1,4-Dichlorobenzene	ND		9.4	0.43	ug/L		11/19/14 01:54	11/26/14 12:30	1
Bis(2-ethylhexyl) phthalate	5.4		4.7	1.7	ug/L		11/19/14 01:54	11/26/14 12:30	1
Phenol	ND		4.7	0.37	ug/L		11/19/14 01:54	11/26/14 12:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	57		52 - 132	11/19/14 01:54	11/26/14 12:30	1
2-Fluorobiphenyl	61		48 - 120	11/19/14 01:54	11/26/14 12:30	1
2-Fluorophenol	59		20 - 120	11/19/14 01:54	11/26/14 12:30	1
Nitrobenzene-d5	60		46 - 120	11/19/14 01:54	11/26/14 12:30	1
Phenol-d5	35		16 - 120	11/19/14 01:54	11/26/14 12:30	1
p-Terphenyl-d14	94		67 - 150	11/19/14 01:54	11/26/14 12:30	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 15:48	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 15:48	1
Barium	0.10		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 15:48	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 15:48	1
Chromium	0.0042		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 15:48	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 15:48	1
Iron	0.13		0.050	0.019	mg/L		11/14/14 11:56	11/19/14 15:48	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 15:48	1
Magnesium	129		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 15:48	1
Manganese	0.077		0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 15:48	1
Nickel	0.050		0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 15:48	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 15:48	1
Sodium	43.4		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 15:48	1
Zinc	0.019		0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 15:48	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:00	1

OK  
12/14/14

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-03D

Lab Sample ID: 480-71364-2

Date Collected: 11/12/14 12:37

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 14:09	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/22/14 14:09	1
Acetone	ND		10	3.0	ug/L			11/22/14 14:09	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 14:09	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 14:09	1

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Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		66 - 137		11/22/14 14:09	1
Toluene-d8 (Surr)	100		71 - 126		11/22/14 14:09	1
4-Bromofluorobenzene (Surr)	102		73 - 120		11/22/14 14:09	1
Dibromofluoromethane (Surr)	103		60 - 140		11/22/14 14:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	0.99	J	9.7	0.47	ug/L		11/19/14 01:54	11/26/14 12:56	1
1,4-Dichlorobenzene	1.4	J	9.7	0.45	ug/L		11/19/14 01:54	11/26/14 12:56	1
Bis(2-ethylhexyl) phthalate	5.4		4.9	1.8	ug/L		11/19/14 01:54	11/26/14 12:56	1
Phenol	ND		4.9	0.38	ug/L		11/19/14 01:54	11/26/14 12:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	74		52 - 132	11/19/14 01:54	11/26/14 12:56	1
2-Fluorobiphenyl	68		48 - 120	11/19/14 01:54	11/26/14 12:56	1
2-Fluorophenol	70		20 - 120	11/19/14 01:54	11/26/14 12:56	1
Nitrobenzene-d5	65		46 - 120	11/19/14 01:54	11/26/14 12:56	1
Phenol-d5	49		16 - 120	11/19/14 01:54	11/26/14 12:56	1
p-Terphenyl-d14	91		67 - 150	11/19/14 01:54	11/26/14 12:56	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 15:51	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 15:51	1
Barium	0.079		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 15:51	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 15:51	1
Chromium	0.0047		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 15:51	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 15:51	1
Iron	1.6	B	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 15:51	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 15:51	1
Magnesium	15.9		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 15:51	1
Manganese	0.39	B	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 15:51	1
Nickel	0.0024	J	0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 15:51	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 15:51	1
Sodium	170		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 15:51	1
Zinc	0.0051	J B	0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 15:51	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:06	1

TestAmerica Buffalo



## Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-08D

Lab Sample ID: 480-71364-3

Date Collected: 11/12/14 14:25

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 14:31	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/22/14 14:31	1
Acetone	ND		10	3.0	ug/L			11/22/14 14:31	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 14:31	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 14:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 137		11/22/14 14:31	1
Toluene-d8 (Surr)	101		71 - 126		11/22/14 14:31	1
4-Bromofluorobenzene (Surr)	102		73 - 120		11/22/14 14:31	1
Dibromofluoromethane (Surr)	103		60 - 140		11/22/14 14:31	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		11/19/14 01:54	11/26/14 13:22	1
1,4-Dichlorobenzene	ND		9.9	0.45	ug/L		11/19/14 01:54	11/26/14 13:22	1
Bis(2-ethylhexyl) phthalate	5.9		4.9	1.8	ug/L		11/19/14 01:54	11/26/14 13:22	1
Phenol	ND		4.9	0.39	ug/L		11/19/14 01:54	11/26/14 13:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	77		52 - 132	11/19/14 01:54	11/26/14 13:22	1
2-Fluorobiphenyl	70		48 - 120	11/19/14 01:54	11/26/14 13:22	1
2-Fluorophenol	68		20 - 120	11/19/14 01:54	11/26/14 13:22	1
Nitrobenzene-d5	70		46 - 120	11/19/14 01:54	11/26/14 13:22	1
Phenol-d5	43		16 - 120	11/19/14 01:54	11/26/14 13:22	1
p-Terphenyl-d14	97		67 - 150	11/19/14 01:54	11/26/14 13:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:05	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:05	1
Barium	0.12		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:05	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:05	1
Chromium	0.016		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:05	1
Copper	0.0029	J	0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:05	1
Iron	0.24	B	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:05	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:05	1
Magnesium	20.4		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:05	1
Manganese	0.066	B	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:05	1
Nickel	0.0050	J	0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:05	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:05	1
Sodium	260		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:05	1
Zinc	0.012	B	0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 16:05	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:13	1

OK  
11/16/14

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-08SR

Lab Sample ID: 480-71364-4

Date Collected: 11/12/14 15:07

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 14:53	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/22/14 14:53	1
Acetone	ND		10	3.0	ug/L			11/22/14 14:53	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 14:53	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 14:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		66 - 137		11/22/14 14:53	1
Toluene-d8 (Surr)	101		71 - 126		11/22/14 14:53	1
4-Bromofluorobenzene (Surr)	103		73 - 120		11/22/14 14:53	1
Dibromofluoromethane (Surr)	101		60 - 140		11/22/14 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		11/19/14 01:54	11/26/14 13:48	1
1,4-Dichlorobenzene	ND		10	0.47	ug/L		11/19/14 01:54	11/26/14 13:48	1
Bis(2-ethylhexyl) phthalate	6.1		5.1	1.8	ug/L		11/19/14 01:54	11/26/14 13:48	1
Phenol	ND		5.1	0.40	ug/L		11/19/14 01:54	11/26/14 13:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	86		52 - 132	11/19/14 01:54	11/26/14 13:48	1
2-Fluorobiphenyl	68		48 - 120	11/19/14 01:54	11/26/14 13:48	1
2-Fluorophenol	68		20 - 120	11/19/14 01:54	11/26/14 13:48	1
Nitrobenzene-d5	68		46 - 120	11/19/14 01:54	11/26/14 13:48	1
Phenol-d5	42		16 - 120	11/19/14 01:54	11/26/14 13:48	1
p-Terphenyl-d14	92		67 - 150	11/19/14 01:54	11/26/14 13:48	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:17	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:17	1
Barium	0.36		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:17	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:17	1
Chromium	0.0054		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:17	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:17	1
Iron	22.1	B	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:17	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:17	1
Magnesium	48.5		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:17	1
Manganese	1.3	B	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:17	1
Nickel	0.0052	J	0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:17	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:17	1
Sodium	343		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:17	1
Zinc	0.0095	J-B	0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:17	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:15	1

check validity

TestAmerica Buffalo

## Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-07D

Lab Sample ID: 480-71364-5

Date Collected: 11/12/14 16:40

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 15:15	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/22/14 15:15	1
Acetone	ND		10	3.0	ug/L			11/22/14 15:15	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 15:15	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 15:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		66 - 137		11/22/14 15:15	1
Toluene-d8 (Surr)	115		71 - 126		11/22/14 15:15	1
4-Bromofluorobenzene (Surr)	117		73 - 120		11/22/14 15:15	1
Dibromofluoromethane (Surr)	116		60 - 140		11/22/14 15:15	1

Client Sample ID: GW-07S

Lab Sample ID: 480-71364-6

Date Collected: 11/12/14 16:45

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 15:37	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/22/14 15:37	1
Acetone	ND		10	3.0	ug/L			11/22/14 15:37	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 15:37	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 15:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 137		11/22/14 15:37	1
Toluene-d8 (Surr)	99		71 - 126		11/22/14 15:37	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/22/14 15:37	1
Dibromofluoromethane (Surr)	102		60 - 140		11/22/14 15:37	1

Client Sample ID: GW-34S

Lab Sample ID: 480-71364-7

Date Collected: 11/13/14 08:29

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 16:00	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/22/14 16:00	1
Acetone	ND		10	3.0	ug/L			11/22/14 16:00	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 16:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 16:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 137		11/22/14 16:00	1
Toluene-d8 (Surr)	101		71 - 126		11/22/14 16:00	1
4-Bromofluorobenzene (Surr)	103		73 - 120		11/22/14 16:00	1
Dibromofluoromethane (Surr)	100		60 - 140		11/22/14 16:00	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		11/19/14 01:54	11/26/14 14:15	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-34S

Lab Sample ID: 480-71364-7

Date Collected: 11/13/14 08:29

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/19/14 01:54	11/26/14 14:15	1
Bis(2-ethylhexyl) phthalate	5.3		4.8	1.7	ug/L		11/19/14 01:54	11/26/14 14:15	1
Phenol	ND		4.8	0.37	ug/L		11/19/14 01:54	11/26/14 14:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	71		52 - 132	11/19/14 01:54	11/26/14 14:15	1
2-Fluorobiphenyl	65		48 - 120	11/19/14 01:54	11/26/14 14:15	1
2-Fluorophenol	66		20 - 120	11/19/14 01:54	11/26/14 14:15	1
Nitrobenzene-d5	64		46 - 120	11/19/14 01:54	11/26/14 14:15	1
Phenol-d5	39		16 - 120	11/19/14 01:54	11/26/14 14:15	1
p-Terphenyl-d14	92		67 - 150	11/19/14 01:54	11/26/14 14:15	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:19	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:19	1
Barium	0.15		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:19	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:19	1
Chromium	0.0027	J	0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:19	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:19	1
Iron	0.069	J	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:19	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:19	1
Magnesium	58.3		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:19	1
Manganese	0.16	J	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:19	1
Nickel	0.0061	J	0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:19	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:19	1
Sodium	24.0		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:19	1
Zinc	0.0052	J B * ND	0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 16:19	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:17	1

Client Sample ID: GW-28S

Lab Sample ID: 480-71364-8

Date Collected: 11/13/14 09:20

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 16:22	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			11/22/14 16:22	1
Acetone	ND		10	3.0	ug/L			11/22/14 16:22	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 16:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 16:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 137		11/22/14 16:22	1
Toluene-d8 (Surr)	99		71 - 126		11/22/14 16:22	1
4-Bromofluorobenzene (Surr)	102		73 - 120		11/22/14 16:22	1
Dibromofluoromethane (Surr)	103		60 - 140		11/22/14 16:22	1

TestAmerica Buffalo

## Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-28S

Lab Sample ID: 480-71364-8

Date Collected: 11/13/14 09:20

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.7	0.47	ug/L		11/19/14 01:54	11/26/14 14:41	1
1,4-Dichlorobenzene	ND		9.7	0.45	ug/L		11/19/14 01:54	11/26/14 14:41	1
Bis(2-ethylhexyl) phthalate	5.5		4.9	1.8	ug/L		11/19/14 01:54	11/26/14 14:41	1
Phenol	ND		4.9	0.38	ug/L		11/19/14 01:54	11/26/14 14:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	79		52 - 132	11/19/14 01:54	11/26/14 14:41	1
2-Fluorobiphenyl	65		48 - 120	11/19/14 01:54	11/26/14 14:41	1
2-Fluorophenol	65		20 - 120	11/19/14 01:54	11/26/14 14:41	1
Nitrobenzene-d5	65		46 - 120	11/19/14 01:54	11/26/14 14:41	1
Phenol-d5	42		16 - 120	11/19/14 01:54	11/26/14 14:41	1
p-Terphenyl-d14	93		67 - 150	11/19/14 01:54	11/26/14 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		11/14/14 11:56	11/19/14 16:22	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:22	1
Barium	0.086		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:22	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:22	1
Chromium	0.0013	J	0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:22	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:22	1
Iron	0.22	B	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:22	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:22	1
Magnesium	28.2		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:22	1
Manganese	0.89	B	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:22	1
Nickel	0.0020	J	0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:22	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:22	1
Sodium	11.0		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:22	1
Zinc	0.0075	J-B	0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 16:22	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:19	1

Client Sample ID: GW-04S

Lab Sample ID: 480-71364-9

Date Collected: 11/13/14 09:45

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 16:44	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/22/14 16:44	1
Acetone	ND		10	3.0	ug/L			11/22/14 16:44	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 16:44	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 16:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		66 - 137		11/22/14 16:44	1
Toluene-d8 (Surr)	100		71 - 126		11/22/14 16:44	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/22/14 16:44	1
Dibromofluoromethane (Surr)	104		60 - 140		11/22/14 16:44	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-04D

Lab Sample ID: 480-71364-10

Date Collected: 11/13/14 11:05

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 17:07	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			11/22/14 17:07	1
Acetone	ND		10	3.0	ug/L			11/22/14 17:07	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 17:07	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 17:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 137		11/22/14 17:07	1
Toluene-d8 (Surr)	101		71 - 126		11/22/14 17:07	1
4-Bromofluorobenzene (Surr)	102		73 - 120		11/22/14 17:07	1
Dibromofluoromethane (Surr)	102		60 - 140		11/22/14 17:07	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		11/19/14 01:54	11/26/14 15:07	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		11/19/14 01:54	11/26/14 15:07	1
Bis(2-ethylhexyl) phthalate	4.6	J	4.8	1.7	ug/L		11/19/14 01:54	11/26/14 15:07	1
Phenol	ND		4.8	0.37	ug/L		11/19/14 01:54	11/26/14 15:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	56		52 - 132	11/19/14 01:54	11/26/14 15:07	1
2-Fluorobiphenyl	56		48 - 120	11/19/14 01:54	11/26/14 15:07	1
2-Fluorophenol	52		20 - 120	11/19/14 01:54	11/26/14 15:07	1
Nitrobenzene-d5	54		46 - 120	11/19/14 01:54	11/26/14 15:07	1
Phenol-d5	32		16 - 120	11/19/14 01:54	11/26/14 15:07	1
p-Terphenyl-d14	72		67 - 150	11/19/14 01:54	11/26/14 15:07	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:25	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:25	1
Barium	0.081		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:25	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:25	1
Chromium	0.0019	J	0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:25	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:25	1
Iron	0.081	β	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:25	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:25	1
Magnesium	75.6		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:25	1
Manganese	0.019	β	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:25	1
Nickel	ND		0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:25	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:25	1
Sodium	76.0		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:25	1
Zinc	0.0046	J-B	0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 16:25	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:20	1

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-04S

Lab Sample ID: 480-71364-11

Date Collected: 11/13/14 11:15

Matrix: Water

Date Received: 11/13/14 16:00

## 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		11/19/14 01:54	11/26/14 15:33	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		11/19/14 01:54	11/26/14 15:33	1
Bis(2-ethylhexyl) phthalate	6.2		4.7	1.7	ug/L		11/19/14 01:54	11/26/14 15:33	1
Phenol	ND		4.7	0.37	ug/L		11/19/14 01:54	11/26/14 15:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	67		52 - 132	11/19/14 01:54	11/26/14 15:33	1
2-Fluorobiphenyl	66		48 - 120	11/19/14 01:54	11/26/14 15:33	1
2-Fluorophenol	64		20 - 120	11/19/14 01:54	11/26/14 15:33	1
Nitrobenzene-d5	64		46 - 120	11/19/14 01:54	11/26/14 15:33	1
Phenol-d5	38		16 - 120	11/19/14 01:54	11/26/14 15:33	1
p-Terphenyl-d14	98		67 - 150	11/19/14 01:54	11/26/14 15:33	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:28	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:28	1
Barium	0.14		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:28	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:28	1
Chromium	0.0098		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:28	1
Copper	0.0040	J	0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:28	1
Iron	4.1	B	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:28	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:28	1
Magnesium	28.0		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:28	1
Manganese	0.37	B	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:28	1
Nickel	0.0088	J	0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:28	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:28	1
Sodium	27.4		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:28	1
Zinc	0.027	B	0.010	0.0015	mg/L		11/14/14 11:56	11/20/14 14:37	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:22	1

Client Sample ID: GW-35S

Lab Sample ID: 480-71364-12

Date Collected: 11/13/14 12:08

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/22/14 17:29	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			11/22/14 17:29	1
Acetone	ND		10	3.0	ug/L			11/22/14 17:29	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 17:29	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 17:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		66 - 137		11/22/14 17:29	1
Toluene-d8 (Surr)	100		71 - 126		11/22/14 17:29	1
4-Bromofluorobenzene (Surr)	102		73 - 120		11/22/14 17:29	1
Dibromofluoromethane (Surr)	102		60 - 140		11/22/14 17:29	1

TestAmerica Buffalo



## Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-35S

Lab Sample ID: 480-71364-12

Date Collected: 11/13/14 12:08

Matrix: Water

Date Received: 11/13/14 16:00

### 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		11/19/14 01:54	11/26/14 15:59	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/19/14 01:54	11/26/14 15:59	1
Bis(2-ethylhexyl) phthalate	5.7		4.8	1.7	ug/L		11/19/14 01:54	11/26/14 15:59	1
Phenol	ND		4.8	0.37	ug/L		11/19/14 01:54	11/26/14 15:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	68		52 - 132	11/19/14 01:54	11/26/14 15:59	1
2-Fluorobiphenyl	67		48 - 120	11/19/14 01:54	11/26/14 15:59	1
2-Fluorophenol	60		20 - 120	11/19/14 01:54	11/26/14 15:59	1
Nitrobenzene-d5	63		46 - 120	11/19/14 01:54	11/26/14 15:59	1
Phenol-d5	42		16 - 120	11/19/14 01:54	11/26/14 15:59	1
p-Terphenyl-d14	98		67 - 150	11/19/14 01:54	11/26/14 15:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:31	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:31	1
Barium	0.11		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:31	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:31	1
Chromium	ND		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:31	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:31	1
Iron	0.035	J-B	0.050	0.015	mg/L		11/14/14 11:56	11/19/14 16:31	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:31	1
Magnesium	28.8		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:31	1
Manganese	0.16	J	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:31	1
Nickel	ND		0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:31	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:31	1
Sodium	3.1		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:31	1
Zinc	0.0049	J-B	0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 16:31	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:30	1

Client Sample ID: GW-26D

Date Collected: 11/13/14 13:18

Date Received: 11/13/14 16:00

Lab Sample ID: 480-71364-13

Matrix: Water

### 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			11/22/14 17:51	1
1,2-Dichloroethane, Total	1.0	J	2.0	0.81	ug/L			11/22/14 17:51	1
Acetone	ND		10	3.0	ug/L			11/22/14 17:51	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 17:51	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 17:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 137		11/22/14 17:51	1
Toluene-d8 (Surr)	100		71 - 126		11/22/14 17:51	1
4-Bromofluorobenzene (Surr)	104		73 - 120		11/22/14 17:51	1
Dibromofluoromethane (Surr)	103		60 - 140		11/22/14 17:51	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-26D

Lab Sample ID: 480-71364-13

Date Collected: 11/13/14 13:18

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.7	0.47	ug/L		11/19/14 01:54	11/26/14 16:26	1
1,4-Dichlorobenzene	ND		9.7	0.45	ug/L		11/19/14 01:54	11/26/14 16:26	1
Bis(2-ethylhexyl) phthalate	5.9		4.9	1.7	ug/L		11/19/14 01:54	11/26/14 16:26	1
Phenol	ND		4.9	0.38	ug/L		11/19/14 01:54	11/26/14 16:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	81		52 - 132	11/19/14 01:54	11/26/14 16:26	1
2-Fluorobiphenyl	74		48 - 120	11/19/14 01:54	11/26/14 16:26	1
2-Fluorophenol	69		20 - 120	11/19/14 01:54	11/26/14 16:26	1
Nitrobenzene-d5	72		46 - 120	11/19/14 01:54	11/26/14 16:26	1
Phenol-d5	41		16 - 120	11/19/14 01:54	11/26/14 16:26	1
p-Terphenyl-d14	102		67 - 150	11/19/14 01:54	11/26/14 16:26	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:34	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:34	1
Barium	0.17		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:34	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:34	1
Chromium	ND		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:34	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:34	1
Iron	5.3		0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:34	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:34	1
Magnesium	23.9		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:34	1
Manganese	0.62		0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:34	1
Nickel	0.0062	J	0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:34	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:34	1
Sodium	366		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:34	1
Zinc	0.0050	J B	0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:34	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:37	1

Client Sample ID: FD-111314

Date Collected: 11/13/14 00:00

Date Received: 11/13/14 16:00

Lab Sample ID: 480-71364-14

Matrix: Water

## 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			11/22/14 18:14	1
1,2-Dichloroethane, Total	0.97	J	2.0	0.81	ug/L			11/22/14 18:14	1
Acetone	ND		10	3.0	ug/L			11/22/14 18:14	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 18:14	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 18:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		66 - 137		11/22/14 18:14	1
Toluene-d8 (Surr)	98		71 - 126		11/22/14 18:14	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/22/14 18:14	1
Dibromofluoromethane (Surr)	100		60 - 140		11/22/14 18:14	1

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: FD-111314

Date Collected: 11/13/14 00:00

Date Received: 11/13/14 16:00

GW-26D

Lab Sample ID: 480-71364-14

Matrix: Water

## 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		11/19/14 01:54	11/26/14 16:52	1
1,4-Dichlorobenzene	ND		9.8	0.45	ug/L		11/19/14 01:54	11/26/14 16:52	1
Bis(2-ethylhexyl) phthalate	5.7		4.9	1.8	ug/L		11/19/14 01:54	11/26/14 16:52	1
Phenol	ND		4.9	0.38	ug/L		11/19/14 01:54	11/26/14 16:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		52 - 132	11/19/14 01:54	11/26/14 16:52	1
2-Fluorobiphenyl	72		48 - 120	11/19/14 01:54	11/26/14 16:52	1
2-Fluorophenol	77		20 - 120	11/19/14 01:54	11/26/14 16:52	1
Nitrobenzene-d5	74		46 - 120	11/19/14 01:54	11/26/14 16:52	1
Phenol-d5	56		16 - 120	11/19/14 01:54	11/26/14 16:52	1
p-Terphenyl-d14	93		67 - 150	11/19/14 01:54	11/26/14 16:52	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:37	1
Arsenic	ND		0.010	0.0058	mg/L		11/14/14 11:56	11/19/14 16:37	1
Barium	0.17		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:37	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:37	1
Chromium	ND		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:37	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:37	1
Iron	5.3		0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:37	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:37	1
Magnesium	24.1		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:37	1
Manganese	0.63		0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:37	1
Nickel	0.0061		0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:37	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:37	1
Sodium	362		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:37	1
Zinc	0.0049		0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 16:37	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:39	1

Client Sample ID: GW-29S

Date Collected: 11/13/14 14:29

Date Received: 11/13/14 16:00

Lab Sample ID: 480-71364-15

Matrix: Water

## 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			11/22/14 18:36	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			11/22/14 18:36	1
Acetone	ND		10	3.0	ug/L			11/22/14 18:36	1
Benzene	ND		1.0	0.41	ug/L			11/22/14 18:36	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/22/14 18:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 137		11/22/14 18:36	1
Toluene-d8 (Surr)	99		71 - 126		11/22/14 18:36	1
4-Bromofluorobenzene (Surr)	103		73 - 120		11/22/14 18:36	1
Dibromofluoromethane (Surr)	102		60 - 140		11/22/14 18:36	1

Check  
Reliability

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-29S

Lab Sample ID: 480-71364-15

Date Collected: 11/13/14 14:29

Matrix: Water

Date Received: 11/13/14 16:00

## 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		11/19/14 01:54	11/26/14 17:18	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/19/14 01:54	11/26/14 17:18	1
Bis(2-ethylhexyl) phthalate	5.0		4.8	1.7	ug/L		11/19/14 01:54	11/26/14 17:18	1
Phenol	ND		4.8	0.38	ug/L		11/19/14 01:54	11/26/14 17:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	67		52 - 132	11/19/14 01:54	11/26/14 17:18	1
2-Fluorobiphenyl	63		48 - 120	11/19/14 01:54	11/26/14 17:18	1
2-Fluorophenol	59		20 - 120	11/19/14 01:54	11/26/14 17:18	1
Nitrobenzene-d5	61		46 - 120	11/19/14 01:54	11/26/14 17:18	1
Phenol-d5	35		16 - 120	11/19/14 01:54	11/26/14 17:18	1
p-Terphenyl-d14	84		67 - 150	11/19/14 01:54	11/26/14 17:18	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:40	1
Arsenic	0.016		0.010	0.0056	mg/L		11/14/14 11:56	11/19/14 16:40	1
Barium	0.23		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:40	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:40	1
Chromium	ND		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:40	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:40	1
Iron	11.8		0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:40	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:40	1
Magnesium	84.7		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:40	1
Manganese	0.67		0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:40	1
Nickel	ND		0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:40	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 16:40	1
Sodium	8.9		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:40	1
Zinc	0.0043	J-B + ND	0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 16:40	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:40	1

Client Sample ID: GW-07D

Date Collected: 11/13/14 14:50

Date Received: 11/13/14 16:00

Lab Sample ID: 480-71364-16

Matrix: Water

## 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		11/19/14 01:54	11/26/14 17:44	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		11/19/14 01:54	11/26/14 17:44	1
Bis(2-ethylhexyl) phthalate	6.6		4.8	1.7	ug/L		11/19/14 01:54	11/26/14 17:44	1
Phenol	ND		4.8	0.37	ug/L		11/19/14 01:54	11/26/14 17:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	76		52 - 132	11/19/14 01:54	11/26/14 17:44	1
2-Fluorobiphenyl	76		48 - 120	11/19/14 01:54	11/26/14 17:44	1
2-Fluorophenol	70		20 - 120	11/19/14 01:54	11/26/14 17:44	1
Nitrobenzene-d5	74		46 - 120	11/19/14 01:54	11/26/14 17:44	1
Phenol-d5	39		16 - 120	11/19/14 01:54	11/26/14 17:44	1

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-07D

Lab Sample ID: 480-71364-16

Date Collected: 11/13/14 14:50

Matrix: Water

Date Received: 11/13/14 16:00

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl-d14	90		67 - 150	11/19/14 01:54	11/26/14 17:44	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		11/14/14 11:56	11/19/14 16:51	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/20/14 14:40	1
Barium	0.074		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:51	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:51	1
Chromium	0.038		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:51	1
Copper	0.0048	J	0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:51	1
Iron	1.1	B	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:51	1
Lead	0.024		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:51	1
Magnesium	35.9		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:51	1
Manganese	0.055	B	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:51	1
Nickel	0.022		0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:51	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/20/14 14:40	1
Sodium	77.1		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:51	1
Zinc	0.020	B	0.010	0.0015	mg/L		11/14/14 11:56	11/20/14 14:40	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:42	1

Client Sample ID: GW-07S

Lab Sample ID: 480-71364-17

Date Collected: 11/13/14 14:55

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.5	0.48	ug/L		11/19/14 01:54	11/26/14 18:09	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		11/19/14 01:54	11/26/14 18:09	1
Bis(2-ethylhexyl) phthalate	5.9		4.7	1.7	ug/L		11/19/14 01:54	11/26/14 18:09	1
Phenol	ND		4.7	0.37	ug/L		11/19/14 01:54	11/26/14 18:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	73		52 - 132	11/19/14 01:54	11/26/14 18:09	1
2-Fluorobiphenyl	75		48 - 120	11/19/14 01:54	11/26/14 18:09	1
2-Fluorophenol	70		20 - 120	11/19/14 01:54	11/26/14 18:09	1
Nitrobenzene-d5	74		46 - 120	11/19/14 01:54	11/26/14 18:09	1
Phenol-d5	38		16 - 120	11/19/14 01:54	11/26/14 18:09	1
p-Terphenyl-d14	97		67 - 150	11/19/14 01:54	11/26/14 18:09	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 16:54	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:56	11/20/14 14:43	1
Barium	0.29		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 16:54	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 16:54	1
Chromium	0.0071		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 16:54	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 16:54	1

TestAmerica Buffalo

## Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-07S

Lab Sample ID: 480-71364-17

Date Collected: 11/13/14 14:55

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.24	B	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 16:54	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 16:54	1
Magnesium	37.1		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 16:54	1
Manganese	0.089	B	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 16:54	1
Nickel	0.013		0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 16:54	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/20/14 14:43	1
Sodium	52.6		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 16:54	1
Zinc	0.011	B	0.010	0.0015	mg/L		11/14/14 11:56	11/20/14 14:43	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 12:47	1

Client Sample ID: TB-111214+111314

Lab Sample ID: 480-71364-18

Date Collected: 11/13/14 00:00

Matrix: Water

Date Received: 11/13/14 16:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			11/23/14 18:20	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/23/14 18:20	1
Acetone	ND		10	3.0	ug/L			11/23/14 18:20	1
Benzene	ND		1.0	0.41	ug/L			11/23/14 18:20	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/23/14 18:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		66 - 137		11/23/14 18:20	1
Toluene-d8 (Surr)	98		71 - 126		11/23/14 18:20	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/23/14 18:20	1
Dibromofluoromethane (Surr)	103		60 - 140		11/23/14 18:20	1

Client Sample ID: GW-30S

Lab Sample ID: 480-71462-1

Date Collected: 11/14/14 08:27

Matrix: Water

Date Received: 11/14/14 16:55

### 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			11/24/14 15:21	1
1,2-Dichloroethene, Total	0.97	J	2.0	0.81	ug/L			11/24/14 15:21	1
Acetone	ND		10	3.0	ug/L			11/24/14 15:21	1
Benzene	ND		1.0	0.41	ug/L			11/24/14 15:21	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/14 15:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		66 - 137		11/24/14 15:21	1
Toluene-d8 (Surr)	100		71 - 126		11/24/14 15:21	1
4-Bromofluorobenzene (Surr)	102		73 - 120		11/24/14 15:21	1
Dibromofluoromethane (Surr)	109		60 - 140		11/24/14 15:21	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-30S

Lab Sample ID: 480-71462-1

Date Collected: 11/14/14 08:27

Matrix: Water

Date Received: 11/14/14 16:55

## 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		11/18/14 14:13	12/04/14 13:51	1
1,4-Dichlorobenzene	ND		9.5	0.44	ug/L		11/18/14 14:13	12/04/14 13:51	1
Bis(2-ethylhexyl) phthalate	6.1	B-5+	4.8	1.7	ug/L		11/18/14 14:13	12/04/14 13:51	1
Phenol	ND		4.8	0.37	ug/L		11/18/14 14:13	12/04/14 13:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	102		52 - 132	11/18/14 14:13	12/04/14 13:51	1
2-Fluorobiphenyl	85		48 - 120	11/18/14 14:13	12/04/14 13:51	1
2-Fluorophenol	89		20 - 120	11/18/14 14:13	12/04/14 13:51	1
Nitrobenzene-d5	82		46 - 120	11/18/14 14:13	12/04/14 13:51	1
Phenol-d5	58		16 - 120	11/18/14 14:13	12/04/14 13:51	1
p-Terphenyl-d14	88		67 - 150	11/18/14 14:13	12/04/14 13:51	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/17/14 10:00	11/20/14 20:54	1
Arsenic	ND		0.010	0.0056	mg/L		11/17/14 10:00	11/20/14 20:54	1
Barium	0.30		0.0020	0.00070	mg/L		11/17/14 10:00	11/20/14 20:54	1
Cadmium	ND		0.0010	0.00050	mg/L		11/17/14 10:00	11/20/14 20:54	1
Chromium	0.0014	J	0.0040	0.0010	mg/L		11/17/14 10:00	11/20/14 20:54	1
Copper	ND		0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 01:55	1
Iron	17.3		0.050	0.019	mg/L		11/17/14 10:00	11/20/14 20:54	1
Lead	ND		0.0050	0.0030	mg/L		11/17/14 10:00	11/20/14 20:54	1
Magnesium	45.4		0.20	0.043	mg/L		11/17/14 10:00	11/20/14 20:54	1
Manganese	2.2		0.0030	0.00040	mg/L		11/17/14 10:00	11/20/14 01:55	1
Nickel	ND		0.010	0.0013	mg/L		11/17/14 10:00	11/20/14 20:54	1
Silver	ND		0.0030	0.0017	mg/L		11/17/14 10:00	11/20/14 20:54	1
Sodium	407		1.0	0.32	mg/L		11/17/14 10:00	11/20/14 01:55	1
Zinc	0.0061	J-B	0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 20:54	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 13:04	1

Client Sample ID: GW-31S

Lab Sample ID: 480-71462-2

Date Collected: 11/14/14 09:30

Matrix: Water

Date Received: 11/14/14 16:55

## 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			11/24/14 15:46	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/14 15:46	1
Acetone	ND		10	3.0	ug/L			11/24/14 15:46	1
Benzene	ND		1.0	0.41	ug/L			11/24/14 15:46	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/14 15:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		11/24/14 15:46	1
Toluene-d8 (Surr)	97		71 - 126		11/24/14 15:46	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/24/14 15:46	1
Dibromofluoromethane (Surr)	109		60 - 140		11/24/14 15:46	1

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-31S

Lab Sample ID: 480-71462-2

Date Collected: 11/14/14 09:30

Matrix: Water

Date Received: 11/14/14 16:55

## 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		11/18/14 14:13	12/04/14 14:17	1
1,4-Dichlorobenzene	ND		9.7	0.45	ug/L		11/18/14 14:13	12/04/14 14:17	1
Bis(2-ethylhexyl) phthalate	5.9	B	4.8	1.7	ug/L		11/18/14 14:13	12/04/14 14:17	1
Phenol	ND		4.8	0.38	ug/L		11/18/14 14:13	12/04/14 14:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		52 - 132	11/18/14 14:13	12/04/14 14:17	1
2-Fluorobiphenyl	78		48 - 120	11/18/14 14:13	12/04/14 14:17	1
2-Fluorophenol	70		20 - 120	11/18/14 14:13	12/04/14 14:17	1
Nitrobenzene-d5	71		46 - 120	11/18/14 14:13	12/04/14 14:17	1
Phenol-d5	43		16 - 120	11/18/14 14:13	12/04/14 14:17	1
p-Terphenyl-d14	83		67 - 150	11/18/14 14:13	12/04/14 14:17	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/17/14 10:00	11/20/14 20:57	1
Arsenic	ND		0.010	0.0056	mg/L		11/17/14 10:00	11/20/14 20:57	1
Barium	0.084		0.0020	0.00070	mg/L		11/17/14 10:00	11/20/14 20:57	1
Cadmium	ND		0.0010	0.00050	mg/L		11/17/14 10:00	11/20/14 20:57	1
Chromium	0.0030	J	0.0040	0.0010	mg/L		11/17/14 10:00	11/20/14 20:57	1
Copper	ND		0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 01:58	1
Iron	0.48		0.050	0.019	mg/L		11/17/14 10:00	11/20/14 20:57	1
Lead	ND		0.0050	0.0030	mg/L		11/17/14 10:00	11/20/14 20:57	1
Magnesium	27.2		0.20	0.043	mg/L		11/17/14 10:00	11/20/14 20:57	1
Manganese	0.72		0.0030	0.00040	mg/L		11/17/14 10:00	11/20/14 01:58	1
Nickel	0.0077	J	0.010	0.0013	mg/L		11/17/14 10:00	11/20/14 20:57	1
Silver	ND		0.0030	0.0017	mg/L		11/17/14 10:00	11/20/14 20:57	1
Sodium	4.7		1.0	0.32	mg/L		11/17/14 10:00	11/20/14 01:58	1
Zinc	0.011		0.010	0.0015	mg/L		11/17/14 10:00	11/20/14 20:57	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 13:09	1

Client Sample ID: GW-32S

Lab Sample ID: 480-71462-3

Date Collected: 11/14/14 10:35

Matrix: Water

Date Received: 11/14/14 16:55

## 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			11/24/14 16:10	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/24/14 16:10	1
Acetone	ND		10	3.0	ug/L			11/24/14 16:10	1
Benzene	ND		1.0	0.41	ug/L			11/24/14 16:10	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/14 16:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		11/24/14 16:10	1
Toluene-d8 (Surr)	97		71 - 126		11/24/14 16:10	1
4-Bromofluorobenzene (Surr)	98		73 - 120		11/24/14 16:10	1
Dibromofluoromethane (Surr)	106		60 - 140		11/24/14 16:10	1

TestAmerica Buffalo

## Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-32S

Lab Sample ID: 480-71462-3

Date Collected: 11/14/14 10:35

Matrix: Water

Date Received: 11/14/14 16:55

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		9.4	0.45	ug/L		11/18/14 14:13	12/04/14 14:43	1
1,4-Dichlorobenzene	ND		9.4	0.43	ug/L		11/18/14 14:13	12/04/14 14:43	1
Bis(2-ethylhexyl) phthalate	5.5	B J+	4.7	1.7	ug/L		11/18/14 14:13	12/04/14 14:43	1
Phenol	ND		4.7	0.37	ug/L		11/18/14 14:13	12/04/14 14:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	84		52 - 132	11/18/14 14:13	12/04/14 14:43	1
2-Fluorobiphenyl	78		48 - 120	11/18/14 14:13	12/04/14 14:43	1
2-Fluorophenol	70		20 - 120	11/18/14 14:13	12/04/14 14:43	1
Nitrobenzene-d5	70		46 - 120	11/18/14 14:13	12/04/14 14:43	1
Phenol-d5	43		16 - 120	11/18/14 14:13	12/04/14 14:43	1
p-Terphenyl-d14	86		67 - 150	11/18/14 14:13	12/04/14 14:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/17/14 10:00	11/20/14 21:08	1
Arsenic	ND		0.010	0.0056	mg/L		11/17/14 10:00	11/20/14 21:08	1
Barium	0.068		0.0020	0.00070	mg/L		11/17/14 10:00	11/20/14 21:08	1
Cadmium	ND		0.0010	0.00050	mg/L		11/17/14 10:00	11/20/14 21:08	1
Chromium	0.0024	J	0.0040	0.0010	mg/L		11/17/14 10:00	11/20/14 21:08	1
Copper	ND		0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 02:01	1
Iron	0.050		0.050	0.019	mg/L		11/17/14 10:00	11/20/14 21:08	1
Lead	ND		0.0050	0.0030	mg/L		11/17/14 10:00	11/20/14 21:08	1
Magnesium	36.9		0.20	0.043	mg/L		11/17/14 10:00	11/20/14 21:08	1
Manganese	0.19		0.0030	0.00040	mg/L		11/17/14 10:00	11/20/14 02:01	1
Nickel	0.0015	J	0.010	0.0013	mg/L		11/17/14 10:00	11/20/14 21:08	1
Silver	ND		0.0030	0.0017	mg/L		11/17/14 10:00	11/20/14 21:08	1
Sodium	6.2		1.0	0.32	mg/L		11/17/14 10:00	11/20/14 02:01	1
Zinc	0.0074	J B ND	0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 21:08	1

### Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 13:11	1

Client Sample ID: GW-33S

Date Collected: 11/14/14 11:40

Date Received: 11/14/14 16:55

Lab Sample ID: 480-71462-4

Matrix: Water

### 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			11/24/14 16:35	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			11/24/14 16:35	1
Acetone	ND		10	3.0	ug/L			11/24/14 16:35	1
Benzene	ND		1.0	0.41	ug/L			11/24/14 16:35	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/14 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		11/24/14 16:35	1
Toluene-d8 (Surr)	98		71 - 126		11/24/14 16:35	1
4-Bromofluorobenzene (Surr)	99		73 - 120		11/24/14 16:35	1
Dibromofluoromethane (Surr)	109		60 - 140		11/24/14 16:35	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-33S

Lab Sample ID: 480-71462-4

Date Collected: 11/14/14 11:40

Matrix: Water

Date Received: 11/14/14 16:55

## 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		11/18/14 14:13	12/04/14 15:09	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/18/14 14:13	12/04/14 15:09	1
Bis(2-ethylhexyl) phthalate	6.0	B J+	5.0	1.8	ug/L		11/18/14 14:13	12/04/14 15:09	1
Phenol	ND		5.0	0.39	ug/L		11/18/14 14:13	12/04/14 15:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	72		52 - 132	11/18/14 14:13	12/04/14 15:09	1
2-Fluorobiphenyl	85		48 - 120	11/18/14 14:13	12/04/14 15:09	1
2-Fluorophenol	71		20 - 120	11/18/14 14:13	12/04/14 15:09	1
Nitrobenzene-d5	79		46 - 120	11/18/14 14:13	12/04/14 15:09	1
Phenol-d5	46		16 - 120	11/18/14 14:13	12/04/14 15:09	1
p-Terphenyl-d14	86		67 - 150	11/18/14 14:13	12/04/14 15:09	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/17/14 10:00	11/20/14 21:10	1
Arsenic	ND		0.010	0.0056	mg/L		11/17/14 10:00	11/20/14 21:10	1
Barium	0.049		0.0020	0.00070	mg/L		11/17/14 10:00	11/20/14 21:10	1
Cadmium	ND		0.0010	0.00050	mg/L		11/17/14 10:00	11/20/14 21:10	1
Chromium	0.0019	J	0.0040	0.0010	mg/L		11/17/14 10:00	11/20/14 21:10	1
Copper	ND		0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 02:04	1
Iron	0.021	J	0.050	0.019	mg/L		11/17/14 10:00	11/20/14 21:10	1
Lead	ND		0.0050	0.0030	mg/L		11/17/14 10:00	11/20/14 21:10	1
Magnesium	38.6		0.20	0.043	mg/L		11/17/14 10:00	11/20/14 21:10	1
Manganese	0.024		0.0030	0.00040	mg/L		11/17/14 10:00	11/20/14 02:04	1
Nickel	ND		0.010	0.0013	mg/L		11/17/14 10:00	11/20/14 21:10	1
Silver	ND		0.0030	0.0017	mg/L		11/17/14 10:00	11/20/14 21:10	1
Sodium	3.3		1.0	0.32	mg/L		11/17/14 10:00	11/20/14 02:04	1
Zinc	0.0074	J-B ND	0.010	0.0015	mg/L		11/17/14 10:00	11/20/14 21:10	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 13:13	1

Client Sample ID: GW-01S

Lab Sample ID: 480-71462-5

Date Collected: 11/14/14 12:39

Matrix: Water

Date Received: 11/14/14 16:55

## 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			11/24/14 17:00	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			11/24/14 17:00	1
Acetone	ND		10	3.0	ug/L			11/24/14 17:00	1
Benzene	ND		1.0	0.41	ug/L			11/24/14 17:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/24/14 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		11/24/14 17:00	1
Toluene-d8 (Surr)	98		71 - 126		11/24/14 17:00	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/24/14 17:00	1
Dibromofluoromethane (Surr)	109		60 - 140		11/24/14 17:00	1

TestAmerica Buffalo

# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-01S

Lab Sample ID: 480-71462-5

Date Collected: 11/14/14 12:39

Matrix: Water

Date Received: 11/14/14 16:55

## 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		11/18/14 14:13	12/04/14 15:35	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/18/14 14:13	12/04/14 15:35	1
Bis(2-ethylhexyl) phthalate	5.8	B	4.8	1.7	ug/L		11/18/14 14:13	12/04/14 15:35	1
Phenol	ND		4.8	0.38	ug/L		11/18/14 14:13	12/04/14 15:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	93		52 - 132	11/18/14 14:13	12/04/14 15:35	1
2-Fluorobiphenyl	80		48 - 120	11/18/14 14:13	12/04/14 15:35	1
2-Fluorophenol	72		20 - 120	11/18/14 14:13	12/04/14 15:35	1
Nitrobenzene-d5	76		46 - 120	11/18/14 14:13	12/04/14 15:35	1
Phenol-d5	47		16 - 120	11/18/14 14:13	12/04/14 15:35	1
p-Terphenyl-d14	88		67 - 150	11/18/14 14:13	12/04/14 15:35	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/17/14 10:00	11/20/14 21:13	1
Arsenic	ND		0.010	0.0056	mg/L		11/17/14 10:00	11/20/14 21:13	1
Barium	0.17		0.0020	0.00070	mg/L		11/17/14 10:00	11/20/14 21:13	1
Cadmium	0.0013		0.0010	0.00050	mg/L		11/17/14 10:00	11/20/14 21:13	1
Chromium	0.0012	J	0.0040	0.0010	mg/L		11/17/14 10:00	11/20/14 21:13	1
Copper	ND		0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 02:07	1
Iron	4.8		0.050	0.019	mg/L		11/17/14 10:00	11/20/14 21:13	1
Lead	ND		0.0050	0.0030	mg/L		11/17/14 10:00	11/20/14 21:13	1
Magnesium	19.4		0.20	0.043	mg/L		11/17/14 10:00	11/20/14 21:13	1
Manganese	1.2		0.0030	0.00040	mg/L		11/17/14 10:00	11/20/14 02:07	1
Nickel	ND		0.010	0.0013	mg/L		11/17/14 10:00	11/20/14 21:13	1
Silver	ND		0.0030	0.0017	mg/L		11/17/14 10:00	11/20/14 21:13	1
Sodium	82.6		1.0	0.32	mg/L		11/17/14 10:00	11/20/14 02:07	1
Zinc	0.0074	J B	0.010	0.0045	mg/L		11/17/14 10:00	11/20/14 21:13	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 13:15	1

Client Sample ID: GW-01D

Lab Sample ID: 480-71462-6

Date Collected: 11/14/14 13:54

Matrix: Water

Date Received: 11/14/14 16:55

## 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			11/25/14 01:31	1
1,2-Dichloroethene, Total	ND		2.0	0.81	ug/L			11/25/14 01:31	1
Acetone	ND		10	3.0	ug/L			11/25/14 01:31	1
Benzene	ND		1.0	0.41	ug/L			11/25/14 01:31	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/14 01:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 137		11/25/14 01:31	1
Toluene-d8 (Surr)	97		71 - 126		11/25/14 01:31	1
4-Bromofluorobenzene (Surr)	100		73 - 120		11/25/14 01:31	1
Dibromofluoromethane (Surr)	109		60 - 140		11/25/14 01:31	1

TestAmerica Buffalo



# Client Sample Results

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

TestAmerica Job ID: 480-71364-1

Client Sample ID: GW-01D

Lab Sample ID: 480-71462-6

Date Collected: 11/14/14 13:54

Matrix: Water

Date Received: 11/14/14 16:55

## 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		11/18/14 14:13	12/04/14 16:01	1
1,4-Dichlorobenzene	ND		9.6	0.44	ug/L		11/18/14 14:13	12/04/14 16:01	1
Bis(2-ethylhexyl) phthalate	5.5	B J +	4.8	1.7	ug/L		11/18/14 14:13	12/04/14 16:01	1
Phenol	ND		4.8	0.38	ug/L		11/18/14 14:13	12/04/14 16:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	83		52 - 132	11/18/14 14:13	12/04/14 16:01	1
2-Fluorobiphenyl	81		48 - 120	11/18/14 14:13	12/04/14 16:01	1
2-Fluorophenol	74		20 - 120	11/18/14 14:13	12/04/14 16:01	1
Nitrobenzene-d5	76		46 - 120	11/18/14 14:13	12/04/14 16:01	1
Phenol-d5	46		16 - 120	11/18/14 14:13	12/04/14 16:01	1
p-Terphenyl-d14	82		67 - 150	11/18/14 14:13	12/04/14 16:01	1

## Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/17/14 10:00	11/20/14 21:16	1
Arsenic	ND		0.010	0.0056	mg/L		11/17/14 10:00	11/20/14 21:16	1
Barium	0.079		0.0020	0.00070	mg/L		11/17/14 10:00	11/20/14 21:16	1
Cadmium	ND		0.0010	0.00050	mg/L		11/17/14 10:00	11/20/14 21:16	1
Chromium	0.0019	J	0.0040	0.0010	mg/L		11/17/14 10:00	11/20/14 21:16	1
Copper	ND		0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 02:10	1
Iron	0.028	J	0.050	0.019	mg/L		11/17/14 10:00	11/20/14 21:16	1
Lead	ND		0.0050	0.0030	mg/L		11/17/14 10:00	11/20/14 21:16	1
Magnesium	34.6		0.20	0.043	mg/L		11/17/14 10:00	11/20/14 21:16	1
Manganese	0.017		0.0030	0.00040	mg/L		11/17/14 10:00	11/20/14 02:10	1
Nickel	ND		0.010	0.0013	mg/L		11/17/14 10:00	11/20/14 21:16	1
Silver	ND		0.0030	0.0017	mg/L		11/17/14 10:00	11/20/14 21:16	1
Sodium	88.9		1.0	0.32	mg/L		11/17/14 10:00	11/20/14 02:10	1
Zinc	0.0059	J-B NO	0.010	0.0046	mg/L		11/17/14 10:00	11/20/14 21:16	1

## Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/17/14 13:10	11/18/14 13:17	1

Client Sample ID: TB-111414

Lab Sample ID: 480-71462-7

Date Collected: 11/14/14 00:00

Matrix: Water

Date Received: 11/14/14 16:55

## 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			11/25/14 01:56	1
1,2-Dichloroethane, Total	ND		2.0	0.81	ug/L			11/25/14 01:56	1
Acetone	ND		10	3.0	ug/L			11/25/14 01:56	1
Benzene	ND		1.0	0.41	ug/L			11/25/14 01:56	1
Vinyl chloride	ND		1.0	0.90	ug/L			11/25/14 01:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		11/25/14 01:56	1
Toluene-d8 (Surr)	97		71 - 126		11/25/14 01:56	1
4-Bromofluorobenzene (Surr)	101		73 - 120		11/25/14 01:56	1
Dibromofluoromethane (Surr)	110		60 - 140		11/25/14 01:56	1

TestAmerica Buffalo

CRASH  
collected

# **APPENDIX B**

## **SUPPORT DOCUMENTATION**

# 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

<b>Client Information</b>		Sampler: <u>R. MURPHY / T. URBAN</u>		Lab PM: Deyo, Melissa L		Carrier Tracking No(s):		COC No: 480-58194-7612.1	
Client Contact: Mrs. Ann Marie Kropovitch		Phone: 716-856-5636		E-Mail: melissa.deyo@testamericainc.com				Page: Page 1 of 2	
Company: URS Corporation		Due Date Requested:		Analysis Requested				Job #:	
Address: 257 W. Genesee Street		TAT Requested (days):						Preservation Codes:	
City: Buffalo		STANDARD TAT						A - HCL M - Hexane	
State, Zip: NY, 14203		PO #: Ann_Marie_Kropovitch@URSCorp.com						B - NaOH N - None	
Phone: 716-856-5636(Tel) 716-856-2545(Fax)		WO #: Vendor # 1427538						C - Zn Acetate O - AsNaO2	
Email: ann.marie.kropovitch@urs.com		Project #: 48002609						D - Nitric Acid P - Na2O4S	
Project Name: Pfchl Brothers Landfill GW Monitoring		SSOW#:						E - NaHSO4 Q - Na2SO3	
Site:								F - MeOH R - Na2S2O3	
								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)	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Soil, Sediment, etc.)	Field Filtered Sample (Yes or No)	8010B, 7470A	8200B - Volatile Organic Compounds (GC/MS)	8270D - Semivolatile Compounds by GC/MS	Barcode	480-71364 Chain of Custody
GW-035	11/2/14	1105	G	Water			1	3	2	6
GW-03D	11/12/14	1237	G	Water			1	3	2	6
GW-03D MS	11/12/14	1237	G	Water			1	3	2	6
GW-03D MSD	11/12/14	1237	G	Water			1	3	2	6
GW-08D	11/12/14	1425	G	Water			1	3	2	6
GW-08SR	11/12/14	1507	G	Water			1	3	2	6
GW-07D	11/12/14	1640	G	Water				3		6
GW-07S	11/12/14	1645	G	Water				3		6
GW-34S	11/13/14	0829	G	Water			1	3	2	6
GW-28S	11/13/14	0920	G	Water			1	3	2	6
GW-04S	11/13/14	0945	G	Water				3		3

<b>Possible Hazard Identification</b>		<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>	
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B
<input type="checkbox"/> Unknown	<input type="checkbox"/> Radiological	<input type="checkbox"/> Return To Client	
Deliverable Requested: I, II, III, IV, Other (specify)		<input checked="" type="checkbox"/> Disposal By Lab	
		<input type="checkbox"/> Archive For _____ Months	
		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:	
Date/Time:		Time:	
Relinquished by: <u>John</u>		Company: <u>URS</u>	
Date/Time: <u>11/13/14 @ 1600</u>		Received by: <u>[Signature]</u>	
Company: <u>URS</u>		Date/Time: <u>11/13/14 1600</u>	
Relinquished by:		Company:	
Date/Time:		Received by:	
Company:		Date/Time:	
Relinquished by:		Company:	
Date/Time:		Received by:	
Company:		Date/Time:	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:	
Cooler Temperature(s) °C and Other Remarks: <u>4.6 °C, 3.9 °C</u>		<u>#3</u>	

## Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b>		Sampler: <u>R. MURPHY / T. URBAN</u>		Lab PM: Deyo, Melissa L.		Carrier Tracking No(s):		COC No: 480-58184-7612.2	
Client Contact: Mrs. Ann Marie Kropovitch		Phone: 716-856-5636		E-Mail: melissa.deyo@testamericainc.com				Page: Page 2 of 3	
Company: URS Corporation		Due Date Requested:		Analysis Requested				Job #:	
Address: 257 W. Genesee Street		TAT Requested (days):						Preservation Codes:	
City: Buffalo		STANDARD TAT						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 L - EDA Z - other (specify)	
State, Zip: NY, 14203		PO #: Ann_Marie_Kropovitch@URSCorp.com						Other:	
Phone: 716-856-5636(Tel) 716-856-2545(Fax)		WO #: Vendor # 1427536							
Email: ann.marie.kropovitch@urs.com		Project #: 48002609							
Project Name: Pfohl Brothers Landfill GW Monitoring		SSOW#:							
Site:									
<b>Sample Identification</b>		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=soil, G=grab)	
								Special Instructions/Note:	
GW-04D		11/13/14		1105		Water		F 3 2	
GW-04S		11/13/14		1115		Water		1 2	
GW-35S		11/13/14		1203		Water		1 3 2	
GW-26D		11/13/14		1318		Water		1 3 2	
FD-111314		11/13/14		—		Water		1 3 2	
GW-29S		11/13/14		1429		Water		1 3 2	
GW-07D		11/13/14		1450		Water		1 2	
GW-07S		11/13/14		1455		Water		1 2	
TB-111214 + 111314		11/13/14		—		Water		2	
						Water			
						Water			
<b>Possible Hazard Identification</b>		<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>					
Deliverable Requested: I, II, III, IV, Other (specify)				<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
				Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipper:			
Relinquished by: <u>T. Urban</u>		Date/Time: 11/13/14 1600		Company: URS		Received by: <u>Chris</u>		Date/Time: 11/13/14 1600	
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: 4.6°C, 3.9°C #3					



10 Hazelwood Drive  
Amherst, NY 14228-2298  
Phone (716) 891-2600 Fax (716) 891-7991

THE LEADER IN ENVIRONMENTAL TESTING

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12/8/2014

## Case Narrative

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

TestAmerica Job ID: 480-71364-1

Job ID: 480-71364-1

Laboratory: TestAmerica Buffalo

### Narrative

#### Job Narrative 480-71364-1

#### Receipt

The samples were received on 11/13/2014 4:00 PM and 11/14/2014 4:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.1° C, 3.9° C and 4.6° C.

#### GC/MS VOA

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

#### GC/MS Semi VOA

Method(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-extraction/re-analysis. The following sample(s) contained an allowable number of surrogate compounds outside limits: (MB 480-214814/1-A), GW-03D (480-71364-2 MS) and LCS 480-214720/2A. These results have been reported and qualified.

Method(s) 8270D: Internal standard (ISTD) response for Perylene for the following sample(s) was outside acceptance criteria: FD-111314 (480-71364-14), GW-03D (480-71364-2), GW-03D (480-71364-2 MS), GW-03D (480-71364-2 MSD), GW-03S (480-71364-1), GW-04D (480-71364-10), GW-04S (480-71364-11), GW-07D (480-71364-16), GW-07S (480-71364-17), GW-08D (480-71364-3), GW-08SR (480-71364-4), GW-26D (480-71364-13), GW-28S (480-71364-8), GW-29S (480-71364-15), GW-34S (480-71364-7), GW-35S (480-71364-12). This ISTD does not correspond to any of the requested target compounds; therefore, the data have been reported.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 216119 was outside the method criteria for the following analyte(s): 3,3'-Dichlorobenzidine and 3-Nitroaniline. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

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

#### Metals

Method(s) 6010C: The continuing calibration verification (CCV 480-215100/37) recovered above the upper control limit for total silver and zinc. The samples associated with this CCV were below the laboratory's standard reporting limit for the affected analytes; therefore, the data have been reported. The following samples are impacted: FD-111314 (480-71364-14), GW-04D (480-71364-10), GW-08SR (480-71364-4), GW-26D (480-71364-13), GW-28S (480-71364-8), GW-29S (480-71364-15), GW-34S (480-71364-7), GW-35S (480-71364-12).

Method(s) 6010C: The continuing calibration verification (CCV 480-125100/37) recovered above the upper control limit for total silver. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data has been reported. The following sample was impacted: GW-04S (480-71364-11).

Method(s) 6010C: The continuing calibration verification (CCV 480-215209/13 and 480-215209/18) recovered above the upper control limit for total silver. The sample associated with these CCVs were non-detect for the affected analyte; therefore, the data has been reported. The following sample is impacted: (MB 480-214382/1-A).

Method(s) 6010C: The continuing calibration verification (CCV 480-215209/30) recovered above the upper control limit for total silver. The samples associated with these CCVs were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: GW-01D (480-71462-6), GW-01S (480-71462-5), GW-30S (480-71462-1), GW-31S (480-71462-2), GW-32S (480-71462-3), GW-33S (480-71462-4).

Method(s) 6010C: The continuing calibration verification (CCV 480-215209/42) recovered above the upper control limit for total silver. 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 (480-71462-6), GW-01S (480-71462-5), GW-32S (480-71462-3), GW-33S (480-71462-4).

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



## Case Narrative

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

TestAmerica Job ID: 480-71364-1

Job ID: 480-71364-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

### Organic Prep

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

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## QC Sample Results

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

TestAmerica Job ID: 480-71364-1

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

Lab Sample ID: LCS 480-215760/5  
Matrix: Water  
Analysis Batch: 215760

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

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1,2-Trichloroethane	25.0	26.2		ug/L		105	76 - 122
Acetone	125	137		ug/L		110	56 - 142
Benzene	25.0	26.6		ug/L		106	71 - 124
Vinyl chloride	25.0	26.0		ug/L		104	65 - 133

Surrogate	LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	100		71 - 126
4-Bromofluorobenzene (Surr)	104		73 - 120
Dibromofluoromethane (Surr)	108		60 - 140

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

Lab Sample ID: MB 480-214720/1-A  
Matrix: Water  
Analysis Batch: 216898

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 214720

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,3-Dichlorobenzene	ND		10	0.48	ug/L		11/18/14 14:13	12/03/14 14:53	1
1,4-Dichlorobenzene	ND		10	0.46	ug/L		11/18/14 14:13	12/03/14 14:53	1
Bis(2-ethylhexyl) phthalate	4.38	J	5.0	1.8	ug/L		11/18/14 14:13	12/03/14 14:53	1
Phenol	ND		5.0	0.39	ug/L		11/18/14 14:13	12/03/14 14:53	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4,6-Tribromophenol	57		52 - 132	11/18/14 14:13	12/03/14 14:53	1
2-Fluorobiphenyl	59		48 - 120	11/18/14 14:13	12/03/14 14:53	1
2-Fluorophenol	64		20 - 120	11/18/14 14:13	12/03/14 14:53	1
Nitrobenzene-d5	57		46 - 120	11/18/14 14:13	12/03/14 14:53	1
Phenol-d5	42		16 - 120	11/18/14 14:13	12/03/14 14:53	1
p-Terphenyl-d14	70		67 - 150	11/18/14 14:13	12/03/14 14:53	1

Lab Sample ID: LCS 480-214720/2-A  
Matrix: Water  
Analysis Batch: 216898

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 214720

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,4-Dichlorobenzene	16.0	9.23	J	ug/L		58	32 - 120
Bis(2-ethylhexyl) phthalate	16.0	14.6		ug/L		92	53 - 158
Phenol	16.0	8.03		ug/L		50	17 - 120

Surrogate	LCS		Limits
	%Recovery	Qualifier	
2,4,6-Tribromophenol	77		52 - 132
2-Fluorobiphenyl	61		48 - 120
2-Fluorophenol	69		20 - 120
Nitrobenzene-d5	62		46 - 120
Phenol-d5	44		16 - 120
p-Terphenyl-d14	64	X	67 - 150

TestAmerica Buffalo

## QC Sample Results

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

TestAmerica Job ID: 480-71364-1

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

Lab Sample ID: 480-71364-2 MSD

Matrix: Water

Analysis Batch: 216119

Client Sample ID: GW-03D

Prep Type: Total/NA

Prep Batch: 214814

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dichlorobenzene	1.4	J	15.5	12.7		ug/L		72	32 - 120	1	36
Bis(2-ethylhexyl) phthalate	5.4		15.5	17.5		ug/L		78	53 - 158	14	15
Phenol	ND		15.5	8.40		ug/L		54	17 - 120	9	34

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol	97		52 - 132
2-Fluorobiphenyl	83		48 - 120
2-Fluorophenol	83		20 - 120
Nitrobenzene-d5	79		46 - 120
Phenol-d5	53		16 - 120
p-Terphenyl-d14	87		67 - 150

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

Lab Sample ID: MB 480-214129/1-A

Matrix: Water

Analysis Batch: 215100

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 214129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fac
Antimony	ND		0.020	0.0068	mg/L		11/14/14 11:56	11/19/14 15:43	1
Arsenic	ND		0.010	0.0056	mg/L		11/14/14 11:58	11/19/14 15:43	1
Barium	ND		0.0020	0.00070	mg/L		11/14/14 11:56	11/19/14 15:43	1
Cadmium	ND		0.0010	0.00050	mg/L		11/14/14 11:56	11/19/14 15:43	1
Chromium	ND		0.0040	0.0010	mg/L		11/14/14 11:56	11/19/14 15:43	1
Copper	ND		0.010	0.0016	mg/L		11/14/14 11:56	11/19/14 15:43	1
Iron	0.0414	J	0.050	0.019	mg/L		11/14/14 11:56	11/19/14 15:43	1
Lead	ND		0.0050	0.0030	mg/L		11/14/14 11:56	11/19/14 15:43	1
Magnesium	ND		0.20	0.043	mg/L		11/14/14 11:56	11/19/14 15:43	1
Manganese	0.00213	J	0.0030	0.00040	mg/L		11/14/14 11:56	11/19/14 15:43	1
Nickel	ND		0.010	0.0013	mg/L		11/14/14 11:56	11/19/14 15:43	1
Silver	ND		0.0030	0.0017	mg/L		11/14/14 11:56	11/19/14 15:43	1
Sodium	ND		1.0	0.32	mg/L		11/14/14 11:56	11/19/14 15:43	1
Zinc	0.00485	J	0.010	0.0015	mg/L		11/14/14 11:56	11/19/14 15:43	1

Lab Sample ID: LCS 480-214129/2-A

Matrix: Water

Analysis Batch: 215100

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 214129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.200	0.210		mg/L		105	80 - 120
Arsenic	0.200	0.197		mg/L		99	80 - 120
Barium	0.200	0.217		mg/L		109	80 - 120
Cadmium	0.200	0.208		mg/L		104	80 - 120
Chromium	0.200	0.212		mg/L		106	80 - 120
Copper	0.200	0.202		mg/L		101	80 - 120
Iron	10.0	9.64		mg/L		96	80 - 120
Lead	0.200	0.185		mg/L		93	80 - 120
Magnesium	10.0	10.05		mg/L		101	80 - 120

TestAmerica Buffalo

## QC Sample Results

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

TestAmerica Job ID: 480-71364-1

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

Lab Sample ID: MB 480-214382/1-A  
Matrix: Water  
Analysis Batch: 215097

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 214382

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		0.010	0.0016	mg/L		11/17/14 10:00	11/20/14 01:23	1
Manganese	ND		0.0030	0.00040	mg/L		11/17/14 10:00	11/20/14 01:23	1
Sodium	ND		1.0	0.32	mg/L		11/17/14 10:00	11/20/14 01:23	1

Lab Sample ID: MB 480-214382/1-A  
Matrix: Water  
Analysis Batch: 215209

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 214382

Analyte	Result	MB MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.020	0.0068	mg/L		11/17/14 10:00	11/20/14 20:21	1
Arsenic	ND		0.010	0.0056	mg/L		11/17/14 10:00	11/20/14 20:21	1
Barium	ND		0.0020	0.00070	mg/L		11/17/14 10:00	11/20/14 20:21	1
Cadmium	ND		0.0010	0.00050	mg/L		11/17/14 10:00	11/20/14 20:21	1
Chromium	ND		0.0040	0.0010	mg/L		11/17/14 10:00	11/20/14 20:21	1
Iron	ND		0.050	0.019	mg/L		11/17/14 10:00	11/20/14 20:21	1
Lead	ND		0.0050	0.0030	mg/L		11/17/14 10:00	11/20/14 20:21	1
Magnesium	ND		0.20	0.043	mg/L		11/17/14 10:00	11/20/14 20:21	1
Nickel	ND		0.010	0.0013	mg/L		11/17/14 10:00	11/20/14 20:21	1
Silver	ND		0.0030	0.0017	mg/L		11/17/14 10:00	11/20/14 20:21	1
Zinc	0.00797	J	0.010	0.0015	mg/L		11/17/14 10:00	11/20/14 20:21	1

Lab Sample ID: LCS 480-214382/2-A  
Matrix: Water  
Analysis Batch: 215097

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 214382

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	0.200	0.199		mg/L		99	80 - 120
Manganese	0.200	0.209		mg/L		105	80 - 120
Sodium	10.0	9.30		mg/L		93	80 - 120

Lab Sample ID: LCS 480-214382/2-A  
Matrix: Water  
Analysis Batch: 215209

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 214382

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.200	0.215		mg/L		108	80 - 120
Arsenic	0.200	0.223		mg/L		112	80 - 120
Barium	0.200	0.240		mg/L		120	80 - 120
Cadmium	0.200	0.210		mg/L		105	80 - 120
Chromium	0.200	0.226		mg/L		113	80 - 120
Iron	10.0	10.83		mg/L		108	80 - 120
Lead	0.200	0.199		mg/L		100	80 - 120
Magnesium	10.0	10.67		mg/L		107	80 - 120
Nickel	0.200	0.215		mg/L		107	80 - 120
Zinc	0.200	0.220		mg/L		110	80 - 120

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, 2014 to February 12, 2015		
		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"/>
<b>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.</b>		
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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81.04-2-10.1	Paul Pfohl	Ground Water Use Restriction Landuse Restriction Building Use Restriction
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81.04-2-11

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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81.04-2-9.1

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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82.03-4-10

Elizabeth L. McBride

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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82.03-4-11

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

In accordance with the Declaration of Covenants and Restrictions filed with the Erie County Clerk's Office on 4/25/03 and included as Appendix P in the Remedial Action Construction Report, Vol. II, the following Controls are in place:

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82.03-4-5

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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82.03-4-6

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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82.03-4-8

Paul Pfohl

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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82.03-4-9.11

Aero Land, Inc. c/o Jerome Hirsh

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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- 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

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82.03-4-9.2

Aero Land, Inc. c/o Jerome Hirsh

Ground Water Use Restriction  
Landuse Restriction  
Building Use Restriction

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Box 4

#### Description of Engineering Controls

Parcel

Engineering Control

81.04-1-26

Vapor Mitigation  
Fencing/Access Control  
Cover System  
Leachate Collection

81.04-1-27

Cover System  
Leachate Collection  
Fencing/Access Control  
Vapor Mitigation

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

81.04-1-28.1

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

81.04-2-10.1

Vapor Mitigation

Parcel

Engineering Control

Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

81.04-2-11

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

81.04-2-9.1

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-10

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

82.03-4-11

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-5

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-6

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-8

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

82.03-4-9.11

Vapor Mitigation  
Cover System  
Leachate Collection  
Fencing/Access Control

For Declaration of Covenants and Restrictions, see Appendix P in the Remedial Action Construction Report, Vol. II

Parcel

82.03-4-9.12

Engineering Control

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 MANAGER

2/2/2015  
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

Stamp  
(Required for PE)

2/2/2015  
Date