SEMI ANNUAL REPORT
OPERATION AND MAINTENANCE
JANUARY 2011 TO JUNE 2011
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
77 GOODELL STREET
BUFFALO, NEW YORK 14203

Prepared for:

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

NOVEMBER
2011

November 11, 2011

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

Re: Semi-Annual Report
Pfohl Brothers Landfill, Town of Cheektowaga, New York

Dear Mr. Walia:

Enclosed is one copy of the fifteenth 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

Jon Sundquist, Ph.D.
Project Manager

Enclosures

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

URS Corporation
77 Goodell St.
Buffalo, NY 14203
Tel: 716.856.5636
Fax: 716.856.2545

TABLE OF CONTENTS

Page No.

TABLES

FIGURES

APPENDICES

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. 9-15-043 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) 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 fifteenth 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 2011 through June 2011 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 2011 through June 2011, 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.

- Installed replacement repair parts and re-installed the Toshiba magnetic flow meter at WW-4 on January 29, 2011.

- Replaced defective pump and installed new ball check valve in WW-6 on January 29, 2011.

- Ordered two (2) ¾ HP pumps and six (6) ball check valves for replacement inventory and stored the in the Site Control Building on June 10, 2011.

- Wildlife trapper engaged as needed to control ground burrowing animals in active burrows located west of Control Building and along south perimeter road of Area C (June 25, 2011).

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 fifteenth 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 fifteenth semi-annual round of groundwater sampling was conducted between May 16, 2011 and May 18, 2011. 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 on most wells.

Passive diffusion bags (PDBs) were placed in three wells with low recharge rates (GW-4S, GW-7S, and GW-7D) on April 16, 2011. 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.

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). 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.

Results

No VOCs were detected at concentrations above the Class GA water quality standards at any location. Only one SVOC, bis(2-ethylhexyl)phthalate, was detected at a concentration that exceeded its groundwater quality standard (in monitoring well GW-07D).

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. Chromium and nickel were detected at concentrations exceeding their respective groundwater standards in wells GW-03S and GW-07D. Lead was also detected at a concentration exceeding Class GA standards in well GW-07D.

Comparison to Historical Results

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

The concentrations of chromium and nickel at GW-07D and GW-03S, and lead at GW-07D were within the historical range of concentrations observed for these compounds at these wells.

Sodium concentrations were generally higher in bedrock wells (GW-1D, GW-3D, GW-8D and GW-26D) and shallow wells adjacent to roads (GW-1S 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

Appendix E, Figures E-1 through E-19 presents a trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards. 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 fifteen semi-annual sampling events except as described below. Figure E-2 for GW-01S, indicates a consistent drop in sodium concentration over the fifteen sampling events. Figure E-4 for GW-03S indicates an upward trend for nickel since monitoring began (although concentrations were significantly lower during the last three events) Figure E-4 also 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-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 concentration over recent events. Figure E-12 for GW-28S, indicates decreasing trend for sodium since monitoring began.

Figure E-13 for GW-29S, indicates a slight increasing trend in iron concentration from 2005 through 2008 with a decreasing trend since then. Also at GW-29S, arsenic has been detected at concentrations exceeding its groundwater standard for 5 of the last 8 sampling events.

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 June 2011 is submitted separately from this report.

3.3 Groundwater Discharge Monitoring

URS completed two quarterly sampling events (March 2011 and June 2011) 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. 10-11-CH016 between the Buffalo Sewer Authority and the Town of Cheektowaga. A copy of Permit No. 10-11-CH016 is included as Appendix F.

During the sampling events in March 2011 and June 2011, 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 2011 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 sixteenth round of groundwater sampling will be conducted in November 2011. Low flow sampling techniques will be used. Passive diffusion bags will be used again for VOC analyses at the three wells (GW-4S, GW-7S, and GW-7D) that go dry even using low flow sampling techniques.

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

Surface Water and Sediment Sampling: URS asked that the NYSDEC consider the discontinuation of surface water and sediment sampling at the site in the January to June 2008 Semiannual Report. No future surface water or sediment sampling is planned.

TABLES

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

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

TABLE 3-2 (continued)

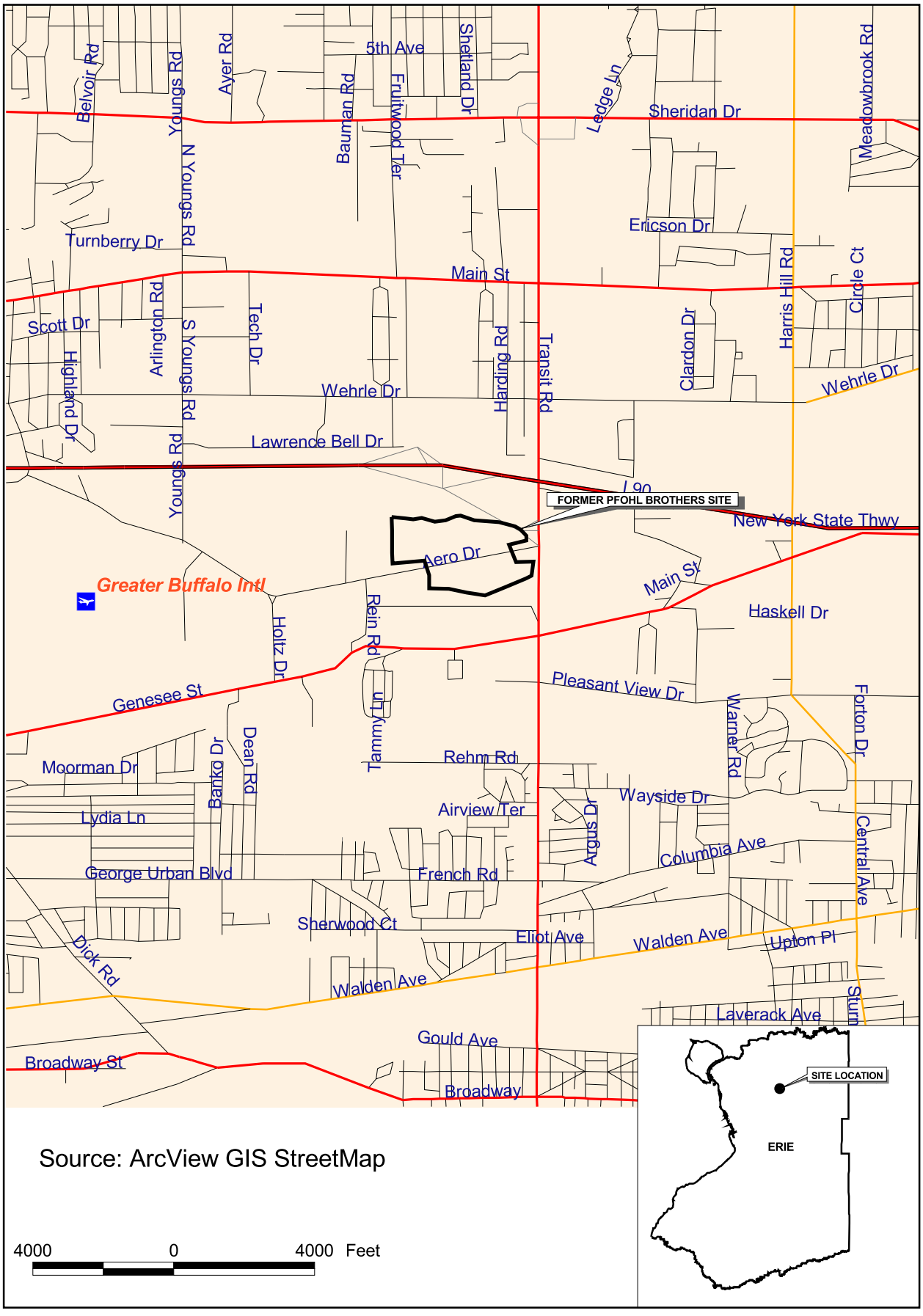
APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

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

PARAMETERS (cont'd)

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

FIGURES



URS	PFOHL BROTHERS LANDFILL SITE LOCATION MAP	FIGURE 1-1

n:\111172700.00000\gis\arcview\pfohl_sitelocation.apr Pfohl Bros Location Map
12/15/2005

N

SG-01
GW-03D
GW-03S
MH-01
MH-02
MH-03
MH-04
MH-06
MH-07
MH-05
WW-01
MH-08
GW-08D
SG-02
GW-08SR
WW-02
MH-09
MH-10
MH-11
MH-28
MH-12
WW-03
GW-28S
GW-01D
GW-01S
GW-34S
WW-06
MH-13
MH-27
AERO DRIVE
MH-23
MH-24
MH-25
MH-14
GW-29S
MH-15
TRANSIT ROAD
Control Building
GW-04D
GW-04S
GW-33S
MH-22
MH-16
GW-30S
WW-04
MH-21
MH-20
MH-17
GW-31S
GW-35S
GW-26D
WW-05
GW-32S
MH-18

Legend

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

300 0 300 Feet

PFOHL BROTHERS LANDFILL
SITE BOUNDARY AND MONITORING LOCATIONS

URS

FIGURE 2-1

N:\11172700.00000\GIS\ArcView\pfhol.apr SITE BOUNDARY & WELL LOCATIONS
2/1/2010

APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 6-27-11

Weather conditions 80° CLEAR, SUNNY

Time 2:20 PM

Read by: BILL PUGH

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	4.6	0	290,722	1467
WW-2	4.6	0	14,839	120
WW-1	99	0	3,478,353	1248
WW-6	6.7	0	1,256,405	6016
WW-4	6.8	0	1,665,536	4812
WW-5	6.5	0	1,260,884	7555

Flow Totalizer at Meter chamber 28,328,184

Heat Trace

Outside temp T = 80°

Current A = 0

Set point SP = 40

Large Suppressor events 414,502

Motor Control Center

Volts 480 volts

Amps 8 amps

Which WW was running?

1☐ 2☐ 3☐ 4☐ 5☐ 6☐ Ø

Filter Checked ☐ Changed ☐

Comments and/or Current Conditions

WW-1 ALARMS - LEVEL INVALID, FLOW INVALID WILL NOT RESET - T. PESTKA TO CHECK

DELIVERED TWO (2) 3/4 H.P. PUMPS TO SITE FOR INVENTORY. (PICKUP FROM FLUID KINETICS 6/24/11)

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 2/24/11

Weather conditions Cloudy 28°

Time 1:25

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	190,552	1416
WW-2	4.6	0	34,143	117
WW-1	4.1	0	2,712,893	862
WW-6	7.1	52.9	8,649,531	5178
WW-4	7.1	0	805,846	4165
WW-5	7.8	0	9,213,098	6321

Flow Totalizer at Meter chamber 21,923,346

Heat Trace

Outside temp T = 28°

Current A = 2.1

Set point SP = 40°

Surge Suppressor events 414,469

Motor Control Center

Volts 480 volts

Amps 5 amps

Which WW was running?

1☐ 2☐ 3☐ 4☐ 5☐ 6☒

Filter Checked ☐ Changed ☐

Comments and/or Current Conditions

RESET W.W. 3 NEG. FLOW ALARM (OK)

APPENDIX B

MONTHLY FLOW SUMMARIES
JANUARY 2011 – JUNE 2011

The
TOWN OF
CHEEKTOWAGA

Jon W. Nichy
Superintendent

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

February 5, 2011

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 2011** 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.

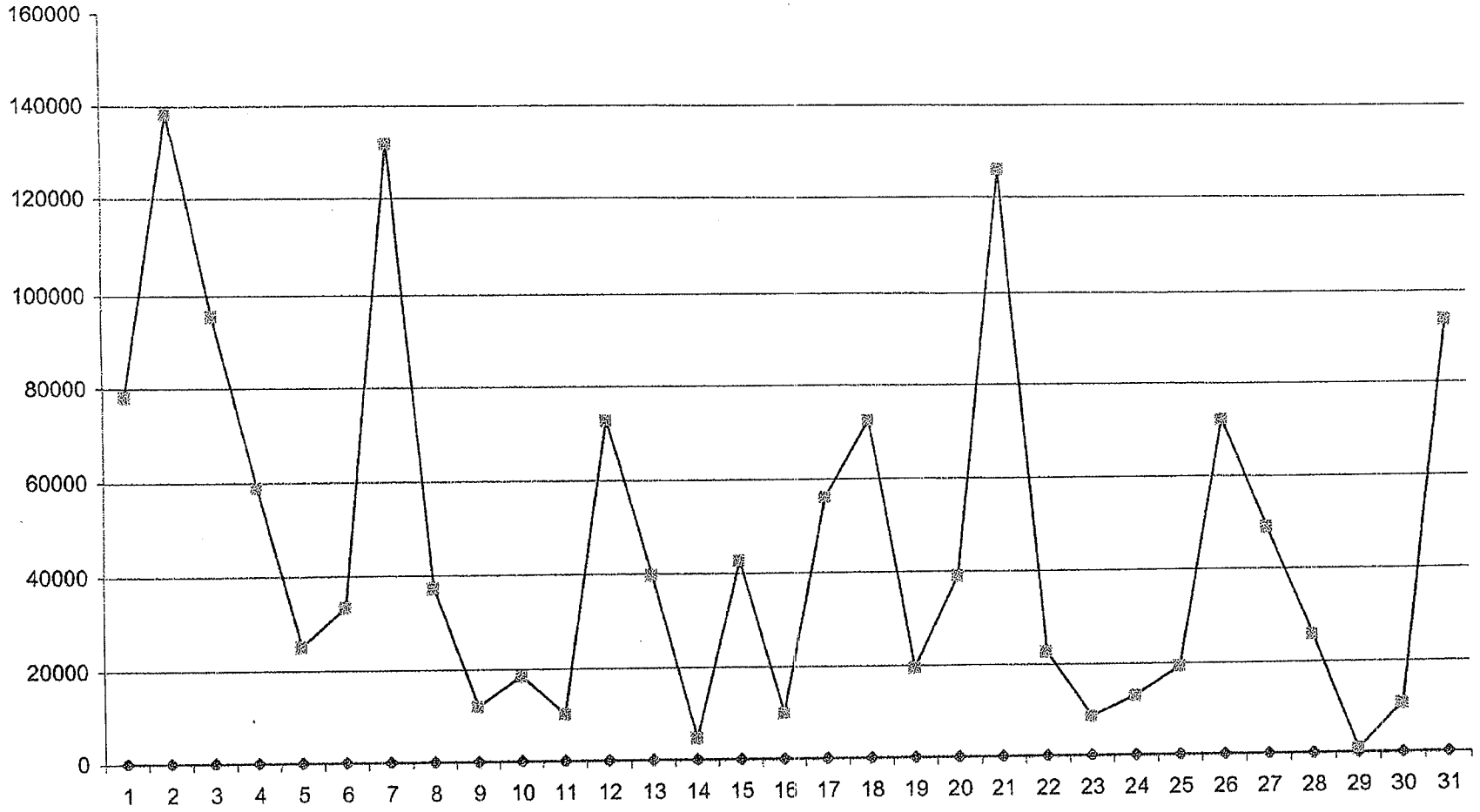
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

12/31/2010		19439748	5,644	19,093,435	
January-11	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		19517896	78,148	19,171,583	1046 inhibit 2038 enable
2		19656018	138,122	19,309,705	
3		19751546	95,528	19,405,233	
4		19810324	58,778	19,464,011	
5		19835446	25,122	19,489,133	
6		19868910	33,464	19,522,597	
7		20000586	131,676	19,654,273	
8		20037996	37,410	19,691,683	
9		20050080	12,084	19,703,767	
10		20068612	18,532	19,722,299	
11		20078860	10,248	19,732,547	
12		20151606	72,746	19,805,293	
13		20191422	39,816	19,845,109	
14		20196120	4,698	19,849,807	
15		20238822	42,702	19,892,509	
16		20248844	10,022	19,902,531	
17		20304872	56,028	19,958,559	
18		20377294	72,422	20,030,981	
19		20396804	19,510	20,050,491	
20		20435872	39,068	20,089,559	
21		20561694	125,822	20,215,381	
22		20584338	22,644	20,238,025	
23		20592990	8,652	20,246,677	
24		20606094	13,104	20,259,781	
25		20625400	19,306	20,279,087	
26		20697490	72,090	20,351,177	
27		20746304	48,814	20,399,991	
28		20772104	25,800	20,425,791	
29		20773034	930	20,426,721	
30		20783840	10,806	20,437,527	
31		20877682	93,842	20,531,369	
		1,437,934	**1,437,934**	**1,437,934**	

January
2011



The
TOWN OF
CHEEKTOWAGA

Jon W. Nichy
Superintendent

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

March 4, 2011

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

Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

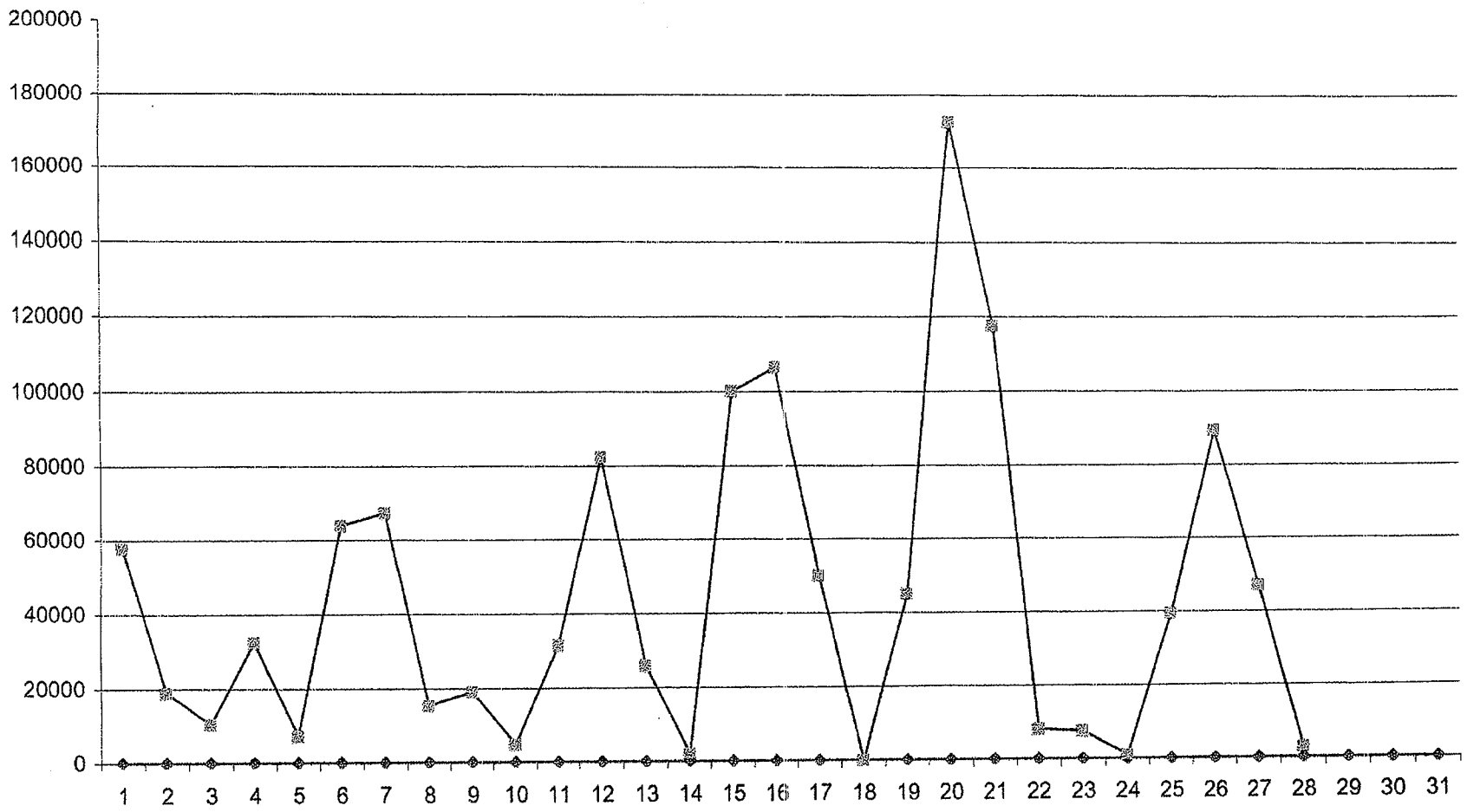
Enclosed for your review, please find a copy of the **February 2011** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

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

February
2011



The
TOWN OF
CHEEKTOWAGA

Jon W. Nichy
Superintendent

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

April 7, 2011

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 2011** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

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

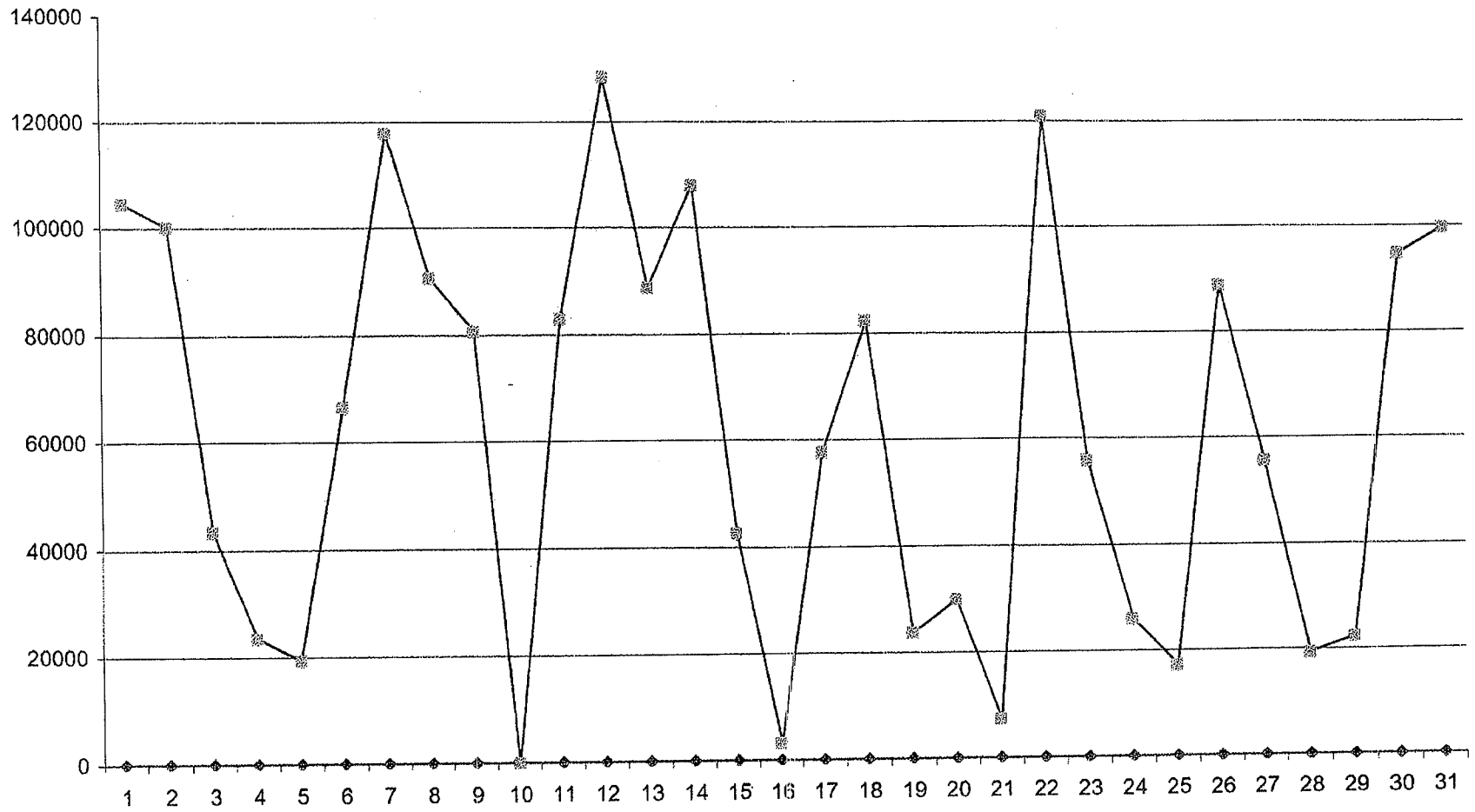
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

2/28/2011		22102644	2,978	21,756,331	
March-11	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		22207172	104,528	21,860,859	
2		22307220	100,048	21,960,907	
3		22350560	43,340	22,004,247	
4		22374134	23,574	22,027,821	
5		22393498	19,364	22,047,185	0808 inhibit
6		22460026	66,528	22,113,713	
7		22577854	117,828	22,231,541	1012 enable
8		22668590	90,736	22,322,277	
9		22749216	80,626	22,402,903	1612 inhibit
10		22749216	0	22,402,903	
11		22832130	82,914	22,485,817	0703 enable
12		22960570	128,440	22,614,257	
13		23049304	88,734	22,702,991	
14		23157148	107,844	22,810,835	
15		23199752	42,604	22,853,439	
16		23202972	3,220	22,856,659	
17		23260626	57,654	22,914,313	
18		23342804	82,178	22,996,491	
19		23366562	23,758	23,020,249	
20		23396444	29,882	23,050,131	
21		23403732	7,288	23,057,419	0146inhibit 2303enable
22		23524606	120,874	23,178,293	
23		23580432	55,826	23,234,119	
24		23606472	26,040	23,260,159	
25		23623642	17,170	23,277,329	
26		23712418	88,776	23,366,105	
27		23768006	55,588	23,421,693	
28		23787306	19,300	23,440,993	
29		23809722	22,416	23,463,409	
30		23904428	94,706	23,558,115	
31		24003900	99,472	23,657,587	
		1,901,256	**1,901,256**	**1,901,256**	

March
2011


140000
120000
100000
80000
60000
40000
20000
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

The
TOWN OF
CHEEKTOWAGA

Jon W. Nichy
Superintendent

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

May 5, 2011

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

Re: Pfohl Bros. Flow Data

Dear Mr. Pugh,

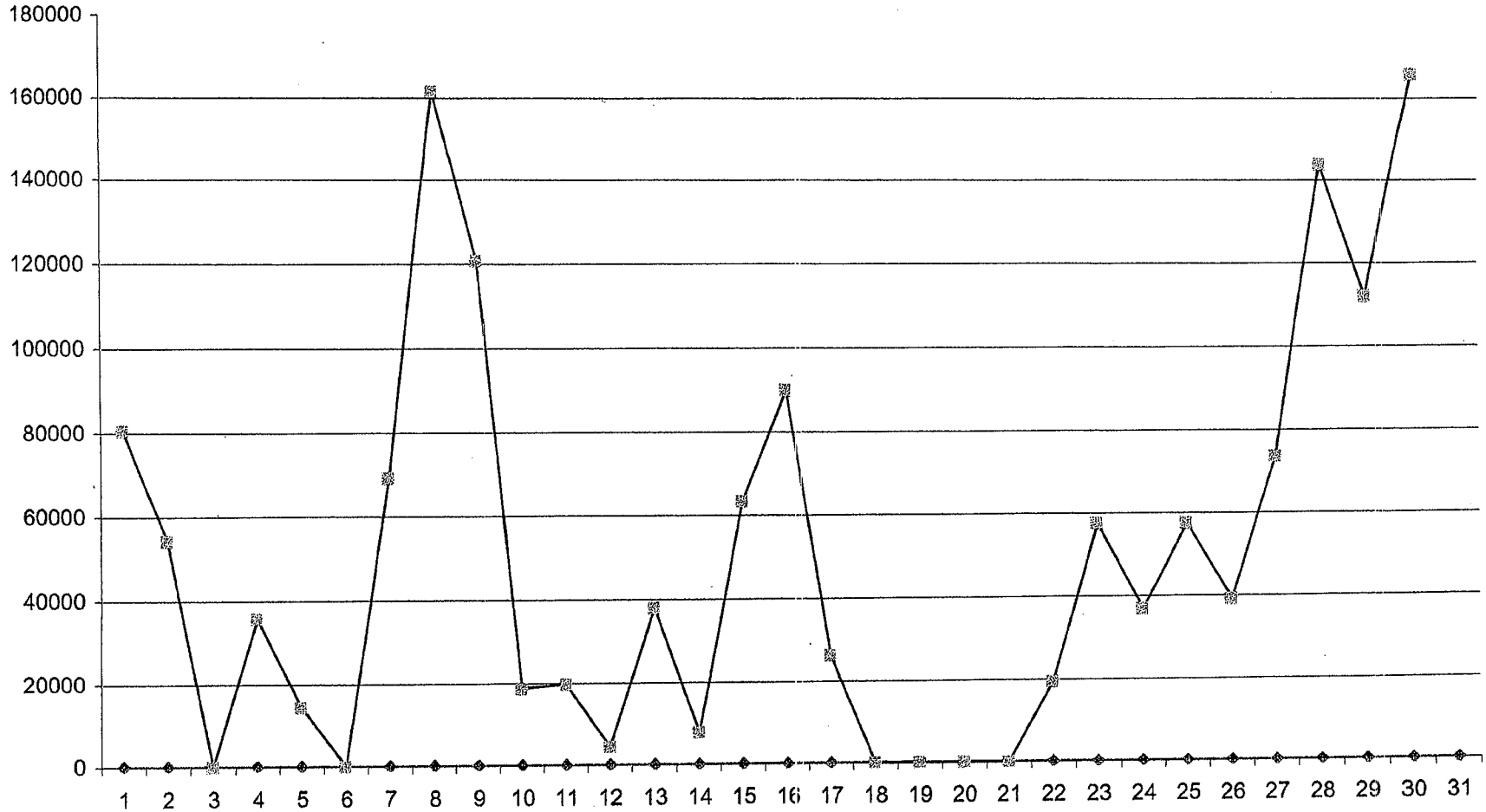
Enclosed for your review, please find a copy of the **April 2011** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

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

April
2011


180000
160000
140000
120000
100000
80000
60000
40000
20000
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Direct Discharge Flow Data

3/31/2011		24003900	99,472	23,657,587	
April-11	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		24084484	80,584	23,738,171	
2		24138716	54,232	23,792,403	
3		24138716	0	23,792,403	
4		24174630	35,914	23,828,317	0746 inhibit
5		24189062	14,432	23,842,749	
6		24189062	0	23,842,749	1426 enable
7		24258278	69,216	23,911,965	
8		24419806	161,528	24,073,493	
9		24540664	120,858	24,194,351	
10		24559456	18,792	24,213,143	
11		24579170	19,714	24,232,857	
12		24583550	4,380	24,237,237	
13		24621600	38,050	24,275,287	0422 inhibit
14		24629454	7,854	24,283,141	1241 enable
15		24692828	63,374	24,346,515	
16		24782802	89,974	24,436,489	1016 inhibit
17		24809178	26,376	24,462,865	
18		24809178	0	24,462,865	
19		24809178	0	24,462,865	
20		24809178	0	24,462,865	
21		24809178	0	24,462,865	1626 enable
22		24828668	19,490	24,482,355	
23		24886278	57,610	24,539,965	0724 inhibit 1559 enable
24		24923264	36,986	24,576,951	
25		24980864	57,600	24,634,551	1706 inhibit
26		25020154	39,290	24,673,841	1045 enable
27		25093654	73,500	24,747,341	
28		25237380	143,726	24,891,067	0110 inhibit 0935 enable
29		25349410	112,030	25,003,097	
30		25515210	165,800	25,168,897	
31					
		1,511,310	**1,511,310**	**1,511,310**	

The
TOWN OF
CHEEKTOWAGA

Jon W. Nichy
Superintendent

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

June 4, 2011

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 2011** 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.

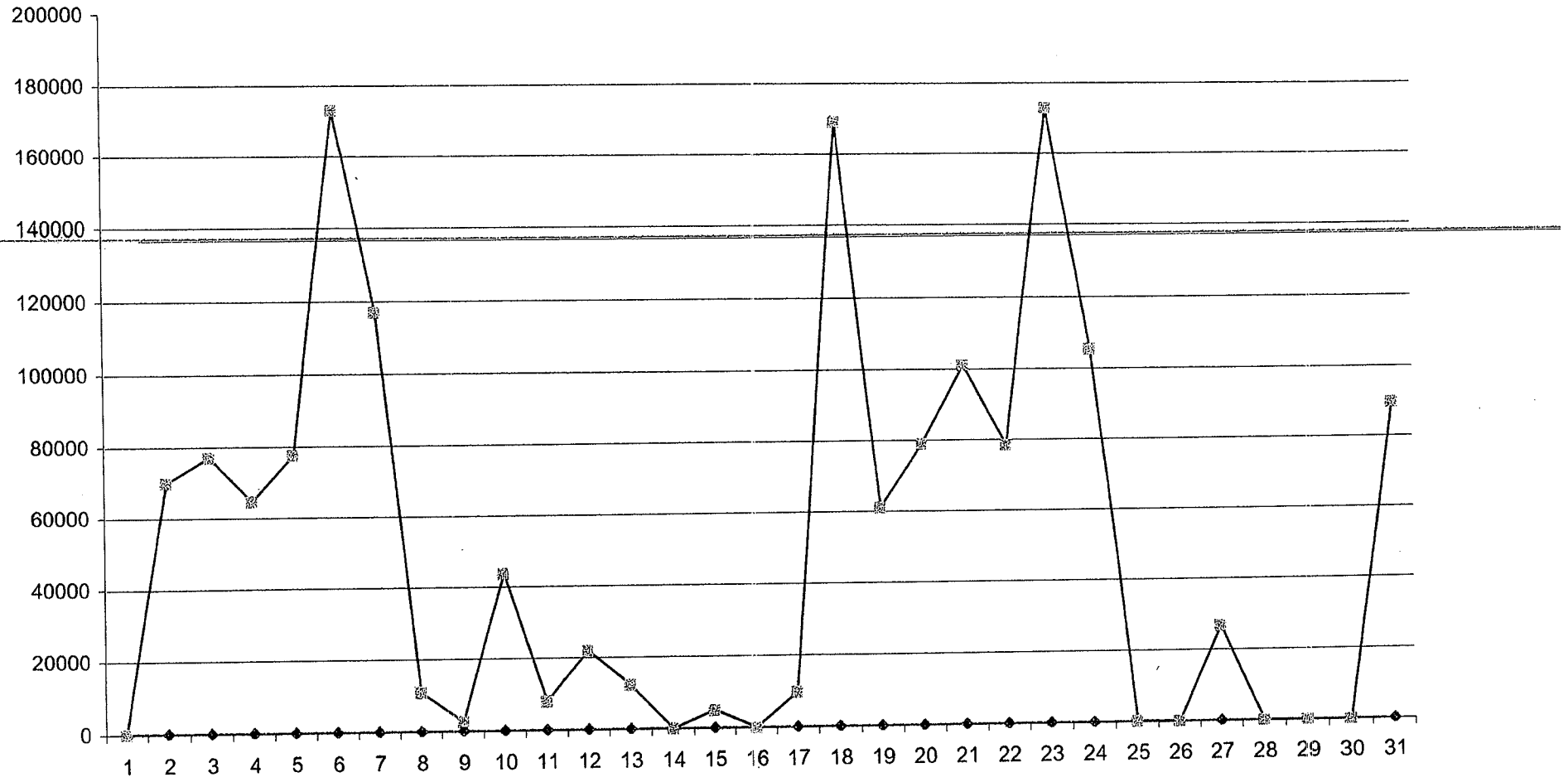
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

4/31/2011		25515210	165,800	25,168,897	
May-11	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)	Total Direct Discharge (Gallons)	Notes
1		25515210	0	25,168,897	
2		25585022	69,812	25,238,709	0411inhibit 1707enable
3		25662106	77,084	25,315,793	1055inhibit
4		25726552	64,446	25,380,239	1343enable
5		25804074	77,522	25,457,761	
6		25976994	172,920	25,630,681	
7		26093892	116,898	25,747,579	
8		26104722	10,830	25,758,409	
9		26107448	2,726	25,761,135	
10		26151080	43,632	25,804,767	
11		26159096	8,016	25,812,783	
12		26180942	21,846	25,834,629	
13		26193182	12,240	25,846,869	
14		26193182	0	25,846,869	
15		26198304	5,122	25,851,991	0001inhibit
16		26198304	0	25,851,991	2311enable
17		26208068	9,764	25,861,755	
18		26377424	169,356	26,031,111	0913inhibit
19		26438474	61,050	26,092,161	1333enable
20		26517542	79,068	26,171,229	1447inhibit
21		26618732	101,190	26,272,419	1346enable
22		26697196	78,464	26,350,883	
23		26869996	172,800	26,523,683	
24		26975432	105,436	26,629,119	1247inhibit
25		26975522	90	26,629,209	
26		26975522	0	26,629,209	1414enable--2104inhibit
27		27002194	26,672	26,655,881	
28		27002194	0	26,655,881	
29		27002194	0	26,655,881	
30		27002194	0	26,655,881	1203enable
31		27091864	89,670	26,745,551	
		1,576,654	**1,576,654**	**1,576,654**	

May
2011


200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

The
TOWN OF
CHEEKTOWAGA

Jon W. Nichy
Superintendent

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

July 5, 2011

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 2011** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

On July 1, 2011 the Flow Totalizers were reset to zero.

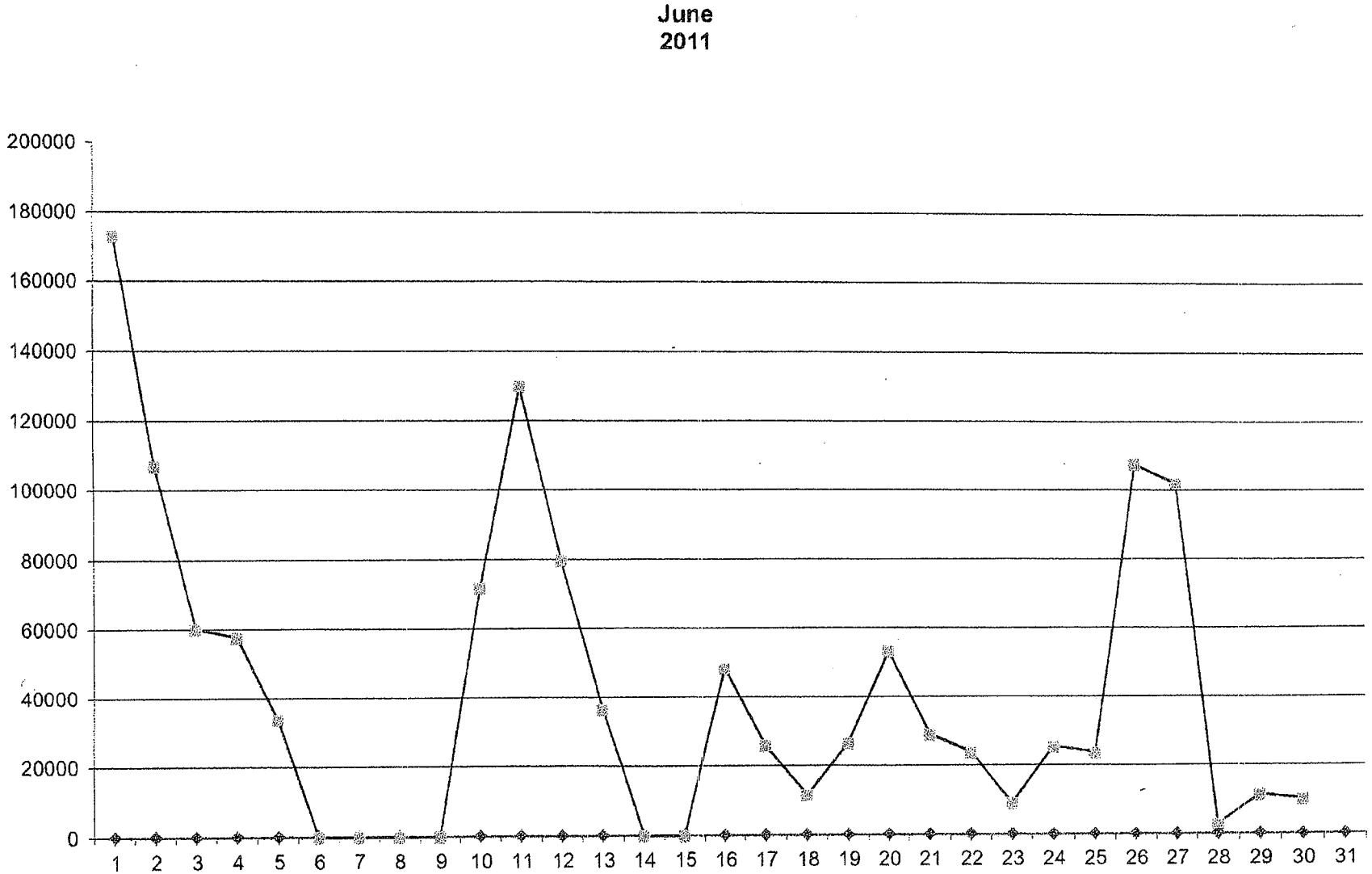
Should you have any other questions or comments regarding this submittal, please contact this office @ 896-1777.

Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

5/31/2011		27091864	89,670	26,745,551	
June-11	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		27264784	172,920	26,918,471	
2		27371556	106,772	27,025,243	
3		27431676	60,120	27,085,363	
4		27489326	57,650	27,143,013	1447inhibit
5		27523006	33,680	27,176,693	
6		27523006	0	27,176,693	
7		27523006	0	27,176,693	
8		27523006	0	27,176,693	
9		27523006	0	27,176,693	1125enable
10		27594844	71,838	27,248,531	
11		27724652	129,808	27,378,339	
12		27804212	79,560	27,457,899	
13		27840566	36,354	27,494,253	
14		27840566	0	27,494,253	
15		27840566	0	27,494,253	
16		27888798	48,232	27,542,485	
17		27914512	25,714	27,568,199	
18		27926016	11,504	27,579,703	
19		27952348	26,332	27,606,035	
20		28005518	53,170	27,659,205	
21		28034332	28,814	27,688,019	
22		28058012	23,680	27,711,699	0106inhibit
23		28066962	8,950	27,720,649	0942enable 1821off 2250on
24		28092334	25,372	27,746,021	1034inhibit
25		28115904	23,570	27,769,591	0832enable
26		28223364	107,460	27,877,051	
27		28325302	101,938	27,978,989	
28		28328184	2,882	27,981,871	
29		28339512	11,328	27,993,199	
30		28349550	10,038	28,003,237	
31					
		1,257,686	**1,257,686**	**1,257,686**	


June
2011
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

APPENDIX C

HYDRAULIC MONITORING TABLES

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2011

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-01D	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								3/30/2011 0000	2.38	693.74	0.00	693.74	
MNW								5/16/2011 0000	1.03	695.09	0.00	695.09	
MNW								6/23/2011 0000	2.81	693.31	0.00	693.31	
GW-01S	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								3/30/2011 0000	3.12	693.07	0.00	693.07	
MNW								5/16/2011 0000	1.95	694.24	0.00	694.24	
MNW								6/23/2011 0000	3.58	692.61	0.00	692.61	
GW-03D	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								3/30/2011 0000	1.90	691.98	0.00	691.98	
MNW								5/16/2011 0000	1.16	692.72	0.00	692.72	
MNW								6/23/2011 0000	4.85	689.03	0.00	689.03	
GW-03S	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								3/30/2011 0000	2.11	691.69	0.00	691.69	
MNW								5/16/2011 0000	2.02	691.78	0.00	691.78	
MNW								6/23/2011 0000	4.30	689.50	0.00	689.50	
GW-04D	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								3/30/2011 0000	12.55	680.20	0.00	680.20	
MNW								5/16/2011 0000	12.33	680.42	0.00	680.42	
MNW								6/23/2011 0000	12.62	680.13	0.00	680.13	
GW-04S	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								3/30/2011 0000	4.28	688.44	0.00	688.44	
MNW								5/16/2011 0000	3.96	688.76	0.00	688.76	
MNW								6/23/2011 0000	5.09	687.63	0.00	687.63	

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

Filter = ([tblGWD].[LOGDATE] Between #1/1/2011# And #6/30/2011#)

Printed: 11/10/2011 3:43:42 PM
N:\11172700.00000\GIS\dB\Program\EDMS.mde/Groundwater Lev

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2011

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-07D	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								3/30/2011 0000	48.00	651.94	0.00	651.94	
MNW								5/16/2011 0000	44.77	655.17	0.00	655.17	
MNW								6/23/2011 0000	57.34	642.60	0.00	642.60	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								3/30/2011 0000	5.21	694.30	0.00	694.30	
MNW								5/16/2011 0000	3.83	695.68	0.00	695.68	
MNW								6/23/2011 0000	5.00	694.51	0.00	694.51	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								3/30/2011 0000	5.58	692.21	0.00	692.21	
MNW								5/16/2011 0000	5.07	692.72	0.00	692.72	
MNW								6/23/2011 0000	5.85	691.94	0.00	691.94	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								3/30/2011 0000	5.17	692.33	0.00	692.33	
MNW								5/16/2011 0000	4.74	692.76	0.00	692.76	
MNW								6/23/2011 0000	5.20	692.30	0.00	692.30	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								3/30/2011 0000	6.73	691.77	0.00	691.77	
MNW								5/16/2011 0000	5.97	692.53	0.00	692.53	
MNW								6/23/2011 0000	6.69	691.81	0.00	691.81	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								3/30/2011 0000	8.35	692.60	0.00	692.60	
MNW								5/16/2011 0000	8.31	692.64	0.00	692.64	
MNW								6/23/2011 0000	9.75	691.20	0.00	691.20	

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

Filter = ([tblGWD].[LOGDATE] Between #1/1/2011# And #6/30/2011#)

Printed: 11/10/2011 3:43:43 PM
N:\11172700.00000\GIS\dB\Program\EDMS.mde/Groundwater Lev

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2011

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-29S	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								3/30/2011 0000	7.09	692.54	0.00	692.54	
MNW								5/16/2011 0000	5.65	693.98	0.00	693.98	
MNW								6/23/2011 0000	9.05	690.58	0.00	690.58	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								3/30/2011 0000	7.82	688.76	0.00	688.76	
MNW								5/16/2011 0000	4.81	691.77	0.00	691.77	
MNW								6/23/2011 0000	7.96	688.62	0.00	688.62	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								3/30/2011 0000	NM	-	NM	-	Frozen @2.50'
MNW								5/16/2011 0000	2.03	696.59	0.00	696.59	
MNW								6/23/2011 0000	3.92	694.70	0.00	694.70	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								3/30/2011 0000	2.34	696.03	0.00	696.03	
MNW								5/16/2011 0000	1.83	696.54	0.00	696.54	
MNW								6/23/2011 0000	3.82	694.55	0.00	694.55	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								3/30/2011 0000	3.22	695.02	0.00	695.02	
MNW								5/16/2011 0000	2.75	695.49	0.00	695.49	
MNW								6/23/2011 0000	5.98	692.26	0.00	692.26	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								3/30/2011 0000	2.53	692.24	0.00	692.24	
MNW								5/16/2011 0000	2.58	692.19	0.00	692.19	
MNW								6/23/2011 0000	2.64	692.13	0.00	692.13	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

Filter = ([tblGWD].[LOGDATE] Between #1/1/2011# And #6/30/2011#)

Printed: 11/10/2011 3:43:43 PM
N:\11172700.00000\GIS\dB\Program\EDMS.mde/Groundwater Lev

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2011

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-35S	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								3/30/2011 0000	2.87	694.52	0.00	694.52	
MNW								5/16/2011 0000	2.68	694.71	0.00	694.71	
MNW								6/23/2011 0000	4.02	693.37	0.00	693.37	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								3/30/2011 0000	10.18	688.44	0.00	688.44	
MH								5/16/2011 0000	9.07	689.55	0.00	689.55	
MH								6/23/2011 0000	9.95	688.67	0.00	688.67	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								3/30/2011 0000	11.05	688.35	0.00	688.35	
MH								5/16/2011 0000	9.92	689.48	0.00	689.48	
MH								6/23/2011 0000	10.85	688.55	0.00	688.55	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								3/30/2011 0000	9.23	687.59	0.00	687.59	
MH								5/16/2011 0000	8.19	688.63	0.00	688.63	
MH								6/23/2011 0000	9.06	687.76	0.00	687.76	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								3/30/2011 0000	14.52	688.49	0.00	688.49	
MH								5/16/2011 0000	14.58	688.43	0.00	688.43	
MH								6/23/2011 0000	14.82	688.19	0.00	688.19	
MH-15	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								3/30/2011 0000	14.68	684.34	0.00	684.34	
MH								5/16/2011 0000	12.95	686.07	0.00	686.07	
MH								6/23/2011 0000	15.00	684.02	0.00	684.02	

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

Filter = ([tblGWD].[LOGDATE] Between #1/1/2011# And #6/30/2011#)

Printed: 11/10/2011 3:43:43 PM
N:\11172700.00000\GIS\dB\Program\EDMS.mde/Groundwater Lev

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2011

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
MH-16	1072133.714	1117748.238	698.57	NM	698.57	NA	1						
MH								3/30/2011 0000	14.39	684.18	0.00	684.18	
MH								5/16/2011 0000	12.43	686.14	0.00	686.14	
MH								6/23/2011 0000	14.60	683.97	0.00	683.97	
MH-17	1071813.137	1117180.019	702.16	NM	702.16	NA	1						
MH								3/30/2011 0000	18.10	684.06	0.00	684.06	
MH								5/16/2011 0000	16.01	686.15	0.00	686.15	
MH								6/23/2011 0000	18.25	683.91	0.00	683.91	
MH-20	1071756.395	1115997.024	706.20	NM	706.20	NA	1						
MH								3/30/2011 0000	19.76	686.44	0.00	686.44	
MH								5/16/2011 0000	19.45	686.75	0.00	686.75	
MH								6/23/2011 0000	19.72	686.48	0.00	686.48	
MH-22	1072158.023	1115589.309	698.05	NM	698.05	NA	1						
MH								3/30/2011 0000	8.99	689.06	0.00	689.06	
MH								5/16/2011 0000	8.38	689.67	0.00	689.67	
MH								6/23/2011 0000	9.02	689.03	0.00	689.03	
MH-25	1072483.928	1114820.313	698.17	NM	698.17	NA	1						
MH								3/30/2011 0000	9.63	688.54	0.00	688.54	
MH								5/16/2011 0000	8.53	689.64	0.00	689.64	
MH								6/23/2011 0000	9.54	688.63	0.00	688.63	
SG-01	1073882.887	1114813.101	NM	NM	690.00	NA	1						
SG								3/30/2011 0000	-1.20	691.20	0.00	691.20	
SG								5/16/2011 0000	-1.70	691.70	0.00	691.70	
SG								6/23/2011 0000	-1.12	691.12	0.00	691.12	

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

Filter = ([tblGWD].[LOGDATE] Between #1/1/2011# And #6/30/2011#)

Printed: 11/10/2011 3:43:43 PM
N:\11172700.00000\GIS\dB\Program\EDMS.mde/Groundwater Lev

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2011

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
SG-02	1073738.27	1116805.85	NM	NM	690.00	NA	1						
SG								3/30/2011 0000	-3.34	693.34	0.00	693.34	
SG								5/16/2011 0000	-3.80	693.80	0.00	693.80	
SG								6/23/2011 0000	-3.3	693.30	0.00	693.30	
WW-01	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								3/30/2011 0000	-4.2	688.22	0.00	688.22	
MH								5/16/2011 0000	-5.3	689.32	0.00	689.32	
MH								6/23/2011 0000	NM	-	NM	-	PLC ERROR
WW-02	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								3/30/2011 0000	-4.6	688.78	0.00	688.78	
MH								5/16/2011 0000	-4.5	688.68	0.00	688.68	
MH								6/23/2011 0000	-4.4	688.58	0.00	688.58	
WW-03	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								3/30/2011 0000	-5.6	689.40	0.00	689.40	
MH								5/16/2011 0000	-5.8	689.60	0.00	689.60	
MH								6/23/2011 0000	-5.7	689.50	0.00	689.50	
WW-04	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								3/30/2011 0000	-7.0	683.62	0.00	683.62	
MH								5/16/2011 0000	-9.0	685.62	0.00	685.62	
MH								6/23/2011 0000	-6.9	683.52	0.00	683.52	
WW-05	1071661.368	1116370.876	NM	NM	676.14	NA	1						
MH								3/30/2011 0000	-5.6	681.74	0.00	681.74	
MH								5/16/2011 0000	-9.8	685.94	0.00	685.94	
MH								6/23/2011 0000	-7.6	683.74	0.00	683.74	

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

Filter = ([tblGWD].[LOGDATE] Between #1/1/2011# And #6/30/2011#)

Printed: 11/10/2011 3:43:43 PM
N:\11172700.00000\GIS\dB\Program\EDMS.mde/Groundwater Lev

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2011

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
WW-06	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								3/30/2011 0000	-7.1	688.99	0.00	688.99	
MH								5/16/2011 0000	-8.3	690.19	0.00	690.19	
MH								6/23/2011 0000	-7.1	688.99	0.00	688.99	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

Filter = ([tblGWD].[LOGDATE] Between #1/1/2011# And #6/30/2011#)

Printed: 11/10/2011 3:43:43 PM
N:\11172700.00000\GIS\dB\Program\EDMS.mde/Groundwater Lev

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)
3/30/2011	688.42	---	---	688.78	692.33	3.55	693.34	4.56
5/16/2011	689.32	---	---	688.68	692.76	4.08	693.80	5.12
6/23/2011	PLC Error	---	---	688.58	692.30	3.72	693.30	4.72

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)
3/30/2011	689.40	692.60	3.20	683.62	---	---
5/16/2011	689.60	692.64	3.04	685.62	---	---
6/23/2011	689.50	691.20	1.70	683.52	---	---

WELL PAIR:	WW-5	GW-32S	Level	WW-6	GW-34S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/30/2011	681.74	696.03	14.29	688.99	692.24	3.25
5/16/2011	685.94	696.54	10.60	690.19	692.19	2.00
6/23/2011	683.74	694.55	10.81	688.99	692.13	3.14

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)
3/30/2011	688.44	691.20	2.76	684.34	692.54	8.20
5/16/2011	689.55	691.70	2.15	686.07	693.98	7.91
6/23/2011	688.67	691.12	2.45	684.02	690.58	6.56

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)
3/30/2011	684.18	688.76	4.58	684.06	NM	NA
5/16/2011	686.14	691.77	5.63	686.15	696.59	10.44
6/23/2011	683.97	688.62	4.65	683.91	694.70	10.79

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)
3/30/2011	686.44	694.52	8.08	689.06	695.02	5.96
5/16/2011	686.75	694.71	7.96	689.67	695.49	5.82
6/23/2011	686.48	693.37	6.89	689.03	692.26	3.23

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: 5/17/2011 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: 2.21' Depth to Well Bottom: 14.94' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 7.9 Estimated Purge Volume (liters): 6.7

Sample ID: GW-1S Sample Time: 12:37 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

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

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:02	7.20	9.05	0.854	4.86	384	-47.2	190	2.21
12:07	7.13	9.05	0.876	3.32	281	-17.2	190	2.92
12:12	7.20	9.01	0.854	0.71	128	-77.8	190	3.00
12:17	7.22	8.95	0.860	0.34	50	-93.7	190	3.09
12:22	7.21	8.87	0.882	0.29	17	-97.7	190	3.14
12:27	7.19	8.86	0.889	0.28	12	-97.9	190	3.15
12:32	7.17	8.92	0.898	0.26	13	-97.3	190	3.19
12:37	7.16	8.85	0.903	0.24	12	-97.6	190	3.22
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/17/2011 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: 1.45' Depth to Well Bottom: 39.65' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 94.4 Estimated Purge Volume (liters): 70.0

Sample ID: GW-1D Sample Time: 14:02 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Sulfur odor

Dark Tint

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:52	7.41	9.80	0.820	0.84	18	-107.3	1000	1.45
12:57	7.41	9.82	0.818	0.15	2	-123.9	1000	1.54
13:02	7.41	9.76	0.817	0.12	2	-138.3	1000	1.54
13:07	7.41	9.63	0.814	0.10	2	-147.8	1000	1.54
13:12	7.41	9.57	0.813	0.10	1	-160.3	1000	1.54
13:17	7.40	9.50	0.811	0.11	1	-184.4	1000	1.54
13:22	7.38	9.44	0.809	0.06	1	-203.2	1000	1.54
13:27	7.38	9.36	0.806	0.05	1	-219.8	1000	1.54
13:32	7.37	9.39	0.807	0.04	1	-232.9	1000	1.54
13:37	7.36	9.38	0.806	0.03	1	-244.3	1000	1.54
13:42	7.35	9.34	0.805	0.01	1	-257.8	1000	1.54
13:47	7.34	9.27	0.803	0.01	1	-273.7	1000	1.54
13:52	7.34	9.31	0.804	0.01	1	-279.8	1000	1.54
13:57	7.34	9.28	0.803	0.00	1	-284.5	1000	1.54
14:02	7.34	9.28	0.803	0.00	1	-287.3	1000	1.54
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/16/2011 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: 2.02' Depth to Well Bottom: 13.22' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 6.9 Estimated Purge Volume (liters): 6.1

Sample ID: GW-3S Sample Time: 15:15 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:45	7.13	8.78	0.857	0.64	40	10.3	220	2.02
14:50	7.11	8.75	0.851	0.51	32	28.3	220	4.40
14:55	7.11	8.73	0.848	0.48	31	22.4	200	5.00
15:00	7.10	8.68	0.842	0.54	15	31.7	190	5.40
15:05	7.11	8.72	0.842	0.56	9.9	36.9	190	5.75
15:10	7.11	8.78	0.842	0.57	7.6	41.0	190	6.05
15:15	7.11	8.80	0.841	0.60	7.0	46.0	190	6.30
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/16/2011 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: 1.28' Depth to Well Bottom: 35.70' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 85.0 Estimated Purge Volume (liters): 45.0

Sample ID: GW-3D Sample Time: 14:15 QA/QC: MS/MSD

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:30	7.14	8.90	1.332	0.29	7.1	-73.3	1000	1.30
13:35	7.14	8.90	1.331	0.22	6.5	-79.2	1000	1.30
13:40	7.14	8.88	1.329	0.21	3.7	-84.8	1000	1.30
13:45	7.14	8.88	1.329	0.20	2.5	-88.8	1000	1.30
13:50	7.14	8.87	1.328	0.17	2.0	-91.1	1000	1.30
13:55	7.14	8.87	1.327	0.18	1.5	-94.3	1000	1.30
14:00	7.14	8.85	1.325	0.16	1.0	-96.6	1000	1.30
14:05	7.14	8.86	1.325	0.15	1.0	-98.6	1000	1.30
14:10	7.14	8.86	1.324	0.14	1.0	-100.6	1000	1.30
14:15	7.14	8.86	1.324	0.15	1.0	-102.4	1000	1.30
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/17/2011 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: 3.73' Depth to Well Bottom: 16.23' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 7.7 Estimated Purge Volume (liters): 25.0

Sample ID: GW-4S Sample Time: 9:20 VOCs/ 11:25 SVOCs & Metals QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 4/26/11, sampled VOCs from PDB at 9:20 on 5/17/11
Well historically goes dry at very low purge rates (<75ml/min). Pumped dry and sampled for SVOCs and Metals after recovery at 11:25.

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:35	8.47	7.92	0.345	1.14	64	-207.7	1000	3.73
9:40	8.53	8.09	0.347	0.56	9.8	-180.4	1000	11.24
9:45	8.51	8.61	0.352	2.38	7.2	-161.4	1000	14.28
9:50	7.99	7.92	0.345	0.29	2.2	-131.6	1000	14.90
9:55	8.13	8.03	0.341	0.25	2.3	-153.0	1000	15.80
10:00	8.28	8.27	0.321	0.67	49.5	-172.8	1000	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 ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/17/2011 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: 12.44' Depth to Well Bottom: 45.57' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 81.8 Estimated Purge Volume (liters): 10.6

Sample ID: GW-4D Sample Time: 11:04 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:08	7.56	8.89	0.950	3.56	5.9	-100.2	190	12.44
10:13	7.51	9.11	0.975	0.69	1.6	-116.5	190	13.04
10:18	7.51	9.13	0.976	0.45	1.7	-120.4	190	13.21
10:23	7.50	9.13	0.976	0.34	1.5	-126.7	190	13.35
10:28	7.49	9.06	0.975	0.31	1.5	-133.3	190	13.46
10:33	7.49	9.06	0.976	0.29	1.5	-138.0	190	13.55
10:38	7.48	9.06	0.977	0.26	1.0	-145.0	190	13.66
10:43	7.48	9.12	0.978	0.23	1.0	-150.3	190	13.76
10:48	7.48	9.11	0.978	0.21	1.0	-158.0	190	13.86
10:53	7.46	9.16	0.981	0.20	1.0	-165.9	190	13.97
10:58	7.46	9.29	0.986	0.16	1.0	-180.7	190	14.00
11:01	7.45	9.27	0.987	0.17	1.0	-185.4	190	14.03
11:04	7.42	9.25	0.995	0.14	1.0	-190.7	190	14.06
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

WELL PURGING LOG

URS Corporation

SITE NAME: Pfohl Brothers Landfill WELL NO.: GW-7S

PROJECT NO.: 11175616.00000

STAFF: Rob Murphy, Kevin McGovern

DATE(S): 5/16/2011, 5/17/11

			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.)	=	3.83	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	31.21	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)	=	5.3	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

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

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	Initial	3.0	5.0	7.0	8.0						
pH	8.16	8.14	8.05	8.06	8.07						
SPEC. COND. (mS/cm)	0.458	0.435	0.443	0.446	0.448						
DO (mg/l)	8.26	9.47	6.07	10.19	10.20						
TEMPERATURE (^{0}C)	10.21	8.82	9.88	10.07	10.08						
TURBIDITY (NTU)	8.0	6.6	32.2	108	122						
ORP (millivolts)	-76.8	-38.2	-22.9	-98.2	-102.6						
TIME	11:47	11:53	11:58	12:07	12:15						

COMMENTS:
11:40 - Fill VOCs from passive diffusion bag (PDB), PDB was installed back on 4/26/11
11:47 - Begin handbailing well.
12:15 - Well dry after removing 8.0 gallons
5/17/2011 16:55 - return to well, depth to water = 3.83 feet.
17:50 - 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): 5/16/11, 5/17/11

			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.)	=	44.77	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	15.68	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)	=	10.3	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	10.5	8"	2.60

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

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	Init	3	6	9	10.5						
pH	8.30	8.00	7.98	8.02	8.22						
SPEC. COND. (mS/cm)	0.570	0.525	0.571	0.613	0.647						
DO (mg/)	4.99	7.67	7.44	8.09	7.40						
TEMPERATURE (^{0}C)	11.03	11.00	10.97	10.82	10.47						
TURBIDITY (NTU)	10.0	25	21	32.7	34.8						
ORP (millivolts)	36.4	-31.9	-102.2	-127.6	-115.5						
TIME	10:40	10:52	11:02	11:14	11:30						

COMMENTS: 10:25 - Fill VOCs from passive diffusion bag (PDB), PDB was installed back on 4/26/11
10:40 - Begin handbailing well.
11:30 - Well dry after removing 10.5 gallons
5/17/2011 16:55 - return to well, depth to water = 59.59 feet.
17:05 - Collect sample for SVOCs and Metals, only enough volume to fill 1 metals container and 1-1 liter Amber container.

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/16/2011 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: 4.76' Depth to Well Bottom: 13.02' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 5.1 Estimated Purge Volume (liters): 7.7

Sample ID: GW-8SR Sample Time: 17:25 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
16:55	6.62	8.47	1.703	1.17	118	-68.1	300	4.76
17:00	6.61	8.56	1.713	0.38	52.1	-77.4	270	6.82
17:05	6.62	8.62	1.715	0.49	51.0	-74.3	240	7.04
17:10	6.64	8.56	1.712	0.64	54.7	-69.4	240	7.10
17:15	6.63	8.58	1.711	0.60	47.2	-69.1	240	7.10
17:20	6.63	8.58	1.710	0.55	37.4	-69.5	240	7.10
17:25	6.63	8.56	1.708	0.54	41.0	-70.1	240	7.10
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/16/2011 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: 5.06' Depth to Well Bottom: 36.54' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 77.8 Estimated Purge Volume (liters): 40.0

Sample ID: GW-8D Sample Time: 16:35 QA/QC: Duplicate (ID=Duplicate)

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:55	7.24	9.73	0.977	0.67	194	-45.4	1000	5.06
16:00	7.22	9.66	0.956	0.27	43.1	-27.0	1000	5.06
16:05	7.21	9.59	0.952	0.24	18.4	-10.7	1000	5.06
16:10	7.20	9.46	0.953	0.21	16.4	2.6	1000	5.06
16:15	7.20	9.44	0.955	0.20	7.5	8.3	1000	5.06
16:20	7.20	9.41	0.957	0.14	7.7	17.7	1000	5.06
16:25	7.19	9.38	0.958	0.14	8.0	18.0	1000	5.06
16:30	7.20	9.39	0.958	0.14	5.3	19.9	1000	5.06
16:35	7.19	9.35	0.958	0.12	5.0	27.0	1000	5.06
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/18/2011 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: 6.33' Depth to Well Bottom: 40.70' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 84.9 Estimated Purge Volume (liters): 40.0

Sample ID: GW-26D Sample Time: 13:10 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Occasional pulses of iron stained particulates in purge water.

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:30	6.87	11.40	1.917	2.10	116	-62.8	1000	6.33
12:35	6.75	11.28	1.912	0.20	23.2	-72.0	1000	6.35
12:40	6.75	11.23	1.909	0.18	7.9	-74.8	1000	6.34
12:45	6.77	11.21	1.907	0.18	16.0	-77.3	1000	6.34
12:50	6.78	11.29	1.911	0.17	49.1	-98.2	1000	6.34
12:55	6.77	11.35	1.919	0.18	14.5	-77.9	1000	6.34
13:00	6.77	11.33	1.918	0.18	1.4	-76.9	1000	6.34
13:05	6.77	11.40	1.919	0.18	1.3	-76.3	1000	6.34
13:10	6.76	11.38	1.919	0.18	2.5	-75.7	1000	6.34
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/17/2011 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: 7.81' Depth to Well Bottom: 15.54' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.8 Estimated Purge Volume (liters): 7.2

Sample ID: GW-28S Sample Time: 15:05 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:29	7.26	8.27	0.435	1.70	98	-183.0	320	7.81
14:34	7.22	8.38	0.432	2.10	37	-195.0	180	8.92
14:39	7.22	8.37	0.429	1.69	26	-200.8	180	8.98
14:44	7.22	8.36	0.432	1.28	18.3	-202.2	180	8.97
14:49	7.22	8.36	0.436	1.18	13.3	-203.7	180	8.97
14:54	7.23	8.38	0.439	1.03	8.8	-203.0	180	8.97
14:59	7.23	8.39	0.443	0.87	7.4	-202.9	180	8.97
15:02	7.23	8.38	0.448	0.80	7.1	-203.4	180	8.97
15:05	7.22	8.38	0.448	0.77	7.2	-203.5	180	8.97
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/17/2011 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: 5.70' Depth to Well Bottom: 20.02' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 8.8 Estimated Purge Volume (liters): 10.3

Sample ID: GW-29S Sample Time: 16:25 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:55	7.00	8.60	0.862	1.51	156	-83.1	1000	5.70
16:00	7.02	8.51	0.852	0.24	156	-94.1	360	10.12
16:05	7.07	8.64	0.852	0.28	74	-100.2	175	9.85
16:10	7.05	8.83	0.864	0.32	38	-105.1	175	9.42
16:15	7.01	8.87	0.870	0.30	37	-107.8	175	9.10
16:20	6.99	8.86	0.874	0.29	25	-108.8	175	8.91
16:25	6.99	8.84	0.875	0.28	22	-109.6	175	8.50
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/18/2011 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: 7.25' Depth to Well Bottom: 17.97' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 6.6 Estimated Purge Volume (liters): 25.0

Sample ID: GW-30S Sample Time: 8:29 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:04	6.69	8.55	2.854	0.74	95.2	-94.0	1000	7.25
8:09	6.60	8.40	2.632	0.26	11.6	-95.2	1000	7.38
8:14	6.62	8.37	2.640	0.22	3.9	-99.7	1000	7.38
8:19	6.62	8.37	2.645	0.23	3.9	-102.3	1000	7.40
8:24	6.62	8.37	2.649	0.24	2.4	-104.4	1000	7.40
8:29	6.62	8.40	2.645	0.24	2.0	-105.9	1000	7.40
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/18/2011 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: 2.06' Depth to Well Bottom: 9.57' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.6 Estimated Purge Volume (liters): 6.2

Sample ID: GW-31S Sample Time: 9:35 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:50	7.24	10.65	0.639	2.22	977	-7.7	170	2.06
8:55	7.22	10.72	0.544	1.78	208	15.9	150	3.47
9:00	7.20	10.95	0.550	1.09	196	23.5	140	3.68
9:05	7.19	11.14	0.571	0.67	172	30.6	130	3.82
9:10	7.18	10.99	0.579	0.57	99	28.2	130	4.04
9:15	7.18	10.95	5.840	0.56	103	26.5	130	4.17
9:20	7.18	10.94	0.563	0.56	78.2	24.0	130	4.34
9:25	7.18	10.94	0.572	0.56	49.3	26.1	130	4.47
9:30	7.17	10.89	0.587	0.52	32.0	24.4	130	4.58
9:35	7.17	10.89	0.589	0.53	39.0	16.5	130	4.71
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/18/2011 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: 2.00' Depth to Well Bottom: 9.93' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.9 Estimated Purge Volume (liters): 7.7

Sample ID: GW-32S Sample Time: 10:57 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:12	7.45	12.05	0.517	2.63	163	54.5	170	2.00
10:17	7.38	11.73	0.484	1.42	17.9	67.3	170	2.45
10:22	7.36	11.46	0.476	0.96	6.2	78.4	170	2.52
10:27	7.36	11.19	0.467	0.64	2.5	85.5	170	2.56
10:32	7.35	11.29	0.467	0.51	2.1	90.2	170	2.59
10:37	7.34	11.39	0.467	0.41	1.7	97.5	170	2.62
10:42	7.34	11.00	0.461	0.32	1.4	104.1	170	2.62
10:47	7.35	11.02	0.461	0.27	1.0	103.5	170	2.62
10:52	7.35	11.07	0.461	0.23	1.1	103.3	170	2.62
10:57	7.35	11.17	0.463	0.23	0.8	104.1	170	2.62
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/18/2011 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: 2.83' Depth to Well Bottom: 8.21' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 3.3 Estimated Purge Volume (liters): 6.1

Sample ID: GW-33S Sample Time: 14:17 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:32	7.07	14.91	0.654	1.93	5.1	68.3	140	2.83
13:37	7.01	14.61	0.622	0.93	5.1	91.0	140	3.65
13:42	7.01	13.84	0.597	0.52	3.7	119.4	140	4.11
13:47	6.99	13.82	0.640	0.59	3.6	126.8	140	4.34
13:52	7.01	14.30	0.617	0.80	1.8	133.7	130	4.48
13:57	6.98	13.87	0.640	0.71	2.4	141.9	130	4.57
14:02	7.01	13.63	0.624	0.74	1.3	140.8	130	4.69
14:07	7.02	13.62	0.611	0.72	1.1	142.8	130	4.75
14:12	7.02	13.50	0.610	0.67	1.0	143.5	130	4.82
14:17	7.02	13.27	0.609	0.65	1.0	148.7	130	4.86
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 ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/17/2011 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: 2.60' Depth to Well Bottom: 10.00' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.6 Estimated Purge Volume (liters): 6.7

Sample ID: GW-34S Sample Time: 8:47 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:12	6.96	7.95	0.940	1.73	197	-69.7	190	2.60
8:17	6.95	7.89	0.925	0.82	134	-74.4	190	3.85
8:22	7.02	7.98	0.788	0.70	47	-60.3	190	4.11
8:27	7.03	8.07	0.773	0.71	29	-50.0	190	4.21
8:32	7.03	8.10	0.766	0.79	17	-39.4	190	4.31
8:37	7.03	8.12	0.761	0.98	15	-32.5	190	4.37
8:42	7.03	8.16	0.749	1.04	15	-26.8	190	4.43
8:47	7.02	8.17	0.746	1.02	14	-24.4	190	4.46
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 5/18/2011 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: 2.49' Depth to Well Bottom: 7.46' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 3.1 Estimated Purge Volume (liters): 6.8

Sample ID: GW-35S Sample Time: 12:10 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:30	7.22	14.95	0.510	1.45	15.6	72.4	220	2.49
11:35	7.26	14.36	0.390	0.66	3.8	79.8	180	2.93
11:40	7.27	14.30	0.383	0.60	1.9	69.0	160	2.93
11:45	7.28	14.25	0.378	0.55	1.6	46.7	160	2.93
11:50	7.29	13.91	0.373	0.51	0.9	42.2	160	2.94
11:55	7.29	13.88	0.374	0.43	0.9	37.7	160	2.94
12:00	7.29	14.07	0.377	0.39	0.8	33.9	160	2.94
12:05	7.29	14.62	0.382	0.37	0.9	32.8	160	2.94
12:10	7.29	14.52	0.382	0.37	0.8	33.7	160	2.94
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: *Pfohl Brothers* Project Number: *11175616.00000*

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

Date of Sampling: *May 16, 2011*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-7D	GW-7D	39.0	39.7	10:25	Groundwater	VOCs	Not Applicable
GW-7S	GW-7S	20.1	30.3	11:40	Groundwater		Not Applicable
GW-3D	GW-3D	85.0	45.0	14:15	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-3D-MS	GW-3D	85.0	45.0	14:15	Matrix Spike		Not Applicable
GW-3D-MSD	GW-3D	85.0	45.0	14:15	Matrix Spike Duplicate		Not Applicable
GW-3S	GW-3S	6.9	6.1	15:15	Groundwater		Not Applicable
GW-8D	GW-8D	77.8	40.0	16:35	Groundwater		Not Applicable

Additional Comments: GW-7D and GW-7S were sampled for VOCs using passive diffusion bags.
GW-7D and GW-7S were purged dry following collection of the VOC samples.
All other wells were purged using low flow methods until parameter stabilization.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: *Pfohl Brothers* Project Number: *11175616.00000*

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

Date of Sampling: *November 1, 2010*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
DUPLICATE	GW-8D	77.8	40.0	16:35	Blind Duplicate	VOCs/SVOCs/ Metals	Not Applicable
GW-8SR	GW-8SR	5.1	7.7	17:25	Groundwater		Not Applicable
TB-051611	---	---	---	---	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* Project Number: *11175616.00000*

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

Date of Sampling: *May 17, 2011*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-34S	GW-34S	4.6	6.7	8:47	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-4S	GW-4S	7.7	25.0	9:20 & 11:25	Groundwater		Not Applicable
GW-4D	GW-4D	81.8	10.6	11:04	Groundwater		Not Applicable
GW-1S	GW-1S	7.9	6.7	12:37	Groundwater		Not Applicable
GW-1D	GW-1D	94.4	70.0	14:02	Groundwater		Not Applicable
GW-28S	GW-28S	4.8	7.2	15:05	Groundwater		Not Applicable
GW-29S	GW-29S	8.8	10.3	16:25	Groundwater		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* Project Number: *11175616.00000*

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

Date of Sampling: *May 17, 2011*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-7D	GW-7D	39.0	39.7	17:05	Groundwater	SVOCs/ Metals	Not Applicable
GW-7S	GW-7S	20.1	30.3	17:50	Groundwater		Not Applicable
TB-051711	---	---	---	---	Trip Blank	VOCs	Not Applicable

Additional Comments: GW-7D and GW-7S were sampled for SVOCs and Metals after recharging overnight.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: *Pfohl Brothers* Project Number: *11175616.00000*

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

Date of Sampling: *May 18, 2011*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-30S	GW-30S	6.6	25.0	8:29	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-31S	GW-31S	4.6	6.2	9:35	Groundwater		Not Applicable
GW-32S	GW-32S	4.9	7.7	10:57	Groundwater		Not Applicable
GW-35S	GW-35S	3.1	6.8	12:10	Groundwater		Not Applicable
GW-26D	GW-26D	84.9	40.0	13:10	Groundwater		Not Applicable
GW-33S	GW-33S	3.3	6.1	14:17	Groundwater		Not Applicable
TB-051811	---	---	---	---	Trip Blank	VOCs	Not Applicable

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

APPENDIX E

HISTORICAL ANALYTICAL RESULTS

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

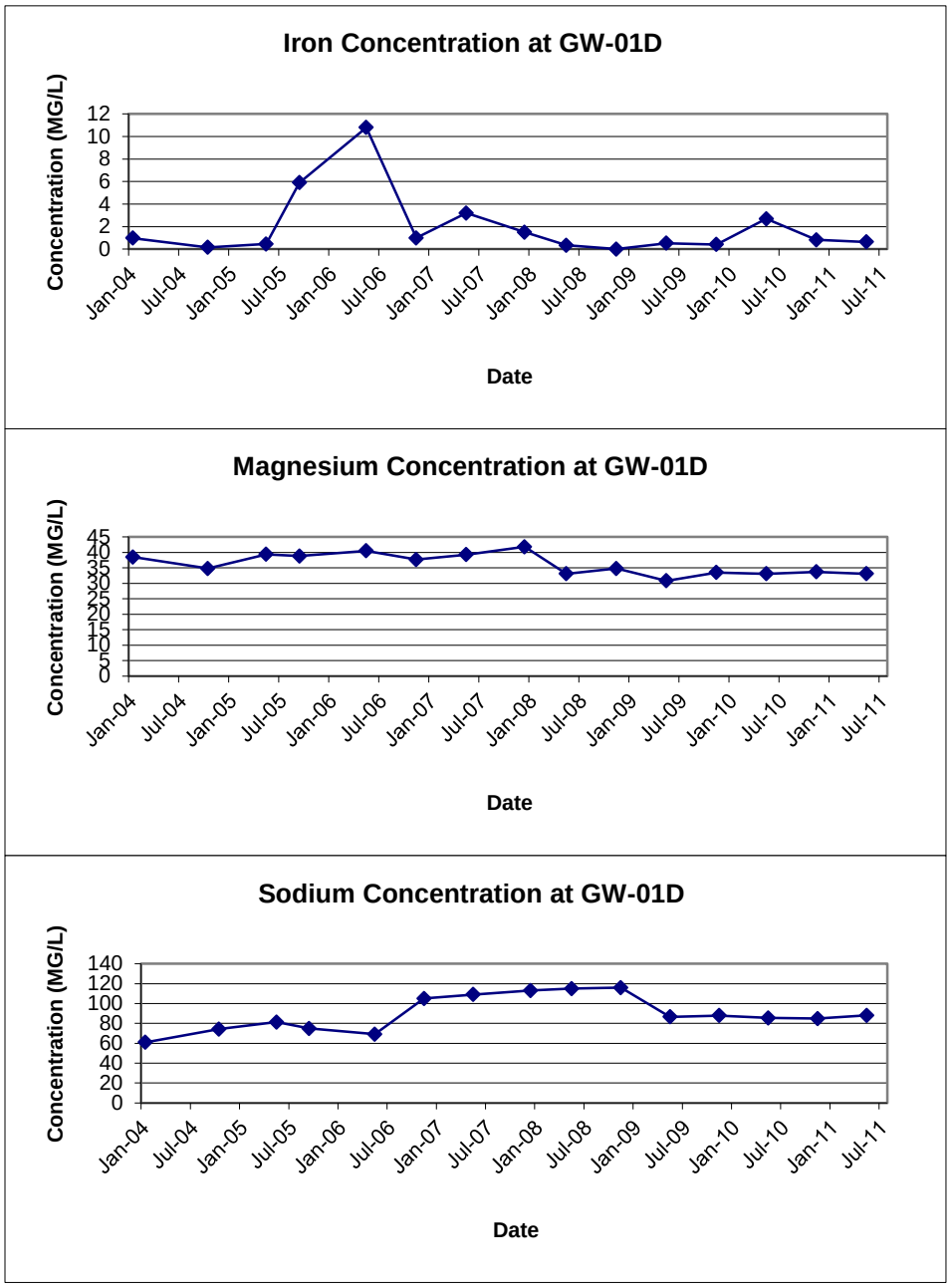


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-1S

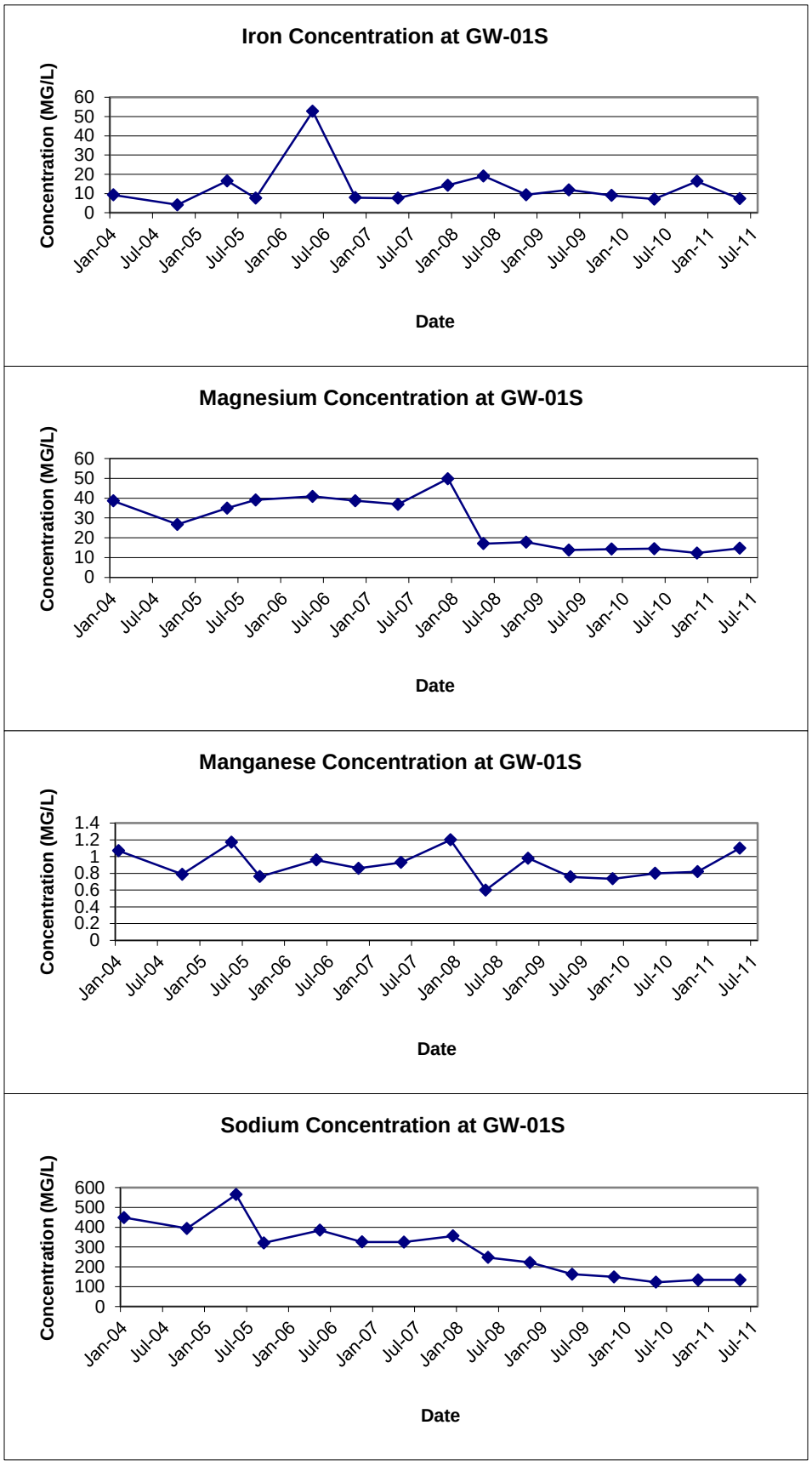


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3D

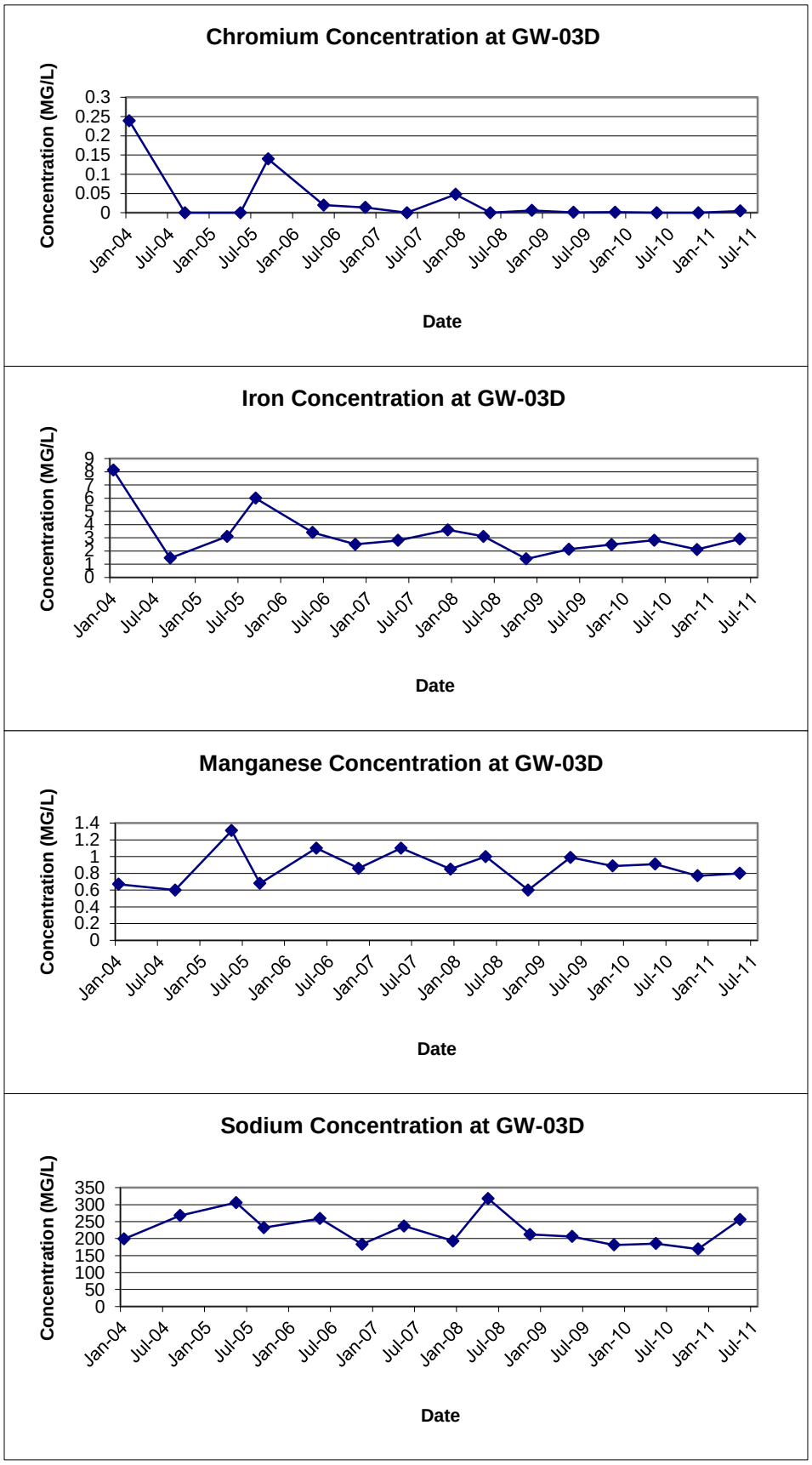


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

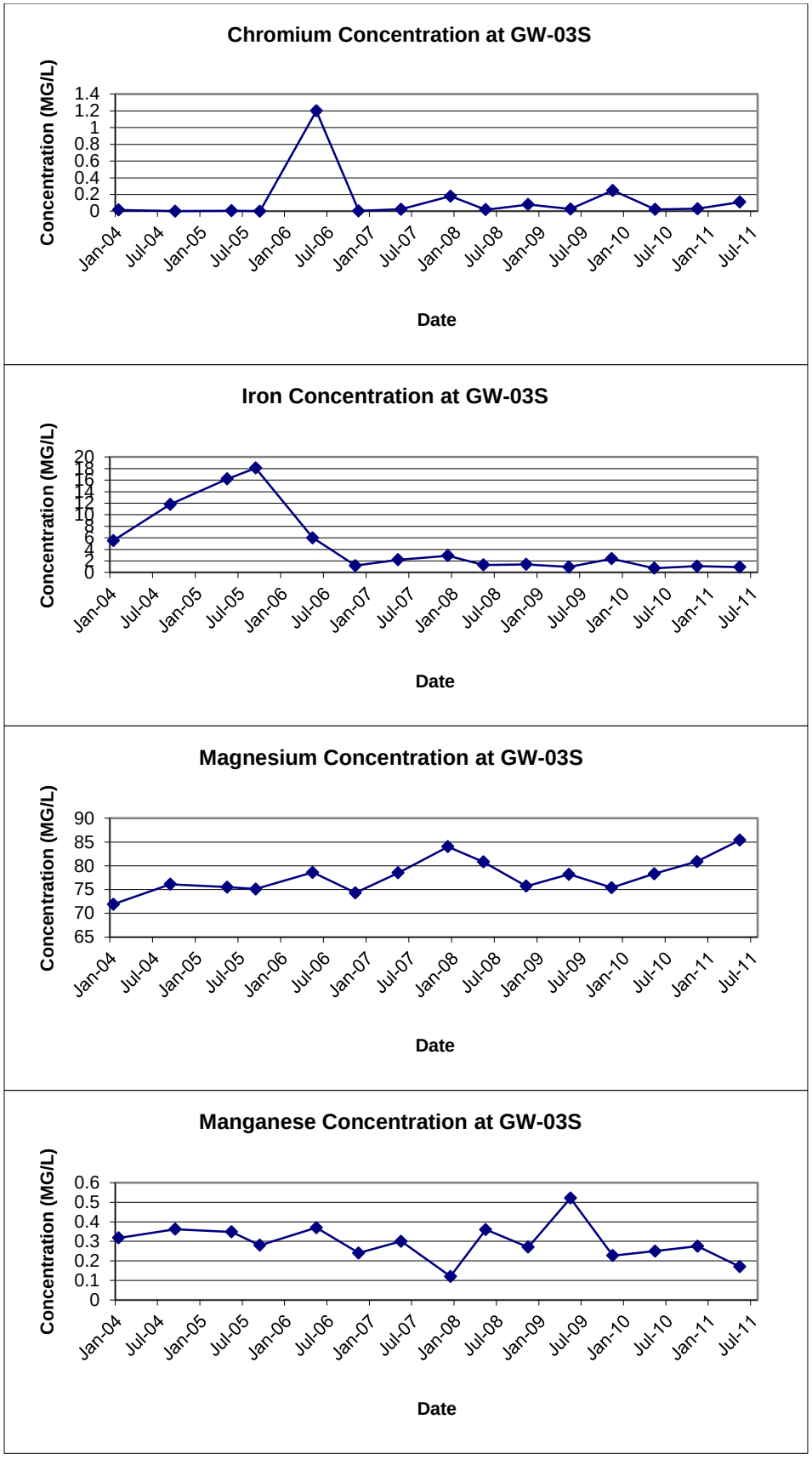


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

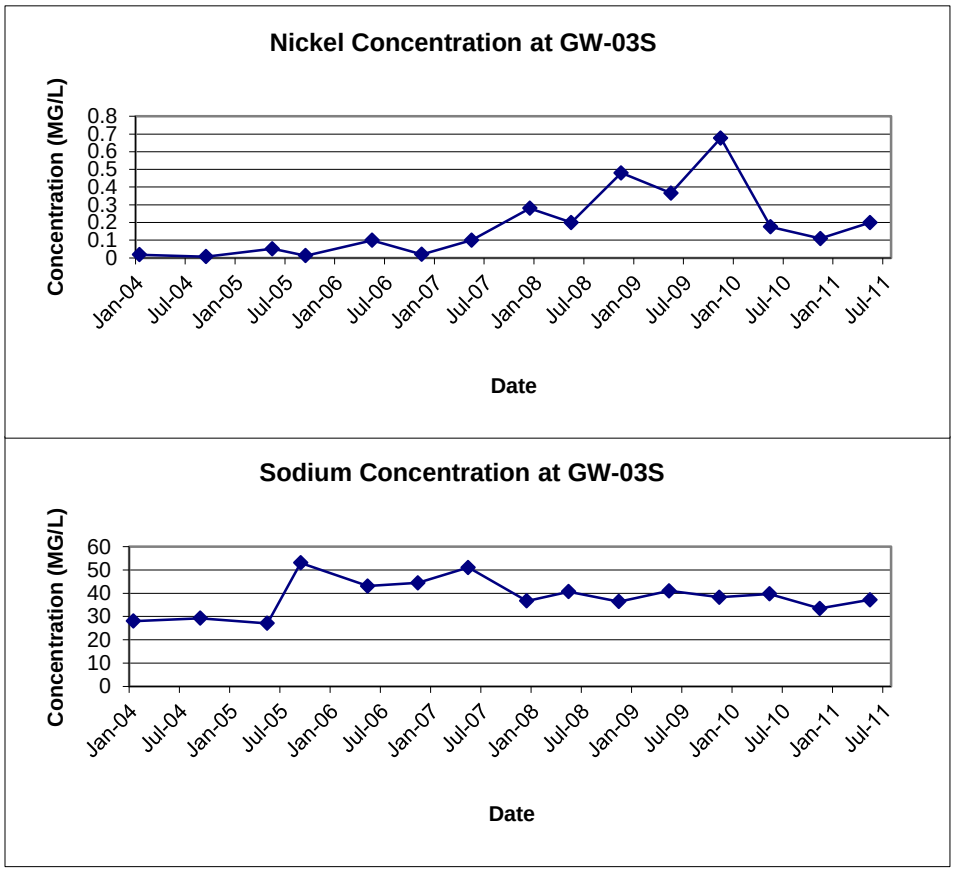


FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-4D

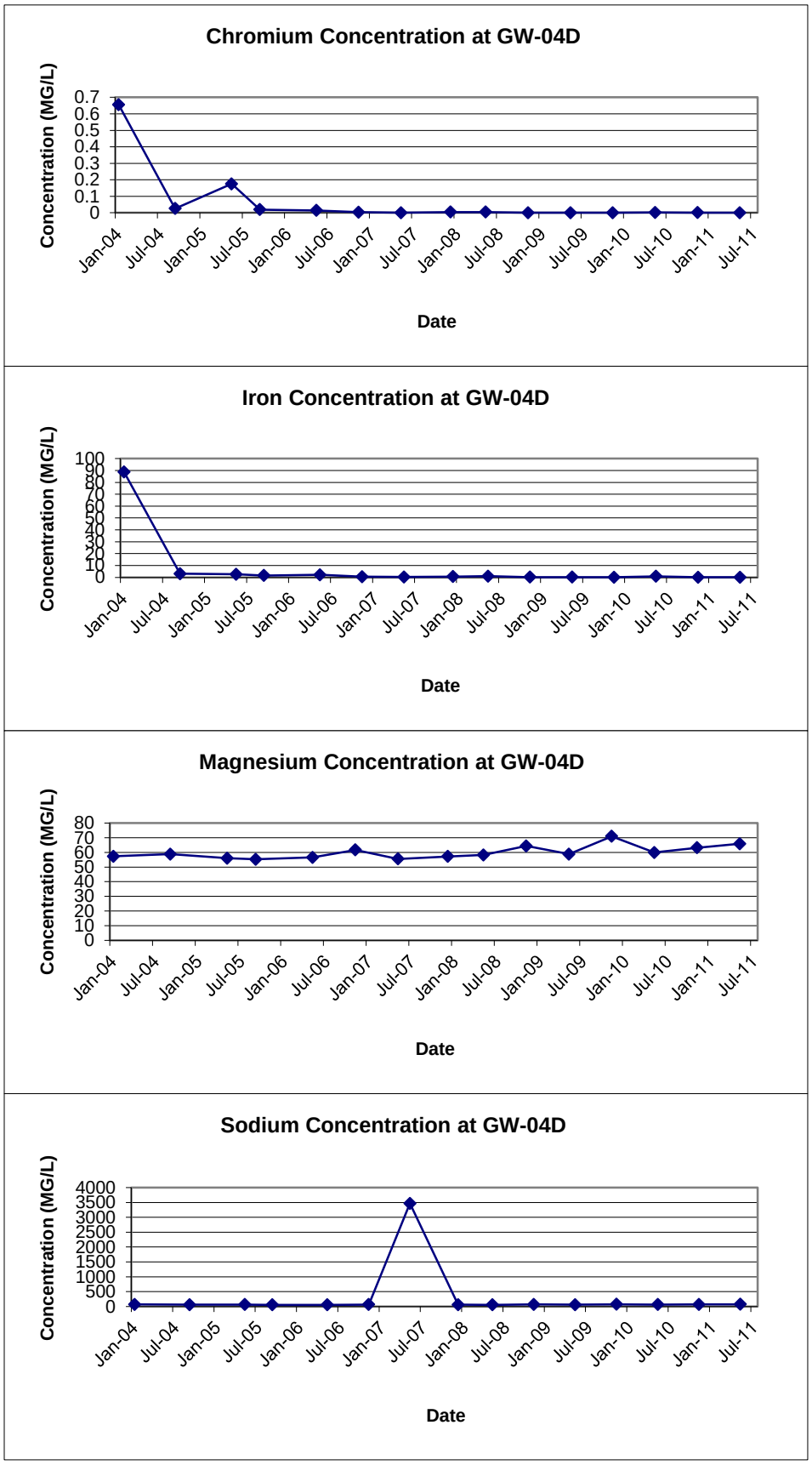


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-4S

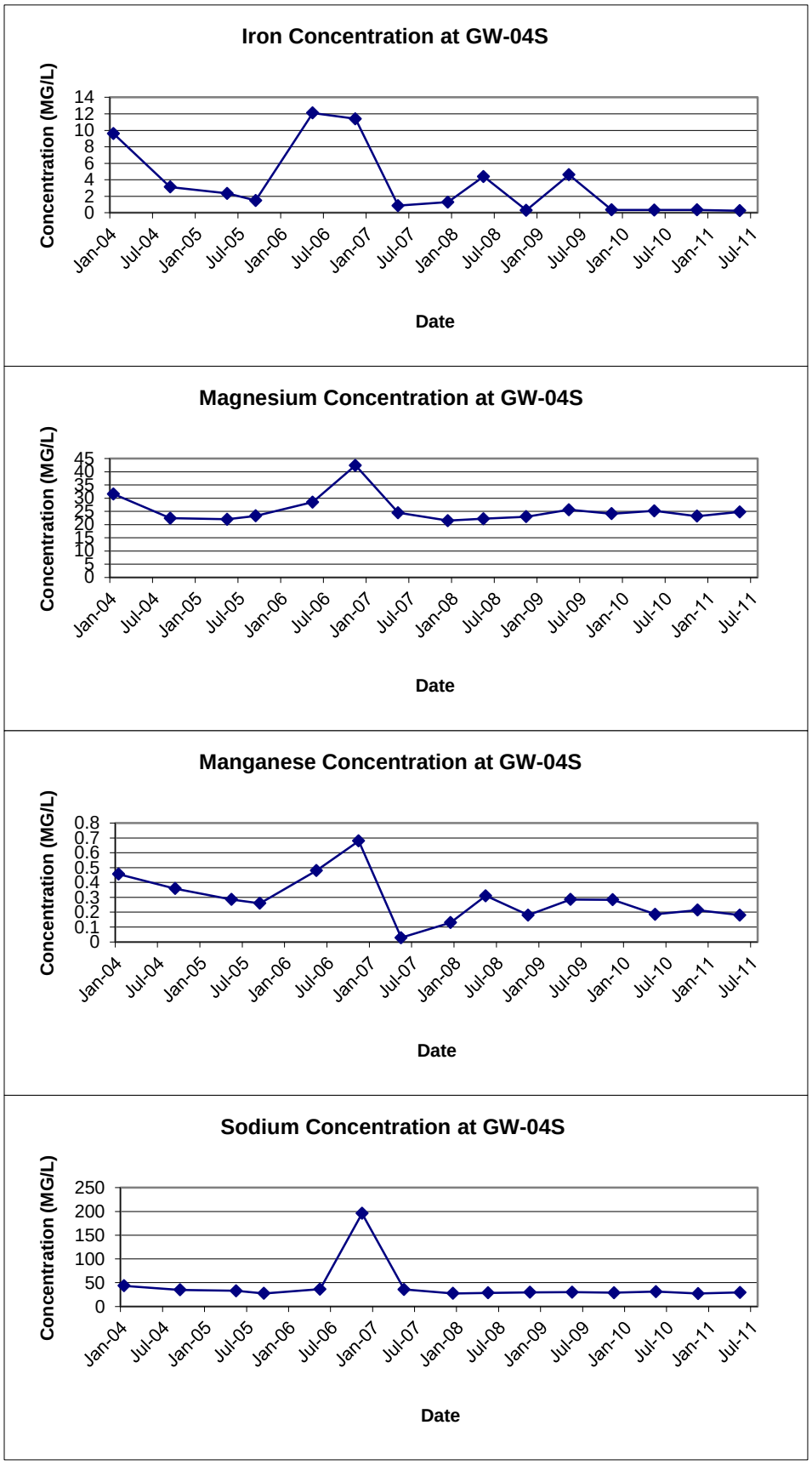


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7D

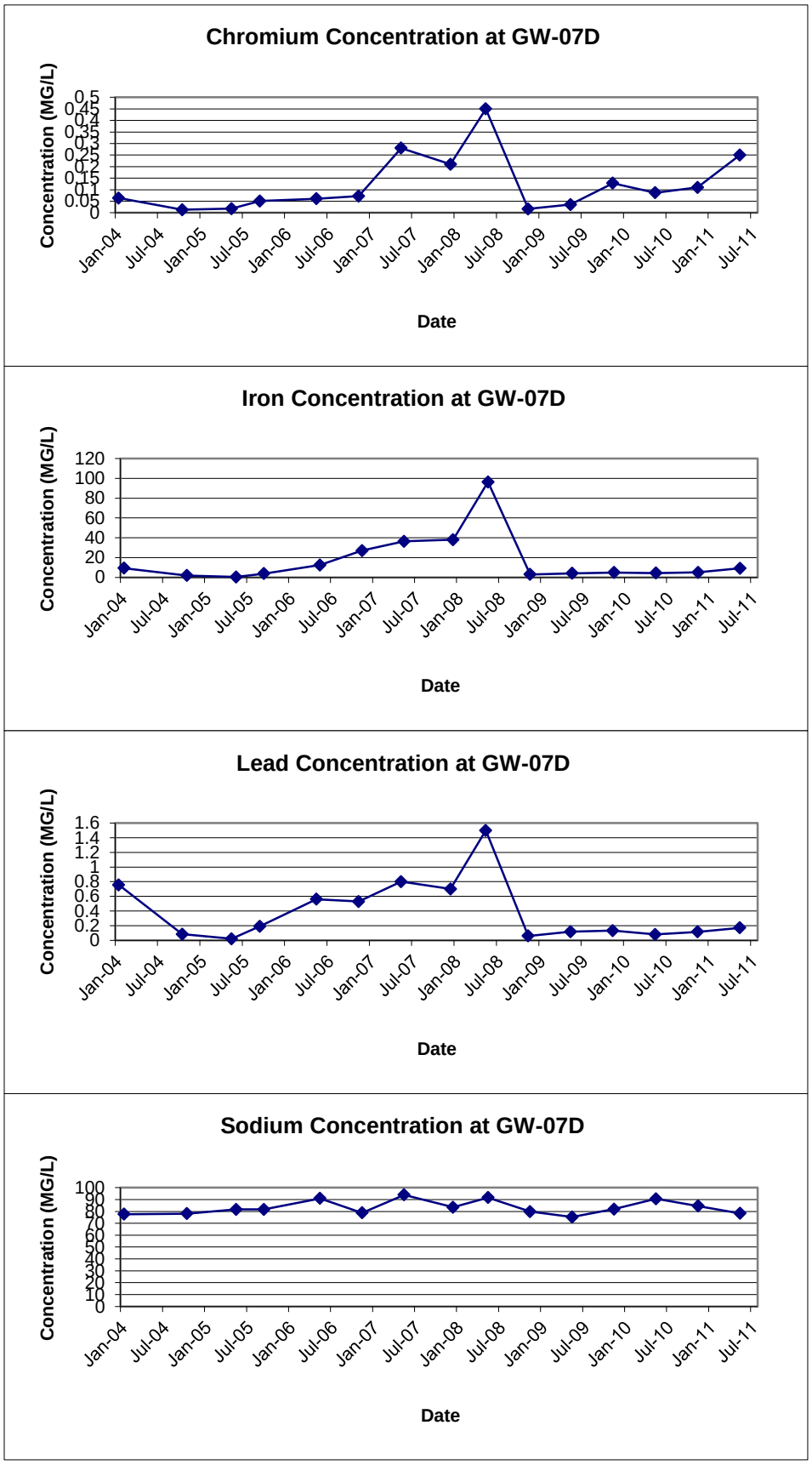


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7S

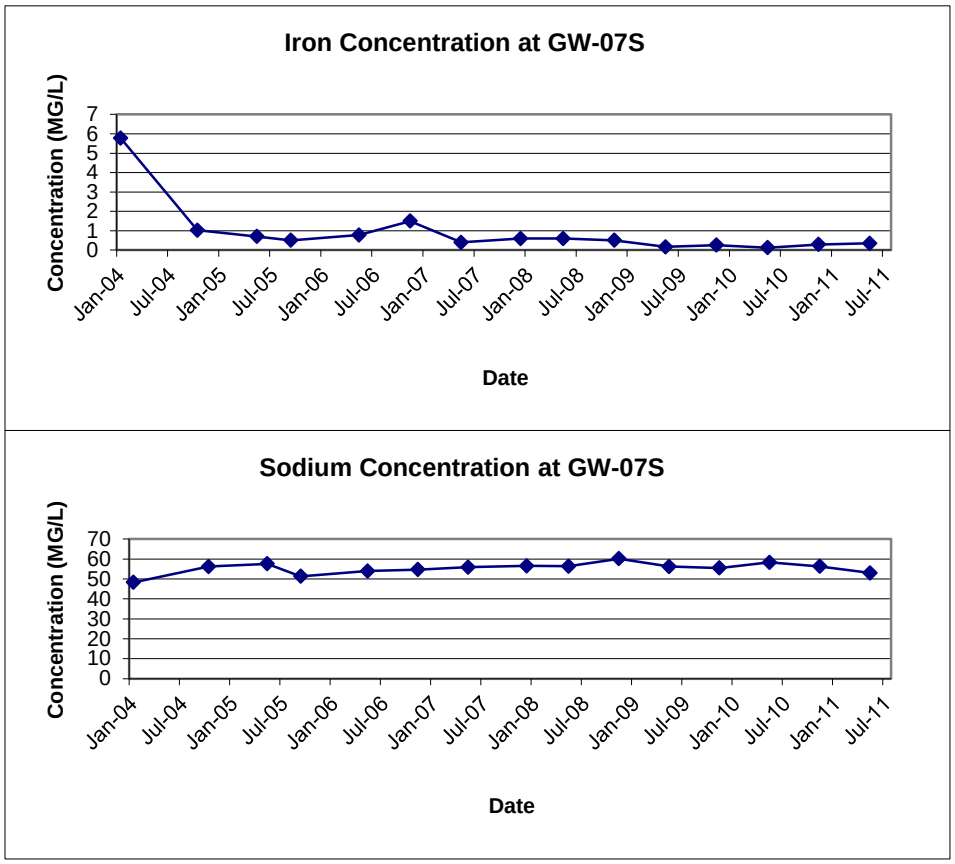


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8D

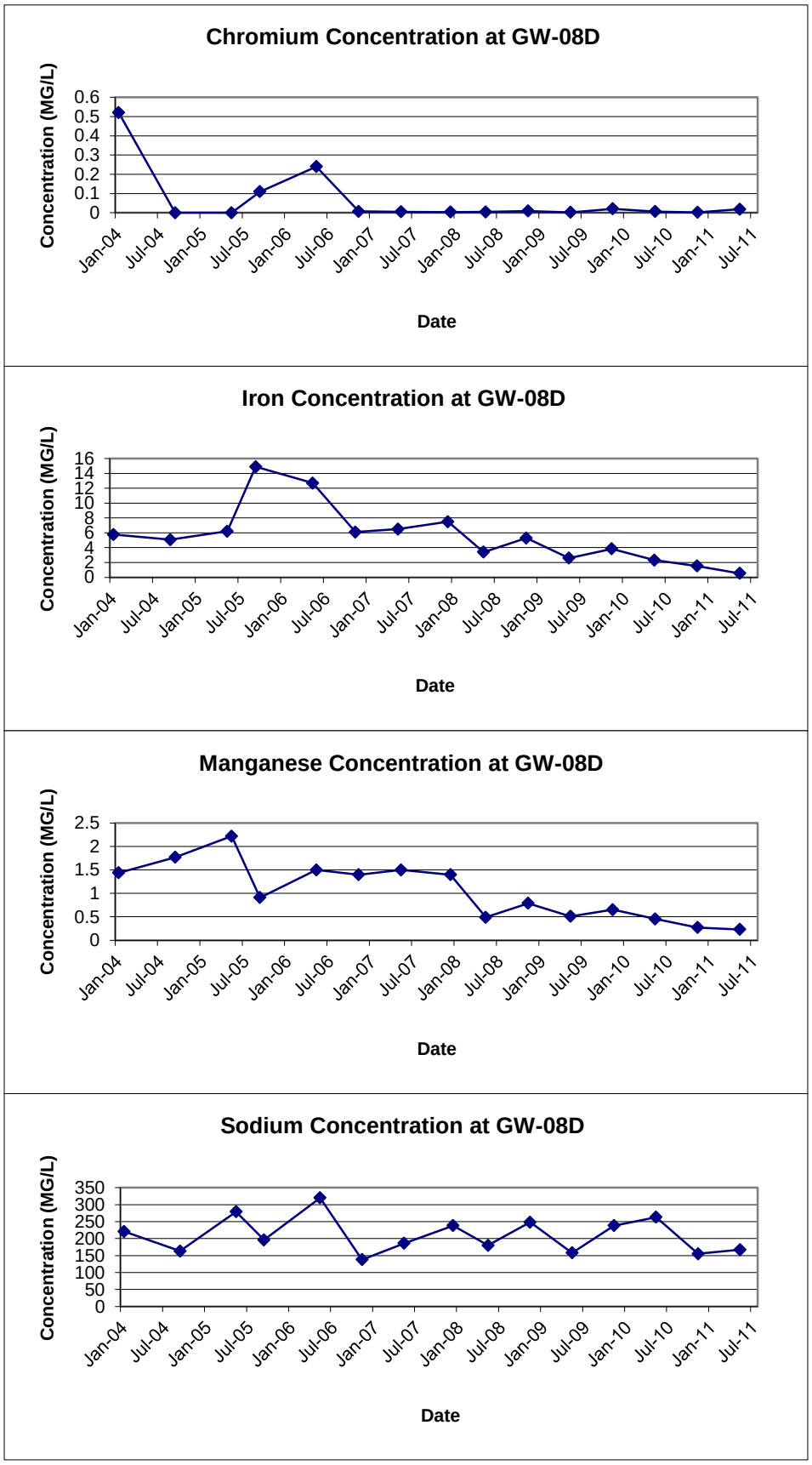


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8SR

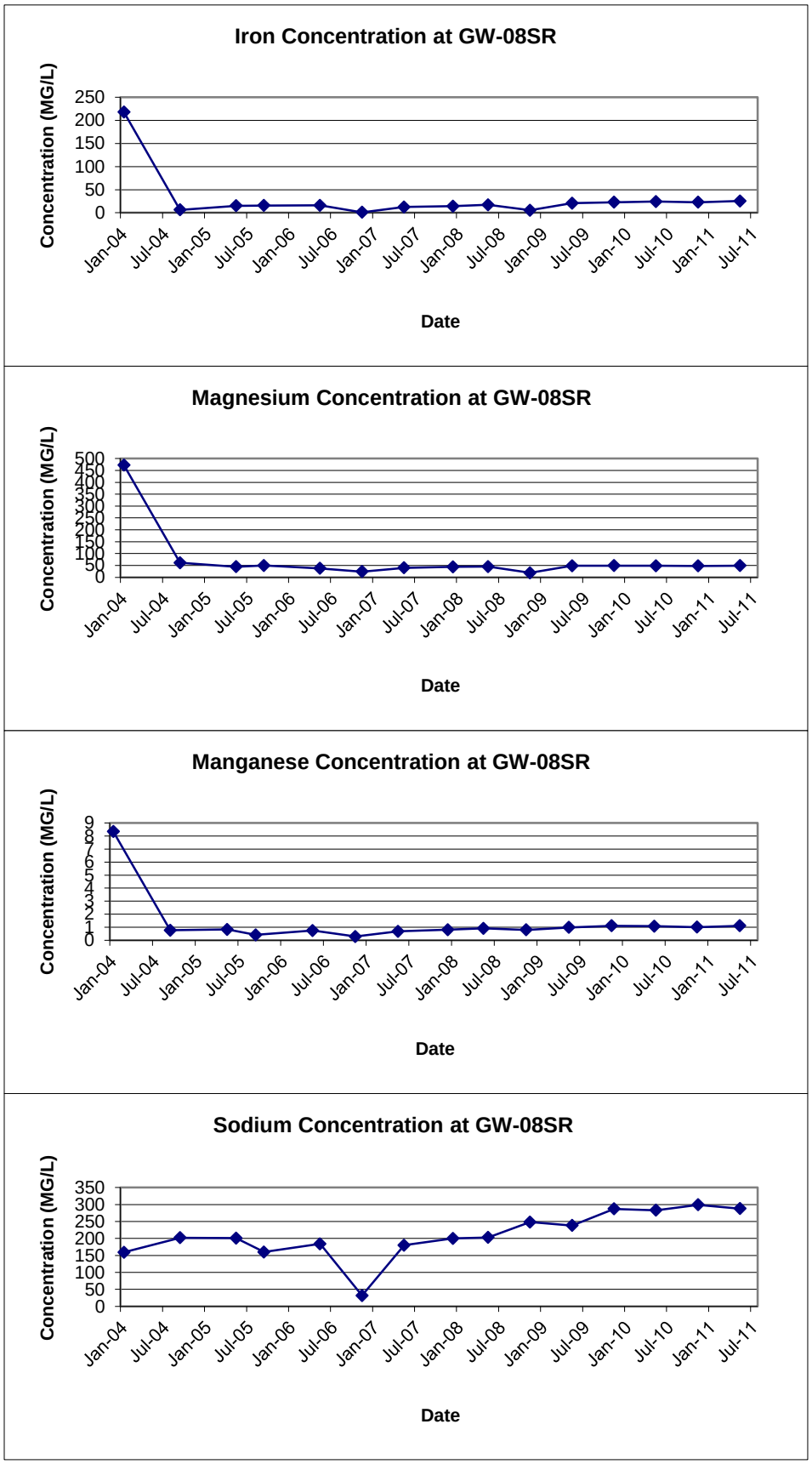


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

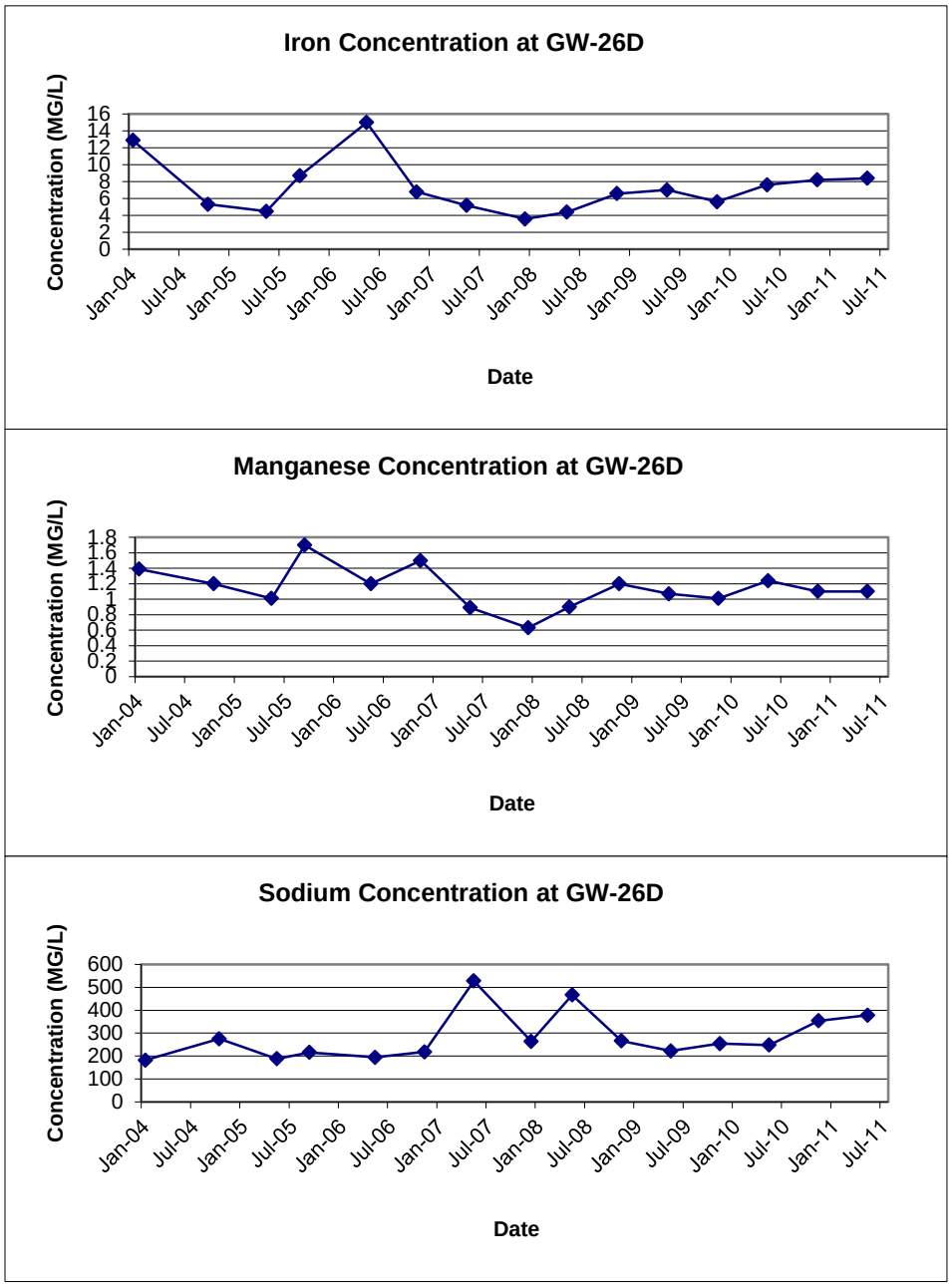


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

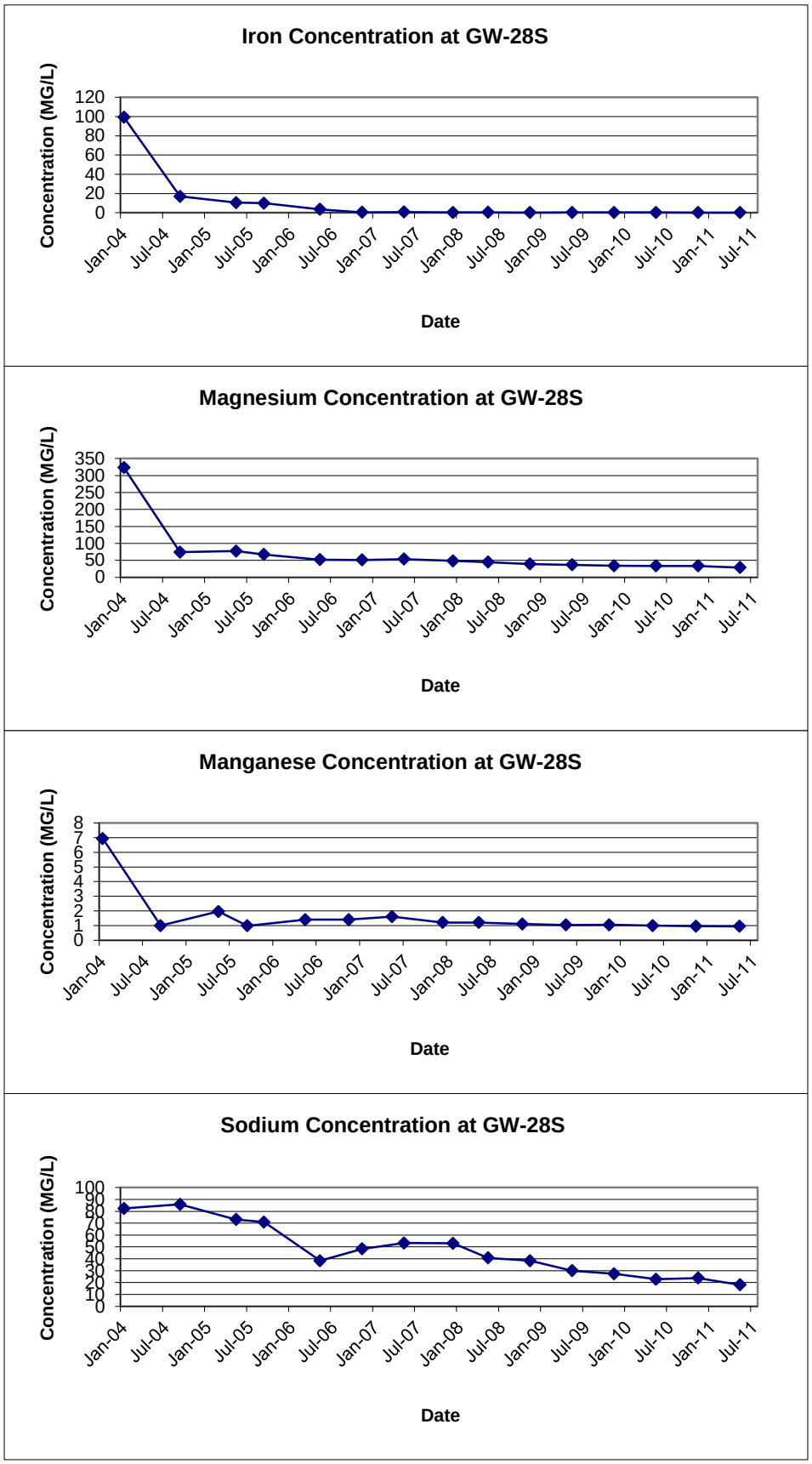


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

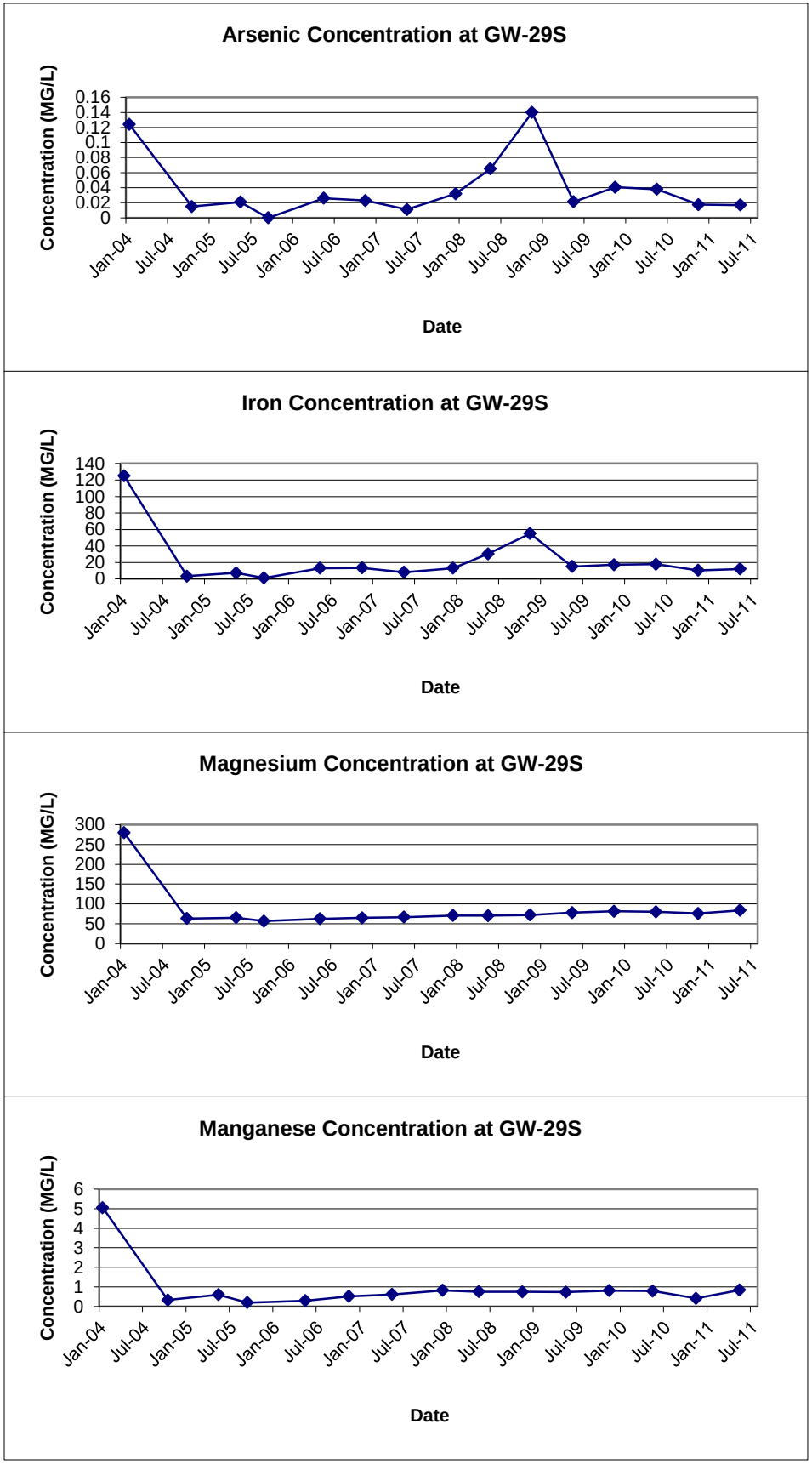


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

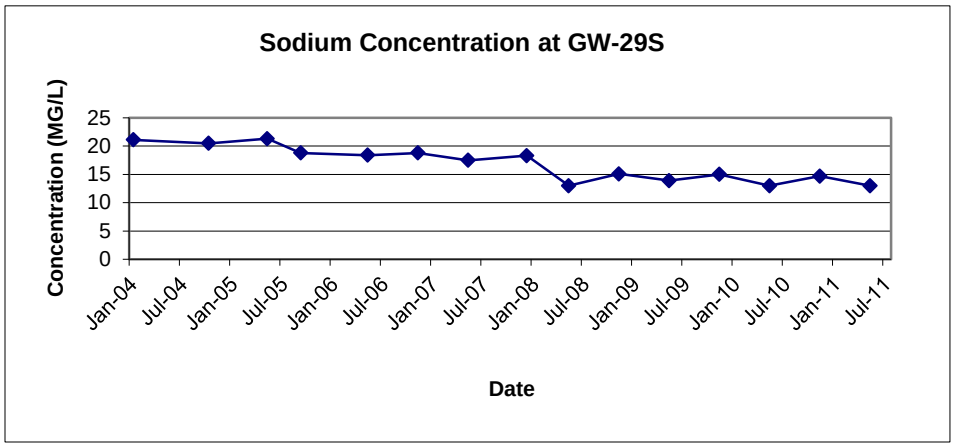


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

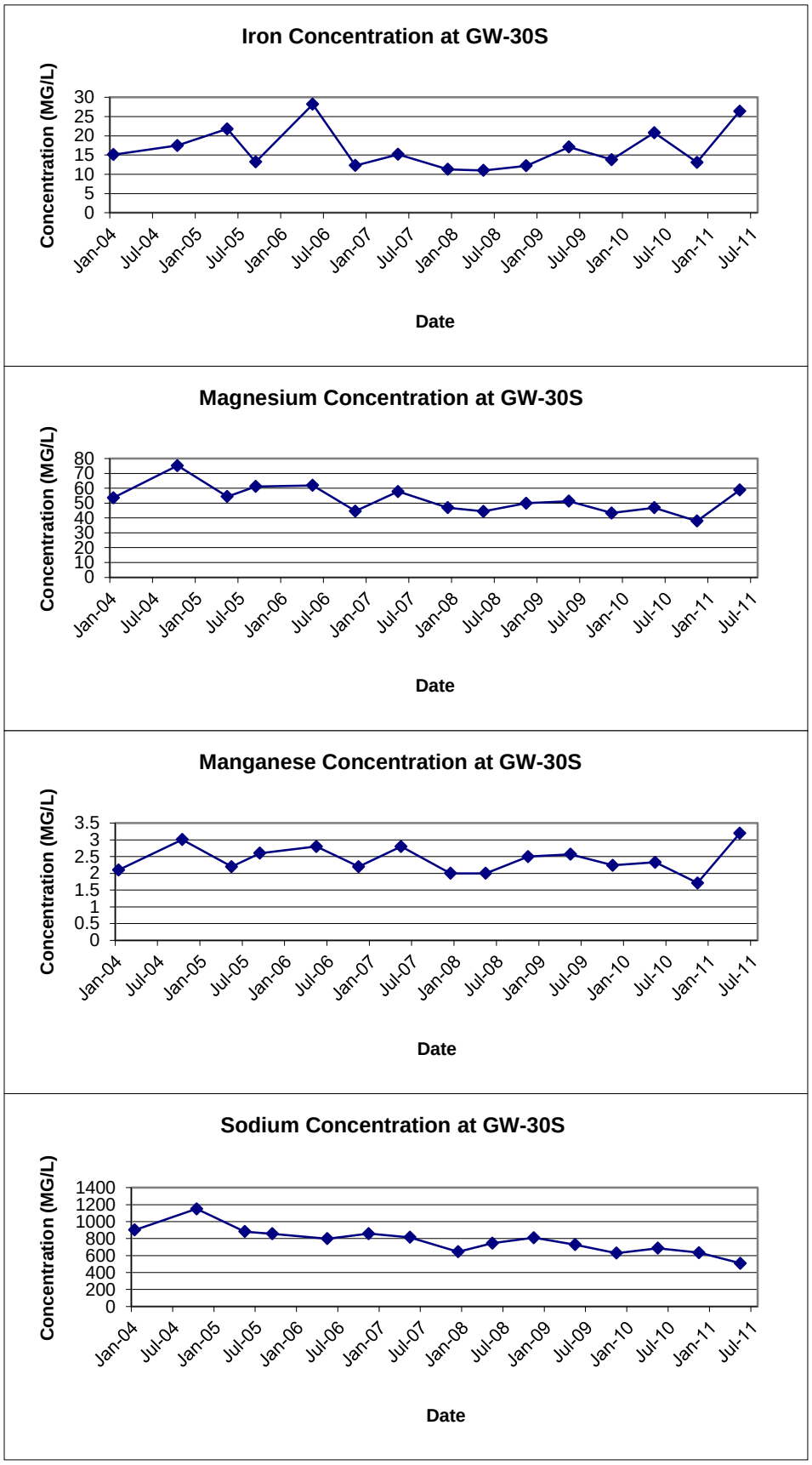


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

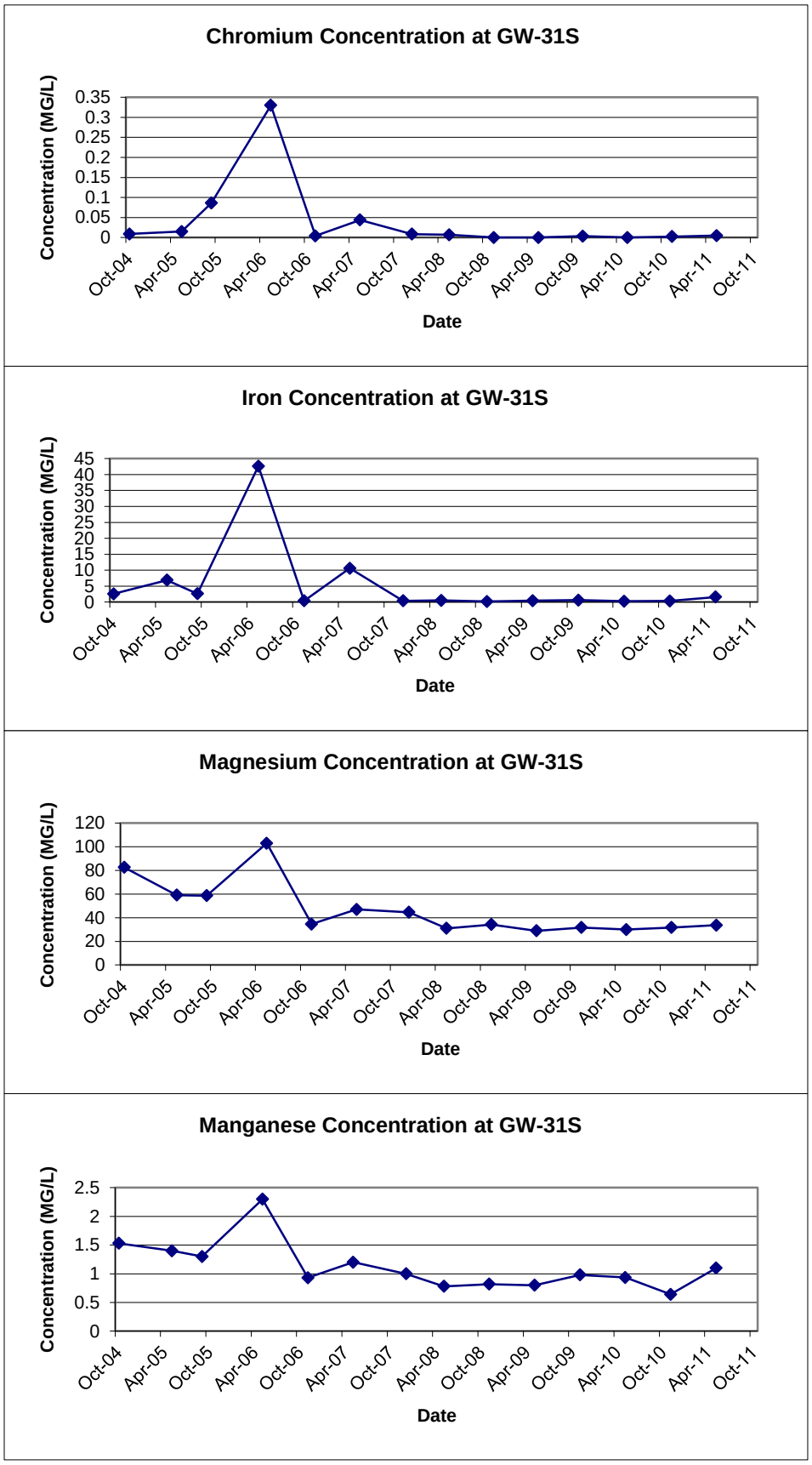


FIGURE E-16
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-32S

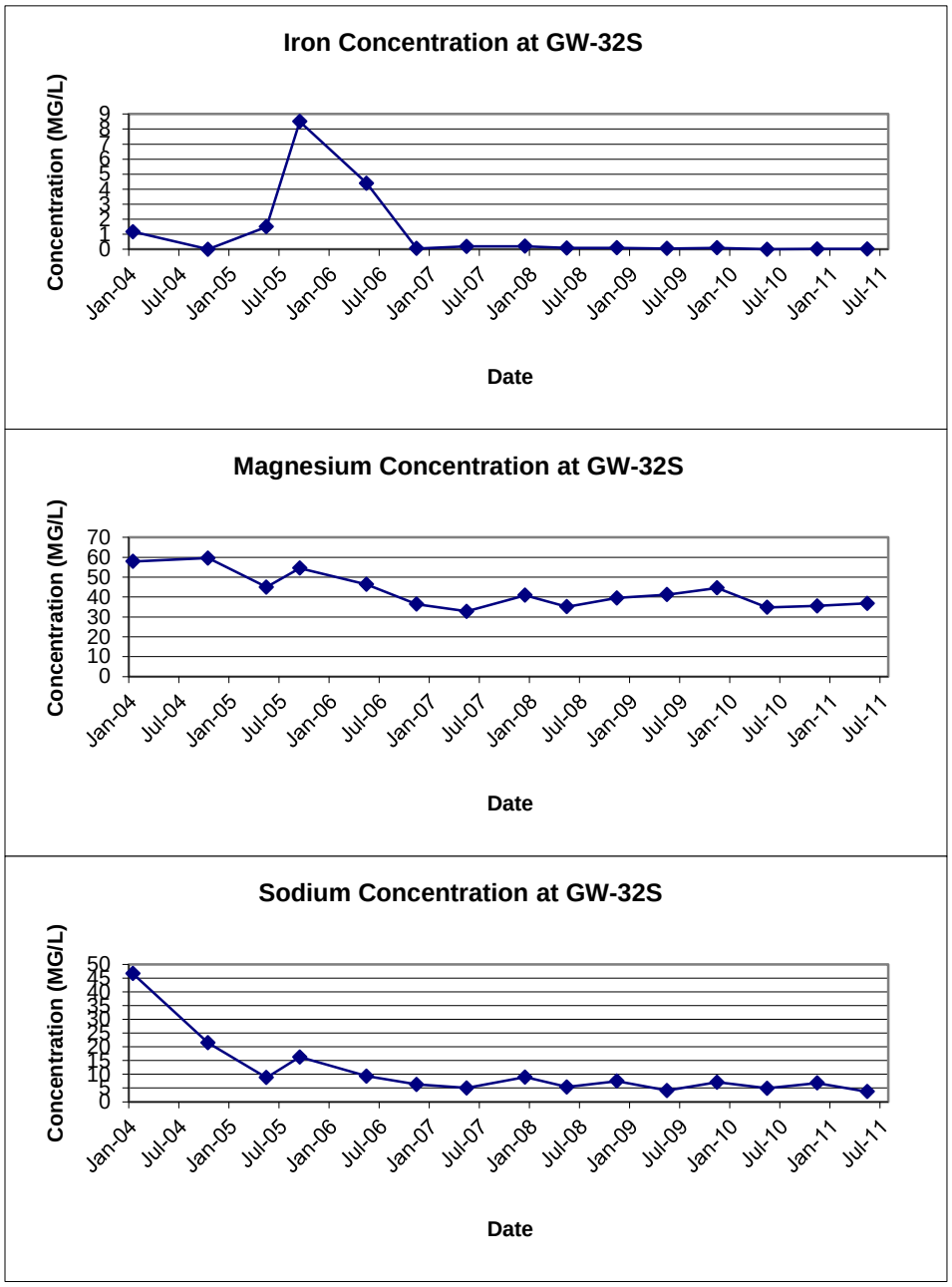


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

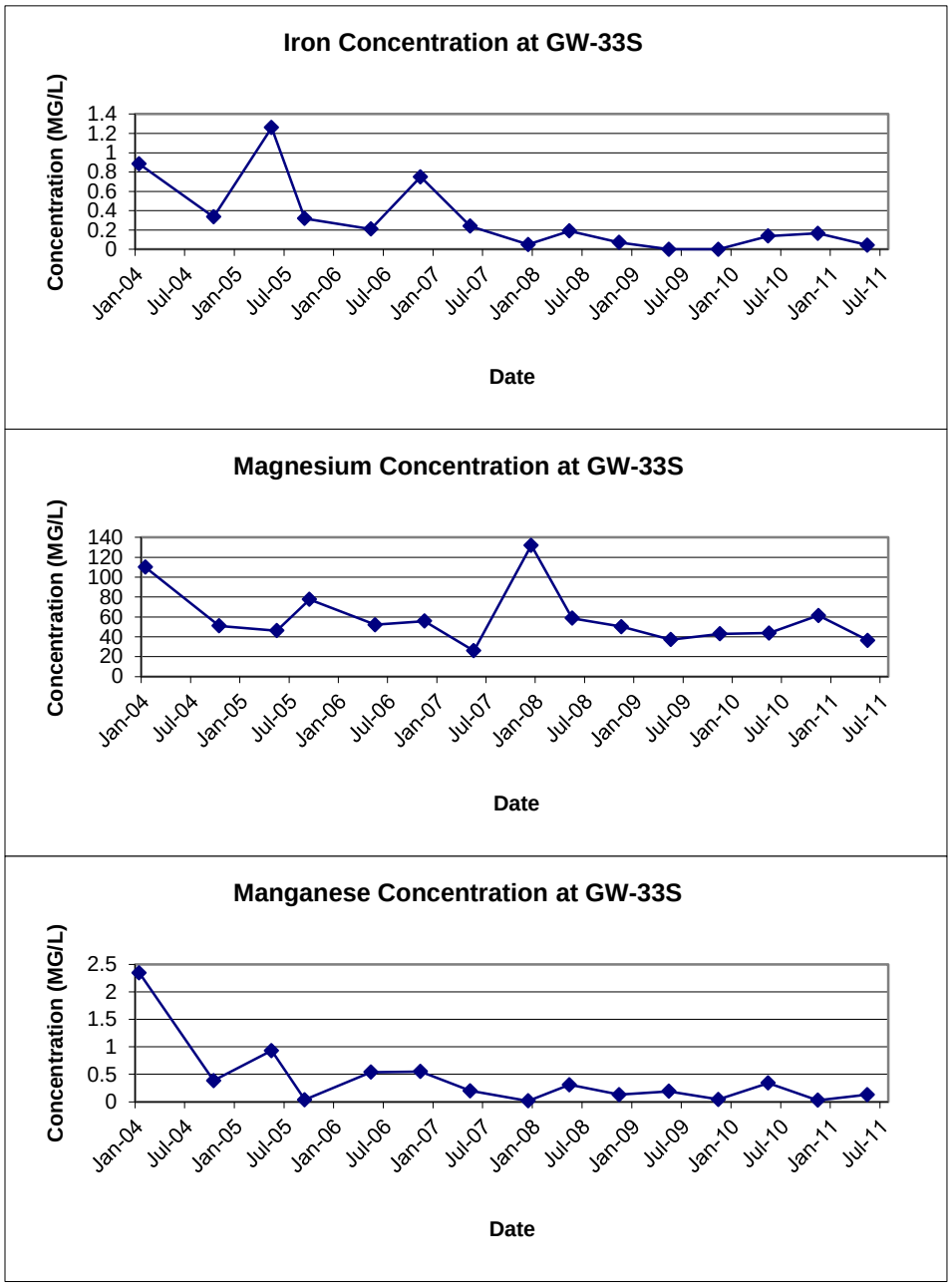


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

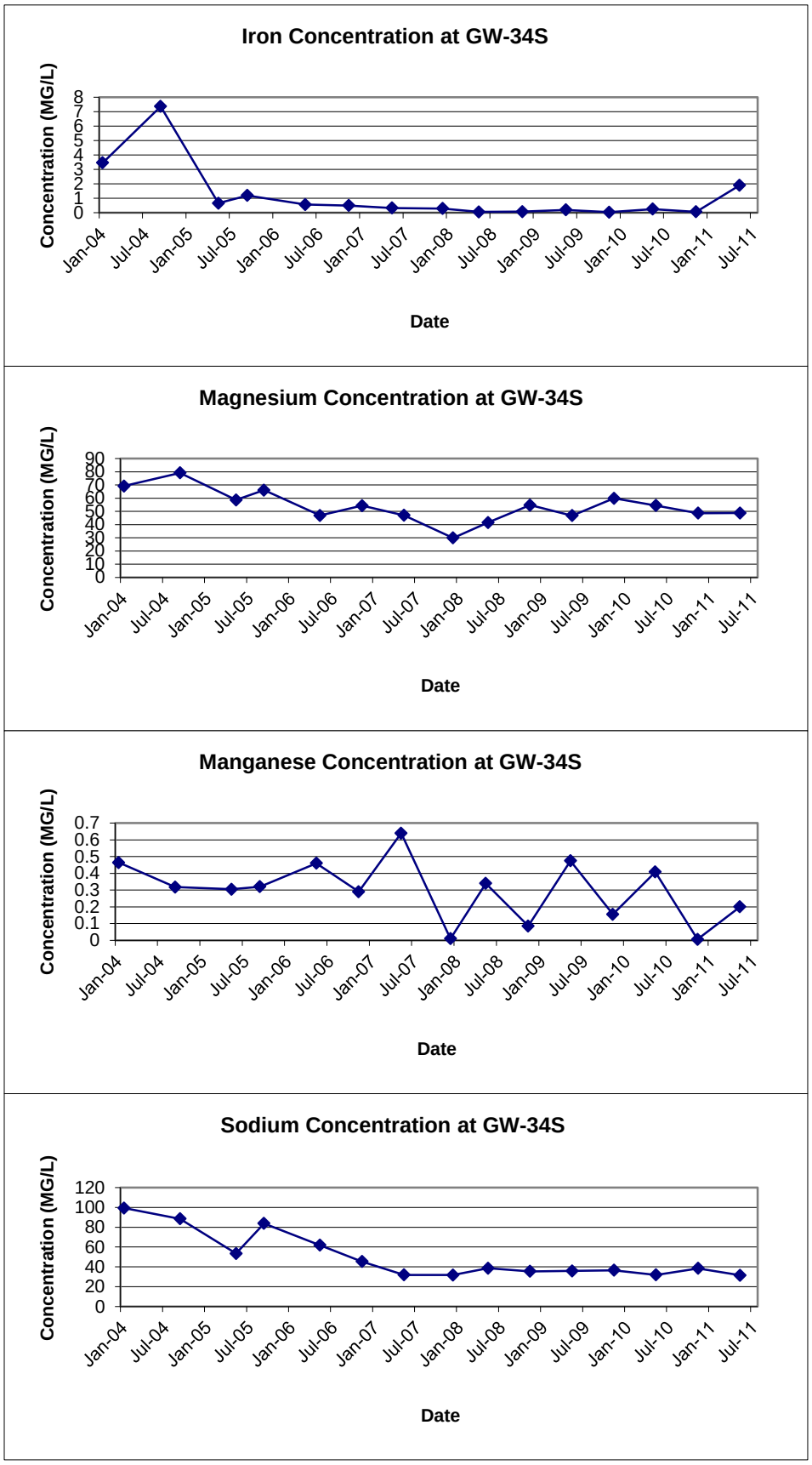
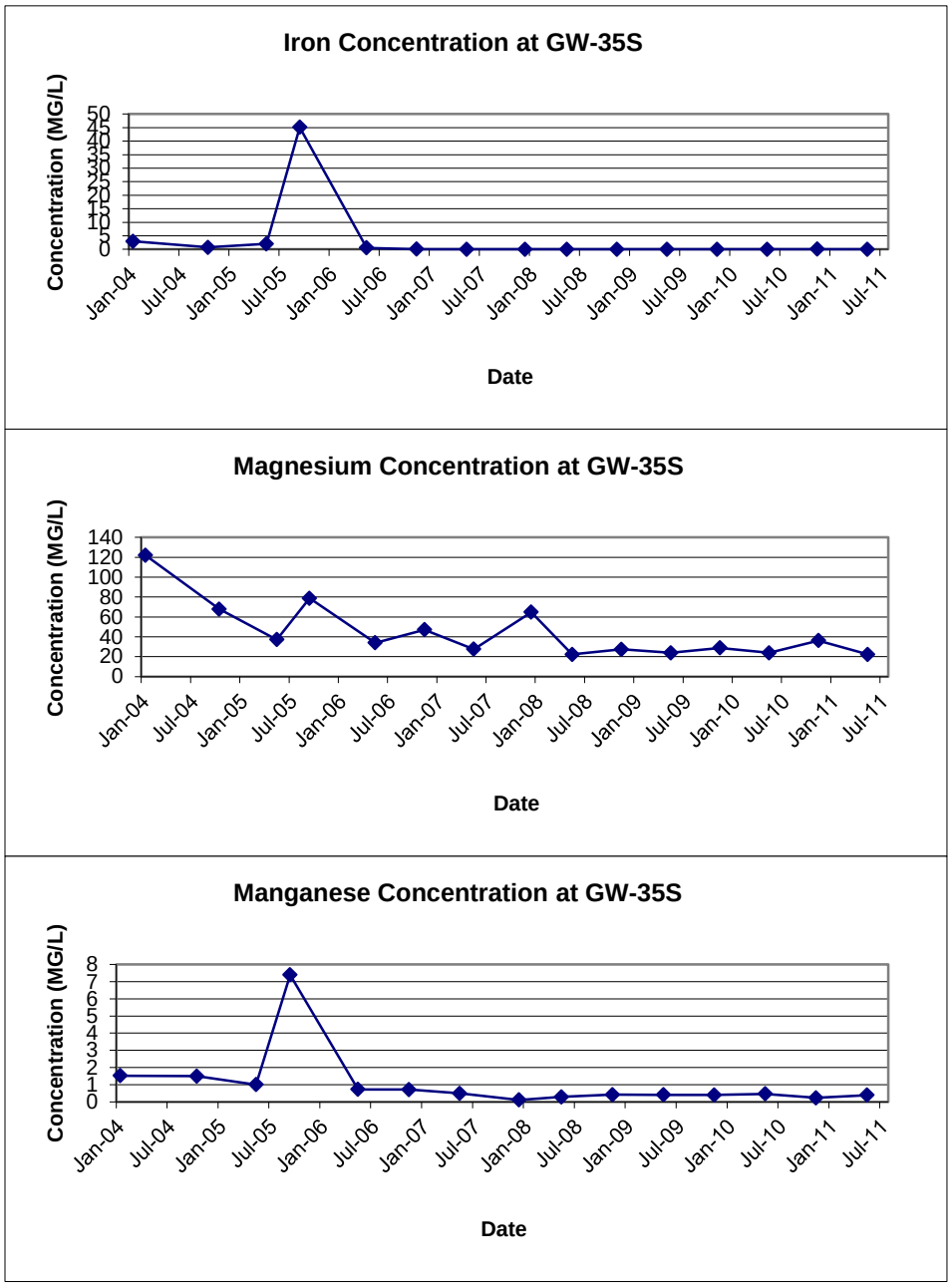


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT NO. 10-11-CH016

AUTHORIZATION TO DISCHARGE UNDER THE BUFFALO POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT NO. 10-11-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 **November 3, 2005** analytical data. This permit is granted in accordance with discharge limitations, monitoring requirements and other conditions set forth in Parts I and II hereof.

Effective this 1st day of November, 2010

To Expire the 31st day of March, 2013

General Manager

Signed this 30th **day of** September, **2010**

PART I: SPECIFIC CONDITIONS

A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

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

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

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

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

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

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

B. DISCHARGE MONITORING REPORTING REQUIREMENTS

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

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

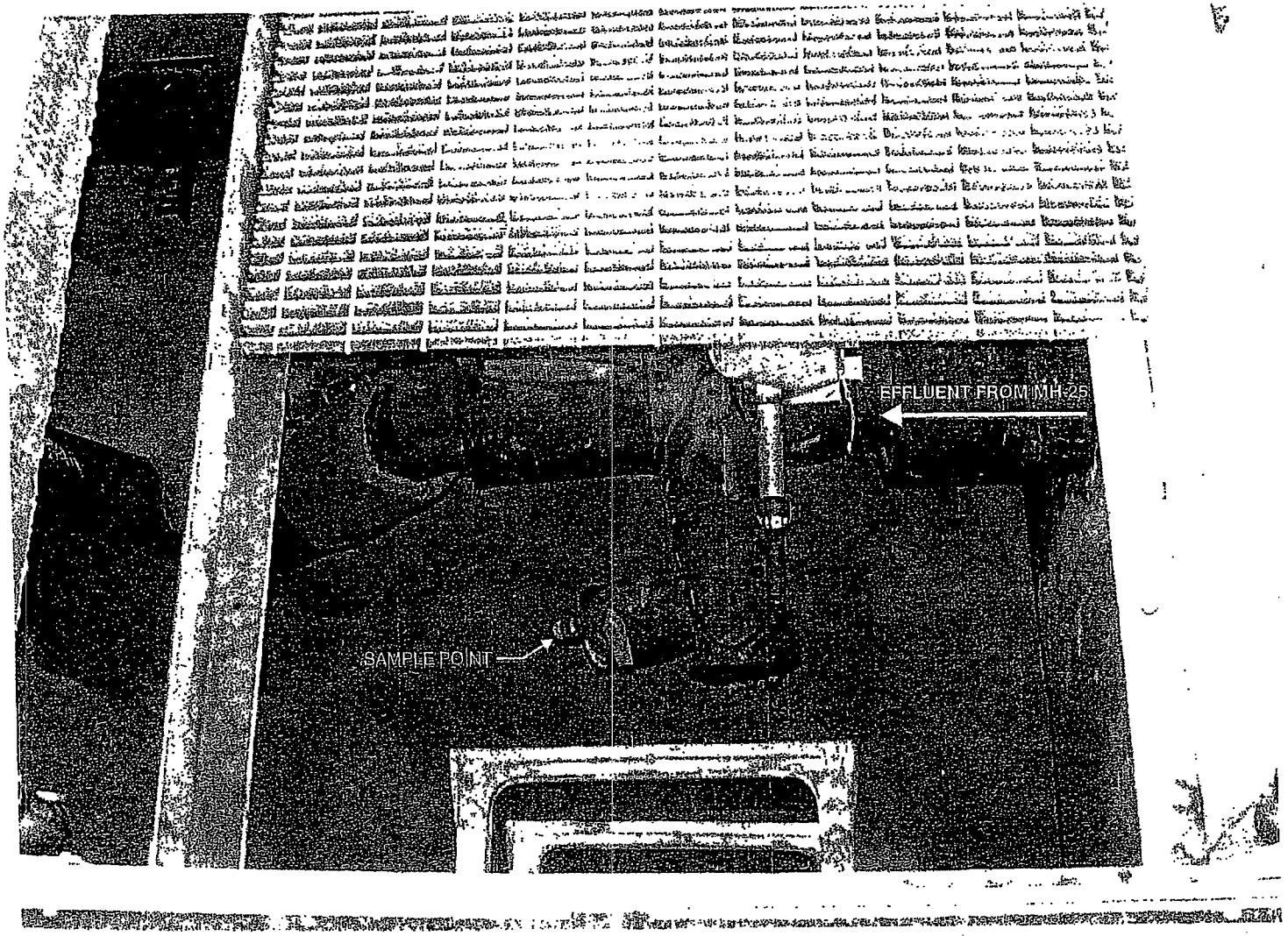
2. Composite samples may be time proportioned.

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

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

TABLE 1

PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS MARCH 2011

Sample ID	EFF-033111			
Matrix	Effluent Water			
Date Sampled	3/31/2011			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.17	0.14	2.34	No
Total Cadmuim	ND(1)	NA(2)	1.17	No
Total Chromium	0.0024	0.002	1.17	No
Total Copper	0.0031	0.003	3.74	No
Total Lead	ND	NA	1.17	No
Total Mercury*	ND	NA	0.001	No
Total Nickel	0.0043	0.004	3.27	No
Total Zinc	0.011	0.009	5.84	No
Total Suspended Solids	ND	NA	250 (3)	No
pH (4)	7.2	NA	5.0 - 12.0	No
Chlorobenzene*	0.0012	NA	NA	No
Trichloroethene*	0.0014	NA	NA	No
Total Flow (5)		101,020	140,000	No

Notes:

(1) ND = Not Detected
(2) NA = Not Applicable
(3) Discharge Limitation in units of mg/L
(4) pH measurement and Discharge Limitation in Standard Units
(5) Total Flow reported in gallons, sample was collected over a 24 hour period
* Mercury and organics analysis performed once per permit duration

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

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: 3/30/11 Crew: R. Murphy, S. McCabe, T. Ifkovich

Weather: 23° F, Clear

Sampling Device: NA

Time of Installation: 8:50 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Wells WW-5 and WW-6 running at the time of sample setup.
PLC display volumes: WW-01 (2,712,893 gals), WW-02 (33,924 gals), WW-03 (190,551 gals),
WW-04 (806,013 gals), WW-05 (9,931,482 gals), WW-06 (9,851,884 gals) & MH-25 (23,848,728 gals).

Date: 3/31/11 Crew: R. Murphy, T. Ifkovich, T. Urban

Weather: 33° F, light snow/rain

Time of Collection: 8:50

Field Measurements:

8:55/RJM (time/initial)

pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10

pH Measurement: 7.2

Temperature: 11.0°C

Identification: EFF-033111

Physical Observations:

Laboratory: TestAmerica, Buffalo, NY

Comments: Wells WW-5 and WW-6 running at the time of sample collection.
PLC display volumes: WW-01 (2,712,893 gals), WW-02 (33,924 gals), WW-03 (190,551 gals),
WW-04 (806,013 gals), WW-05 (9,952,430 gals), WW-06 (9,930,718 gals) & MH-25 (23,949,748 gals).

Reviewed By: Date:
(Supervisor)

TABLE 1

PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS JUNE 2011

Sample ID	EFF-062411			
Matrix	Effluent Water			
Date Sampled	6/24/2011			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.30	0.12	2.34	No
Total Cadmuim	0.00044	0.0002	1.17	No
Total Chromium	0.0019	0.001	1.17	No
Total Copper	0.01	0.004	3.74	No
Total Lead	0.0068	0.003	1.17	No
Total Nickel	0.0065	0.003	3.27	No
Total Zinc	0.032	0.01	5.84	No
Total Suspended Solids	76.4	NA(1)	250 (2)	No
pH (3)	7.5	NA	5.0 - 12.0	No
Total Flow (4)		47,224	140,000	No

Notes:

(1) NA = Not Applicable
(2) Discharge Limitation in units of mg/L
(3) pH measurement and Discharge Limitation in Standard Units
(4) Total Flow reported in gallons, sample was collected over a 24 hour period

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

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: 6/23/11 Crew: R. Murphy, T. Urban, S. Conway

Weather: *72* ^{o} F, Partly Cloudy

Sampling Device: NA

Time of Installation: 9:05 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Wells WW-4 and WW-5 were running at the time of sample setup.
PLC display volumes: WW-01 (3,478,353 gals), WW-02 (15,022 gals), WW-03 (243,638 gals),
WW-04 (1,621,884 gals), WW-05 (1,220,454 gals), WW-06 (1,125,715 gals) & MH-25 (28,067,160 gals).

Date: 6/24/11 Crew: R. Murphy, T. Urban, S. Conway

Weather: 67^{o} F, Rain

Time of Collection: 9:05

Field Measurements:

9:05/RJM (time/initial)

pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10

pH Measurement: 7.5

Temperature: 18.5^{o}C

Identification: EFF-062411

Physical Observations:

Laboratory: TestAmerica, Buffalo, NY

Comments: Wells WW-4 and WW-5 were running at the time of sample collection.
PLC display volumes: WW-01 (3,478,353 gals), WW-02 (15,022 gals), WW-03 (243,638 gals),
WW-04 (1,648,545 gals), WW-05 (1,241,811 gals), WW-06 (1,125,715 gals) & MH-25 (28,114,384 gals).

Reviewed By: Date:
(Supervisor)

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 16, 2011*

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-1S	OK	OK	OK	Bulged	1.95	14.94	
GW-1D	OK	OK	OK	Bulged	1.03	39.65	
GW-3S	OK	OK	OK	OK	2.02	13.22	
GW-3D	OK	OK	OK	OK	1.16	35.70	
GW-4S	OK	OK	OK	OK	3.96	16.23	
GW-4D	OK	OK	OK	OK	12.33	45.57	
GW-7S	OK	OK	OK	OK	3.83	35.04	
GW-7D	OK	OK	OK	Damaged	44.77	60.45	

Additional Comments: _____

_____

_____

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 16, 2011*

Well I.D. Number	*Lock*	*Surface Seal*	*Protective Casing*	*Riser*	*Water Level (ft. BTOC)*	*Well Depth (ft. BTOC)*	*Other Comments*
GW-8SR	OK	OK	OK	OK	4.74	13.02	
GW-8D	OK	OK	OK	OK	5.07	36.54	
GW-26D	OK	OK	OK	OK	5.97	40.70	
GW-28S	OK	OK	OK	OK	8.31	15.54	
GW-29S	OK	OK	OK	OK	5.65	20.02	
GW-30S	OK	OK	OK	OK	4.81	17.97	
GW-31S	OK	OK	OK	OK	2.03	9.57	
GW-32S	OK	OK	OK	OK	1.83	9.93	

Additional Comments: _____

_____

_____

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 16, 2011*

Well I.D. Number	***Lock***	***Surface Seal***	***Protective Casing***	***Riser***	***Water Level (ft. BTOC)***	***Well Depth (ft. BTOC)***	***Other Comments***
GW-33S	OK	OK	OK	OK	2.75	8.21	
GW-34S	OK	OK	OK	OK	2.58	10.00	
GW-35S	OK	OK	OK	OK	2.68	7.46	

Additional Comments: _____

_____

_____