SEMI ANNUAL REPORT
OPERATION AND MAINTENANCE
JANUARY 2015 TO JUNE 2015
PFOHL BROTHERS LANDFILL
CHEEKTOWAGA, NY

Submitted to:

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

Prepared by:

URS CORPORATION
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Prepared for:

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

NOVEMBER
2015

November 18, 2015

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

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

Dear Mr. Walia:

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

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

Sincerely,

URS CORPORATION

Jon Sundquist, Ph.D.
Project Manager

Enclosures

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

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1.0 INTRODUCTION

1.1 Background

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

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

1.2 Operation and Maintenance Activities

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

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

2.0 GENERAL MAINTENANCE ACTIVITIES

Since completion of construction activities in 2002, personnel from the Town of Cheektowaga Engineering Department have performed general activities to ensure the physical operation of the landfill as intended by the design. The various O&M activities performed by the Town from January 2015 through June 2015 include the following actions.

- The amount of groundwater discharged through the collection system was recorded on a daily basis. The flow rate displayed by each wet well pump at the time of daily inspection and the total cumulative volume of flow was recorded for each wet well on daily inspection sheets. Examples of the daily inspection sheet are attached in Appendix A.
- Total cumulative effluent flow rates and volumes were summarized on a monthly basis starting in February 2015. The monthly totals for the period of January 2015 through June 2015, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shut down during wet weather flow conditions as necessary at various times throughout the year to reduce hydraulic loading to the sewer. Such actions were only taken upon request of the Buffalo Sewer Authority (BSA) during heavy storm events in order to reduce the hydraulic load on the BSA treatment system during such events. Shutdown events are recorded and included with the monthly flow data as previously requested by NYSDEC.
- Plowed snow to access the Control Building when necessary.
- Cleaned/replaced check valves as necessary at all six (6) wet wells.
- Replaced surge suppressors and fuses as needed for pump station instrumentation equipment.

3.0 MONITORING ACTIVITIES

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

3.1 Groundwater Hydraulic Monitoring

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

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

3.2 Groundwater Quality Monitoring

The twenty-third semi-annual round of groundwater sampling was conducted between May 6, 2015 and May 8, 2015. All wells listed in Table 3.2 of the O&M plan were purged and sampled using dedicated/disposable equipment. Figure 3-1 shows the well locations. Low flow sampling techniques were used at most monitoring well locations.

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

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

Table 3-1 of this report presents the groundwater sample results compared with NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Class GA water quality standards. Groundwater samples were analyzed for the parameters listed in Table 3.2 of the O&M plan as revised in accordance with Table 3-6 in the Semi Annual Report dated September 2007 (January through June 2007) and as approved by the December 6, 2006 and November 29, 2007 correspondence from the NYSDEC authorizing a reduction in the parameters list (that table is included in this report as Table 3-2).

Results

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

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

Comparison to Historical Results

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

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

Trend Analysis

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented in Figures E-1 through E-19 of Appendix E. A review of the trend analysis indicated that no significant changes or trends in concentrations of any of the parameters exceeding groundwater standards have occurred over the twenty-three semi-annual sampling events except as described below. Figure E-2 for GW-01S, indicates a recent upward trend in manganese concentrations, and a downward trend in sodium concentration over the twenty-three sampling events. Figure E-3 for GW-03D indicates a downward trend for manganese. Figure E-4 indicates upward trends for magnesium and sodium in GW-03S since monitoring began. Figure E-5 for GW-04D, indicates a slight increasing trend for magnesium. Figure E-7 for GW-07D shows concentrations for chromium, iron, and lead were significantly lower the last three events after increasing steadily for the previous eleven events. Figure E-9 for GW-08D shows a decreasing trend for both iron and manganese since monitoring began. Figure E-10 for GW-08SR shows an upward trend in sodium concentrations since monitoring began. Figure E-11 for GW-26D indicates downward trends for iron and manganese and an upward trend for sodium. Figures E-12 and E-13 for GW-28S and GW-29S, respectively, indicate a decreasing trend for sodium since monitoring began. Figure E-14 for GW-30S indicates a downward trend for magnesium and sodium. Figure E-16 shows there is a seasonal variation in sodium concentration in monitoring well GW-32S. Figure E-18 for GW-34S indicates a seasonal fluctuation in manganese concentration.

Laboratory Report

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

A Data Applicability Report (DAR) was prepared following the guidelines provided in NYSDEC Division of Environmental Remediation (DER-10) *Technical Guidance for Site Investigation and Remediation, Appendix 2B,* dated May 2010. The DAR dated June 2015 is submitted separately from this report.

3.3 Groundwater Discharge Monitoring

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

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

3.4 Monitoring Well Inspections

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

4.0 SUMMARY AND RECOMMENDATIONS

General Maintenance: The Town will continue to maintain mechanical equipment at the landfill on an as-needed basis and operate the groundwater collection and discharge system as designed. The Town will also continue regular inspections, mow the cap once per year, and plow access to the control building during winter months as necessary.

Groundwater Hydraulic Monitoring: Hydraulic monitoring has been performed on a quarterly basis in conjunction with the discharge monitoring. Water level measurement data demonstrates that the hydraulic gradient is from outside the landfill towards the collection trench. Continued quarterly monitoring is recommended.

Groundwater Quality Monitoring: Groundwater sample results indicate that only low levels of organic compounds and metals are present. Similar concentrations of most parameters were found during previous sampling events. The twenty-fourth round of groundwater sampling will be conducted in November 2015. Low flow sampling techniques will be used. Passive diffusion bags will be used again for VOC analyses at the three wells (GW-04S, GW-07S, and GW-07D) that go dry even using low flow sampling techniques.

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

TABLES

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

Location ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/08/15	05/08/15	05/06/15	05/06/15	05/07/15
Parameter	**Units**	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			1.5 J		
1,4-Dichlorobenzene	UG/L	3			2.1 J		
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.072	0.16	0.072	0.098	0.085
Cadmium	MG/L	0.005		0.0013		0.0015	
Chromium	MG/L	0.05	0.0053			0.013	
Copper	MG/L	0.2				0.0019 J	
Iron	MG/L	0.3	0.48	6.8	1.6	1.5	0.029 J
Lead	MG/L	0.025					
Magnesium	MG/L	35	34.4	20.0	14.6	114	75.0
Manganese	MG/L	0.3	0.019	1.4	0.33	0.16	0.020
Nickel	MG/L	0.1			0.0025 J	0.057	
Sodium	MG/L	20	102	113	180	67.1	92.6
Zinc	MG/L	2		0.0041 J		0.017	

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds

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

NA - Not Analyzed.

Only Detected Results Reported.

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

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

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

Flags assigned during chemistry validation are shown.

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

NA - Not Analyzed.

Only Detected Results Reported.

J:\Projects\11172700.00000\GIS\dB\Program\EDMS.md
Printed: 9/17/2015 3:40:10 PM
[LOCID] Like 'GW*' and [LOGDATE] BETWEEN #5/6/2015# AND #5/8/2015

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

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

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

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

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

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

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

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

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds

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NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2

APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

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

LOCATIONS

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

FREQUENCY

semi-annually for overburden and bedrock groundwater

PARAMETERS

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)

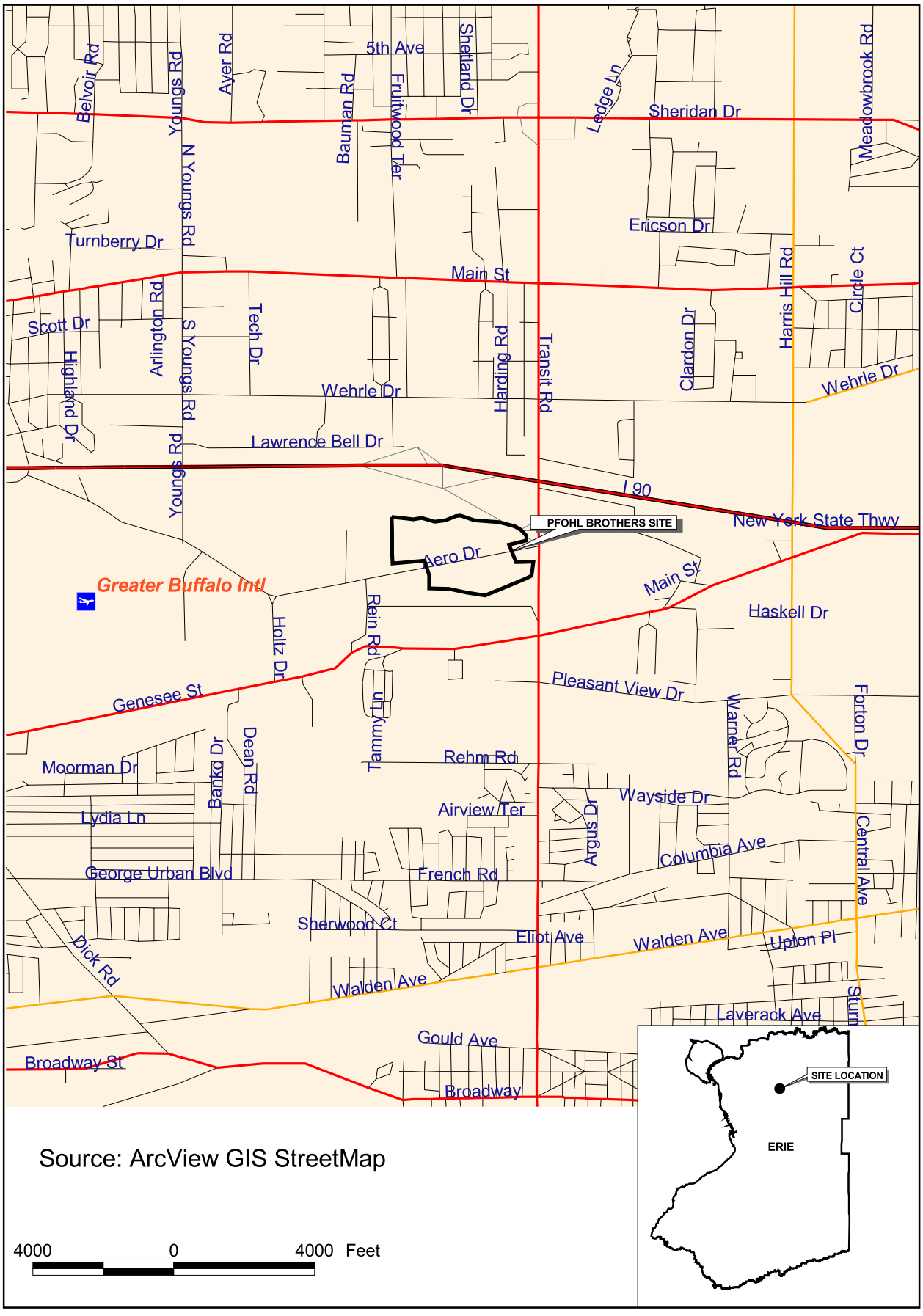
APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

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

Legend

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

400 0 400 Feet

PFOHL BROTHERS LANDFILL
MONITORING LOCATIONS

URS

FIGURE 3-1

N:\11172700.00000\GIS\ArcView\pfhol.apr WELL LOCATIONS
12/15/2005

APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 2/7/15

Time 1241

Weather conditions Cldy

Read by: JRN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	183	2758
WW-2	4.7	0	77	144
WW-1	4.7	0	953541	4361
WW-6	7.5	62	2685757	11780
WW-4	7.0	0	166700	6591
WW-5	7.5	0	3054343	13793

Flow Totalizer at Meter chamber 6966548

Heat Trace

Outside temp **T** = 33

Current **A** = 2.2

Set point **SP** = 40

Surge Suppressor events 415924

Motor Control Center

Volts 480 **volts**

Amps 6 **amps**

Which WW was running?

1☐ 2☐ 3☐ 4☐ 5☐ 6☒

Filter **Checked** ☒ **Changed** ☐

Comments and/or Current Conditions

Data — Flow

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 3/14/15

Weather conditions Cldy

Time 1133

Read by: JWW

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	183	2758
WW-2	4.7	0	77	144
WW-1	5.3	0	1138418	4442
WW-6	8.3	0	286991	11834
WW-4	7.5	0	146700	6556
WW-5	8.0	0	3498007	13971

Flow Totalizer at Meter chamber

Heat Trace

Outside temp **T** = 43

Current **A** =

Set point **SP** = 40

Surge Suppressor events 415963

Motor Control Center

Volts 480 **volts**

Amps 104 **amps**

Which WW was running?

1☐ 2☐ 3☐ 4☐ 5☐ 6☐

Filter **Checked ☐** **Changed ☐**

Comments and/or Current Conditions

Remote Tank Ok JWW

Pfohl Brothers Landfill Site

Daily Logsheet — Town of Cheektowaga

Date 6/15/16 — Weather conditions Sunny 80°

Time 2:45 PM — Read by: P. Bowen

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0 (ALARM)	0.0	183	2758
WW-2	4.7	0.0	37744	161
WW-1	3.5	0.0	1448989	4606
WW-6	5.7	0.0	4186038	12217
WW-4	6.2	0.0	620375	6866
WW-5	6.6	0.0	4567255	14473

Flow Totalizer at Meter chamber 0.0 / 10975331

Heat Trace

Outside temp **T** = 85°

Current **A** = 0.0

Set point **SP** = 40

Surge Suppressor events 415986

Motor Control Center

Volts 490 **volts**

Amps 3 **amps**

Which WW was running?

1☐ 2☐ 3☐ 4☐ 5☐ 6☐

Filter **Checked** ☐ **Changed** ☐

Comments and/or Current Conditions

WW-3 ALARM

APPENDIX B

MONTHLY FLOW SUMMARIES
JANUARY 2015 – JUNE 2015

The
TOWN OF
CHEEKTOWAGA

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

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

February 10, 2015

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

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

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

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

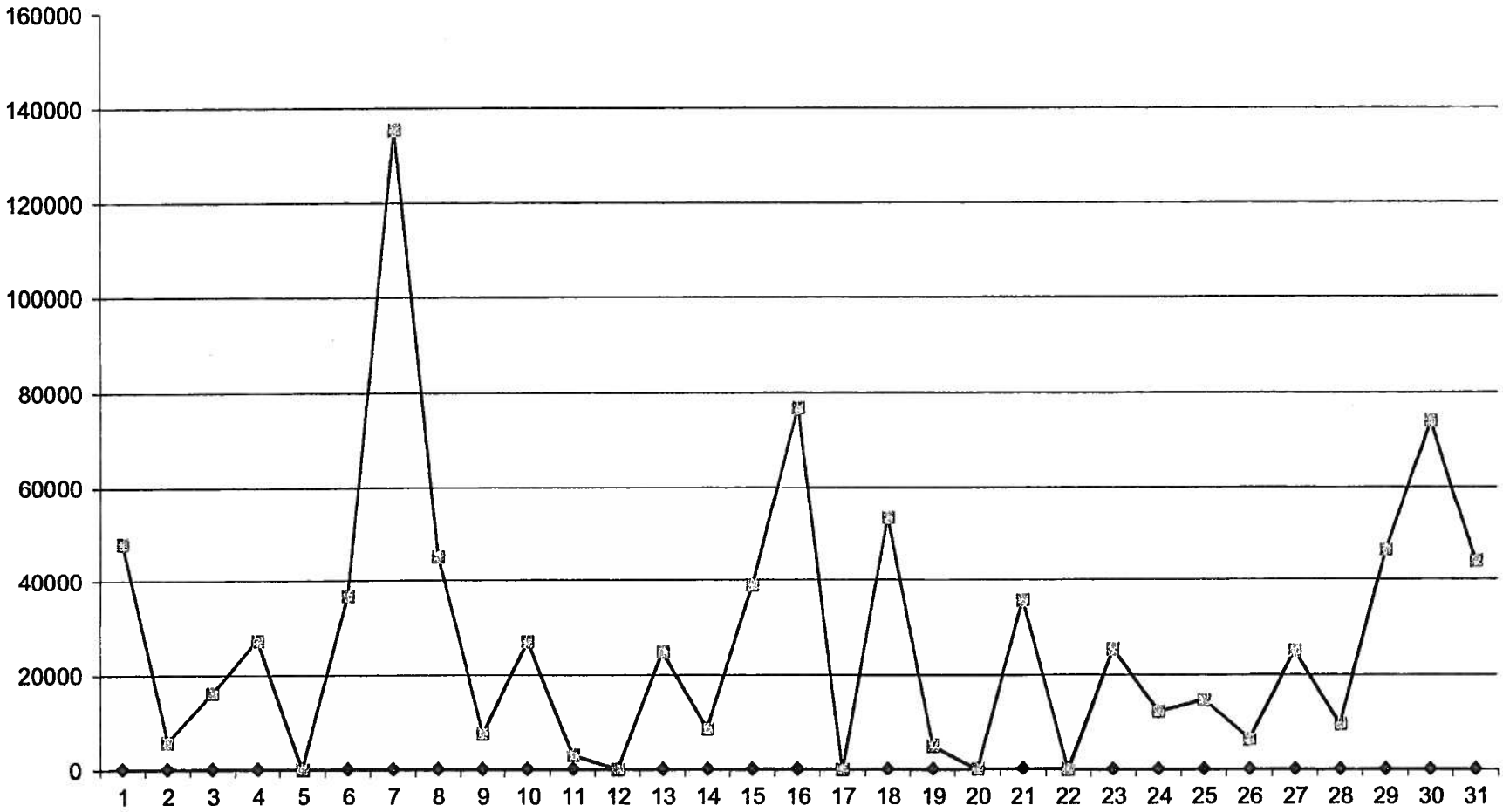
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

12/31/2014		6035494	89,635		
Jan-15	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		6083366	47,872		
2		6089175	5,809		
3		6105361	16,186		15:26 inhibit
4		6132590	27,229		
5		6132590	0		17:49 enable
6		6169282	36,693		
7		6304762	135,480		
8		6349832	45,070		
9		6357399	7,568		
10		6384374	26,975		
11		6387418	3,042		
12		6387418	0		
13		6412234	24,817		
14		6420825	8,591		
15		6459704	38,879		
16		6536433	76,729		
17		6536433	0		
18		6589689	53,257		
19		6494715	5,026		
20		6594715	0		
21		6630403	35,688		
22		6630403	0		
23		6655742	25,339		
24		6668010	12,269		
25		6682710	14,700		
26		6689178	6,468		
27		6714181	25,004		
28		6723763	9,582		
29		6770150	46387		
30		6844132	73982		
31		6887969	43837		
		852,475	**852,479**		

January 2015



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Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

March 14, 2015

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

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

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

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

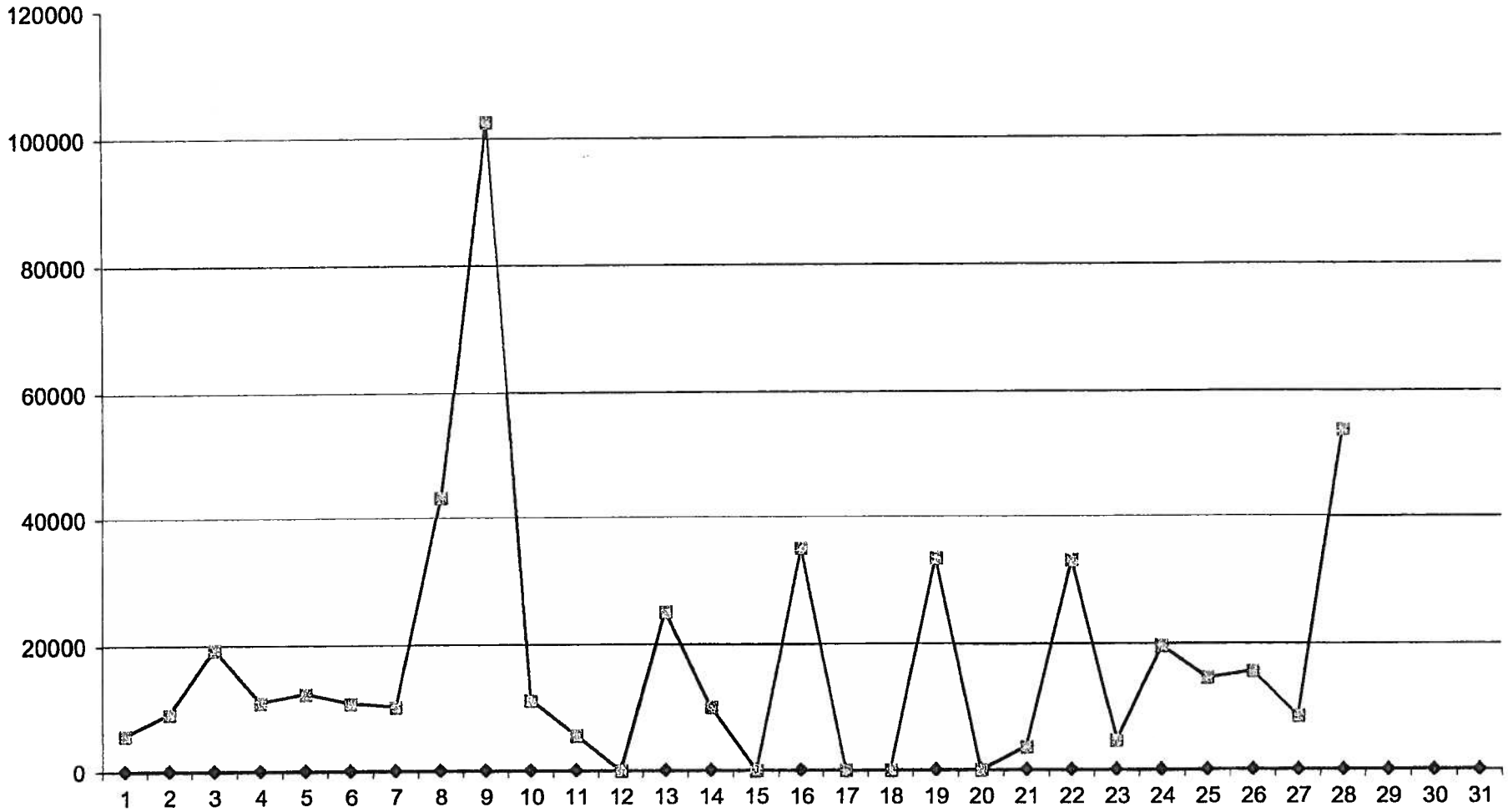
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

1/31/2015		6887969	43,837		
Feb-15	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		6893720	5,751		
2		6902882	9,162		
3		6922186	19,304		
4		6933120	10,934		
5		6945426	12,306		
6		6956200	10,775		
7		6966396	10,196		
8		7009741	43,345		
9		7112226	102,485		
10		7123451	11,225		
11		7129058	5,607		
12		7129058	0		
13		7154219	25,161		
14		7164236	10,017		
15		7164236	0		
16		7199256	35,020		
17		7199278	22		
18		7199278	0		
19		7232734	33,456		
20		7232734	0		
21		7236509	3,776		
22		7269469	32,960		
23		7274258	4,790		
24		7293880	19,622		
25		7308495	14,616		
26		7324141	15,646		
27		7332691	8,551		
28		7386561	53,870		
29					
30					
31					
		498,592	**498,597**		

February 2015



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Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

April 11, 2015

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

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

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

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

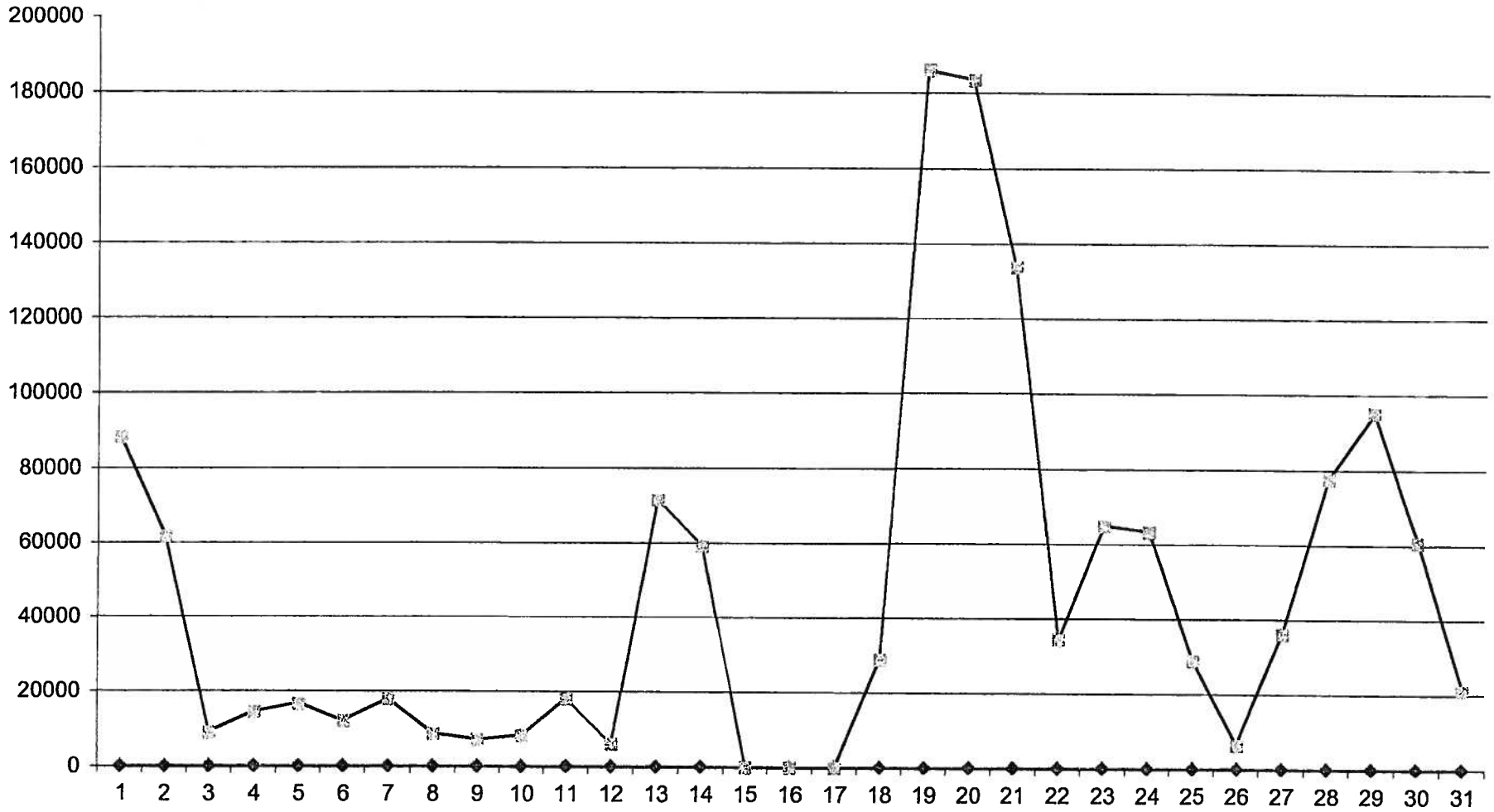
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

2/28/2015		7386561	53,870		
Mar-15	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		7474861	88,300		
2		7536519	61,658		
3		7545585	9,067		
4		7560124	14,539		
5		7576858	16,734		
6		7589002	12,144		
7		7606876	17,874		
8		7615619	8,743		
9		7622820	7,201		
10		7631146	8,327		16:02 inhibit
11		7649215	18,069		
12		7655285	6,070		21:48 enable
13		7726817	71,532		18:48 inhibit
14		7785924	59,108		
15		7785924	0		
16		7785924	0		
17		7785924	0		20:54 enable
18		7814879	28,955		
19		8000883	186,005		
20		8184414	183,531		
21		8318241	133,827		
22		8352665	34,425		
23		8417561	64,896		
24		8480881	63,320		
25		8510010	29,128		
26		8516573	6,564		16:11 inhibit
27		8552822	36,249		10:55 enable
28		8630355	77,533		
29		8725517	95162		
30		8786162	60645		18:19inhibit 21:20enable
31		8807530	21368		
		1,420,969	**1,420,974**		

March 2015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Fax: 716-896-6437

Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

May 6, 2015

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

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

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

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

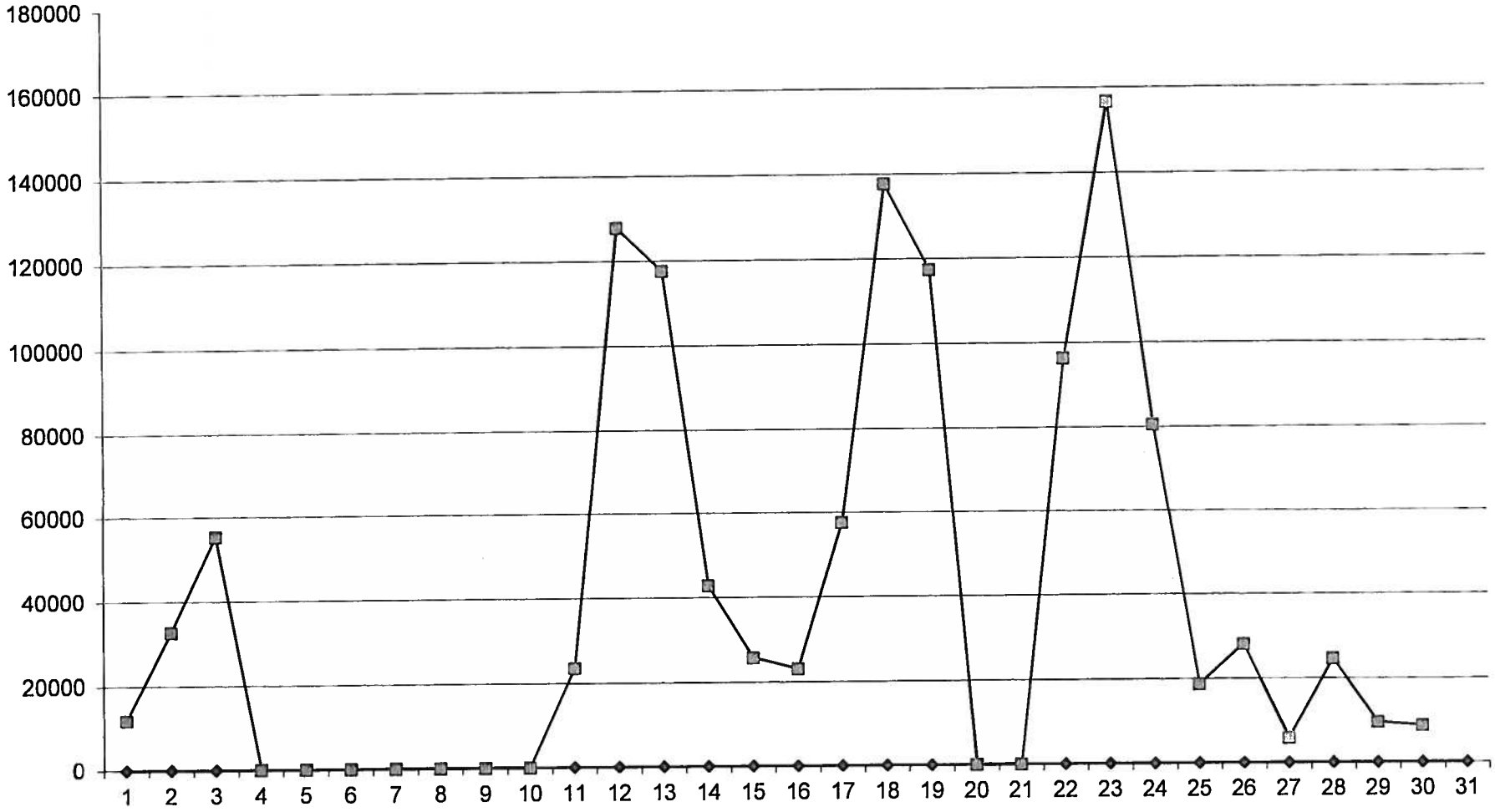
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

3/31/2015		8807530	53,870		
Apr-15	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		8819397	11,867		
2		8852160	32,763		22:56 inhibit
3		8907538	55,378		
4		8907538	0		
5		8907538	0		
6		8907538	0		
7		8907538	0		
8		8907538	0		
9		8907538	0		
10		8907538	0		21:15 enable
11		8931132	23,594		
12		9059078	127,946		
13		9176757	117,679		21:04 inhibit
14		9219560	42,803		00:33 enable
15		9245327	25,767		
16		9268424	23,097		
17		9326024	57,600		
18		9463809	137,785		18:02 inhibit
19		9581272	117,463		
20		9581272	0		
21		9581272	0		10:43 enable
22		9677658	96,386		
23		9834313	156,655		
24		9914953	80,640		
25		9933773	18,820		
26		9961958	28,185		
27		9967823	5,865		
28		9992509	24,686		
29		10002035	9526		
30		10010777	8742		
31					
		1,203,247	**1,203,247**		

April 2015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Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

June 10, 2015

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

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

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

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

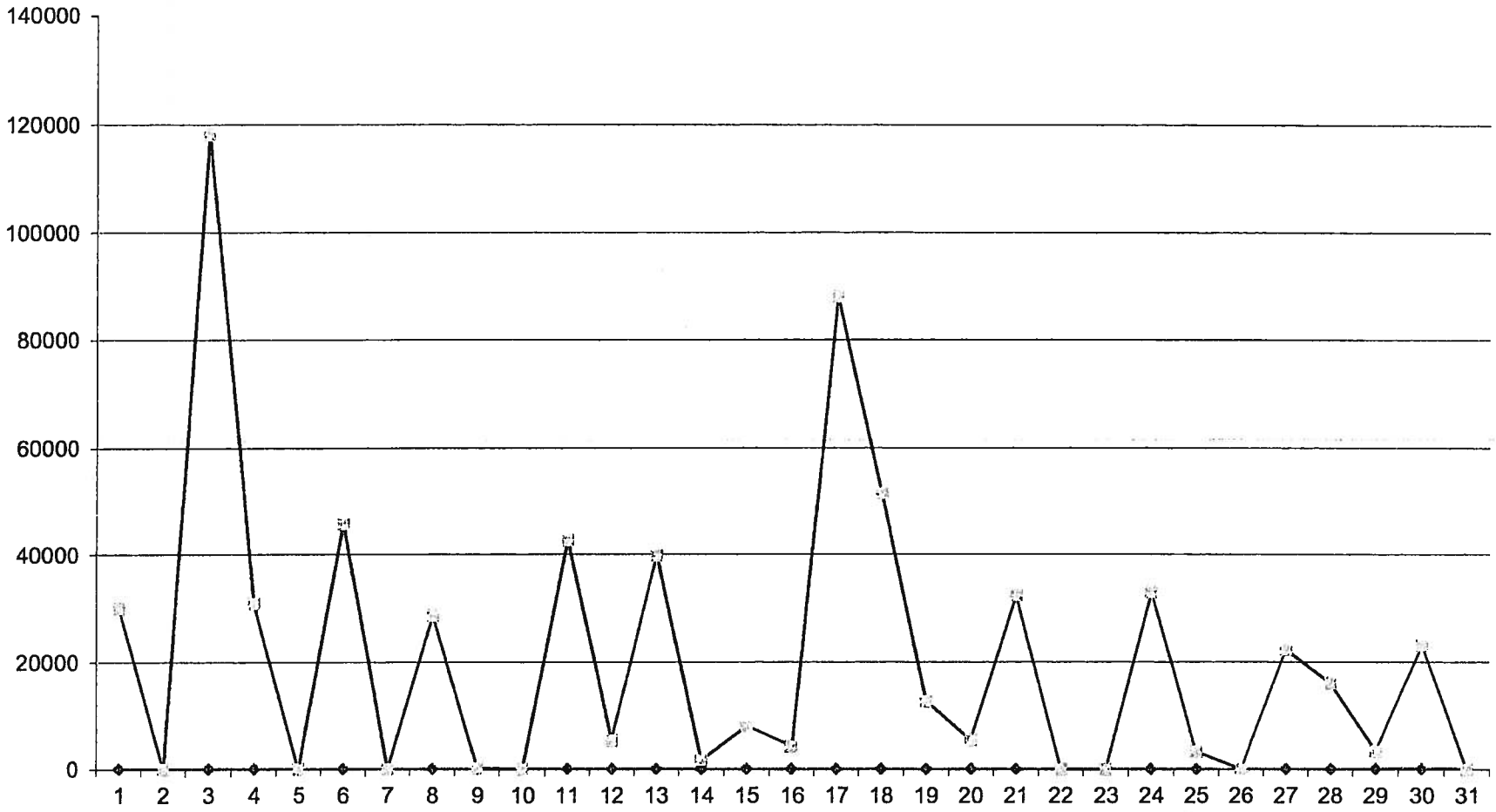
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

4/30/2015		10010777	8,742		
May-15	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Total Direct Discharge (Gallons)**	**Notes**
1		10040763	29,986		
2		10040763	0		
3		10158845	118,082		
4		10189714	30,869		
5		10189714	0		
6		10235419	45,705		
7		10235419	0		
8		10264066	28,647		
9		10264264	198		22:26 inhibit
10		10264264	0		09:20 enable
11		10306951	42,687		
12		10312290	5,339		
13		10352090	39,800		
14		1035381	1,720		
15		10361886	8,076		
16		10366187	4,301		
17		10454105	87,918		
18		10505619	51,514		
19		10518324	12,705		
20		10523775	5,451		
21		10556143	32,368		
22		10556143	0		
23		10556143	0		
24		10589119	32,976		
25		10592430	3,311		
26		10592430	0		
27		10614679	22,249		
28		10630695	16,016		
29		10634126	3431		
30		10657215	23089		
31		10657215	0		00:10 inhibit
		646,438	**646,438**		

May
2015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Jon W. Nichy
Superintendent
Joseph Glab
Asst. Superintendent

July 8, 2015

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

Re: Pfohl Bros. Flow Data

Dear Mr. Bowen,

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

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

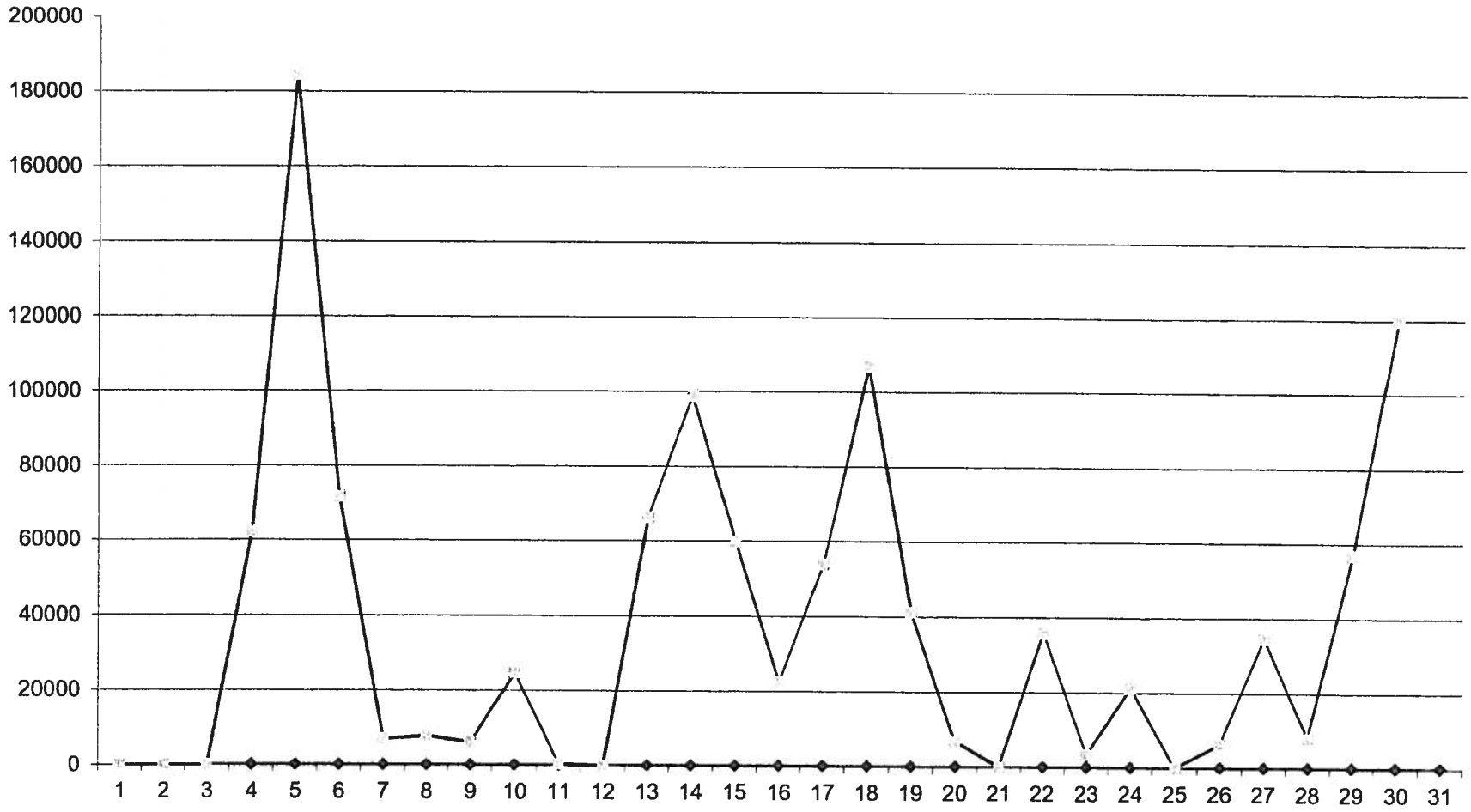
Yours truly,

Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

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

June
2015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APPENDIX C

HYDRAULIC MONITORING TABLES

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

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-01D	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								3/27/2015 1345	NM	-	NM	-	Lock corroded shut.
MNW								5/6/2015 1638	3.19	692.93	0.00	692.93	
MNW								6/19/2015 1206	2.95	693.17	0.00	693.17	
GW-01S	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								3/27/2015 1345	NM	-	NM	-	Lock corroded shut.
MNW								5/6/2015 1638	4.43	691.76	0.00	691.76	
MNW								6/19/2015 1206	4.04	692.15	0.00	692.15	
GW-03D	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								3/27/2015 1216	1.51	692.37	0.00	692.37	
MNW								5/6/2015 0825	2.19	691.69	0.00	691.69	
MNW								6/19/2015 1121	2.05	691.83	0.00	691.83	
GW-03S	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								3/27/2015 1215	1.92	691.88	0.00	691.88	
MNW								5/6/2015 0825	3.05	690.75	0.00	690.75	
MNW								6/19/2015 1120	2.68	691.12	0.00	691.12	
GW-04D	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								3/27/2015 1402	12.78	679.97	0.00	679.97	
MNW								5/6/2015 0932	13.10	679.65	0.00	679.65	
MNW								6/19/2015 1227	13.18	679.57	0.00	679.57	
GW-04S	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								3/27/2015 1403	3.82	688.90	0.00	688.90	
MNW								5/6/2015 0931	4.71	688.01	0.00	688.01	
MNW								6/19/2015 1228	4.13	688.59	0.00	688.59	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

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

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-07D	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								3/27/2015 1331	49.43	650.51	0.00	650.51	
MNW								5/6/2015 1515	46.65	653.29	0.00	653.29	
MNW								6/19/2015 1200	56.04	643.90	0.00	643.90	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								3/27/2015 1332	3.80	695.71	0.00	695.71	
MNW								5/6/2015 1600	5.00	694.51	0.00	694.51	
MNW								6/19/2015 1200	4.82	694.69	0.00	694.69	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								3/27/2015 1233	5.40	692.39	0.00	692.39	
MNW								5/6/2015 0848	6.16	691.63	0.00	691.63	
MNW								6/19/2015 1128	6.03	691.76	0.00	691.76	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								3/27/2015 1233	5.02	692.48	0.00	692.48	
MNW								5/6/2015 0848	5.31	692.19	0.00	692.19	
MNW								6/19/2015 1127	5.27	692.23	0.00	692.23	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								3/27/2015 1316	6.28	692.22	0.00	692.22	
MNW								5/6/2015 0922	6.99	691.51	0.00	691.51	
MNW								6/19/2015 1222	6.88	691.62	0.00	691.62	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								3/27/2015 1244	8.05	692.90	0.00	692.90	
MNW								5/6/2015 0855	9.51	691.44	0.00	691.44	
MNW								6/19/2015 1132	9.27	691.68	0.00	691.68	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

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

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-29S	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								3/27/2015 1300	5.66	693.97	0.00	693.97	
MNW								5/6/2015 0906	8.86	690.77	0.00	690.77	
MNW								6/19/2015 1213	8.24	691.39	0.00	691.39	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								3/27/2015 1303	6.48	690.10	0.00	690.10	
MNW								5/6/2015 0909	8.11	688.47	0.00	688.47	
MNW								6/19/2015 1215	7.99	688.59	0.00	688.59	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								3/27/2015 1307	2.86	695.76	0.00	695.76	
MNW								5/6/2015 0914	3.62	695.00	0.00	695.00	
MNW								6/19/2015 1218	3.20	695.42	0.00	695.42	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								3/27/2015 1312	2.06	696.31	0.00	696.31	
MNW								5/6/2015 0917	3.82	694.55	0.00	694.55	
MNW								6/19/2015 1220	3.43	694.94	0.00	694.94	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								3/27/2015 1323	2.95	695.29	0.00	695.29	
MNW								5/6/2015 0926	5.27	692.97	0.00	692.97	
MNW								6/19/2015 1224	4.54	693.70	0.00	693.70	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								3/27/2015 1206	2.50	692.27	0.00	692.27	
MNW								5/6/2015 0824	2.77	692.00	0.00	692.00	
MNW								6/19/2015 1114	2.99	691.78	0.00	691.78	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

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

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-35S	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								3/27/2015 1317	2.88	694.51	0.00	694.51	
MNW								5/6/2015 0922	3.82	693.57	0.00	693.57	
MNW								6/19/2015 1223	4.36	693.03	0.00	693.03	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								3/27/2015 1211	9.73	688.89	0.00	688.89	
MH								5/6/2015 0840	10.58	688.04	0.00	688.04	
MH								6/19/2015 1122	11.07	687.55	0.00	687.55	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								3/27/2015 1222	10.61	688.79	0.00	688.79	
MH								5/6/2015 0839	11.23	688.17	0.00	688.17	
MH								6/19/2015 1123	11.27	688.13	0.00	688.13	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								3/27/2015 1229	8.82	688.00	0.00	688.00	
MH								5/6/2015 0844	9.46	687.36	0.00	687.36	
MH								6/19/2015 1125	9.52	687.30	0.00	687.30	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								3/27/2015 1239	14.47	688.54	0.00	688.54	
MH								5/6/2015 0952	14.43	688.58	0.00	688.58	
MH								6/19/2015 1130	14.49	688.52	0.00	688.52	
MH-15	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								3/27/2015 1259	13.89	685.13	0.00	685.13	
MH								5/6/2015 0906	14.39	684.63	0.00	684.63	
MH								6/19/2015 1213	14.94	684.08	0.00	684.08	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

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

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
MH-16	1072133.714	1117748.238	698.57	NM	698.57	NA	1						
MH								3/27/2015 1303	14.44	684.13	0.00	684.13	
MH								5/6/2015 0909	14.51	684.06	0.00	684.06	
MH								6/19/2015 1215	14.67	683.90	0.00	683.90	
MH-17	1071813.137	1117180.019	702.16	NM	702.16	NA	1						
MH								3/27/2015 1308	18.09	684.07	0.00	684.07	
MH								5/6/2015 0913	18.14	684.02	0.00	684.02	
MH								6/19/2015 1217	18.28	683.88	0.00	683.88	
MH-20	1071756.395	1115997.024	706.20	NM	706.20	NA	1						
MH								3/27/2015 1315	19.75	686.45	0.00	686.45	
MH								5/6/2015 0921	19.75	686.45	0.00	686.45	
MH								6/19/2015 1222	19.75	686.45	0.00	686.45	
MH-22	1072158.023	1115589.309	698.05	NM	698.05	NA	1						
MH								3/27/2015 1322	8.82	689.23	0.00	689.23	
MH								5/6/2015 0925	9.00	689.05	0.00	689.05	
MH								6/19/2015 1224	9.01	689.04	0.00	689.04	
MH-25	1072483.928	1114820.313	698.17	NM	698.17	NA	1						
MH								3/27/2015 1159	9.12	689.05	0.00	689.05	
MH								5/6/2015 0819	10.16	688.01	0.00	688.01	
MH								6/19/2015 1110	10.56	687.61	0.00	687.61	
SG-01	1073882.887	1114813.101	NM	NM	690.00	NA	1						
SG								3/27/2015 1212	-1.10	691.10	0.00	691.10	
SG								5/6/2015 0827	-0.60	690.60	0.00	690.60	
SG								6/19/2015 1119	-0.60	690.60	0.00	690.60	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

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

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
SG-02	1073738.27	1116805.85	NM	NM	690.00	NA	1						
SG								3/27/2015 1236	-3.36	693.36	0.00	693.36	
SG								5/6/2015 0848	-3.00	693.00	0.00	693.00	
SG								6/19/2015 1128	-3.10	693.10	0.00	693.10	
WW-01	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								3/27/2015 1105	-4.7	688.72	0.00	688.72	
MH								5/6/2015 0730	-3.9	687.92	0.00	687.92	
MH								6/19/2015 1045	-3.9	687.92	0.00	687.92	
WW-02	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								3/27/2015 1105	-4.7	688.88	0.00	688.88	
MH								5/6/2015 0730	-4.7	688.88	0.00	688.88	
MH								6/19/2015 1045	-4.7	688.88	0.00	688.88	
WW-03	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								3/27/2015 1105	-4.82	688.62	0.00	688.62	
MH								5/6/2015 0730	-4.75	688.55	0.00	688.55	
MH								6/19/2015 1045	-4.80	688.60	0.00	688.60	
WW-04	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								3/27/2015 1105	-7.0	683.62	0.00	683.62	
MH								5/6/2015 0730	-6.9	683.52	0.00	683.52	
MH								6/19/2015 1045	-6.8	683.42	0.00	683.42	
WW-05	1071661.368	1116370.876	NM	NM	676.14	NA	1						
MH								3/27/2015 1105	-6.8	682.94	0.00	682.94	
MH								5/6/2015 0730	-7.0	683.14	0.00	683.14	
MH								6/19/2015 1045	-6.8	682.94	0.00	682.94	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

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

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
WW-06	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								3/27/2015 1105	-7.7	689.59	0.00	689.59	
MH								5/6/2015 0730	-6.6	688.49	0.00	688.49	
MH								6/19/2015 1045	-6.0	687.89	0.00	687.89	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

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TABLE 2
PFOHL BROTHERS LANDFILL SITE
OVERBURDEN HYDRAULIC GRADIENT

WELL PAIR:	WW-1	*	Level	WW-2	GW-8SR	Level	SG-02	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft)
3/27/2015	688.72	---	---	688.88	692.48	3.60	693.36	4.48
5/6/2015	687.92	---	---	688.88	692.19	3.31	693.00	4.12
6/19/2015	687.92	---	---	688.88	692.23	3.35	693.10	4.22

WELL PAIR:	WW-3	GW-28S	Level	WW-4	*	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/27/2015	688.62	692.90	4.28	683.62	---	---
5/6/2015	688.55	691.44	2.89	683.52	---	---
6/19/2015	688.60	691.68	3.08	683.42	---	---

WELL PAIR:	WW-5	GW-32S	Level	WW-6	GW-34S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/27/2015	682.94	696.31	13.37	689.59	692.27	2.68
5/6/2015	683.14	694.55	11.41	688.49	692.00	3.51
6/19/2015	682.94	694.94	12.00	687.89	691.78	3.89

WELL PAIR:	MH-1	SG-1	Level	MH-15	GW-29S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/27/2015	688.89	691.10	2.21	685.13	693.97	8.84
5/6/2015	688.04	690.60	2.56	684.63	690.77	6.14
6/19/2015	687.55	690.60	3.05	684.08	691.39	7.31

WELL PAIR:	MH-16	GW-30S	Level	MH-17	GW-31S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/27/2015	684.13	690.10	5.97	684.07	695.76	11.69
5/6/2015	684.06	688.47	4.41	684.02	695.00	10.98
6/19/2015	683.90	688.59	4.69	683.88	695.42	11.54

WELL PAIR:	MH-20	GW-35S	Level	MH-22	GW-33S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/27/2015	686.45	694.51	8.06	689.23	695.29	6.06
5/6/2015	686.45	693.57	7.12	689.05	692.97	3.92
6/19/2015	686.45	693.03	6.58	689.04	693.70	4.66

Notes:

* = No corresponding monitoring well.

NA = Not applicable

APPENDIX D

GROUNDWATER PURGE AND SAMPLE COLLECTION LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 4.56' Depth to Well Bottom: 14.94' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 6.4 Estimated Purge Volume (liters): 10.7

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

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

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:20	7.20	11.81	0.869	4.32	190	-137	325	4.56
13:25	7.13	10.40	0.831	3.73	172	-120	260	4.68
13:30	7.06	10.43	0.907	3.32	94.3	-106	260	4.69
13:35	7.01	10.40	0.988	2.92	57.4	-105	260	5.76
13:40	7.01	10.28	0.974	2.91	64.3	-105	260	5.92
13:45	7.02	10.34	0.977	2.97	69.9	-103	260	5.99
13:50	7.00	10.37	1.01	2.83	37.7	-101	260	6.05
13:55	6.99	10.11	1.02	2.77	21.8	-101	260	6.09
14:00	6.99	10.18	1.02	2.72	16.8	-102	260	6.10
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 3.31' Depth to Well Bottom: 39.65' Well Diameter: 4" Screen Length:

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Sulfur odor

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:10	7.53	11.37	1.07	3.70	0.0	-122	940	3.31
12:15	7.46	9.89	1.08	4.08	0.0	-121	940	3.31
12:20	7.46	9.63	1.08	3.49	0.0	-121	940	3.31
12:25	7.46	9.52	1.07	3.20	0.0	-122	940	3.31
12:30	7.45	9.46	1.07	3.08	0.0	-128	940	3.31
12:35	7.43	9.45	1.07	3.00	0.0	-145	940	3.31
12:40	7.40	9.42	1.06	3.28	0.0	-171	940	3.31
12:45	7.39	9.46	1.06	2.99	0.0	-185	940	3.31
12:50	7.38	9.39	1.06	2.96	0.0	-197	940	3.31
12:55	7.37	9.40	1.06	2.96	0.0	-207	940	3.31
13:00	7.36	9.39	1.06	2.95	0.0	-218	940	3.31
13:05	7.35	9.31	1.05	2.97	0.0	-224	940	3.31
13:10	7.35	9.34	1.05	2.96	0.0	-232	940	3.31
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

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

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:40	6.79	9.57	1.43	7.06	26.7	13	300	2.97
11:45	6.86	8.23	1.39	5.37	7.4	42	300	5.45
11:50	6.89	9.47	1.38	5.19	3.1	54	160	6.06
11:55	6.90	9.87	1.37	5.00	3.9	62	160	6.52
12:00	6.93	9.71	1.37	5.21	6.2	69	160	7.02
12:05	6.95	9.74	1.37	5.36	7.1	74	160	7.55
12:10	6.95	10.17	1.37	5.22	5.5	76	150	7.78
12:15	6.94	10.52	1.36	5.00	4.4	78	150	8.03
12:20	6.94	10.48	1.35	4.87	2.9	80	150	8.31
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 2.19' Depth to Well Bottom: 35.70' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 82.8 Estimated Purge Volume (liters): 60.0

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:20	6.64	8.95	1.10	5.40	0.0	79	1000	2.19
10:25	6.92	8.36	1.10	7.15	0.7	6	1000	2.19
10:30	7.02	8.32	1.10	5.97	4.1	-26	1000	2.19
10:35	7.05	8.28	1.10	5.43	0.0	-42	1000	2.19
10:40	7.05	8.26	1.10	5.19	0.0	-50	1000	2.19
10:45	7.05	8.26	1.10	5.03	0.0	-56	1000	2.19
10:50	7.04	8.21	1.10	4.92	0.0	-59	1000	2.19
10:55	7.03	8.21	1.10	4.81	0.0	-63	1000	2.19
11:00	7.02	8.21	1.10	4.71	0.0	-66	1000	2.19
11:05	7.02	8.20	1.10	4.63	0.0	-67	1000	2.19
11:10	7.01	8.22	1.10	4.51	0.0	-69	1000	2.19
11:15	7.01	8.26	1.10	4.45	0.0	-70	1000	2.19
11:20	7.01	8.23	1.10	4.39	0.0	-70	1000	2.19
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 4.68' Depth to Well Bottom: 16.23' Well Diameter: 2" Screen Length:

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 3/27/15, sampled VOCs from PDB at 10:15 on 5/7/15. Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 11:55.

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:26	8.46	16.89	0.409	5.72	2.2	92	Initial	4.68
10:28	8.50	11.41	0.428	13.87	10.7	99	1 Gal. Purged	-
10:29	8.33	10.37	0.439	13.22	118	92	2 Gal. Purged	-
10:32	8.30	10.11	0.429	11.99	609	43	3 Gal. Purged	Dry
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 13.02' Depth to Well Bottom: 45.57' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 80.4 Estimated Purge Volume (liters): 10.2

Sample ID: GW-4D Sample Time: 11:45 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)
10:45	7.31	15.10	1.19	2.64	0.9	-136	170	13.02
10:50	7.26	11.97	1.29	3.02	0.0	-239	170	13.50
10:55	7.27	11.71	1.30	2.89	0.0	-257	170	13.67
11:00	7.27	11.50	1.30	2.92	1.4	-265	170	13.81
11:05	7.26	11.80	1.29	2.70	3.9	-273	170	13.92
11:10	7.26	11.96	1.29	2.67	5.5	-278	170	14.03
11:15	7.25	12.48	1.28	2.75	12.3	-284	170	14.11
11:20	7.25	12.63	1.28	2.56	14.0	-287	170	14.17
11:25	7.24	12.70	1.29	2.46	18.2	-292	170	14.22
11:30	7.25	12.14	1.31	2.50	20.3	-294	170	14.25
11:35	7.22	12.25	1.32	2.40	0.6	-300	170	14.35
11:40	7.22	13.01	1.31	2.31	3.3	-302	170	14.36
11:45	7.21	12.93	1.33	2.33	3.0	-304	170	14.38
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, Tim Ifkovich, Ernie Thalhamer

DATE(S): 5/6/15, 5/7/15

			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.)	=	5.00	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	30.04	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)	=	5.11	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	7.0	8"	2.60

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

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	Initial	2	4	7							
pH	8.22	8.26	8.27	8.11							
SPEC. COND. (mS/cm)	0.548	0.540	0.537	0.535							
DO (mg/l)	4.34	11.30	4.61	5.79							
TEMPERATURE (^{0}C)	13.53	11.24	11.57	12.57							
TURBIDITY (NTU)	0.0	6.5	1.1	54.5							
ORP (millivolts)	-88	-65	-46	7							
TIME	16:08	16:10	16:12	16:18							

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

WELL PURGING LOG

URS Corporation

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

PROJECT NO.: 11175616.00000

STAFF: Rob Murphy, Tim Ifkovich, Ernie Thalhamer

DATE(S): 5/6/15, 5/7/15

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

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

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	Init	3	6	9.1							
pH	7.79	7.82	7.80	8.02							
SPEC. COND. (mS/cm)	0.598	0.632	0.726	0.723							
DO (mg/l)	10.01	4.56	4.03	5.81							
TEMPERATURE (^{0}C)	17.59	15.81	15.29	14.74							
TURBIDITY (NTU)	2.6	3.5	0.6	20.1							
ORP (millivolts)	-21	-87	-131	-97							
TIME	15:25	15:38	15:46	15:55							

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 5.30' Depth to Well Bottom: 13.02' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.8 Estimated Purge Volume (liters): 5.7

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:55	6.52	10.57	2.10	3.63	308	-53	220	5.30
14:00	6.48	10.89	2.12	3.14	241	-60	130	6.24
14:05	6.48	10.87	2.12	3.02	150	-65	130	6.80
14:10	6.49	10.81	2.12	2.95	126	-67	130	6.99
14:15	6.49	10.74	2.12	2.92	89.1	-70	130	7.16
14:20	6.49	10.83	2.11	2.88	57.2	-71	130	7.24
14:25	6.51	10.59	2.11	2.91	44.2	-73	130	7.30
14:30	6.51	10.27	2.11	2.97	42.7	-73	130	7.38
14:35	6.52	10.05	2.11	2.97	34.4	-74	130	7.44
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 6.16' Depth to Well Bottom: 36.54' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 75.0 Estimated Purge Volume (liters): 60.0

Sample ID: GW-8D Sample Time: 13:45 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:45	7.08	9.68	1.74	2.89	3.1	36	1000	6.16
12:50	7.01	9.18	1.74	3.74	2.2	45	1000	6.16
12:55	7.00	9.10	1.74	3..51	5.8	42	1000	6.16
13:00	7.00	9.06	1.74	3.44	8.7	39	1000	6.16
13:05	6.99	9.01	1.74	3.33	12.1	32	1000	6.16
13:10	6.98	8.95	1.74	3.36	9.3	37	1000	6.16
13:15	6.98	8.90	1.74	3.39	5.7	42	1000	6.16
13:20	6.97	8.86	1.73	3.41	2.5	45	1000	6.16
13:25	6.96	8.92	1.73	3.40	0.2	48	1000	6.16
13:30	6.96	8.90	1.73	3.40	0.0	51	1000	6.16
13:35	6.96	8.89	1.73	3.40	0.0	52	1000	6.16
13:40	6.95	8.92	1.73	3.38	0.0	51	1000	6.16
13:45	6.95	8.87	1.73	3.37	0.0	54	1000	6.16
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 7.04' Depth to Well Bottom: 40.70' Well Diameter: 4" Screen Length:

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:55	6.97	12.26	1.91	2.51	76.4	-110	830	7.04
14:00	6.91	11.05	1.93	2.79	0.0	-97	830	7.03
14:05	6.91	11.08	1.93	2.64	0.0	-96	830	7.04
14:10	6.90	10.91	1.93	2.62	0.0	-96	830	7.04
14:15	6.90	10.95	1.93	2.62	0.0	-96	830	7.04
14:20	6.90	10.97	1.92	2.64	0.0	-96	830	7.04
14:25	6.90	11.01	1.92	2.65	0.0	-96	830	7.04
14:30	6.90	10.99	1.92	2.66	0.0	-96	830	7.04
14:35	6.90	10.91	1.92	2.68	0.0	-96	830	7.04
14:40	6.90	10.94	1.92	2.68	0.0	-96	830	7.04
14:45	6.89	10.99	1.92	2.66	0.0	-96	830	7.04
14:50	6.89	10.99	1.92	2.65	0.0	-96	830	7.04
14:55	6.89	11.05	1.92	2.64	0.0	-96	830	7.04
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

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

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:15	7.34	10.17	0.547	4.15	19.1	79	215	9.51
9:20	7.18	9.44	0.539	4.17	12.3	27	125	10.65
9:25	7.17	9.21	0.537	3.85	7.7	17	125	10.75
9:30	7.17	9.40	0.532	3.70	3.4	15	125	10.76
9:35	7.17	9.66	0.534	3.59	4.5	15	125	10.78
9:40	7.17	9.89	0.534	3.53	3.2	16	125	10.79
9:45	7.17	9.94	0.534	3.49	0.0	18	125	10.76
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 8.95' Depth to Well Bottom: 20.04' Well Diameter: 2" Screen Length:

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange iron particulates at start of purge

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:00	7.01	14.97	0.932	3.97	246	-77	230	8.95
8:05	6.98	14.22	0.948	5.23	157	-104	140	10.75
8:10	7.03	13.65	0.940	4.22	54.9	-105	140	10.96
8:15	7.02	13.65	0.952	3.75	35.6	-105	140	11.03
8:20	7.01	13.66	0.964	3.50	29.7	-105	140	11.12
8:25	6.99	13.78	0.967	3.30	22.2	-107	140	11.24
8:30	6.97	14.05	0.972	3.08	14.2	-108	140	11.35
8:35	6.96	14.13	0.978	2.97	13.3	-108	140	11.38
8:40	6.95	14.35	0.982	2.96	9.2	-109	140	11.47
8:45	6.94	14.55	0.981	2.83	6.7	-109	140	11.57
8:50	6.94	14.64	0.979	2.76	3.3	-109	140	11.58
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 8.13' Depth to Well Bottom: 17.97' Well Diameter: 2" Screen Length:

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Orange tint to water, occasional orange particulates

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:20	6.83	10.82	2.50	6.09	130	-97	430	8.13
9:25	6.81	8.61	1.70	5.71	6.8	-97	430	8.23
9:30	6.81	8.49	1.68	4.83	0.0	-100	430	8.23
9:35	6.81	8.50	1.66	4.42	0.0	-102	430	8.23
9:40	6.80	8.49	1.66	4.21	0.0	-104	430	8.23
9:45	6.80	8.40	1.66	4.10	0.0	-105	430	8.23
9:50	6.80	8.53	1.66	3.99	0.0	-106	430	8.20
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 4.00' Depth to Well Bottom: 9.57' Well Diameter: 2" Screen Length:

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:05	7.18	10.79	0.638	3.55	255.0	-20	385	4.00
10:10	7.15	10.23	0.577	3.51	438.0	-5	175	6.35
10:15	7.13	11.03	0.585	3.43	379.0	-1	175	6.55
10:20	7.11	11.64	0.595	3.19	188.0	-3	175	6.56
10:25	7.10	12.82	0.612	2.88	85.0	-8	175	6.56
10:30	7.09	12.95	0.626	2.69	55.3	-13	175	6.52
10:35	7.09	12.85	0.620	2.61	39.5	-15	175	6.56
10:40	7.08	12.99	0.623	2.72	23.2	-17	175	6.61
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 4.10' Depth to Well Bottom: 9.93' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 3.6 Estimated Purge Volume (liters): 9.0

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:00	7.43	11.17	0.480	3.79	0.0	39	300	4.10
11:05	7.38	9.84	0.515	3.77	0.0	36	300	4.96
11:10	7.37	9.72	0.529	3.64	0.0	32	300	5.02
11:15	7.36	9.55	0.532	3..02	0.0	27	300	5.05
11:20	7.37	9.41	0.533	2.96	0.0	26	300	5.08
11:25	7.36	9.43	0.535	2.88	0.0	24	300	5.11
11:30	7.36	9.61	0.535	2.84	0.0	22	300	5.12
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

Measuring Point: Below Top of Riser Initial Depth to Water: 5.45' Depth to Well Bottom: 8.21' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 1.7 Estimated Purge Volume (liters): 2.8

Sample ID: GW-33S Sample Time: 13:25 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)
13:00	7.22	21.90	0.655	1.33	0.0	-26	125	5.45
13:05	7.13	12.71	0.670	3.72	0.0	-27	125	6.32
13:10	7.12	12.87	0.659	3.95	0.0	-27	100	6.40
13:15	7.13	12.68	0.667	3.89	0.0	-22	100	6.45
13:20	7.14	12.56	0.664	3.76	0.0	-19	100	6.56
13:25	7.13	12.12	0.666	3.48	0.0	-15	100	6.66
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: 5/7/2015 Sampling Personnel: Tim Ifkovich, Ernie Thalhamer Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 2.89' Depth to Well Bottom: 10.01' Well Diameter: 2" Screen Length:

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:05	7.01	13.74	0.930	5.41	46.2	-3	240	2.89
8:10	6.90	9.16	1.00	7.81	30.5	-8	160	3.69
8:15	6.88	8.92	1.04	6.59	21.0	1	160	3.69
8:20	6.86	8.50	1.06	6.49	17.7	2	160	3.69
8:25	6.85	7.84	1.08	6.30	15.1	4	160	3.72
8:30	6.84	7.88	1.06	6.10	8.9	5	160	3.73
8:35	6.82	8.14	1.02	6.05	2.9	7	160	3.76
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

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

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

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

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

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

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:05	7.35	12.64	0.449	3.37	0.0	-45	290	4.41
15:10	7.26	11.10	0.436	3.00	0.0	-34	290	4.44
15:15	7.24	11.33	0.446	2.72	0.0	-32	290	4.45
15:20	7.23	11.95	0.453	2.48	0.0	-32	290	4.28
15:25	7.22	11.63	0.444	2.49	0.0	-32	290	4.81
15:30	7.23	10.70	0.450	2.64	0.0	-31	280	4.58
15:35	7.22	10.82	0.452	2.62	0.0	-33	280	4.59
15:40	7.22	11.03	0.453	2.54	0.0	-33	280	4.60
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

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

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

Date of Sampling: *May 6, 2015*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-03D	GW-03D	82.8	60.0	11:20	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-03D-MS	GW-03D	82.8	60.0	11:20	Matrix Spike		Not Applicable
GW-03D-MSD	GW-03D	82.8	60.0	11:20	Matrix Spike Duplicate		Not Applicable
GW-03S	GW-03S	6.3	7.7	12:20	Matrix Spike Duplicate		Not Applicable
GW-08D	GW-08D	75.0	60.0	13:45	Groundwater		Not Applicable
GW-08SR	GW-08SR	4.8	5.7	14:35	Groundwater		Not Applicable
TB	---	---	---	---	Trip Blank	VOCs	Not Applicable

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

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

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

Date of Sampling: *May 6, 2015*

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

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

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

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

Date of Sampling: *May 7, 2015*

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

Additional Comments: GW-4S was sampled for VOCs using a passive diffusion bag and then purged dry/allowed to recharge for collection of other parameters. GW-7D and GW-7S were sampled for SVOCs and Metals after recharging overnight. All other wells were purged using low flow methods until parameter stabilization.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

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

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

Date of Sampling: *May 7, 2015*

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

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

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

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

Date of Sampling: *May 8, 2015*

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

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

APPENDIX E

GROUNDWATER TREND ANALYSIS

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

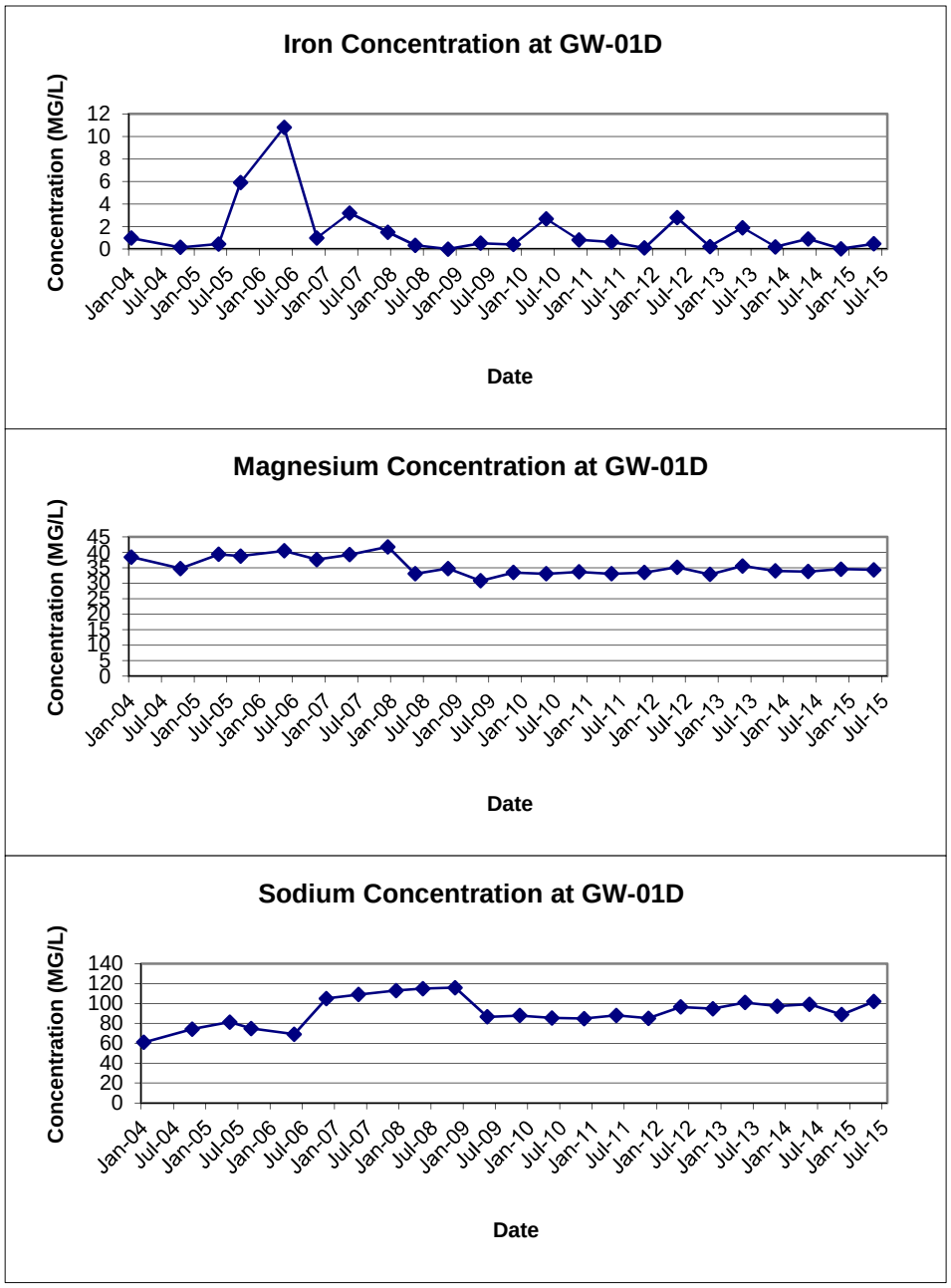


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-1S

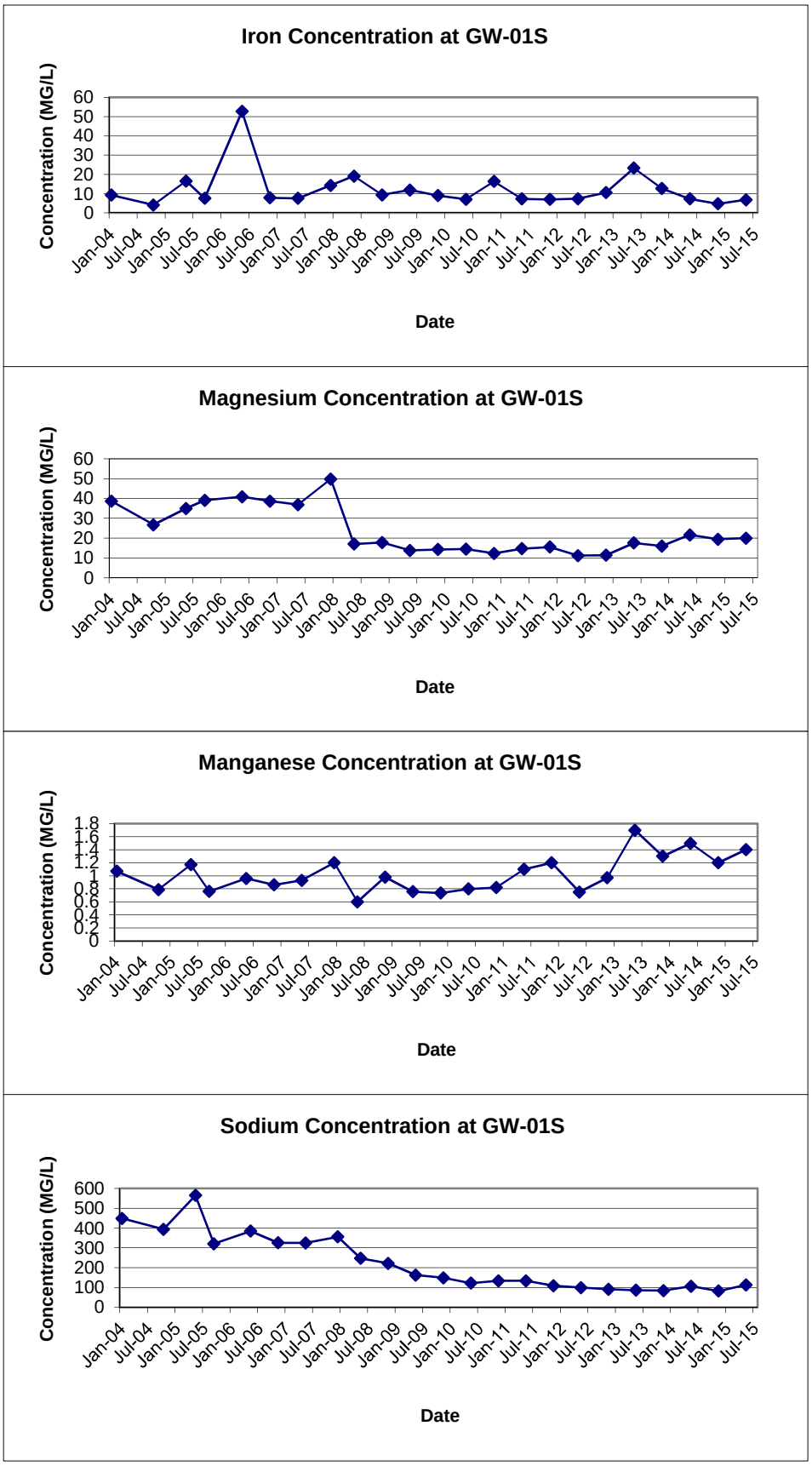


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3D

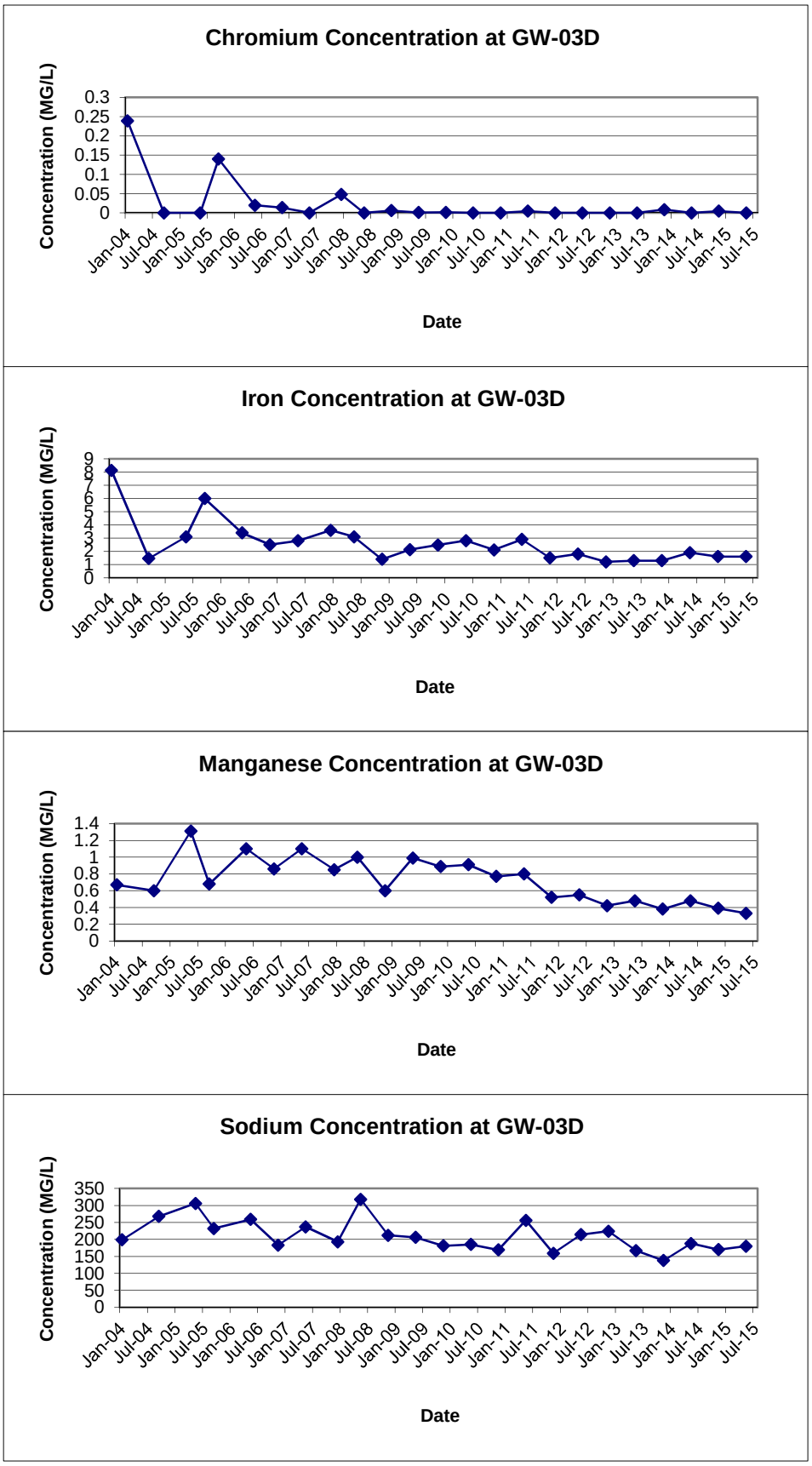


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

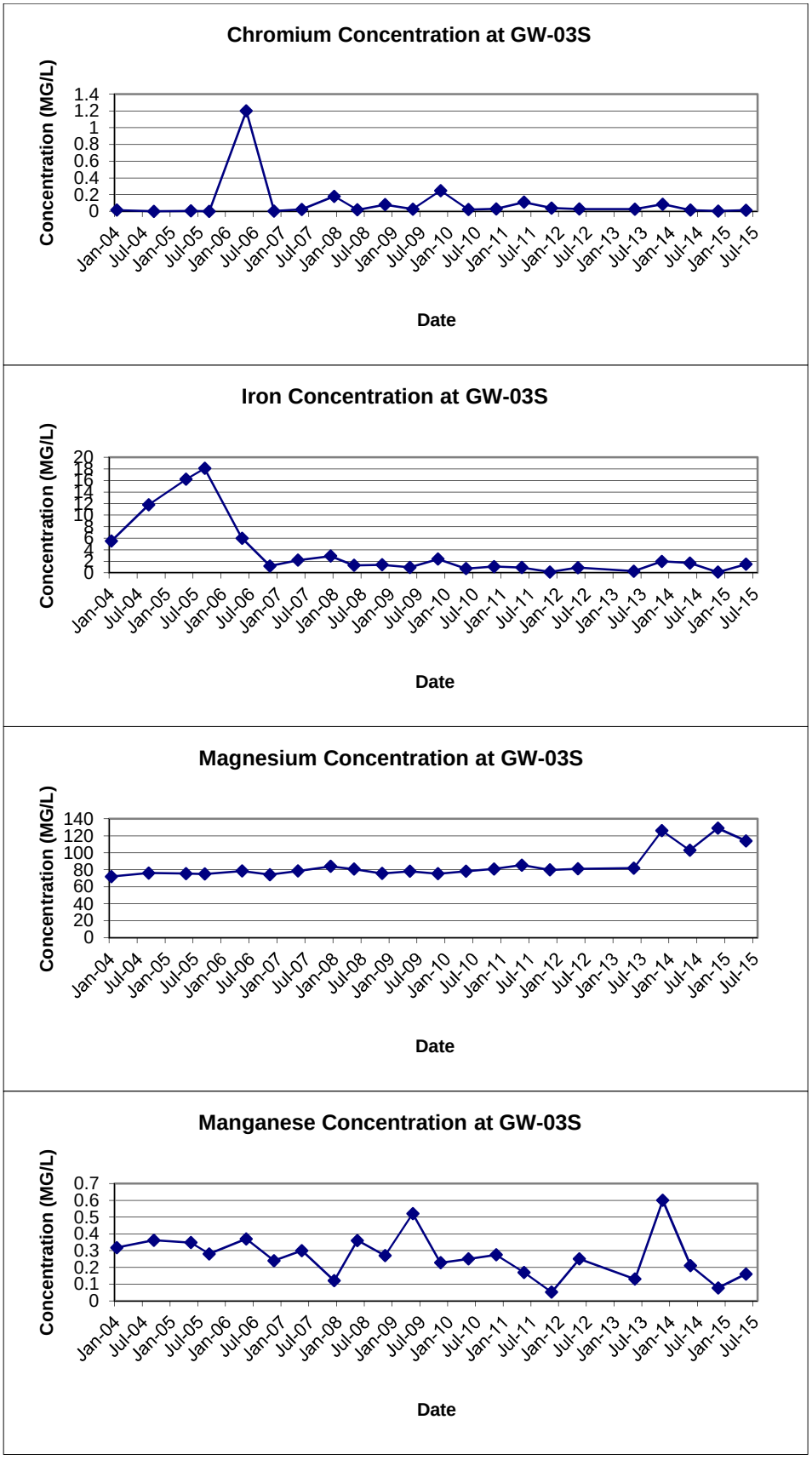


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

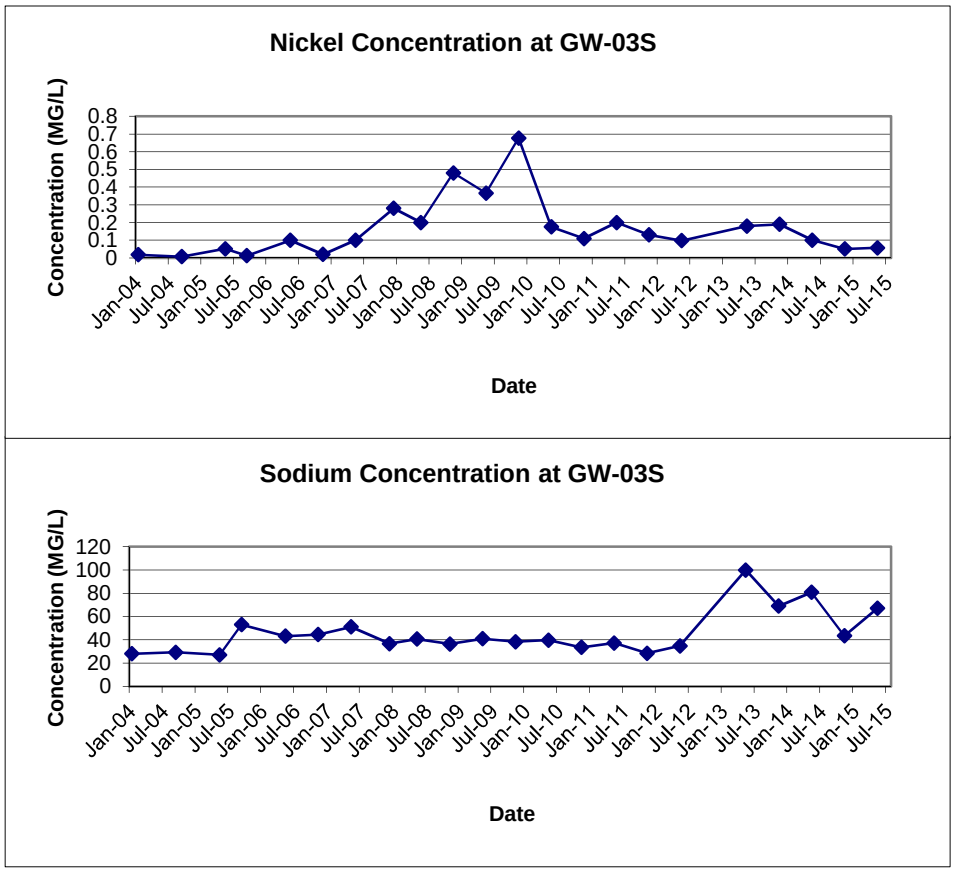


FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-4D

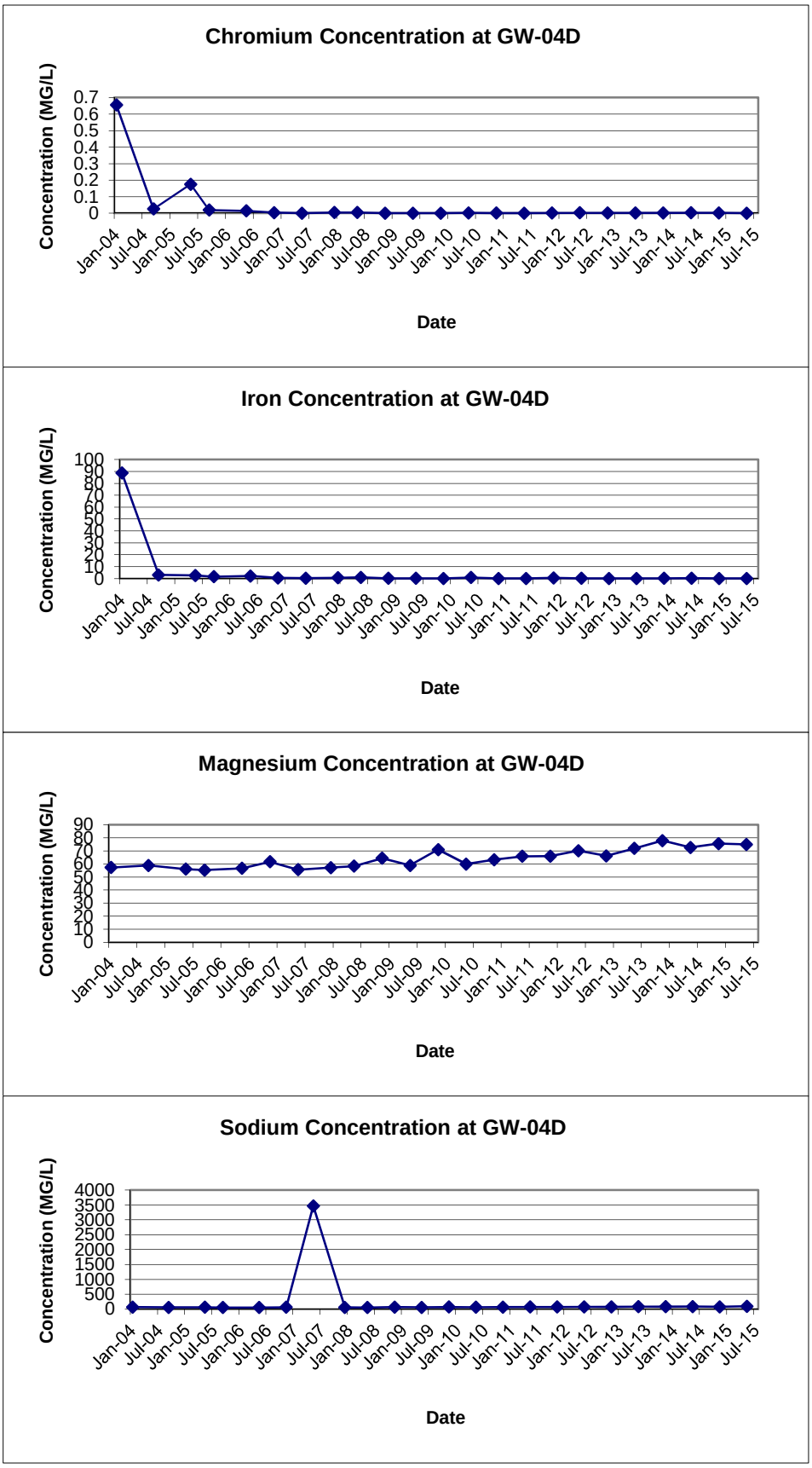


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-4S

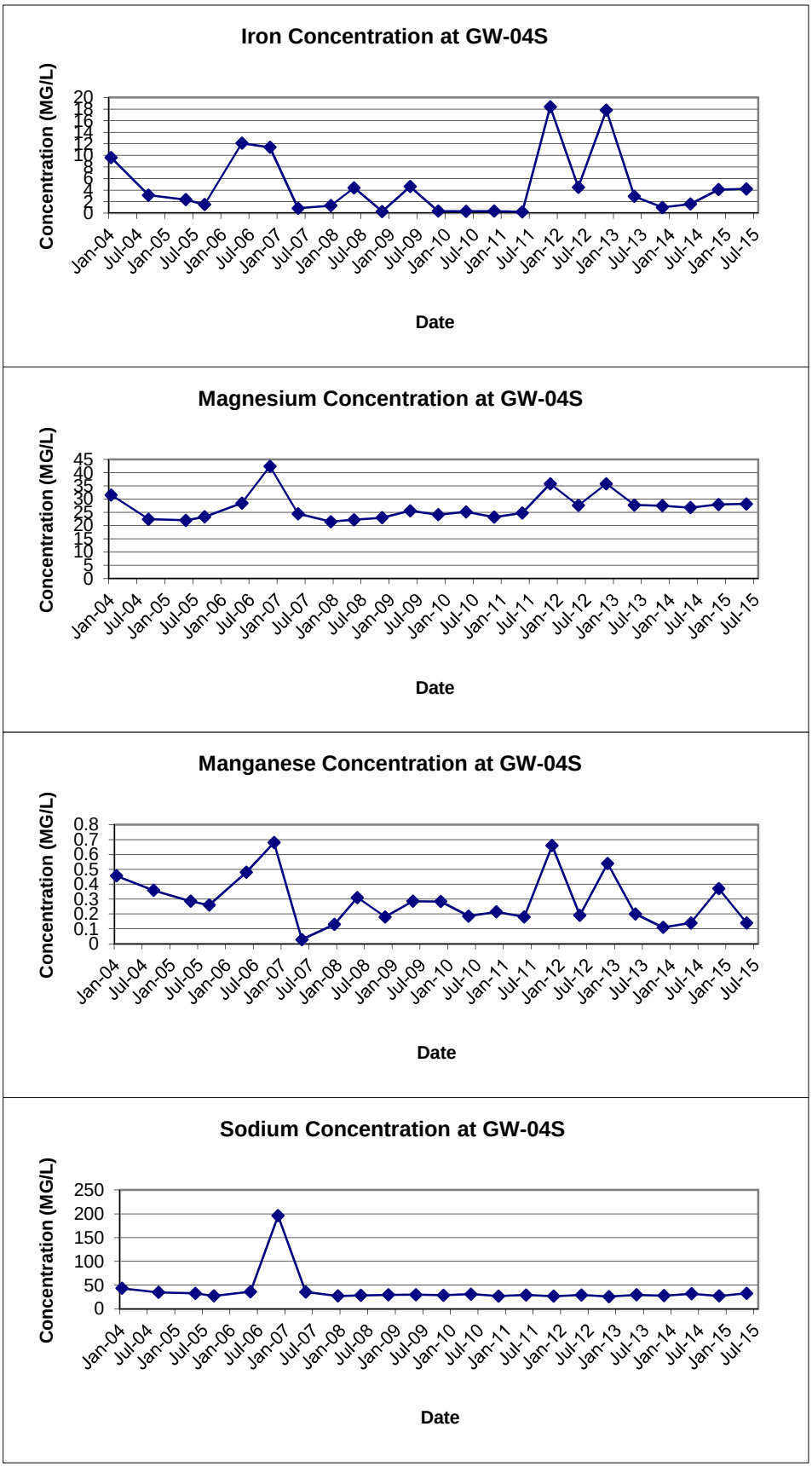


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7D

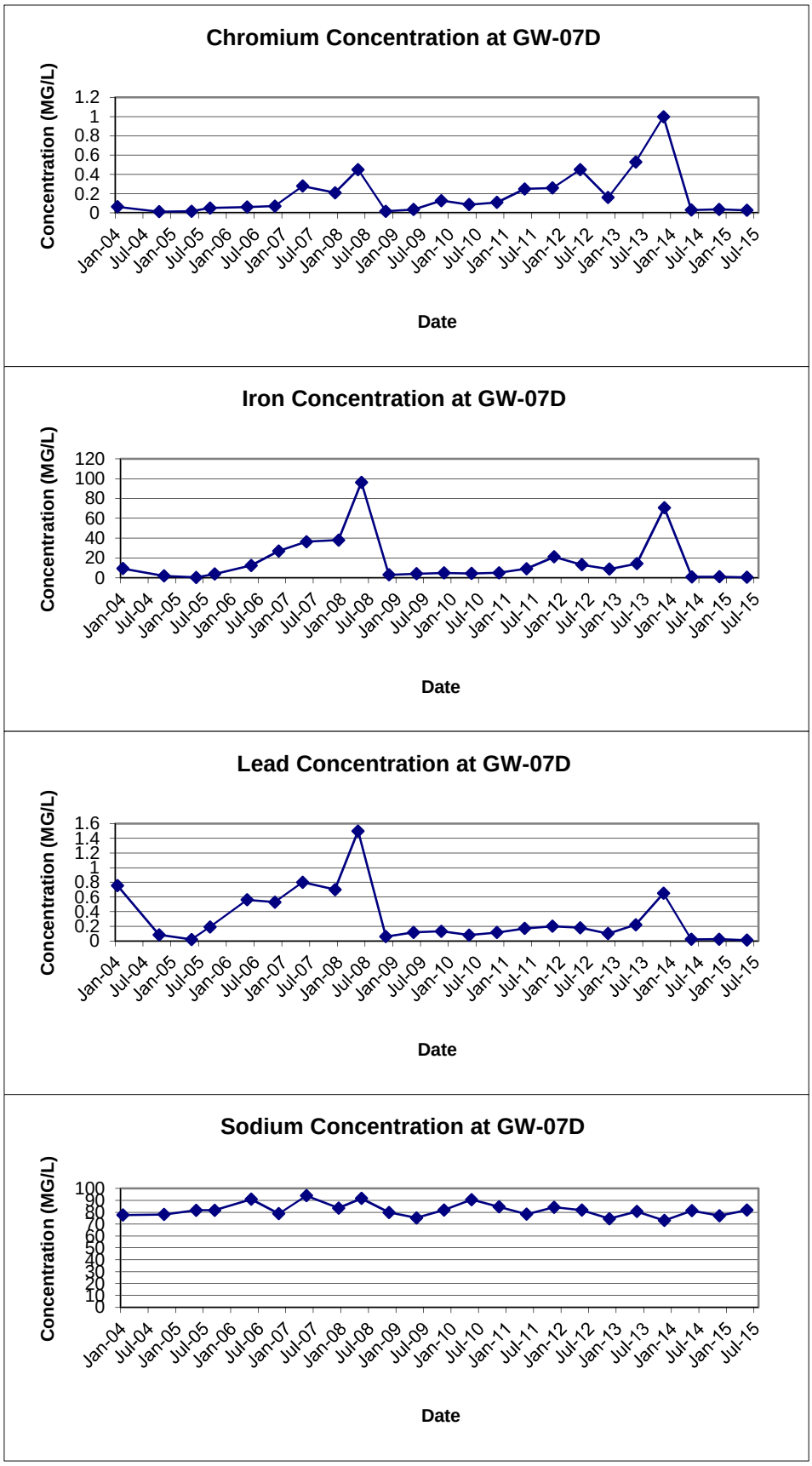


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7S

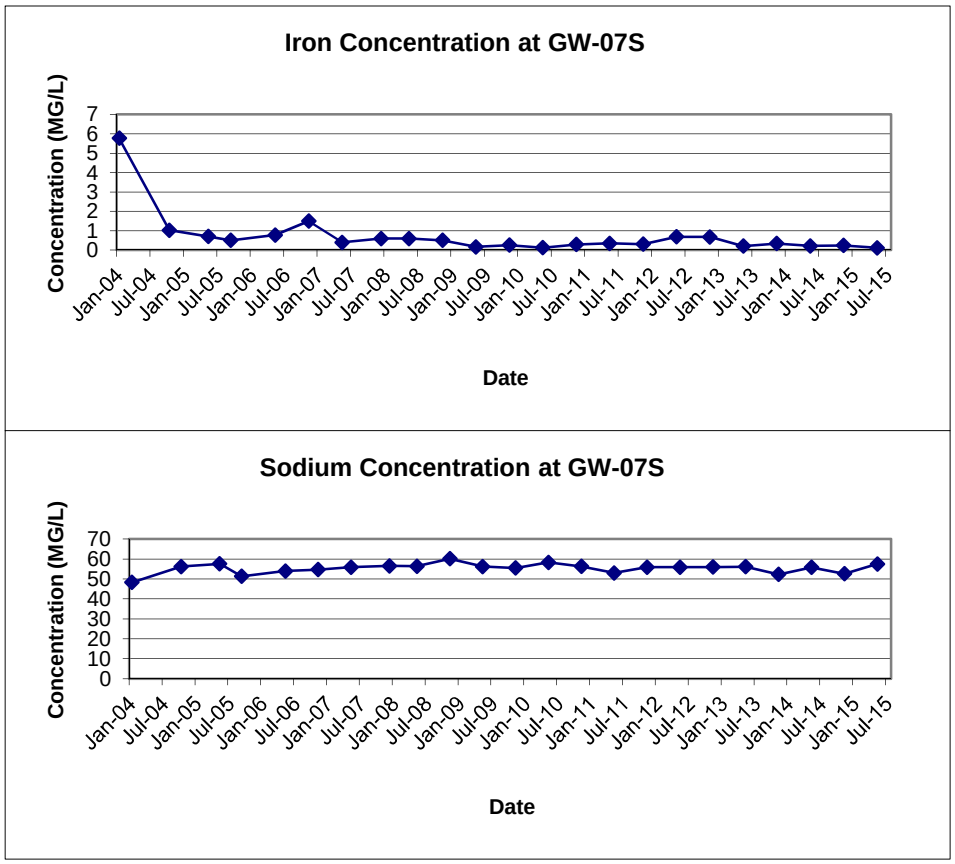


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8D

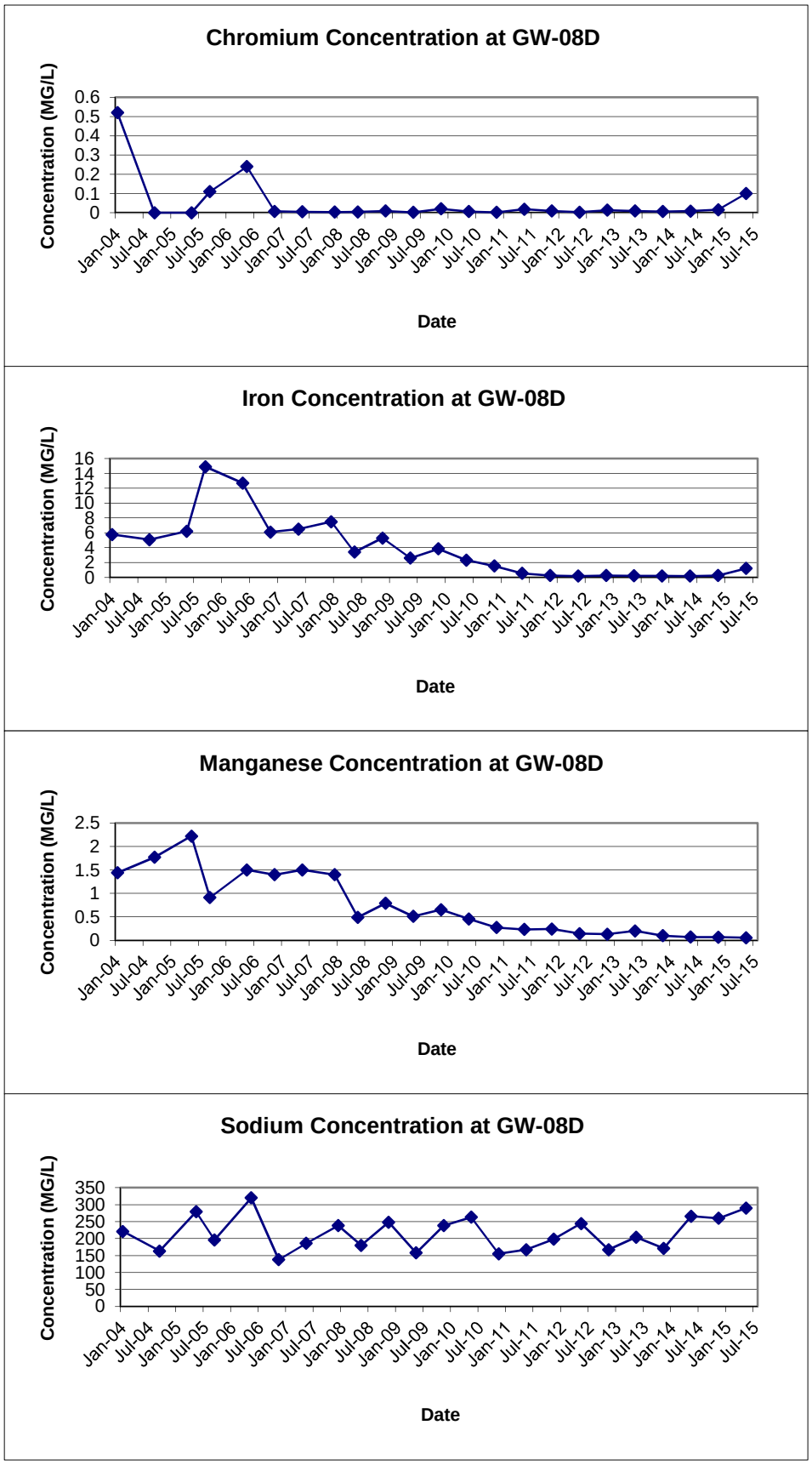


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8SR

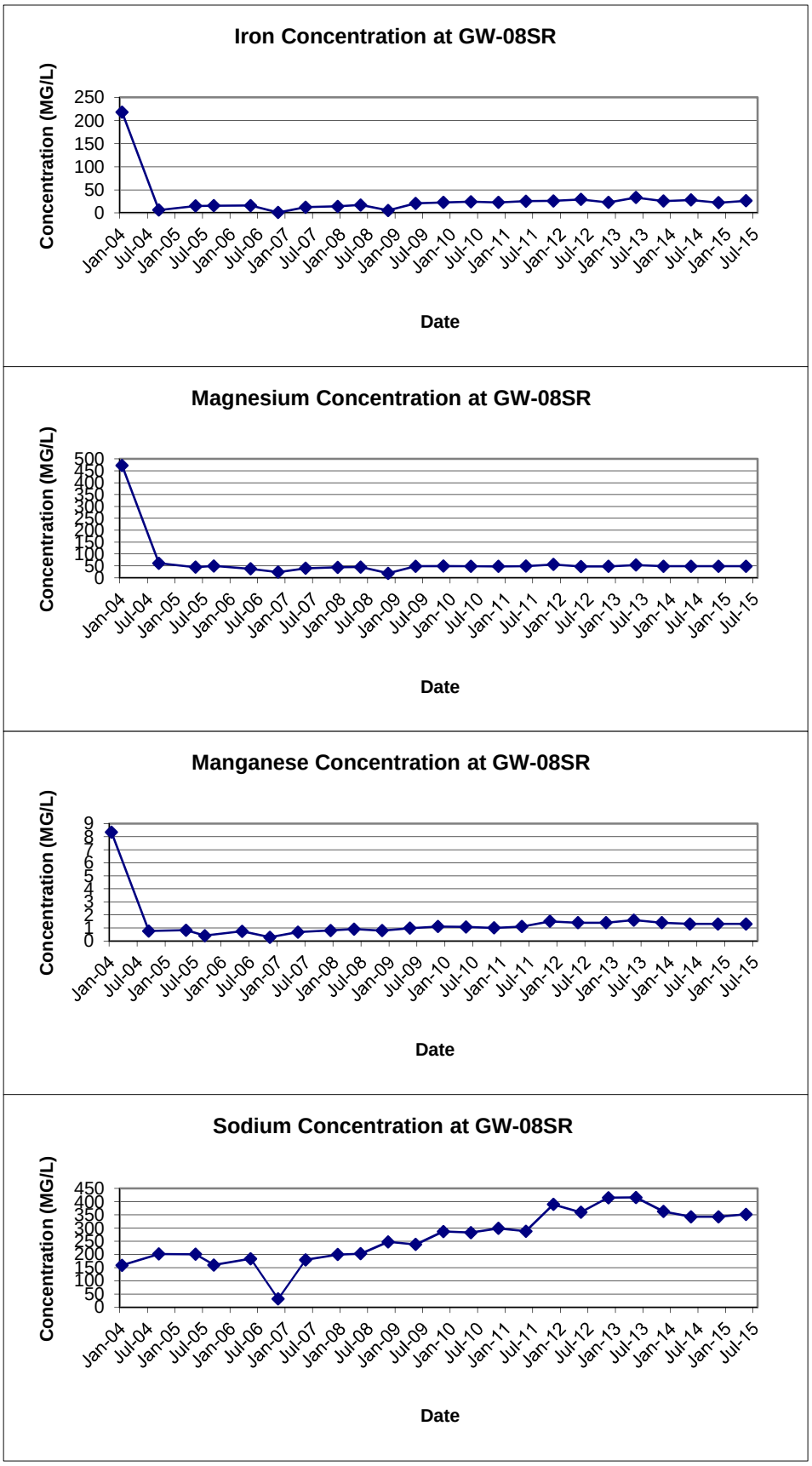


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

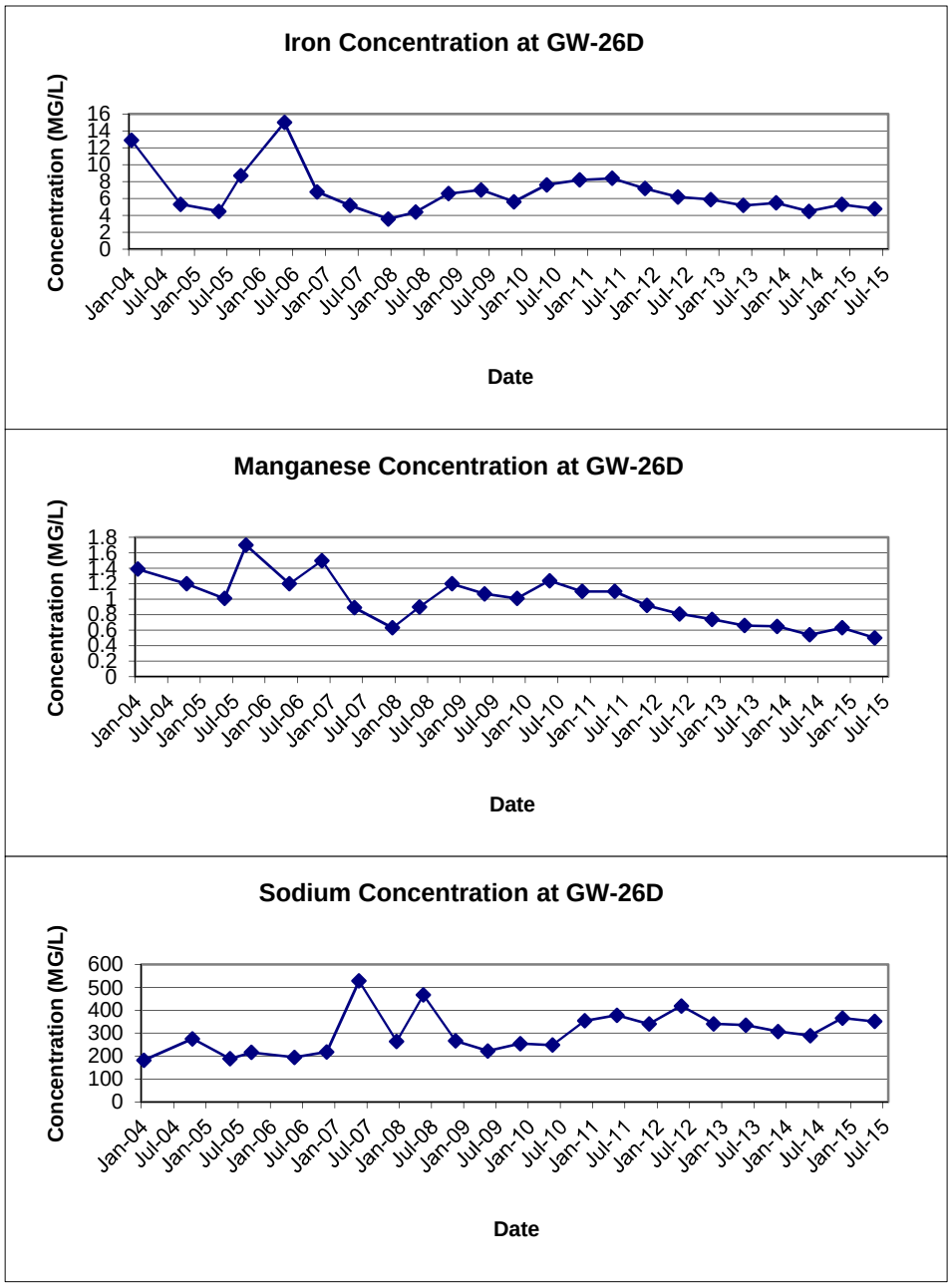


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

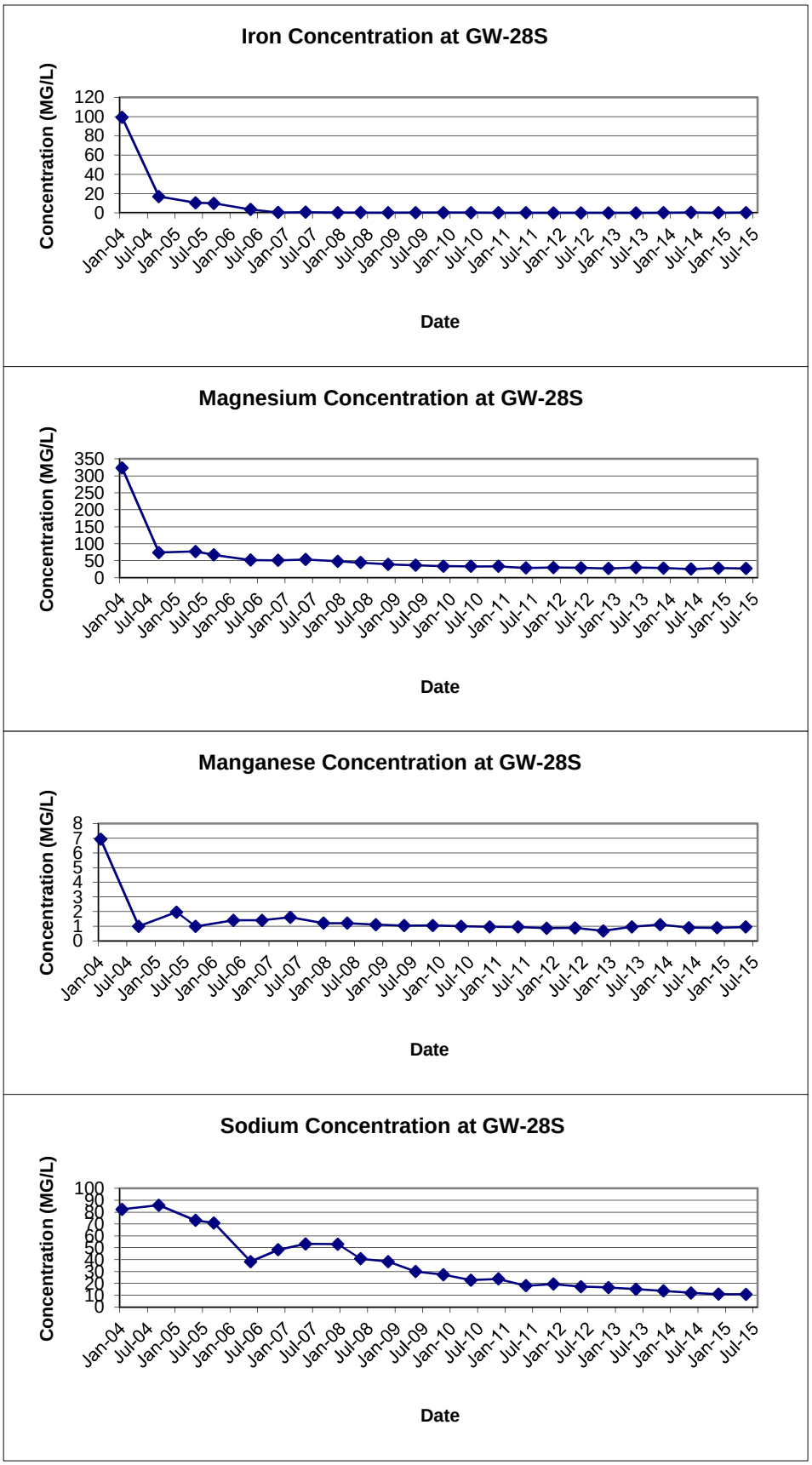


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

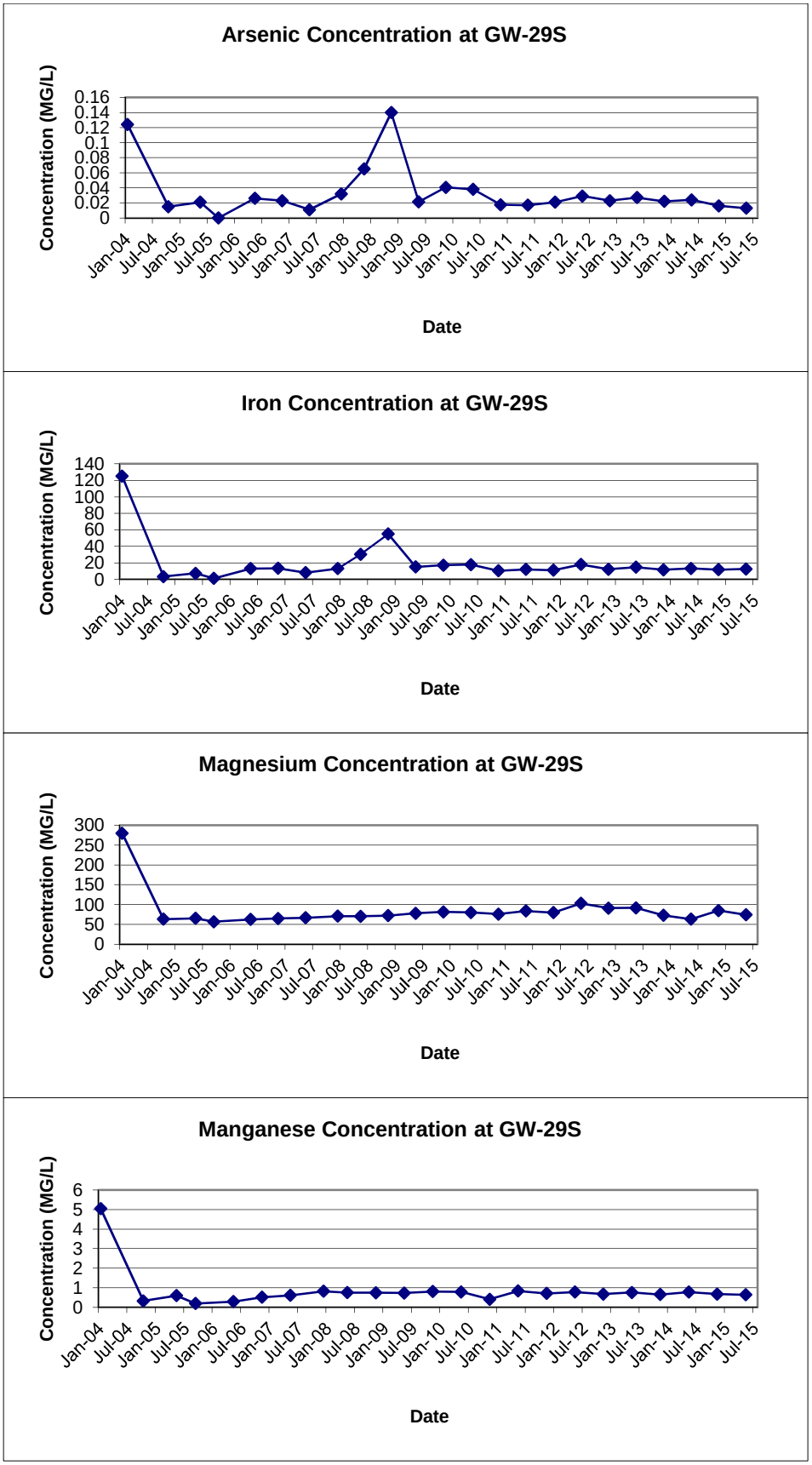


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

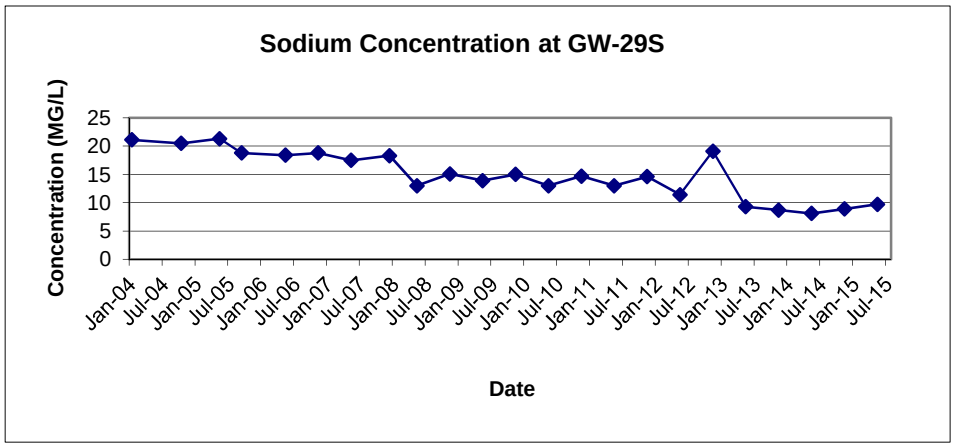


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

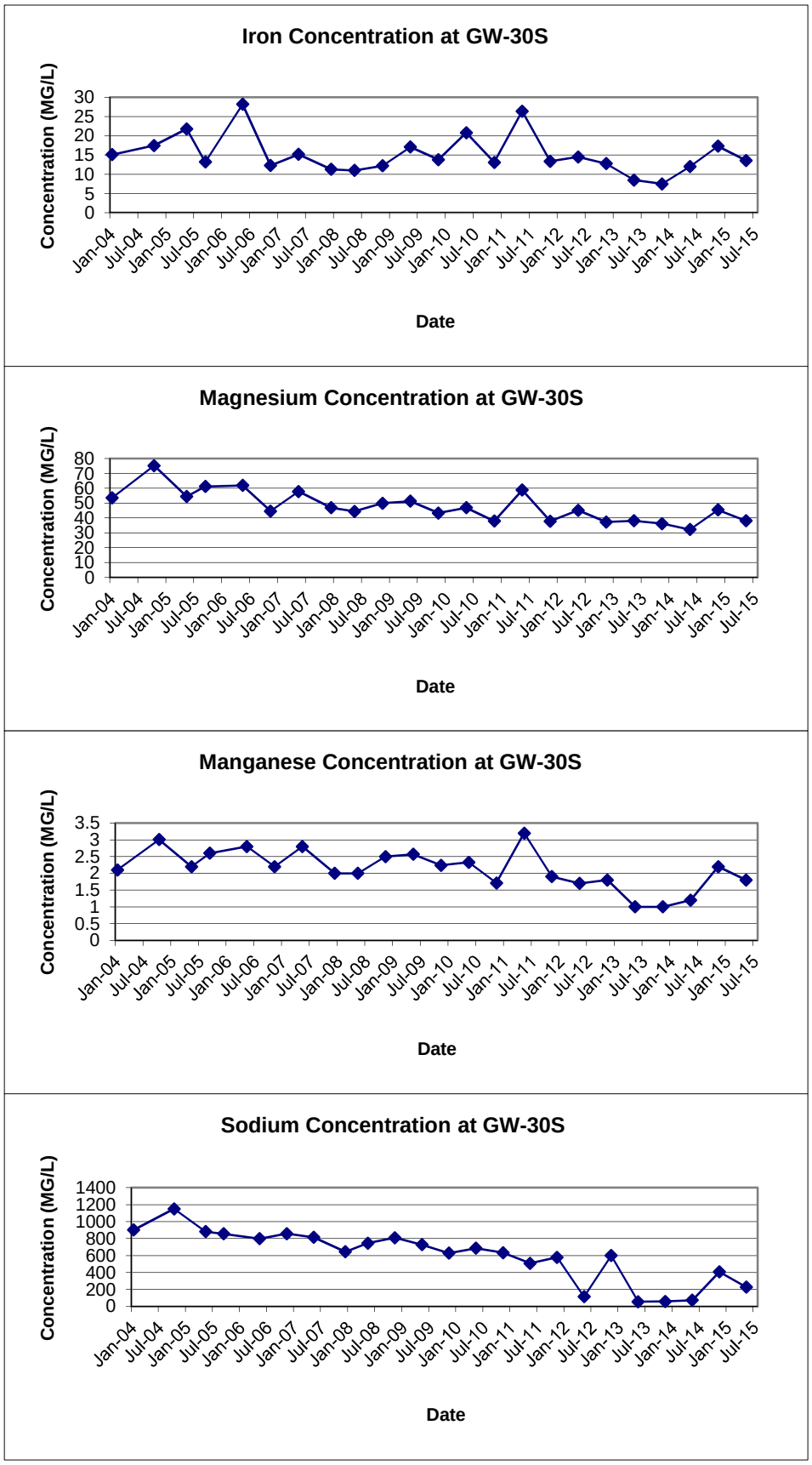


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

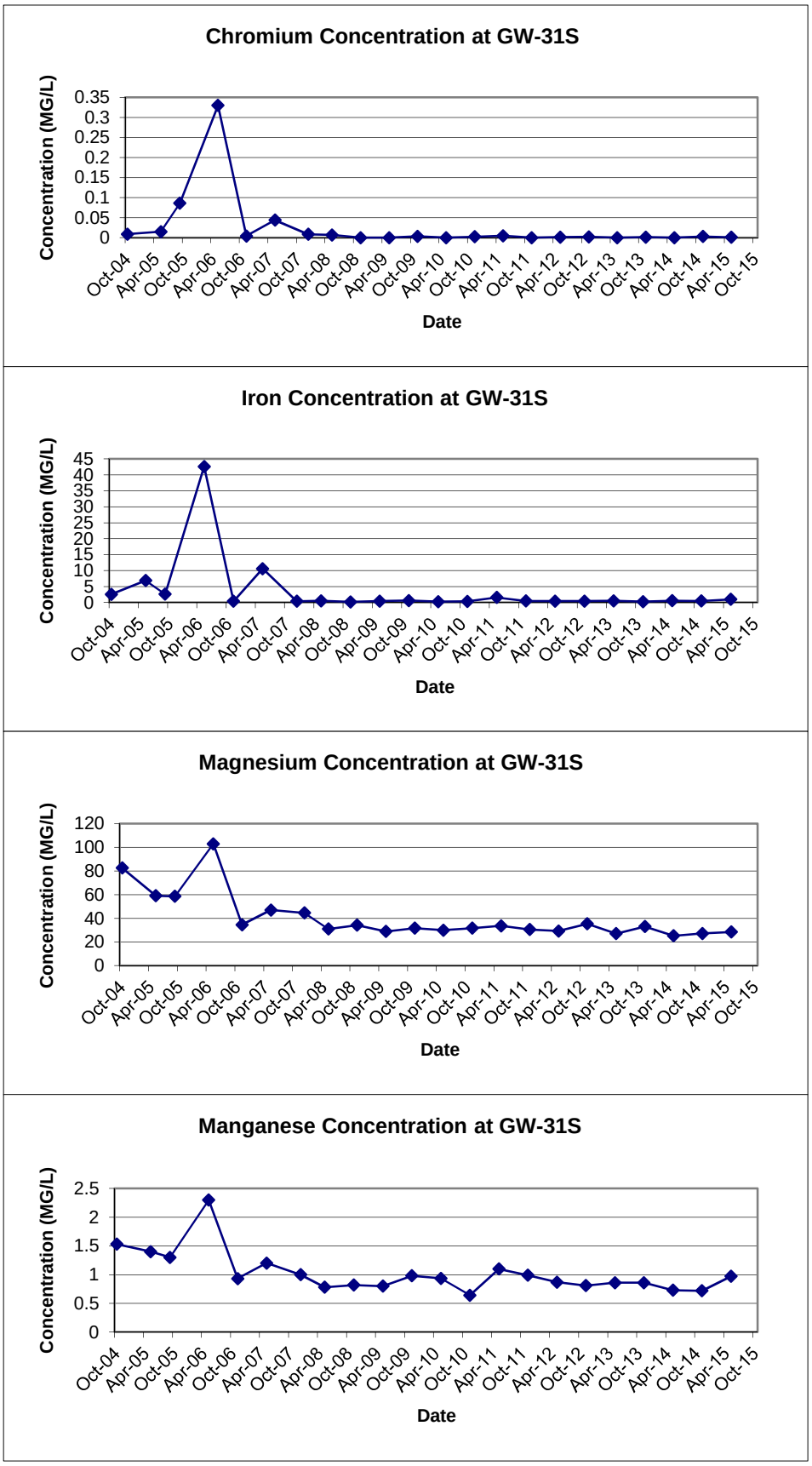


FIGURE E-16
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-32S

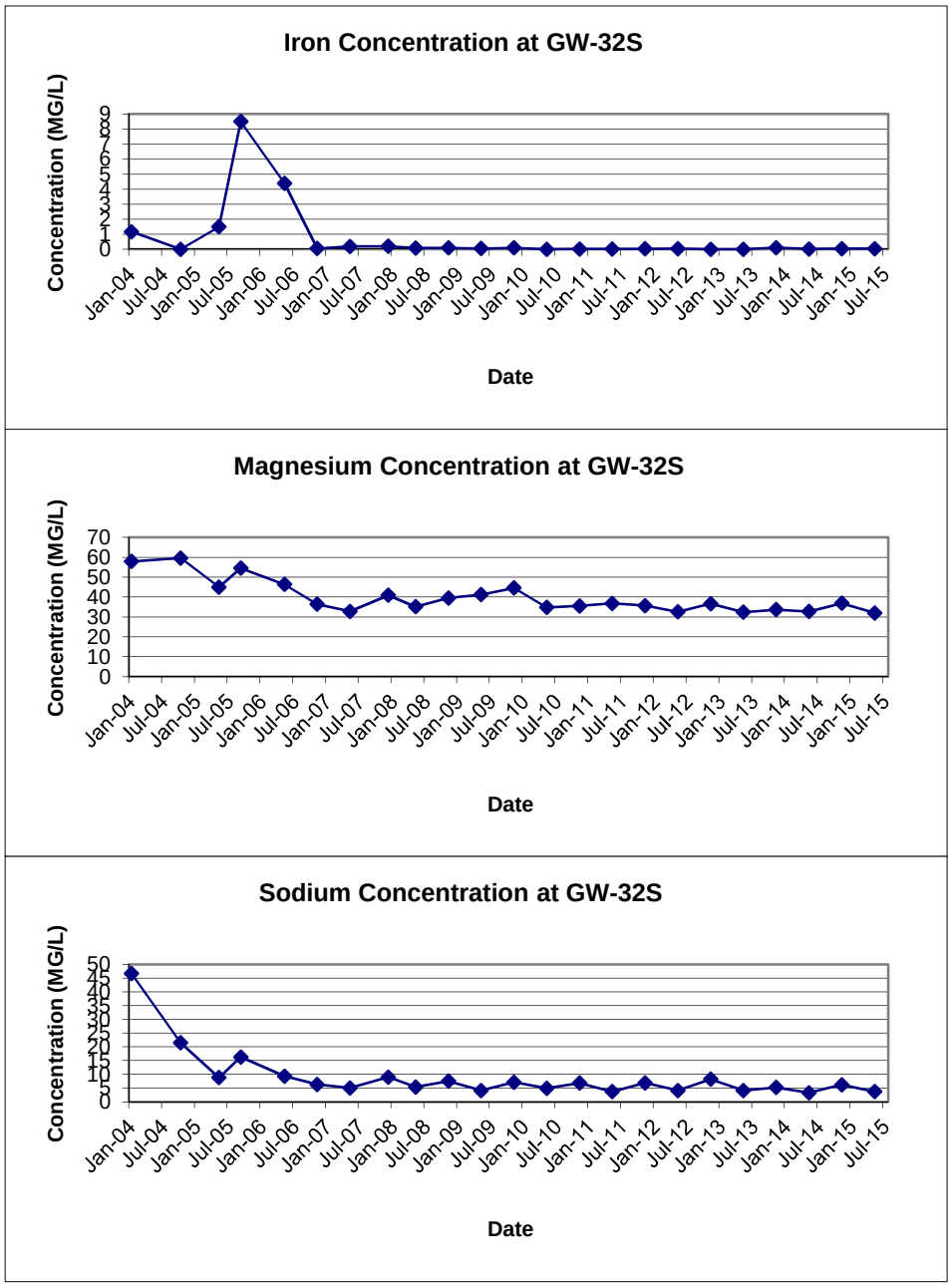


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

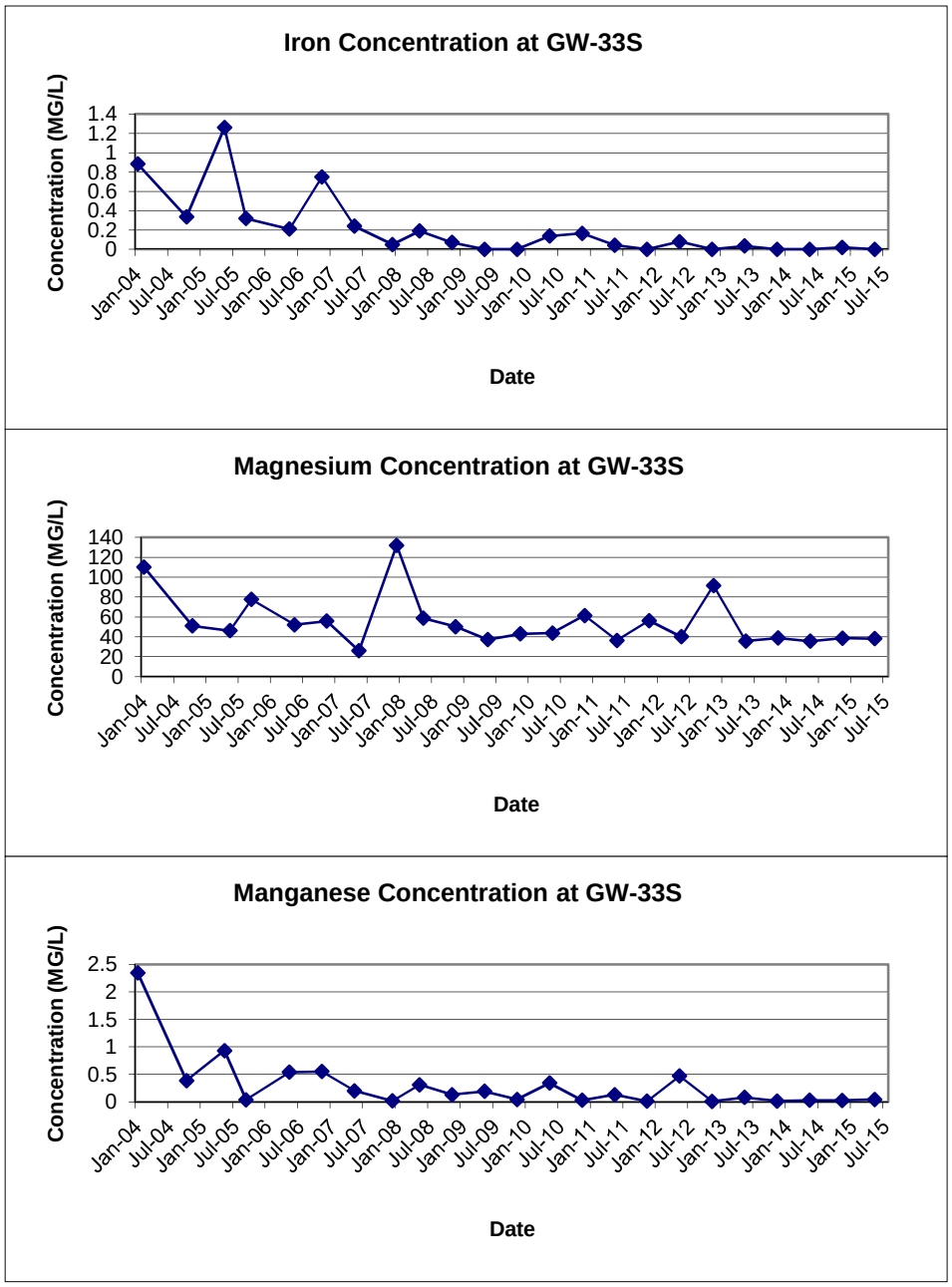


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

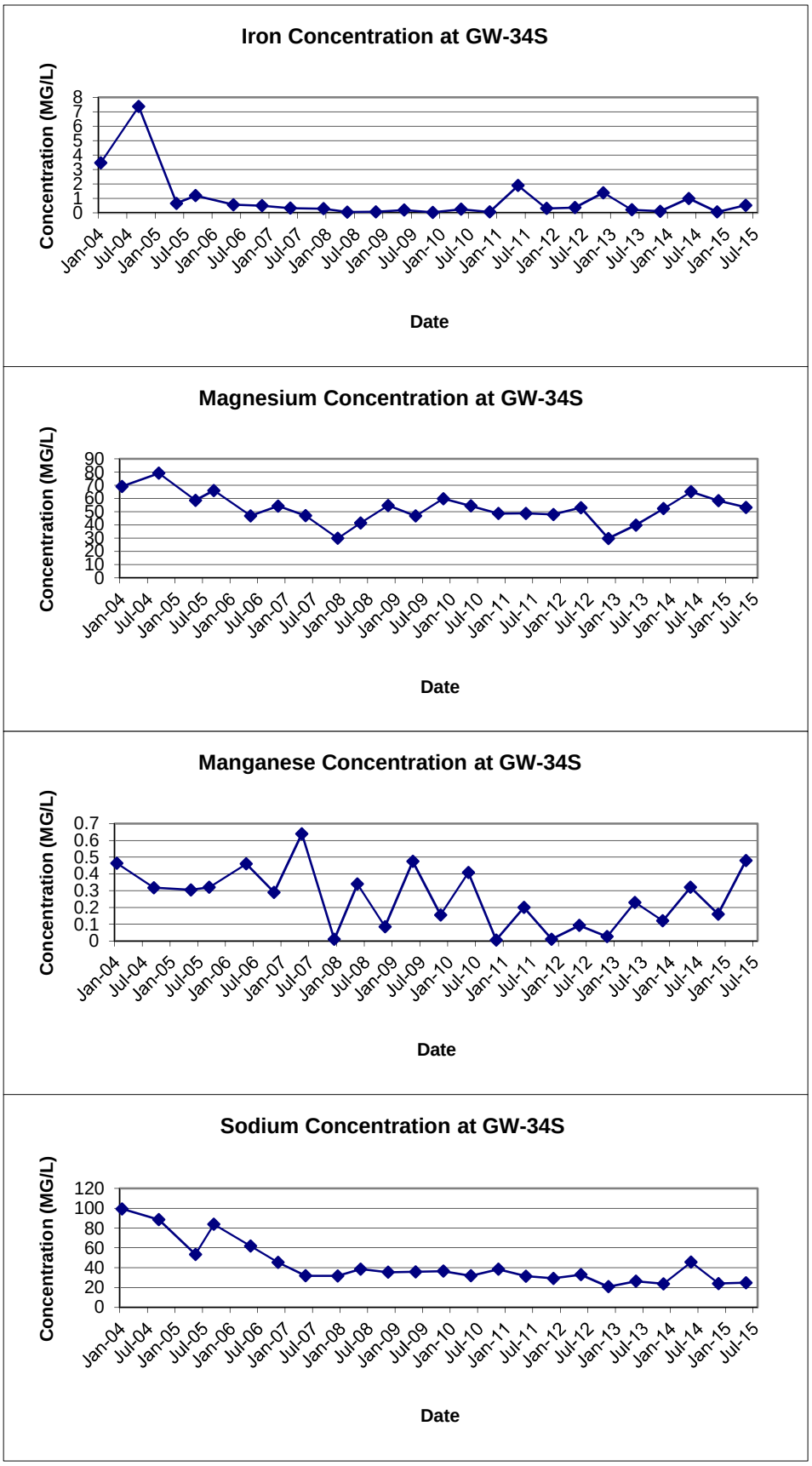
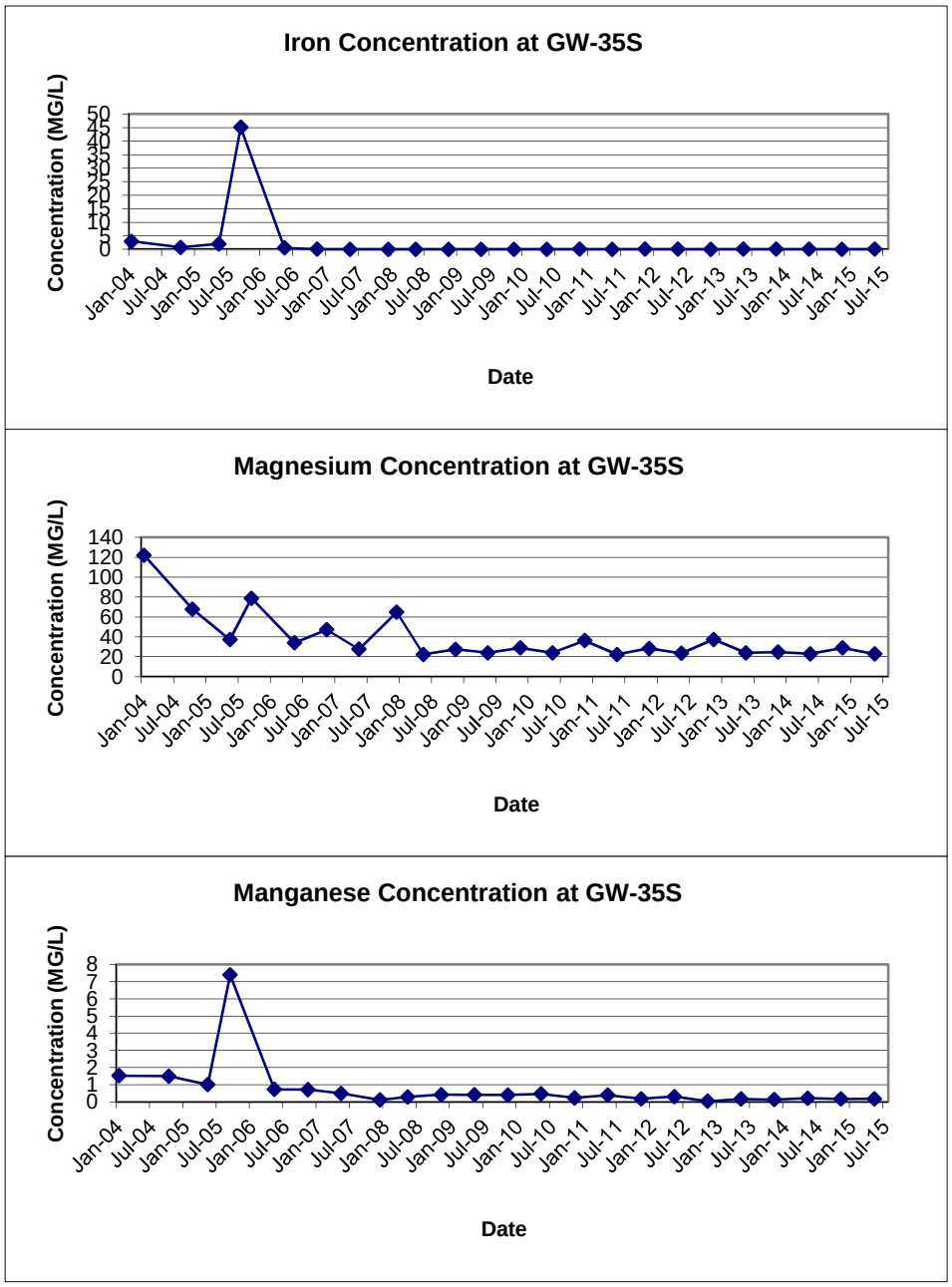


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT NO. 13-04-CH016

The Town of Cheektowaga
275 Alexander Street
Cheektowaga NY 14211

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

WILLIAM R. PUGH, P.E.
TOWN ENGINEER

October 8, 2013

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

Re: Pfohl Bros. Landfill
Site Discharge Permit

Dear Mr. Sundquist:

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

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

Very truly yours,

TOWN OF CHEEKTOWAGA

William R. Pugh, P.E.
Town Engineer

WRP/mj

enc.

AUTHORIZATION TO DISCHARGE UNDER THE BUFFALO POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT NO. 13-04-CH016
USEPA Category 40 CFR Part 403

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

THE TOWN OF CHEEKTOWAGA

to discharge wastewater from a facility located at:

PFOHL BROTHERS LANDFILL REMEDIATION SITE

1000 AERO DRIVE

CHEEKTOWAGA, NEW YORK 14225

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

Issuance of this permit is based upon a permit application filed on **February 11, 2013** analytical data. This permit is granted in accordance with discharge limitations, monitoring requirements and other conditions set forth in Parts I and II hereof.

Effective this 1st day of April, 2013

To Expire the 31st day of March, 2016

General Manager

Signed this 12th **day of** March **, 2013**

PART I: SPECIFIC CONDITIONS

A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

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

Sample Point	Parameter	Discharge Limitations[1] 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.

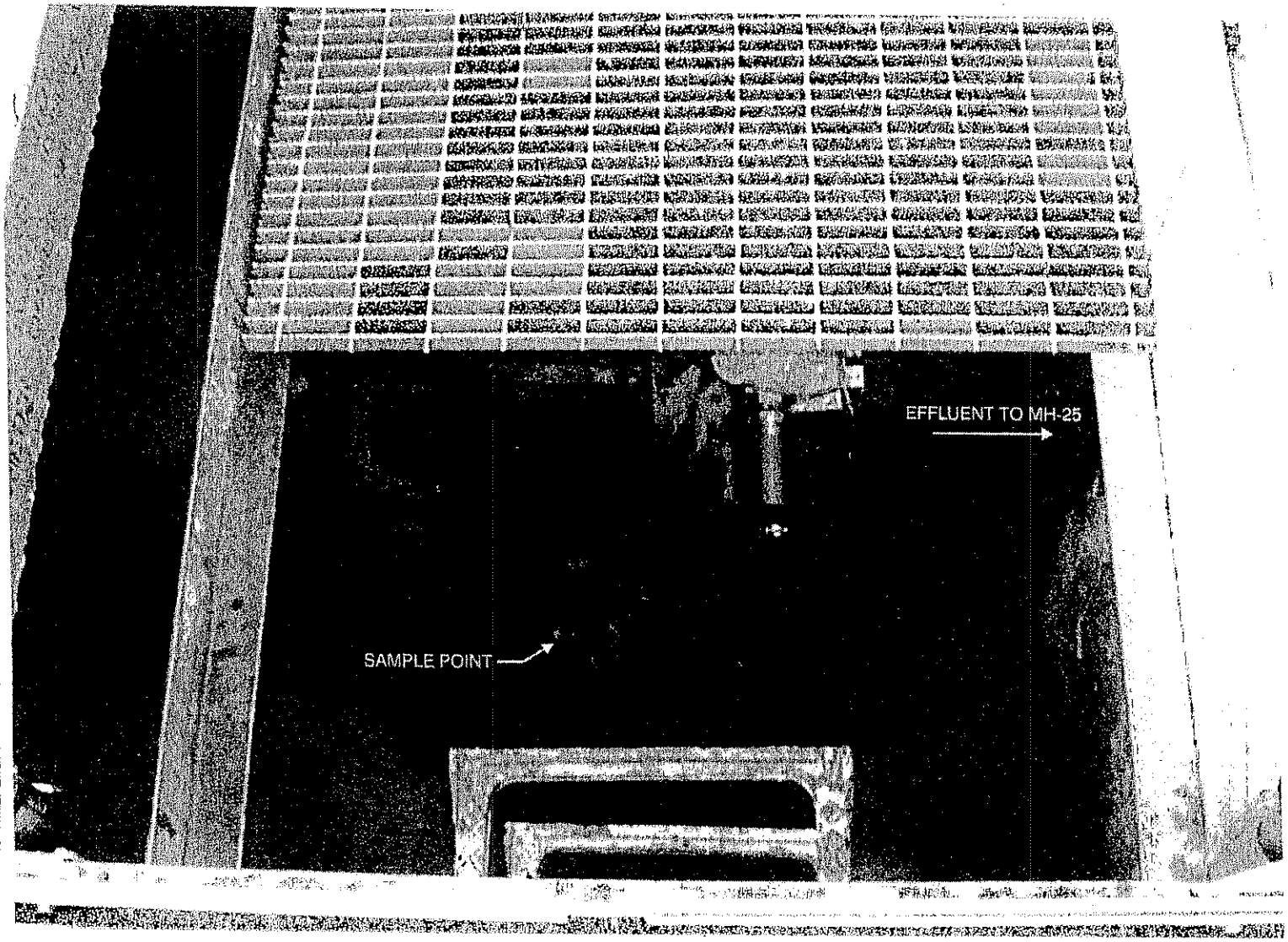
2. Composite samples may be time proportioned.

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

SAMPLING FIELD SHEET

Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

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

Installation:

Sample Point: SP-001

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

Date: 3/26/15 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 36° F, Rain/Snow Mix

Sampling Device: NA

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

Sample Interval: NA Sample Volume: NA

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

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

Weather: 33° F, Light Snow

Time of Collection: 11:20

Field Measurements:

11:20/RJM
(time/initial)

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

pH Measurement: 8.29

Temperature: 4.9°C

Identification: EFF-032715

Physical Observations:

Laboratory: TestAmerica, Buffalo, NY

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

Reviewed By: Date:
(Supervisor)

TABLE 1

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

Sample ID	EFF-032715			
Matrix	Effluent Water			
Date Sampled	3/27/2015			
Parameter	**Result**	**Mass Loading**	**Discharge Limitation**	**Violations**
	(mg/L)	**(lbs/day)**	**(lbs/day)**	**(Y/N)**
Total Barium	0.05	0.01	2.34	No
Total Cadmuim	<(1) 0.0005	< 0.0001	1.17	No
Total Chromium	< 0.0010	< 0.0002	1.17	No
Total Copper	0.0052	0.001	3.74	No
Total Lead	< 0.0030	< 0.001	1.17	No
Total Nickel	0.0013	0.0002	3.27	No
Total Zinc	0.027	0.005	5.84	No
Total Suspended Solids	< 4.0	NA(2)	250 (3)	No
pH (4)	8.29	NA	5.0 - 12.0	No
Total Flow (5)		21,539	140,100	No

Notes:

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

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

Installation:

Sample Point: SP-001

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

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

Weather: 86° F, Sunny

Sampling Device: NA

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

Sample Interval: NA Sample Volume: NA

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

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

Weather: 63° F, Cloudy

Time of Collection: 11:40

Field Measurements:

11:40/RJM (time/initial)

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

pH Measurement: 7.82

Temperature: 18.4°C

Identification: EFF-061915

Physical Observations:

Laboratory: TestAmerica, Buffalo, NY

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

Reviewed By: Date:
(Supervisor)

TABLE 1

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

Sample ID	EFF-061915			
Matrix	Effluent Water			
Date Sampled	6/19/2015			
Parameter	**Result**	**Mass Loading**	**Discharge Limitation**	**Violations**
	(mg/L)	**(lbs/day)**	**(lbs/day)**	**(Y/N)**
Total Barium	0.26	0.02	2.34	No
Total Cadmuim	<(1) 0.0005	< 0.00003	1.17	No
Total Chromium	< 0.0010	< 0.0001	1.17	No
Total Copper	0.0044	0.000	3.74	No
Total Lead	< 0.0030	< 0.0002	1.17	No
Total Nickel	0.0042	0.0002	3.27	No
Total Zinc	0.038	0.002	5.84	No
Total Suspended Solids	< 4.0	NA(2)	250 (3)	No
pH (4)	7.82	NA	5.0 - 12.0	No
Total Flow (5)		7,077	140,100	No

Notes:

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

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

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

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

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

Date(s) of Inspection: *May 6, 2015*

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

Additional Comments:

WELL INSPECTION SUMMARY

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

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

Date(s) of Inspection: *May 6, 2015*

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

Additional Comments: _____

WELL INSPECTION SUMMARY

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

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

Date(s) of Inspection: *May 6, 2015*

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	5.27	8.21	
GW-34S	OK	OK	OK	OK	2.77	10.01	
GW-35S	OK	OK	OK	OK	3.82	7.46	

Additional Comments: _____

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