

**SEMI ANNUAL REPORT
OPERATION AND MAINTENANCE
JULY 2008 TO DECEMBER 2008
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**

FEBRUARY

2009



February 4, 2009

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

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

Dear Mr. Walia:

Enclosed are two copies of the ninth 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 are Data Usability Summary Reports for laboratory analyses associated with the sampling events. PDF copies of the reports are also enclosed.

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

Sincerely,

URS CORPORATION

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

Jon Sundquist, Ph.D.
Project Manager

Enclosures

cc: Pamela Tames, P.E. - USEPA (w/attachments)
William Pugh, 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. 9-15-043 on the New York State Department of Environmental Conservation's (NYSDEC's) Registry of Inactive Hazardous Waste Disposal Sites. A Consent Order between NYSDEC and potentially responsible parties (PRPs) for closure of the site was signed in 2001 and remedial construction commenced in 2001. The remedy included consolidation of waste material, capping of the waste disposal and consolidation areas, and encircling the landfill areas with a groundwater collection system to prevent off-site migration. The remedial action was completed in 2002.

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

1.2 Operation and Maintenance Activities

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

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

2.0 GENERAL MAINTENANCE ACTIVITIES

Since completion of construction activities in 2002, personnel from the Town of Cheektowaga Engineering Department have performed general activities to ensure the physical operation of the landfill as intended by the design. The various O&M activities performed by the Town from July 2008 through December 2008 include the following actions.

- The amount of groundwater discharged through the collection system was recorded on a daily basis. The flow rate displayed by each wet well pump at the time of daily inspection and the total cumulative volume of flow was recorded for each wet well on daily inspection sheets. Examples of the daily inspection sheet are attached in Appendix A.
- Total cumulative effluent flow rates and volumes were summarized on a monthly basis starting in February 2003. The monthly totals for the period of July 2008 through December 2008, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shutdown during wet weather flow conditions throughout the year to reduce hydraulic loading to the sewer. Such actions were only taken upon request of the Buffalo Sewer Authority during heavy storm events in order to reduce the hydraulic load on the BSA treatment system during such events. Shutdown events are recorded and included with the monthly flow data as previously requested by NYSDEC.
- Plowed snow to access the Control Building when necessary.
- Cleaned/replaced check valves as necessary at all wet wells.
- Engaged contractor to mow entire landfill cap (September 2008)
- Engaged electrical contractor to investigate defective underground electrical cable serving WW4 and WW5, removed and replaced electrical power cable between MH20 and MH21 (August 2008).

- Engaged locksmith to repair/replace Control Building lockset and door hardware following vandalism (September 2008).
- Town Electrician replaced exterior security lighting on Control Building (September 2008).
- Installed exterior (dummy) security camera to deter trespass at Control Building (October 2008)
- Engaged contractor to haul and spread additional stone over the entire length of the perimeter access road on the south side of Aero Drive – Area C (October 2008)
- Engaged mechanical contractor to disassemble piping in WW4 and to clean, re-assemble and re-insulate discharge piping as discharge rate from WW4 had diminished significantly. Also cleaned and flushed force main segments from
 - WW4 to MH17
 - MH17 to MH18
 - MH18 to WW5

Pumping rate from WW4 increased to 39 +/- gpm following cleaning.

- Purchased six ball check valves for replacement inventory.
- Engaged wildlife control contractor (trapper) to address woodchuck activity.
- Replaced surge suppression equipment at WW2, WW3, and WW4 and fuses as necessary (November 2008).
- Replaced batteries in UPS (July 2008)

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 tenth semi-annual groundwater quality monitoring event (Section 3.1.1.3 of the O&M plan). A summary of the monitoring activities is presented in the following subsections. Hydraulic and groundwater sampling locations are shown on Figure 3-1.

3.1 Groundwater Hydraulic Monitoring

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

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

3.2 Groundwater Quality Monitoring

The tenth semi-annual round of groundwater sampling was conducted between November 11, 2008 and November 13, 2008. All wells listed in Table 3.2 of the O&M plan were purged and sampled using dedicated equipment. Figure 3-1 shows the well locations. During this sampling event, low flow sampling techniques were used on wells that historically have been purged to dryness. Three wells were purged dry using low flow techniques before a sample could be collected including GW-4S, GW-7S, and GW-7D. These wells were sampled after their water levels recovered. Purge logs and sampling summary sheets are provided in Appendix D.

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

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

No VOCs were detected at concentrations above the Class GA water quality standards at any location. One SVOC, bis(2-ethylhexyl)phthalate, was detected at a concentration slightly exceeding its Class GA water quality standard in the upgradient well GW-07D.

Among the metals, iron, magnesium, manganese, and sodium routinely exceed Class GA standards in most site wells. The concentration of iron, magnesium, manganese, and sodium in most site wells was similar to the concentrations found during previous sampling events. Lead exceeded its respective groundwater standard in upgradient well GW-07D. Arsenic on GW-29S and Chromium in GW-03S marginally exceeded their respective groundwater standards. However, both of these metals were detected at less than 0.15 milligrams per liter (mg/L).

Sodium concentrations were generally higher in bedrock wells (GW-1D, GW-3D, GW-8D and GW-26D) and shallow wells adjacent to roads (GW-1S and GW-30S). No significant changes in metals concentrations were observed when compared to previous sampling event analytical results. 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.

Appendix E, Figures E-1 through E-19 presents a trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards. A review of the trend analysis indicated that no significant changes or trends in concentrations of any of the parameters exceeding groundwater standards have occurred over the ten semi-annual sampling events except as described below. Figure E-5 for GW-04D, indicates magnesium concentrations have been increasing over the last three sampling events. Figure E-7 provides a trend analysis for upgradient monitoring well GW-7D for chromium, iron, lead, and sodium. The metals concentrations at this upgradient well had been slowly increasing over several monitoring events but concentrations were drastically lower during this event. Figure E-11 for GW-26, indicates periodic (perhaps seasonal) recent increases in sodium have occurred at this well. Figure E-13 for GW-29S, indicates iron concentrations have been slowly increasing over the last three events.

The groundwater analytical data package was prepared by Test America in accordance with NYSDEC Category A deliverable requirements. It was reviewed for compliance with analytical method requirements and the following guidelines: USEPA *Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review*, EPA-540-R-99-008, October 1999; USEPA *CLP National Functional Guidelines for Inorganic Data Review*, EPA-540-R-01-008, July 2002; and USEPA *Region II Data Validation SOP for SW-846 Method 8290, PCDDs and PCDFs by High Resolution Gas Chromatography/High-Resolution Mass Spectrometry (HRGC/HRMS)*, SOP No. HW-19, Revision 1, October 1994. Qualifications applied to the data include “J/UJ” (estimated concentration/estimated quantitation limit), “J+” (estimated concentration with possible high bias), “J-” (estimated concentration with possible low bias), and “U” (not detected).

A Data Usability Summary Report (DUSR) was prepared following the guidelines provided in NYSDEC Division of Environmental Remediation *Guidance for the Development of Data Usability Summary Reports*, dated June 1999. The DUSR dated January 2009 is submitted separately from this report.

3.3 Groundwater Discharge Monitoring

URS completed two quarterly sampling events (September 2008 and December 2008) 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. 05-12-CH016 between the Buffalo Sewer Authority and the Town of Cheektowaga. A copy of Permit No. 05-12-CH016 is included as Appendix F.

During the sampling events in September 2008 and December 2008, each regulated parameter was below the limits set by the permit. Copies of the data summary tables that were included with the monitoring reports are included as Appendix G.

3.4 Monitoring Well Inspections

During the November 2008 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of damage to the riser on GW-07D. The lock at GW-01S required lubrication and was functioning properly afterwards. 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 eleventh round of groundwater sampling will be conducted in May 2009. Low flow sampling techniques will continue to be used on wells that historically have been purged to dryness. A review of the purge logs (Appendix D) has indicated that four wells (GW-4S, GW-7S, GW-7D, and GW-31S) can still be purged to dryness even using low flow sampling techniques.

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

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

Wetland Inspection Summary: An inspection of the wetlands during the May 2008 event indicated that most of the replanted wetland stock has flourished and the wetland areas are returning to their natural state.

TABLES

TABLE 3-1
GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2008

Location ID			GW-04D	GW-04S	GW-07D	GW-07S	GW-08D
Sample ID			GW-4D	GW-4S	GW-7D	GW-7S	GW-8D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/12/08	11/12/08	11/12/08	11/12/08	11/11/08
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					1.4 J
Vinyl chloride	UG/L	2					1.7
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5			9.0		
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.062	0.097	0.042	0.23	0.10
Chromium	MG/L	0.05			0.017	0.0052	0.0098
Copper	MG/L	0.2			0.010		
Iron	MG/L	0.3	0.15	0.30	2.9	0.51	5.3
Lead	MG/L	0.025			0.058		
Magnesium	MG/L	35	64.4	23.0	22.6	29.8	18.9
Manganese	MG/L	0.3	0.018	0.18	0.055	0.15	0.79
Nickel	MG/L	0.1			0.025		
Sodium	MG/L	20	64.8	29.8	79.9	60.1	248
Zinc	MG/L	2	0.088		0.028		0.065

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 Addendum). Class GA.

Flags assigned during chemistry validation are shown.

 Concentration Exceeds

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

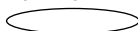
Only Detected Results Reported.

TABLE 3-1
GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2008

Location ID			GW-01D	GW-01S	GW-03D	GW-03D	GW-03S
Sample ID			GW-1D	GW-1S	110808 DUP	GW-3D	GW-3S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/12/08	11/12/08	11/11/08	11/11/08	11/11/08
Parameter	Units	*			Field Duplicate (1-1)		
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5			1.1 J	1.1 J	
Vinyl chloride	UG/L	2			0.44 J	0.47 J	
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			1.0 J	1.0 J	
1,4-Dichlorobenzene	UG/L	3			2.0 J	2.0 J	
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.071	0.19	0.075	0.073	0.16
Chromium	MG/L	0.05	0.0052		0.0062	0.0057	0.080
Copper	MG/L	0.2					
Iron	MG/L	0.3		9.4	1.4	1.4	1.4
Lead	MG/L	0.025					
Magnesium	MG/L	35	34.8	17.8	15.0	14.8	75.7
Manganese	MG/L	0.3	0.019	0.98	0.60	0.59	0.27
Nickel	MG/L	0.1					0.48
Sodium	MG/L	20	116	222	212	209	36.4
Zinc	MG/L	2	0.025				0.017

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 Addendum). Class GA.

Flags assigned during chemistry validation are shown.

 Concentration Exceeds

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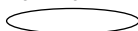
Only Detected Results Reported.

TABLE 3-1
GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2008

Location ID			GW-08SR	GW-26D	GW-28S	GW-29S	GW-30S
Sample ID			GW-8S(R)	GW-26D	GW-28S	GW-29S	GW-30S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/11/08	11/13/08	11/12/08	11/12/08	11/13/08
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5		1.6 J			
Vinyl chloride	UG/L	2	1.4				
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025				0.14	
Barium	MG/L	1	0.56	0.15	0.069	0.42	0.41
Chromium	MG/L	0.05				0.014	
Copper	MG/L	0.2					
Iron	MG/L	0.3	18.7	6.6	0.22	55.1	12.2
Lead	MG/L	0.025					
Magnesium	MG/L	35	51.1	23.8	39.1	71.9	49.9
Manganese	MG/L	0.3	0.95	1.2	1.1	0.74	2.5
Nickel	MG/L	0.1					
Sodium	MG/L	20	248	266	38.3	15.1	809
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 Addendum). Class GA.

Flags assigned during chemistry validation are shown.

 Concentration Exceeds

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

Only Detected Results Reported.

TABLE 3-1
GROUNDWATER SAMPLE RESULTS
PFOHL BROTHERS LANDFILL SITE
NOVEMBER 2008

Location ID			GW-31S	GW-32S	GW-33S	GW-34S	GW-35S
Sample ID			GW-31S	GW-32S	GW-33S	GW-34S	GW-35S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			11/13/08	11/13/08	11/13/08	11/11/08	11/13/08
Parameter	Units	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Vinyl chloride	UG/L	2					
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.052	0.057	0.031	0.16	0.057
Chromium	MG/L	0.05					
Copper	MG/L	0.2					
Iron	MG/L	0.3	0.19	0.10	0.072	0.078 J+	
Lead	MG/L	0.025					
Magnesium	MG/L	35	34.2	39.5	50.2	54.7	27.3
Manganese	MG/L	0.3	0.82	0.19	0.13	0.085	0.41
Nickel	MG/L	0.1					
Sodium	MG/L	20	7.3	7.5	5.6	35.5	4.1
Zinc	MG/L	2					

*- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (includes 4/2000 Addendum). Class GA.

Flags assigned during chemistry validation are shown.



Concentration Exceeds

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

Only Detected Results Reported.

TABLE 3-2

APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

GROUNDWATER SAMPLING SUMMARY

OPERATION AND MAINTENANCE PLAN

PFOHL BROTHERS LANDFILL SITE, CHEEKTOWAGA, NEW YORK

LOCATIONS

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

FREQUENCY

semi-annually for overburden and bedrock groundwater

PARAMETERS

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

TABLE 3-2 (continued)

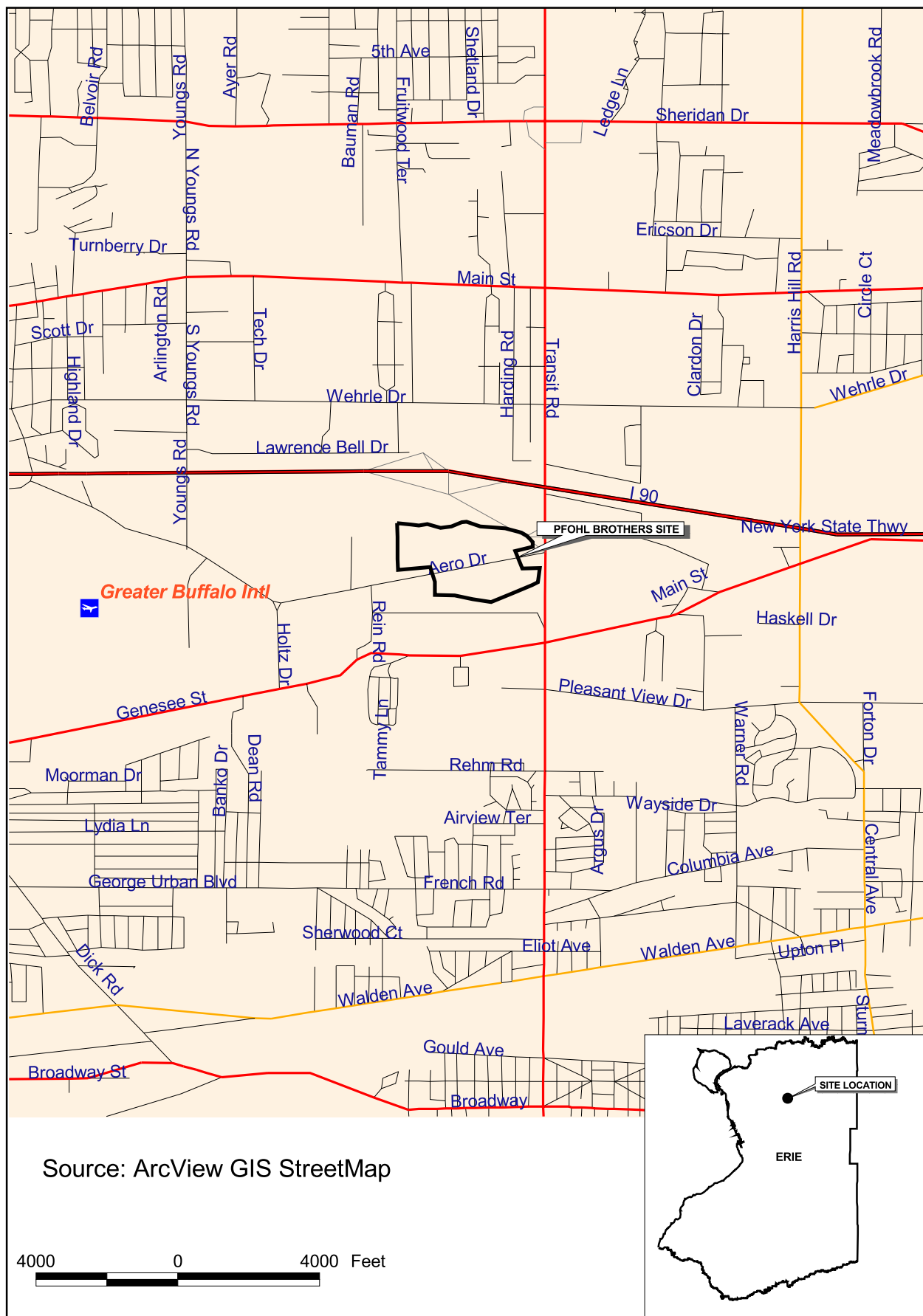
APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

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

PARAMETERS (cont'd)

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

FIGURES



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



Legend

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

PFOHL BROTHERS LANDFILL
MONITORING LOCATIONS

URS

FIGURE 3-1

APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date

10/30/08

Weather conditions

SUNNY COLD 47°

Time

1:25

Read by:

B. PUGH

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	5.5	0	208,888	1274
WW-2	4.6	0	42,656	29
WW-1	4.3	0	493,654	1130
WW-6	7.3	0	1,122,937	1639
WW-4	7.0	0	80481	3108
WW-5	5.8	43.2	1,329,254	513

Flow Totalizer at Meter chamber

Heat Trace

Outside temp T = 47

Set point SP = 40°

Current A = 0

Surge Suppressor events

115

Motor Control Center

Volts 480 volts

Which WW was running?

Amps 5 amps

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☒ 6 ☐

Filter

Checked ☐

Changed ☐

Comments and/or Current Conditions

DROVE N. & S. SIDES - NEW STONE
APPLIED ON S. SIDE TOUCH-UP ON N.
SIDE. new security camera looks
good!

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 11/14/08

Weather conditions Rain

Time 12/14

Read by: JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	<u>5.6</u>	<u>0</u>	<u>208888</u>	<u>1274</u>
WW-2	<u>4.7</u>	<u>0</u>	<u>42880</u>	<u>30</u>
WW-1	<u>4.6</u>	<u>0</u>	<u>493842</u>	<u>1130</u>
WW-6	<u>7.4</u>	<u>53.2</u>	<u>1450127</u>	<u>1728</u>
WW-4	<u>7.0</u>	<u>0</u>	<u>142974</u>	<u>3147</u>
WW-5	<u>7.0</u>	<u>45.9</u>	<u>1593839</u>	<u>623</u>

Flow Totalizer at Meter chamber

Heat Trace

Outside temp T = 52

Set point SP = 40

Current A = 6

Surge Suppressor events 130

Motor Control Center

Volts 480 volts

Which WW was running?

Amps 10 amps

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☒

Filter ☒ Checked ☐ Changed

Comments and/or Current Conditions

AC Unit Off for season.
Heat On for season.

APPENDIX B

MONTHLY FLOW SUMMARIES
JULY 2008 – DECMEBER 2008

THE TOWN OF
CHEEKTOWAGA



JON W. NICHY
Superintendent

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

August 13, 2008

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

Re: Pfohl Bros. Flow Data

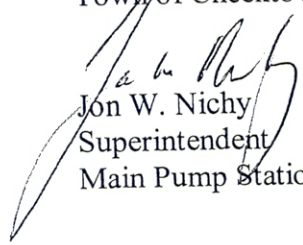
Dear Mr. Pugh,

Enclosed for your review, please find a copy of the **July 2008** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

Please note that the **Discharge Totalizers** were reset on July 1, 2008.

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

Yours truly,
Town of Cheektowaga


Jon W. Nichy
Superintendent
Main Pump Station

RECEIVED

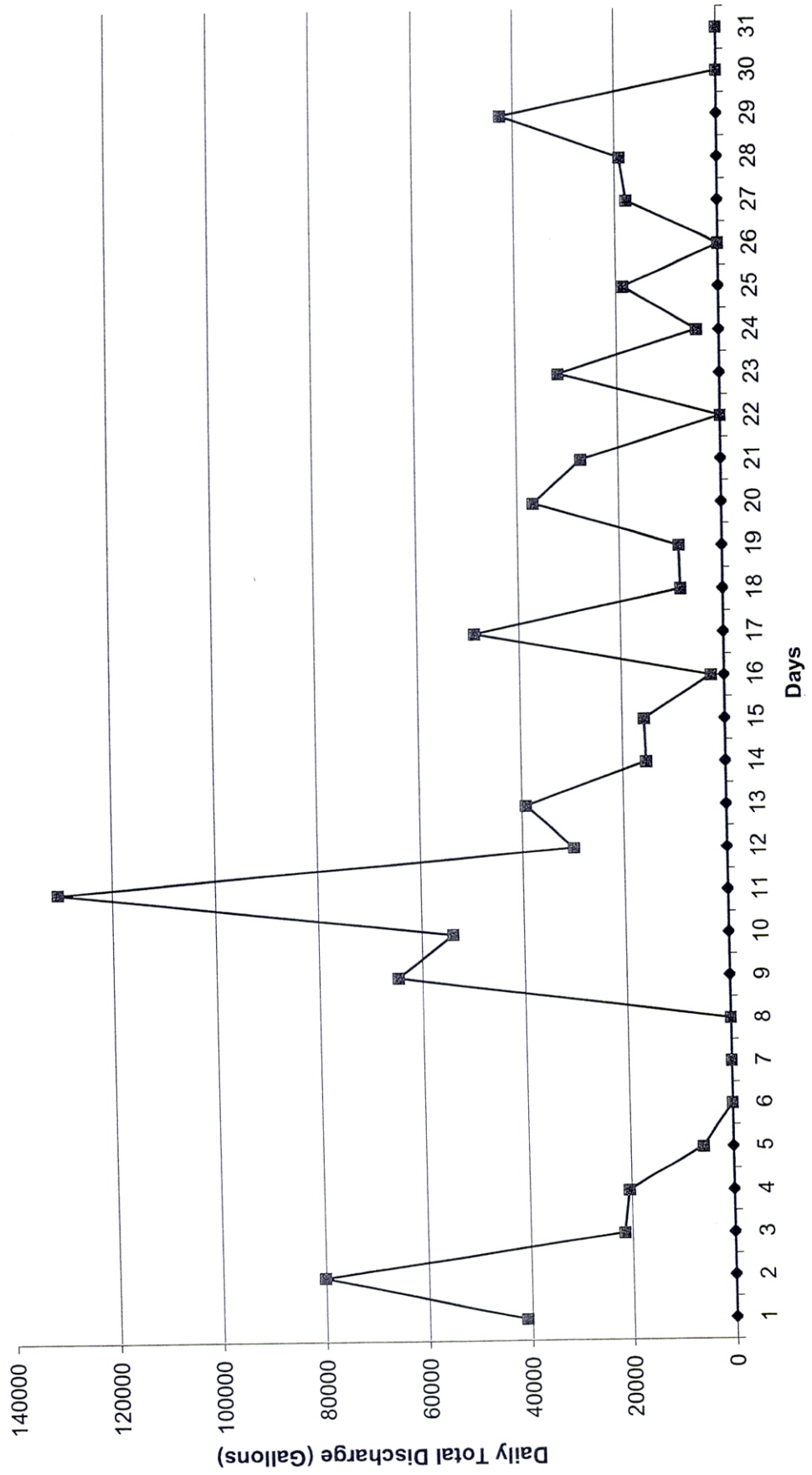
AUG 13 2008

ENGINEERING
DEPT

Direct Discharge Flow Data

6/30/2008		0	0	0	
July-08	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)		Notes
1		40920	40,920	40,920	
2		120975	80,055	120,975	
3		142504	21,529	142,504	
4		162916	20,411	162,915	
5		168806	5,890	168,805	
6		168806	0	168,805	
7		168806	0	168,805	
8		168806	0	168,805	
9		233465	64,660	233,465	
10		287408	53,943	287,408	
11		417879	130,471	417,879	
12		447708	29,829	447,708	
13		486811	39,103	486,811	
14		502311	15,500	502,311	
15		518107	15,796	518,107	
16		520678	2,572	520,679	
17		569349	48,671	569,350	
18		577654	8,305	577,655	
19		586210	8,555	586,210	
20		623107	36,897	623,107	
21		650431	27,324	650,431	
22		650431	0	650,431	
23		681976	31,545	681,976	
24		686401	4,425	686,401	
25		705130	18,729	705,130	
26		705130	0	705,130	
27		722988	17,858	722,988	
28		742067	19,080	742,068	
29		784589	42,521	784,589	
30		784589	0	784,589	
31		784589	0	784,589	
		784,589	784,589	784,589	

Pfohl Bros.
July
2008



THE TOWN OF
CHEEKTOWAGA



JON W. NICHY
Superintendent

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

September 12, 2008

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

Re: Pfohl Bros. Flow Data

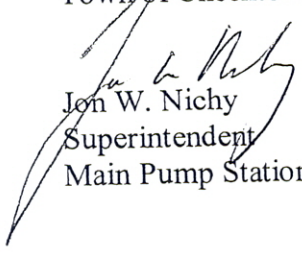
Dear Mr. Pugh,

Enclosed for your review, please find a copy of the **August 2008** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

A monthly log sheet indicating inhibiting and enabling of pumping operation at the site is included with this package.

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

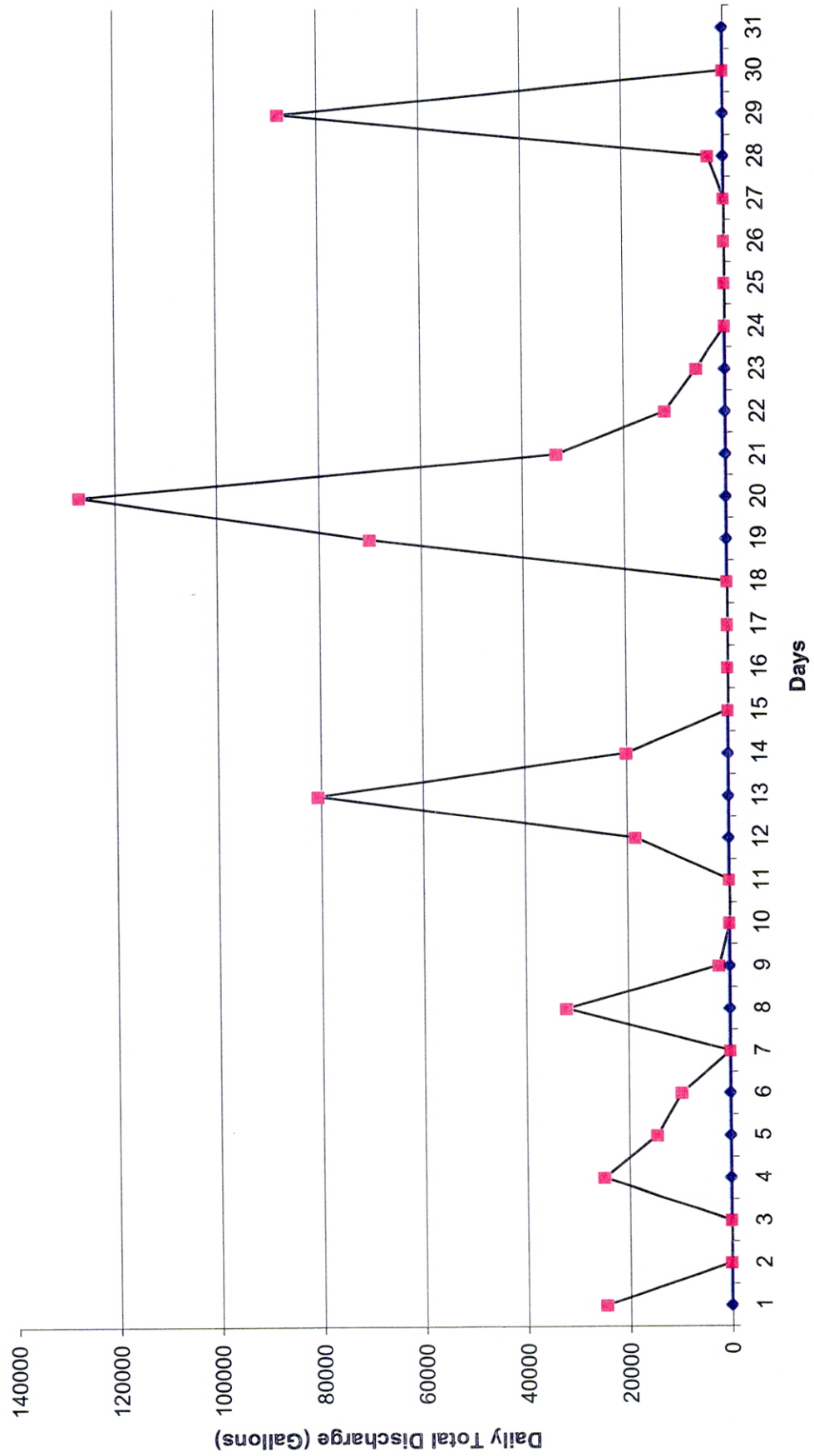
Yours truly,
Town of Cheektowaga


Jon W. Nichy
Superintendent
Main Pump Station

Direct Discharge Flow Data

7/31/2008		784589	0	784,589	
August-08	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)		Notes
1		809170	24,581	809,170	
2		809264	94	809,264	
3		809264	0	809,264	
4		834221	24,957	834,221	
5		848799	14,579	848,800	
6		858492	9,693	858,493	
7		858492	0	858,493	
8		890622	32,130	890,623	
9		892852	2,230	892,853	
10		892852	0	892,853	
11		892852	0	892,853	
12		911190	18,338	911,191	
13		991695	80,504	991,695	
14		1011750	20,055	1,011,750	
15		1011750	0	1,011,750	
16		1011750	0	1,011,750	
17		1011750	0	1,011,750	
18		1011750	0	1,011,750	
19		1081762	70,013	1,081,763	
20		1208698	126,936	1,208,699	
21		1241918	33,220	1,241,919	
22		1253849	11,931	1,253,850	
23		1259570	5,721	1,259,571	
24		1259570	0	1,259,571	
25		1259570	0	1,259,571	
26		1259570	0	1,259,571	
27		1259570	0	1,259,571	
28		1262696	3,126	1,262,697	
29		1350098	87,403	1,350,100	
30		1350098	0	1,350,100	
31				1,350,100	
		565,509	565,511	565,511	

Pfohl Bros.
August
2008



Auto Dialer System Log

[illegible]

THE TOWN OF
CHEEKTOWAGA



JON W. NICHY
Superintendent

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

October 10, 2008

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

Re: Pfohl Bros. Flow Data

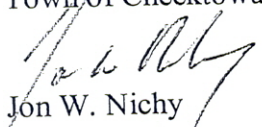
Dear Mr. Pugh,

Enclosed for your review, please find a copy of the **September 2008** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

A monthly log sheet indicating inhibiting and enabling of pumping operation at the site is included with this package.

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

Yours truly,
Town of Cheektowaga


Jon W. Nichy
Superintendent
Main Pump Station

RECEIVED

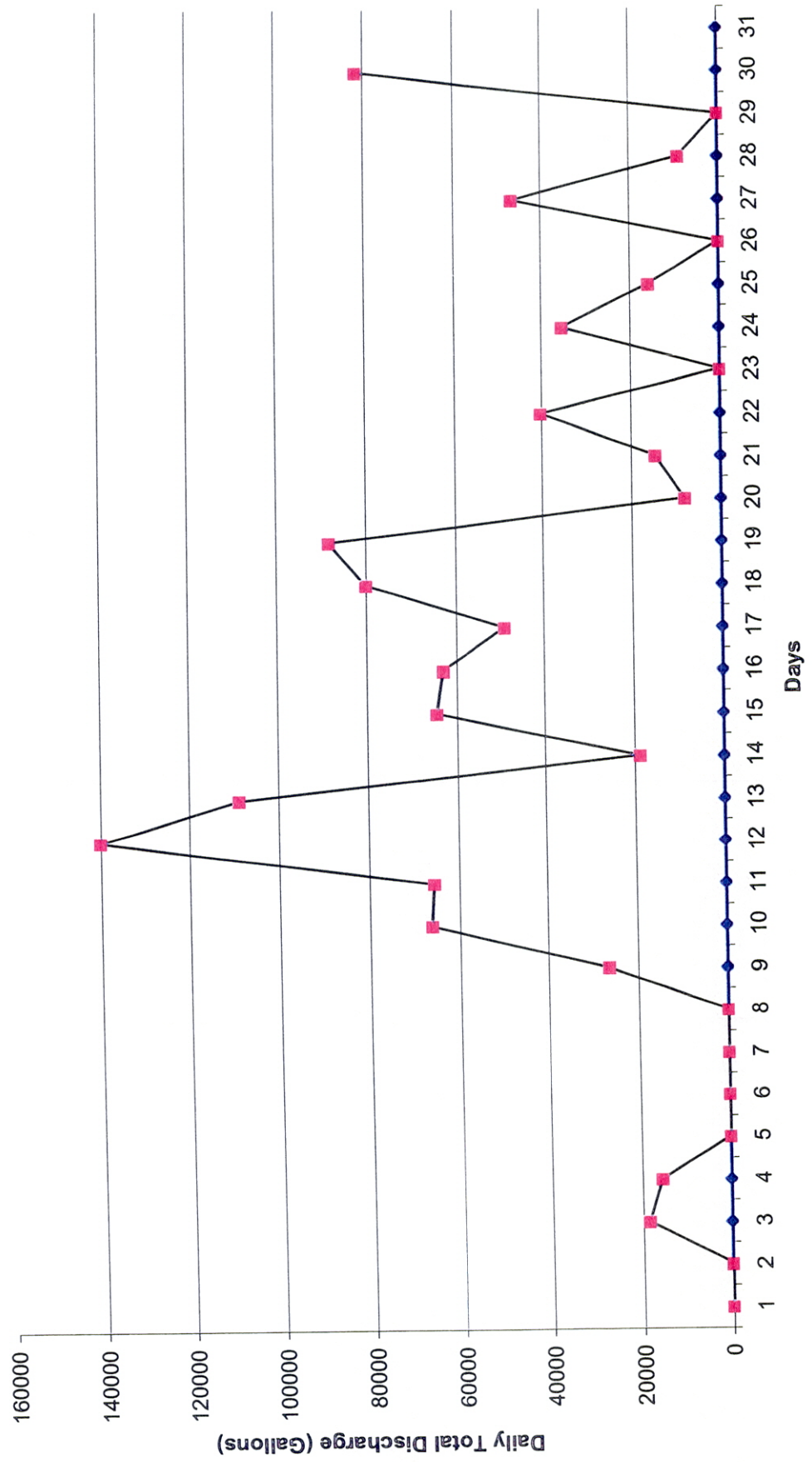
OCT - 8 2008

ENGINEERING
DEPT

Direct Discharge Flow Data

8/31/2008		1350098	0	1,350,100	
September-08	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)		Notes
		1350098	0	1,350,100	
		1350149	51	1,350,151	
		1368678	18,529	1,368,680	
		1384276	15,598	1,384,278	
		1384276	0	1,384,278	
		1384276	0	1,384,278	
		1384276	0	1,384,278	
		1384276	0	1,384,278	
		1410774	26,498	1,410,776	
		1476986	66,213	1,476,989	
		1542622	65,636	1,542,625	
		1682634	140,012	1,682,637	
		1791460	108,827	1,791,464	
		1810338	18,877	1,810,341	
		1874947	64,609	1,874,950	
		1937950	63,004	1,937,954	
		1987020	49,069	1,987,023	
		2067126	80,106	2,067,129	
		2155424	88,298	2,155,427	
		2163662	8,238	2,163,665	
		2178413	14,751	2,178,416	
		2218803	40,390	2,218,806	
		2218803	0	2,218,806	
		2254167	35,364	2,254,170	
		2270123	15,956	2,270,126	
		2270123	0	2,270,126	
		2316747	46,624	2,316,750	
		2325787	9,041	2,325,791	
		2325787	0	2,325,791	
		2407425	81,637	2,407,428	
		1,057,327	1,057,328	1,057,328	

Pfohl Bros.
September
2008



Auto Dialer System Log

[illegible]

THE TOWN OF
CHEEKTOWAGA



JON W. NICHY
Superintendent

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

November 14, 2008

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

Re: Pfohl Bros. Flow Data

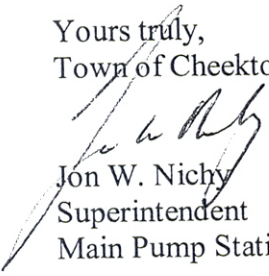
Dear Mr. Pugh,

Enclosed for your review, please find a copy of the **October 2008** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

A monthly log sheet indicating inhibiting and enabling of pumping operation at the site is included with this package.

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

Yours truly,
Town of Cheektowaga

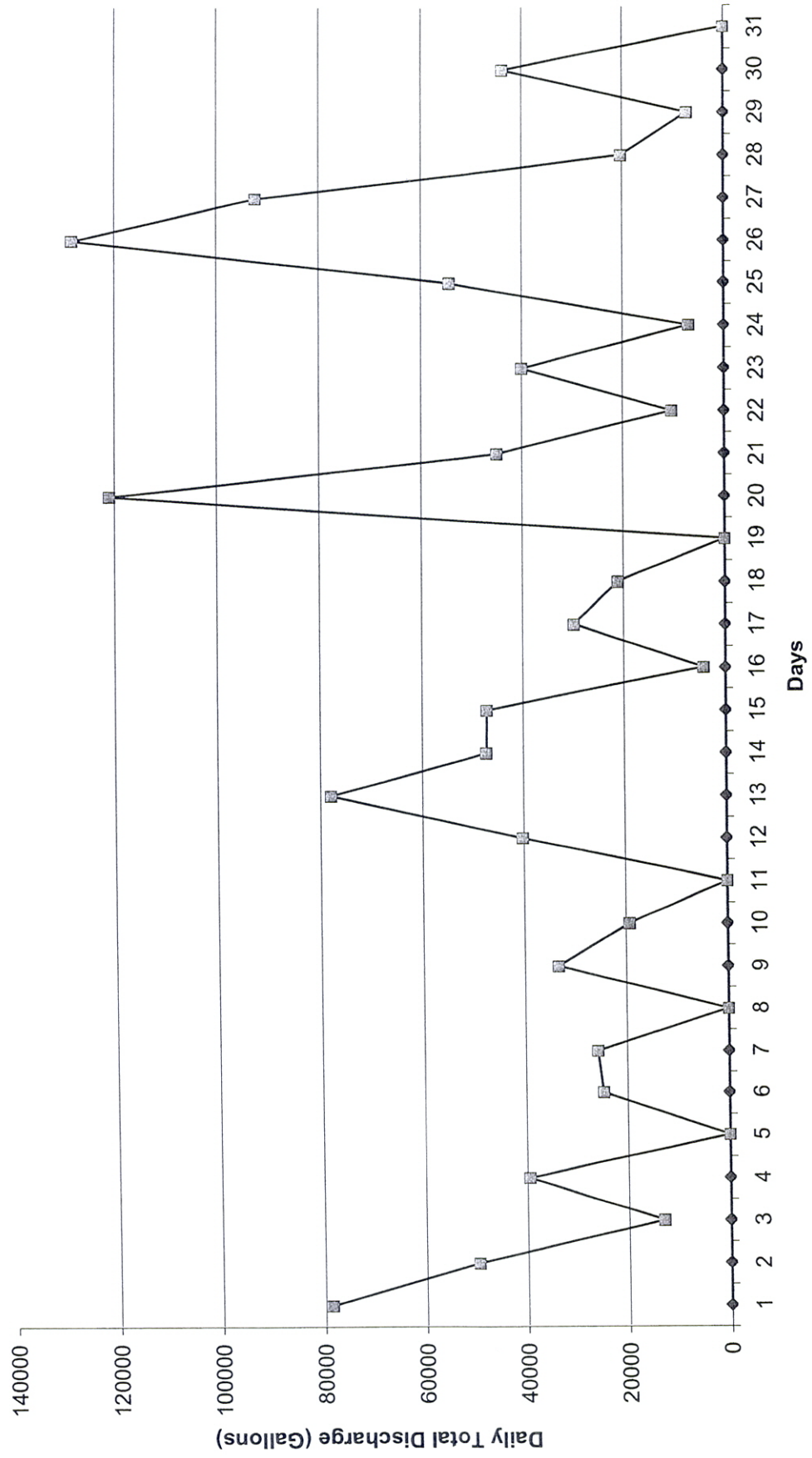

Jon W. Nichy
Superintendent
Main Pump Station

RECEIVED

NOV 18 2008

ENGINEERING
DEPT

Pfohl Bros.
October
2008



Direct Discharge Flow Data

9/30/2008		2407425	81,637	2,407,428	
October-08	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)		Notes
1		2485938	78,514	2,485,942	
2		2535527	49,589	2,535,531	
3		2548623	13,097	2,548,628	
4		2588076	39,453	2,588,081	
5		2588076	0	2,588,081	
6		2612766	24,690	2,612,771	
7		2638491	25,725	2,638,496	
8		2638491	0	2,638,496	
9		2671820	33,329	2,671,825	
10		2691087	19,267	2,691,092	
11		2691087	0	2,691,092	
12		2731329	40,243	2,731,335	
13		2809223	77,894	2,809,229	
14		2856473	47,250	2,856,479	
15		2903674	47,201	2,903,680	
16		2908021	4,347	2,908,027	
17		2937804	29,784	2,937,811	
18		2958846	21,042	2,958,853	
19		2958846	0	2,958,853	
20		3079771	120,929	3,079,782	
21		3124692	44,921	3,124,703	
22		3135037	10,345	3,135,048	
23		3175012	39,975	3,175,023	
24		3181956	6,945	3,181,968	
25		3236419	54,463	3,236,431	
26		3364599	128,180	3,364,611	
27		3456962	92,363	3,456,974	
28		3477187	20,225	3,477,199	
29		3484497	7,310	3,484,509	
30		3528336	43,839	3,528,348	
31		3528336	0		
		1,120,911	1,120,920	1,120,920	

Auto Dialer System Log

DATE	PUMP Inhibit -08 (Off)	TIME Enable -07 (On)	COMMENTS
10/16/08	0130	1352	RAIN
10/25/08	0541	1921	RAIN
10/27/08	0656	1111	RAIN

THE TOWN OF
CHEEKTOWAGA



JON W. NICHY
Superintendent

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

December 10, 2008

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

Re: Pfohl Bros. Flow Data

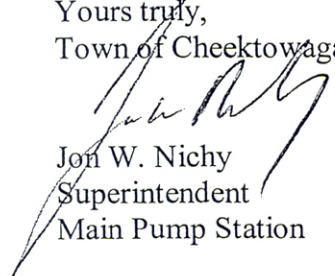
Dear Mr. Pugh,

Enclosed for your review, please find a copy of the **November 2008** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

A monthly log sheet indicating inhibiting and enabling of pumping operation at the site is included with this package.

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

Yours truly,
Town of Cheektowaga


Jon W. Nichy
Superintendent
Main Pump Station

RECEIVED

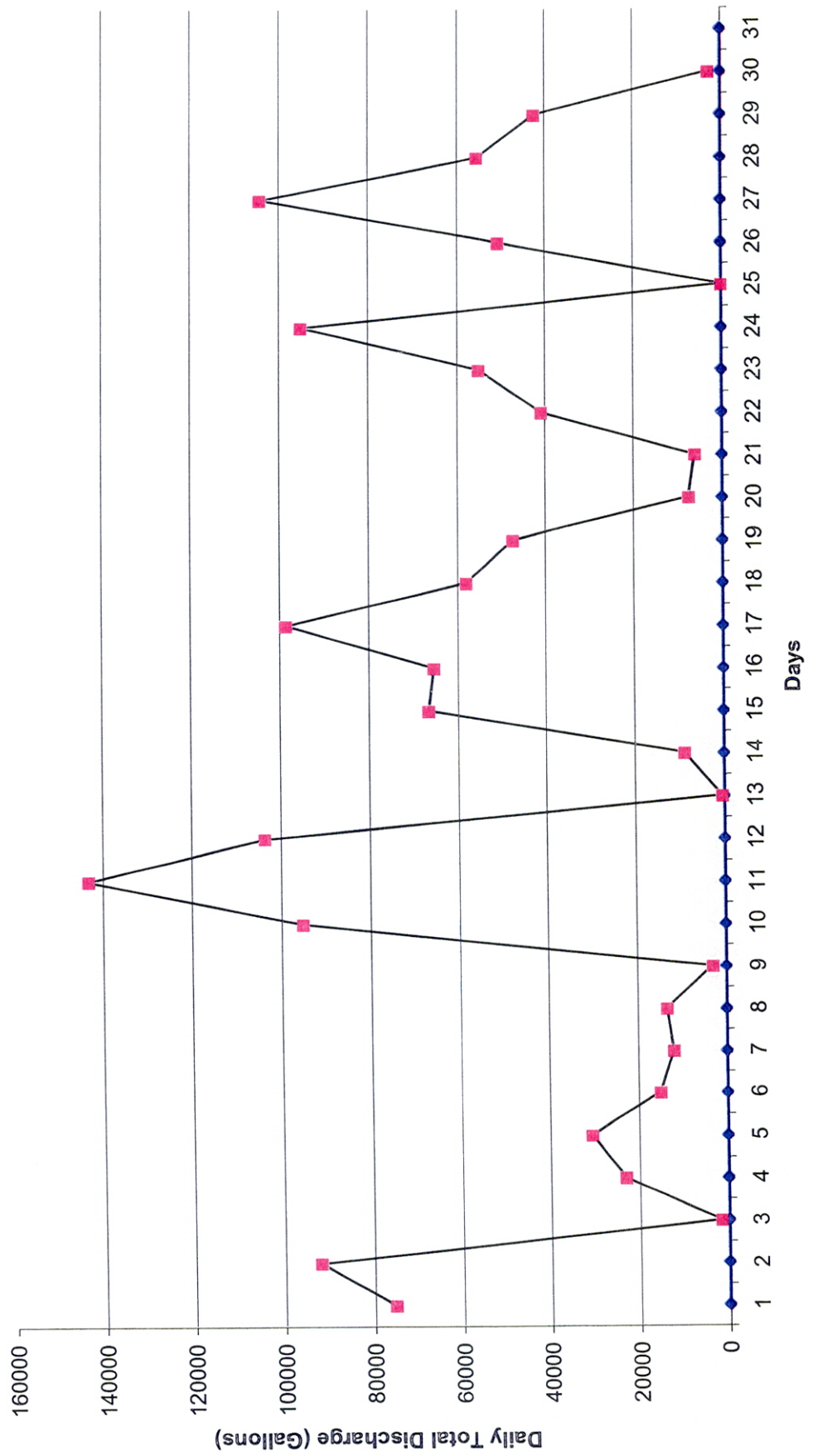
DEC 11 2008

ENGINEERING
DEPT

Direct Discharge Flow Data

10/31/2008		3528336	0	3,528,348	
November-08	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)		Notes
1		3603613	75,277	3,603,625	
2		3695367	91,754	3,695,379	
3		3697035	1,668	3,697,047	
4		3720012	22,978	3,720,025	
5		3750511	30,499	3,750,524	
6		3765553	15,043	3,765,567	
7		3777553	12,000	3,777,567	
8		3790976	13,423	3,790,990	
9		3794093	3,118	3,794,108	
10		3889153	95,060	3,889,168	
11		4032299	143,146	4,032,314	
12		4135847	103,548	4,135,862	
13		4136264	416	4,136,278	
14		4145188	8,925	4,145,203	
15		4211749	66,561	4,211,764	
16		4277122	65,374	4,277,138	
17		4375688	98,566	4,375,704	
18		4433615	57,927	4,433,631	
19		4481007	47,393	4,481,024	
20		4488548	7,541	4,488,565	
21		4494682	6,134	4,494,699	
22		4535509	40,827	4,535,526	
23		4590458	54,949	4,590,475	
24		4685470	95,013	4,685,488	
25		4685485	15	4,685,503	
26		4736096	50,611	4,736,114	
27		4840242	104,146	4,840,260	
28		4895558	55,316	4,895,576	
29		4937970	42,412	4,937,988	
30		4940791	2,822	4,940,810	
31					
		1,412,455	1,412,462	1,412,462	

Pfohl Bros.
November
2008



Auto Dialer System Log

[illegible]

THE TOWN OF
CHEEKTOWAGA



JON W. NICHY
Superintendent

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

January 7, 2009

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

Re: Pfohl Bros. Flow Data

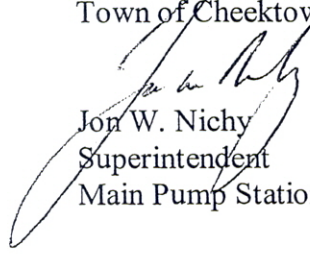
Dear Mr. Pugh,

Enclosed for your review, please find a copy of the **December 2008** Direct Discharge Flow Data Report, prepared by Jon W. Nichy.

A monthly log sheet indicating inhibiting and enabling of pumping operation at the site is included with this package.

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

Yours truly,
Town of Cheektowaga


Jon W. Nichy
Superintendent
Main Pump Station

RECEIVED

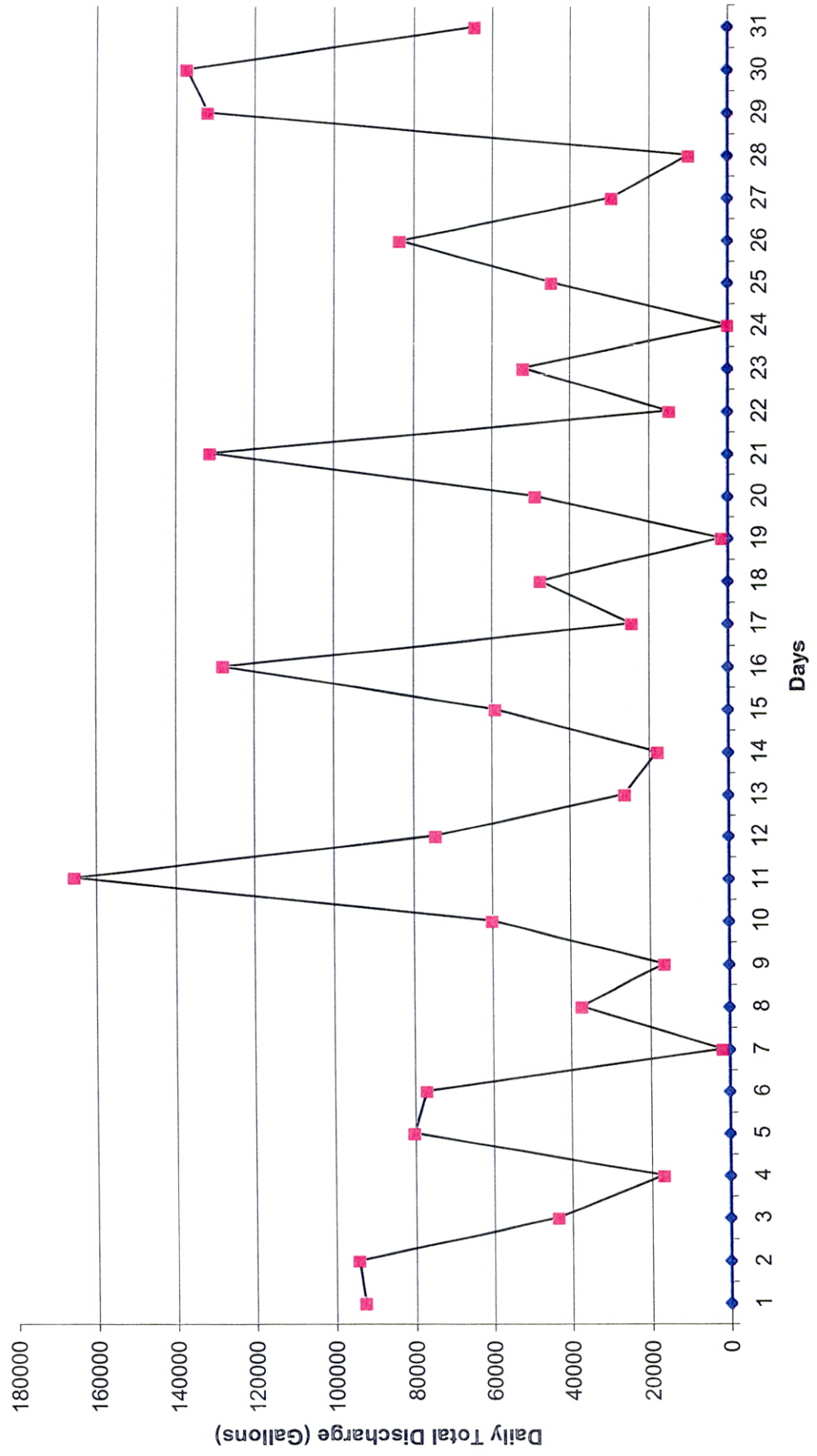
JAN - 8 2009

ENGINEERING
DEPT

Direct Discharge Flow Data

11/30/2008		4940791	2,822	4,940,810	
December-08	Time; 11:58pm unless otherwise stated	Totalizer Reading (Gallons)	Daily Total Discharge (Gallons)		Notes
1		5033405	92,614	5,033,424	
2		5127722	94,317	5,127,741	
3		5171251	43,529	5,171,270	
4		5188202	16,951	5,188,221	
5		5268475	80,273	5,268,494	
6		5345506	77,032	5,345,526	
7		5347317	1,811	5,347,337	
8		5384738	37,421	5,384,758	
9		5401319	16,581	5,401,339	
10		5461388	60,069	5,461,408	
11		5626800	165,412	5,626,820	
12		5701361	74,562	5,701,382	
13		5727712	26,351	5,727,733	
14		5745698	17,986	5,745,719	
15		5804798	59,100	5,804,819	
16		5932786	127,988	5,932,807	
17		5957228	24,442	5,957,249	
18		6004877	47,650	6,004,899	
19		6006496	1,619	6,006,518	
20		6055525	49,029	6,055,547	
21		6186816	131,292	6,186,839	
22		6201759	14,943	6,201,782	
23		6253788	52,029	6,253,811	
24		6253788	0	6,253,811	
25		6298669	44,882	6,298,693	
26		6382247	83,578	6,382,271	
27		6411720	29,473	6,411,744	
28		6421747	10,027	6,421,771	
29		6553610	131,863	6,553,634	
30		6690829	137,219	6,690,853	
31		6755366	64,538	6,755,391	
		1,814,575	1,814,581	1,814,581	

Pfohl Bros.
December
2008



Auto Dialer System Log

DATE	PUMP Inhibit -08 (Off)	TIME Enable -07 (On)	COMMENTS
12/9/08	1520 1000		RAIN
12/10/08		1254	
12/23/08	1403	1444	
12/24/08	1221		
12/25/08		0923	
12/27/08	0718		
12/28/08		2024	
12/30/08	1314	1327	

APPENDIX C

HYDRAULIC MONITORING TABLES

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2008

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-01D MNW	1073088.634	1117968.213	694.41	NM	696.12	D	1	11/12/2008 0000	2.06	694.06	0.00	694.06	
GW-01S MNW	1073087.779	1117961.500	694.53	NM	696.19	S	1	11/12/2008 0000	3.34	692.85	0.00	692.85	
GW-03D MNW	1073819.106	1114602.426	692.35	NM	693.88	D	1	11/11/2008 0000	1.54	692.34	0.00	692.34	
GW-03S MNW	1073812.622	1114605.762	692.61	NM	693.80	S	1	9/25/2008 0000	4.96	688.84	0.00	688.84	
MNW								11/11/2008 0000	2.58	691.22	0.00	691.22	
MNW								12/16/2008 0000	2.50	691.30	0.00	691.30	
GW-04D MNW	1072289.432	1114685.625	690.89	NM	692.75	D	1	11/12/2008 0000	13.19	679.56	0.00	679.56	
GW-04S MNW	1072284.456	1114685.127	690.76	NM	692.72	S	1	9/25/2008 0000	5.29	687.43	0.00	687.43	
MNW								11/12/2008 0000	4.03	688.69	0.00	688.69	
MNW								12/16/2008 0000	4.15	688.57	0.00	688.57	
GW-07D MNW	1071242.458	1117669.925	697.15	NM	699.94	D	1	11/11/2008 0000	42.28	657.66	0.00	657.66	
GW-07S MNW	1071238.157	1117666.265	697.47	NM	699.51	S	1	9/25/2008 0000	5.85	693.66	0.00	693.66	
MNW								11/11/2008 0000	4.30	695.21	0.00	695.21	
MNW								12/16/2008 0000	4.31	695.20	0.00	695.20	
GW-08D MNW	1073713.617	1116795.328	695.28	NM	697.79	D	1	11/11/2008 0000	5.48	692.31	0.00	692.31	

NM - No Measurement

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

Type:

MH

MNW

SG

Manhole Monitoring Point

Monitoring Well

Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2008

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-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								9/25/2008 0000	5.73	691.77	0.00	691.77	
MNW								11/11/2008 0000	5.21	692.29	0.00	692.29	
MNW								12/16/2008 0000	5.23	692.27	0.00	692.27	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								9/25/2008 0000	10.14	690.81	0.00	690.81	
MNW								11/12/2008 0000	8.94	692.01	0.00	692.01	
MNW								12/16/2008 0000	8.86	692.09	0.00	692.09	
GW-29S	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								9/25/2008 0000	9.57	690.06	0.00	690.06	
MNW								11/12/2008 0000	7.47	692.16	0.00	692.16	
MNW								12/16/2008 0000	7.18	692.45	0.00	692.45	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								9/25/2008 0000	8.55	688.03	0.00	688.03	
MNW								11/13/2008 0000	8.21	688.37	0.00	688.37	
MNW								12/16/2008 0000	7.25	689.33	0.00	689.33	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								9/25/2008 0000	4.53	694.09	0.00	694.09	
MNW								11/13/2008 0000	2.18	696.44	0.00	696.44	
MNW								12/16/2008 0000	2.22	696.40	0.00	696.40	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								9/25/2008 0000	4.38	693.99	0.00	693.99	
MNW								12/16/2008 0000	2.22	696.15	0.00	696.15	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								9/25/2008 0000	5.65	692.59	0.00	692.59	

NM - No Measurement

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

Type:

MH

MNW

SG

Manhole Monitoring Point

Monitoring Well

Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2008

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
MNW								12/16/2008 0000	3.59	694.65	0.00	694.65	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								9/25/2008 0000	4.77	690.00	0.00	690.00	
MNW								11/11/2008 0000	2.75	692.02	0.00	692.02	
MNW								12/16/2008 0000	2.79	691.98	0.00	691.98	
GW-35S	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								9/25/2008 0000	5.19	692.20	0.00	692.20	
MNW								12/16/2008 0000	2.83	694.56	0.00	694.56	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								9/25/2008 0000	10.08	688.54	0.00	688.54	
MH								11/11/2008 0000	10.12	688.50	0.00	688.50	
MH								12/16/2008 0000	10.42	688.20	0.00	688.20	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								9/25/2008 0000	10.96	688.44	0.00	688.44	
MH								11/11/2008 0000	11.02	688.38	0.00	688.38	
MH								12/16/2008 0000	11.19	688.21	0.00	688.21	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								9/25/2008 0000	9.17	687.65	0.00	687.65	
MH								11/11/2008 0000	9.22	687.60	0.00	687.60	
MH								12/16/2008 0000	9.39	687.43	0.00	687.43	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								9/25/2008 0000	14.50	688.51	0.00	688.51	
MH								11/12/2008 0000	14.52	688.49	0.00	688.49	
MH								12/16/2008 0000	14.45	688.56	0.00	688.56	

NM - No Measurement

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

Type:

MH

MNW

SG

Manhole Monitoring Point

Monitoring Well

Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2008

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-15 MH	1072531.567	1117761.125	699.02	NM	699.02	NA	1	9/25/2008 0000	14.88	684.14	0.00	684.14	
								11/12/2008 0000	15.07	683.95	0.00	683.95	
								12/16/2008 0000	14.80	684.22	0.00	684.22	
MH-16 MH	1072133.714	1117748.238	698.57	NM	698.57	NA	1	9/25/2008 0000	14.45	684.12	0.00	684.12	
								11/13/2008 0000	14.53	684.04	0.00	684.04	
								12/16/2008 0000	14.45	684.12	0.00	684.12	
MH-17 MH	1071813.137	1117180.019	702.16	NM	702.16	NA	1	9/25/2008 0000	18.14	684.02	0.00	684.02	
								11/13/2008 0000	18.16	684.00	0.00	684.00	
								12/16/2008 0000	18.11	684.05	0.00	684.05	
MH-20 MH	1071756.395	1115997.024	706.20	NM	706.20	NA	1	9/25/2008 0000	19.71	686.49	0.00	686.49	
								11/13/2008 0000	19.74	686.46	0.00	686.46	
								12/16/2008 0000	20.68	685.52	0.00	685.52	
MH-22 MH	1072158.023	1115589.309	698.05	NM	698.05	NA	1	9/25/2008 0000	8.98	689.07	0.00	689.07	
								11/13/2008 0000	9.03	689.02	0.00	689.02	
								12/16/2008 0000	9.02	689.03	0.00	689.03	
MH-25 MH	1072483.928	1114820.313	698.17	NM	698.17	NA	1	9/25/2008 0000	9.69	688.48	0.00	688.48	
								11/13/2008 0000	10.11	688.06	0.00	688.06	
								12/16/2008 0000	9.96	688.21	0.00	688.21	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2008

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-01	1073882.887	1114813.101	NM	NM	690.00	NA	1						
SG								9/25/2008 0000	-0.90	690.90	0.00	690.90	
SG								11/11/2008 0000	-1.47	691.47	0.00	691.47	
SG								12/16/2008 0000	-1.40	691.40	0.00	691.40	
SG-02	1073738.27	1116805.85	NM	NM	690.00	NA	1						
SG								9/25/2008 0000	NM	-	NM	-	Dry
SG								11/11/2008 0000	-3.50	693.50	0.00	693.50	
SG								12/16/2008 0000	-3.37	693.37	0.00	693.37	
WW-01	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								9/25/2008 0000	-4.2	688.22	0.00	688.22	
MH								11/11/2008 0000	-4.4	688.42	0.00	688.42	
MH								12/16/2008 0000	-4.0	688.02	0.00	688.02	
WW-02	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								9/25/2008 0000	-4.7	688.88	0.00	688.88	
MH								11/11/2008 0000	-4.6	688.78	0.00	688.78	
MH								12/16/2008 0000	-4.7	688.88	0.00	688.88	
WW-03	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								9/25/2008 0000	-5.5	689.30	0.00	689.30	
MH								11/11/2008 0000	-5.5	689.30	0.00	689.30	
MH								12/16/2008 0000	-5.5	689.30	0.00	689.30	
WW-04	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								9/25/2008 0000	-7.0	683.62	0.00	683.62	
MH								11/11/2008 0000	-7.0	683.62	0.00	683.62	
MH								12/16/2008 0000	-7.0	683.62	0.00	683.62	

NM - No Measurement

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

Type:

MH

MNW

SG

Manhole Monitoring Point

Monitoring Well

Staff Gauge

TABLE 1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JULY - DECEMBER 2008

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-05 MH	1071661.368	1116370.876	NM	NM	676.14	NA	1	9/25/2008 0000	-7.2	683.34	0.00	683.34	
								11/11/2008 0000	-6.6	682.74	0.00	682.74	
								12/16/2008 0000	-5.7	681.84	0.00	681.84	
WW-06 MH	1072988.420	1114811.518	NM	NM	681.89	NA	1	9/25/2008 0000	-6.9	688.79	0.00	688.79	
								11/11/2008 0000	-7.2	689.09	0.00	689.09	
								12/16/2008 0000	-6.8	688.69	0.00	688.69	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE 2
PFOHL BROTHERS LANDFILL SITE
OVERBURDEN HYDRAULIC GRADIENT

WELL PAIR:	WW-1	*	Level	WW-2	GW-8SR	Level	SG-02	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft)
9/25/2008	688.22	---	---	688.88	691.77	2.89	**	---
11/11/08-11/13/08	688.42	---	---	688.78	692.29	3.51	693.50	4.72
12/16/2008	688.02	---	---	688.88	692.27	3.39	693.37	4.49

WELL PAIR:	WW-3	GW-28S	Level	WW-4	*	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/25/2008	689.30	690.81	1.51	683.62	---	---
11/11/08-11/13/08	689.30	692.01	2.71	683.62	---	---
12/16/2008	689.30	692.09	2.79	683.62	---	---

WELL PAIR:	WW-5	GW-32S	Level	WW-6	GW-34S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/25/2008	683.34	693.99	10.65	688.79	690.00	1.21
11/11/08-11/13/08	682.74	696.14	13.40	689.09	692.02	2.93
12/16/2008	681.84	696.15	14.31	688.69	691.98	3.29

WELL PAIR:	MH-1	SG-1	Level	MH-15	GW-29S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/25/2008	688.54	690.90	2.36	684.14	690.06	5.92
11/11/08-11/13/08	688.50	691.47	2.97	683.95	692.16	8.21
12/16/2008	688.20	691.40	3.20	684.22	692.45	8.23

WELL PAIR:	MH-16	GW-30S	Level	MH-17	GW-31S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/25/2008	684.12	688.03	3.91	684.02	694.09	10.07
11/11/08-11/13/08	684.04	688.37	4.33	684.00	695.81	11.81
12/16/2008	684.12	689.33	5.21	684.05	696.40	12.35

WELL PAIR:	MH-20	GW-35S	Level	MH-22	GW-33S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
9/25/2008	686.49	692.20	5.71	686.49	692.59	6.10
11/11/08-11/13/08	686.46	694.53	8.07	689.02	695.44	6.42
12/16/2008	685.52	694.56	9.04	689.03	694.65	5.62

Notes:

* = No corresponding monitoring well.

** = No water present - dry conditions.

APPENDIX D

**GROUNDWATER PURGE AND SAMPLE COLLECTION
LOGS**

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	3.34'	Depth to Well Bottom:	14.94'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.2	Estimated Purge Volume (liters):	7.9
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Sample ID:	GW-1S	Sample Time:	13:35	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.06'	Depth to Well Bottom:	39.68'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	92.9	Estimated Purge Volume (liters):	44.5
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Sample ID:	GW-1D	Sample Time:	12:42	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/11/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.58'	Depth to Well Bottom:	13.24'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	6.6	Estimated Purge Volume (liters):	7.4
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Sample ID:	GW-3S	Sample Time:	12:49	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/11/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	1.54'	Depth to Well Bottom:	35.66'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	84.3	Estimated Purge Volume (liters):	38.2
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Sample ID:	GW-3D	Sample Time:	14:07	QA/QC:	11/11/08 DUP
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	4.03'	Depth to Well Bottom:	16.23'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.5	Estimated Purge Volume (liters):	28.9
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Sample ID:	GW-4S	Sample Time:	11:15	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

Well historically goes dry at very low purge rates (<75ml/min). Pumped dry and sampled after recovery.

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	13.19'	Depth to Well Bottom:	45.57'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	80.0	Estimated Purge Volume (liters):	10.3
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Sample ID:	GW-4D	Sample Time:	10:57	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

WELL PURGING LOG

URS Corporation

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-7S
PROJECT NO.:	11175616.00000		
STAFF:	Rob Murphy/Tim Ifkovich		
DATE(S):	11/11/08 and 11/12/08		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	35.04	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	4.30	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	30.74	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)	=	5.2	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	15.7	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	7.5	8"	2.60

V=0.0408 x (CASING DIAMETER [INCHES])²

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	3	5	6	7					
pH	8.07	8.17	8.18	7.85	7.78					
SPEC. COND. (mS/cm)	0.437	0.443	0.439	0.443	0.421					
DO (mg/l)	8.08	7.60	6.18	7.12	6.70					
TEMPERATURE (°C)	10.46	11.28	10.97	10.75	10.63					
TURBIDITY (NTU)	10	10	16	243	163					
ORP (millivolts)	-9.3	-7.7	-7.7	-50.9	-44.5					
TIME	9:57	10:00	10:04	10:08	10:13					

COMMENTS:
Purged with dedicated stainless steel bailer. Well went dry after removing about 7.5 gallons. Return on 11/12/08 and sample with dedicated stainless steel bailer.
Sample Parameters: VOCs, SVOCs, and TAL Metals
Depth to water was 4.41' on 11/12/08
Sample time 14:25 on 11/12/08

WELL PURGING LOG

URS Corporation

SITE NAME:	Pfohl Brothers Landfill	WELL NO.:	GW-7D
PROJECT NO.:	11175616.00000		
STAFF:	Rob Murphy/Tim Ifkovich		
DATE(S):	11/11/08 and 11/12/08		

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	60.15	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	42.28	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	17.87	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.66	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	11.8	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	35.4	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	11.8	8"	2.60

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

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)									
	0	3	6	9	11					
pH	7.31	7.72	7.68	7.64	7.61					
SPEC. COND. (mS/cm)	0.628	0.621	0.570	0.552	0.550					
DO (mg/l)	5.95	5.38	6.10	4.98	5.33					
TEMPERATURE (°C)	9.55	10.83	11.03	11.03	11.06					
TURBIDITY (NTU)	54	18	7	8	9					
ORP (millivolts)	-21.8	-71.4	-73.0	-52.3	-38.0					
TIME	9:20	9:24	9:26	9:33	9:37					

COMMENTS:
Purged with a dedicated whale pump and tubing. Well went dry after removing about 11 gallons. Bailed remaining 0.8 gallons.
Return on 11/12/08 and sample with dedicated stainless steel bailer.
Sample time 14:10 on 11/12/08
Depth to water was 57.90' on 11/12/08
Sample Parameters: VOCs, SVOCs, and TAL Metals

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/11/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.21'	Depth to Well Bottom:	13.04'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.8	Estimated Purge Volume (liters):	9.6
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Sample ID:	GW-8SR	Sample Time:	15:50	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/11/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	5.48'	Depth to Well Bottom:	36.52'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	76.7	Estimated Purge Volume (liters):	37.6
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Sample ID:	GW-8D	Sample Time:	16:55	QA/QC:	MS/MSD
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	6.40'	Depth to Well Bottom:	40.70'	Well Diameter:	4"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	84.7	Estimated Purge Volume (liters):	36.0
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Sample ID:	GW-26D	Sample Time:	13:32	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:52	7.02	Malfuction	1.431	0.49	14	-19.9	900	6.40
12:57	7.02		1.433	0.20	5	-21.1	900	6.38
13:02	7.01		1.446	0.15	2	-22.1	900	6.39
13:07	7.01		1.447	0.15	1	-23.1	900	6.39
13:12	7.01		1.447	0.13	1	-23.7	900	6.39
13:17	7.01		1.447	0.11	1	-24.2	900	6.40
13:22	7.01		1.447	0.10	1	-24.6	900	6.40
13:27	7.01		1.447	0.10	1	-24.6	900	6.40
13:32	7.01	▼	1.447	0.09	1	-24.6	900	6.40
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	8.94'	Depth to Well Bottom:	15.54'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.1	Estimated Purge Volume (liters):	4.8
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Sample ID:	GW-28S	Sample Time:	8:45	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/12/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	7.47'	Depth to Well Bottom:	20.02'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	7.7	Estimated Purge Volume (liters):	5.8
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Sample ID:	GW-29S	Sample Time:	15:45	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

Project:	11175616.00000	Site:	Pfohl Brothers	Well I.D.:	GW-30S
Date:	11/13/2008	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:	8.21'	Depth to Well Bottom:	17.99'	Well Diameter:	2"	Screen Length:	
Casing Type:	Stainless Steel		Volume in 1 Well Casing (liters):	6.0	Estimated Purge Volume (liters):	9.8			

Sample ID:	GW-30S	Sample Time:	10:20	QA/QC:	none
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Other Information:

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.18'	Depth to Well Bottom:	9.58'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.6	Estimated Purge Volume (liters):	4.4
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Sample ID:	GW-31S	Sample Time:	9:12	QA/QC:	none
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

[illegible]

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

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

Measuring Below Top of Initial Depth Depth to Well Screen
Point: Riser to Water: 2.23' Bottom: 9.92' Diameter: 2" Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.7 Estimated Purge Volume (liters): 6.7

Sample ID: GW-32S Sample Time: 11:22 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:47	7.52	Malfunction	0.534	0.61	76	-3.6	235	2.23
10:52	7.45		0.551	0.51	47	-2.4	185	2.74
10:57	7.45		0.498	0.63	22	-1.8	185	2.72
11:02	7.44		0.489	0.57	20	-1.5	185	2.73
11:07	7.43		0.484	0.42	14	-1.2	185	2.74
11:12	7.44		0.479	0.47	9	-1.1	185	2.75
11:17	7.44		0.473	0.49	8	-0.9	185	2.76
11:22	7.44	▼	0.471	0.42	8	-0.6	185	2.77
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.80'	Depth to Well Bottom:	8.20'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	3.3	Estimated Purge Volume (liters):	6.3
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Sample ID:	GW-33S	Sample Time:	14:55	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:05	7.23	Malfuction	0.852	1.44	13	2.3	125	2.80
14:10	7.18		0.791	0.80	14	4.2	125	3.88
14:15	7.19		0.764	0.79	13	4.7	125	4.08
14:20	7.19		0.751	1.04	13	4.8	125	4.27
14:25	7.19		0.748	1.12	12	4.8	125	4.41
14:30	7.18		0.756	1.30	12	5.0	125	4.52
14:35	7.16		0.771	1.13	8	5.1	125	4.62
14:40	7.15		0.796	0.90	8	5.4	125	4.67
14:45	7.13		0.816	0.80	7	5.5	125	4.74
14:50	7.14		0.809	0.81	5	5.4	125	4.79
14:55	7.14	▼	0.812	0.79	5	5.6	125	4.86
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/11/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

Purging/ Sampling Device:	Geopump 2	Tubing Type:	LDPE/Silicone	Pump/Tubing Inlet Location:	Screen midpoint
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Measuring Point:	Below Top of Riser	Initial Depth to Water:	2.75'	Depth to Well Bottom:	10.01'	Well Diameter:	2"	Screen Length:
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Casing Type:	Stainless Steel	Volume in 1 Well Casing (liters):	4.5	Estimated Purge Volume (liters):	10.5
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Sample ID:	GW-34S	Sample Time:	11:33	QA/QC:	None
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Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O₂ (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:03	6.93	9.52	1.014	3.43	20	0.1	650	2.75
11:08	6.89	9.07	0.997	3.26	16	0.3	380	4.70
11:13	6.88	9.03	0.990	3.18	9	-0.3	265	4.72
11:18	6.86	9.14	0.989	3.25	7	-1.7	265	4.62
11:23	6.85	9.19	0.976	2.90	4	-2.5	265	4.60
11:28	6.83	9.21	0.954	2.91	2	-2.9	265	4.65
11:33	6.81	9.22	0.934	2.80	2	-2.8	265	4.70
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 ($vol_w = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

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

Date: 11/13/2008 Sampling Personnel: Rob Murphy, Tim Ifkovich Company: URS Corporation

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

Measuring Below Top of Initial Depth Depth to Well Well Screen
Point: Riser to Water: 2.86' Well Bottom: 7.46' Diameter: 2" Length:

Casing Volume in 1 Estimated
Type: Stainless Steel Well Casing Purge
(liters): 2.8 Volume (liters): 5.7

Sample ID: GW-35S Sample Time: 12:30 QA/QC: None

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O ₂ (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:55	6.57	Malfunction	0.617	1.38	37	21.2	185	2.86
12:00	6.71		0.505	0.74	16	21.2	160	3.40
12:05	6.78		0.493	0.52	16	22.7	160	3.40
12:10	6.91		0.453	0.49	9	21.3	160	3.40
12:15	7.09		0.433	0.41	5	22.5	160	3.41
12:20	7.20		0.429	0.39	3	23.2	160	3.44
12:25	7.20		0.429	0.36	3	22.8	160	3.46
12:30	7.21	▼	0.426	0.35	2	22.4	160	3.47
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers

Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich

Supervisor: J. Sundquist

Date of Sampling: November 11, 2008

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	4.5	10.5	11:33	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-3S	GW-3S	6.6	7.4	12:49	Groundwater		Not Applicable
GW-3D	GW-3D	84.3	38.2	14:07	Groundwater		Not Applicable
11/11/08-DUP	GW-3D	84.3	38.2	14:07	Blind Duplicate		Not Applicable
GW-8SR	GW-8SR	4.8	9.6	15:50	Groundwater		Not Applicable
GW-8D	GW-8D	76.7	37.6	16:55	Groundwater		Not Applicable
GW-8D MS	GW-8D	76.7	37.6	16:55	Matrix Spike		Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.
Some wells went dry even at very low flow conditions.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers

Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich

Supervisor: J. Sundquist

Date of Sampling: November 11, 2008 (continued)

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of- Custody Number
GW-8D MSD	GW-8D	76.7	37.6	16:55	Matrix Spike Duplicate	VOCs/SVOCs/ Metals	Not Applicable
TB-111108	---	---	---	---	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.
Some wells went dry even at very low flow conditions.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers

Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich

Supervisor: J. Sundquist

Date of Sampling: November 12, 2008

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-28S	GW-28S	4.1	4.8	8:45	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-4D	GW-4D	80.0	10.3	10:57	Groundwater		Not Applicable
GW-4S	GW-4S	7.5	28.9	11:15	Groundwater		Not Applicable
GW-1D	GW-1D	92.9	44.5	12:42	Groundwater		Not Applicable
GW-1S	GW-1S	7.2	7.9	13:35	Groundwater		Not Applicable
GW-7D	GW-7D	44.7	44.7	14:10	Groundwater		Not Applicable
GW-7S	GW-7S	19.7	28.4	14:25	Groundwater		Not Applicable

Additional Comments: All wells (except GW-7D and GW-7S) were purged using low flow methods until parameter stabilization.
Some wells went dry even at very low flow conditions.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers

Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich

Supervisor: J. Sundquist

Date of Sampling: November 12, 2008 (continued)

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of- Custody Number
GW-29S	GW-29S	7.7	5.8	15:45	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
TB-111208	---	---	---	---	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.
Some wells went dry even at very low flow conditions.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: Pfohl Brothers

Project Number: 11175616.00000

Sampling Crew Members: R. Murphy, T. Ifkovich

Supervisor: J. Sundquist

Date of Sampling: November 13, 2008

Sample I.D. Number	Well Number	Well Volume (liters)	Volume Purged (liters)	Sample Time	Sample Description	Analysis Required	Chain-of-Custody Number
GW-31S	GW-31S	4.6	4.4	9:12	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-30S	GW-30S	6.0	9.8	10:20	Groundwater		Not Applicable
GW-35S	GW-35S	2.8	5.7	12:30	Groundwater		Not Applicable
GW-26D	GW-26D	84.7	36	13:32	Groundwater		Not Applicable
GW-32S	GW-32S	4.7	6.7	11:22	Groundwater		Not Applicable
GW-33S	GW-33S	3.3	6.3	14:55	Groundwater		Not Applicable
TB-111308	---	---	---	---	Trip Blank	VOCs	Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization.
Some wells went dry even at very low flow conditions.

APPENDIX E

HISTORICAL ANALYTICAL RESULTS

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

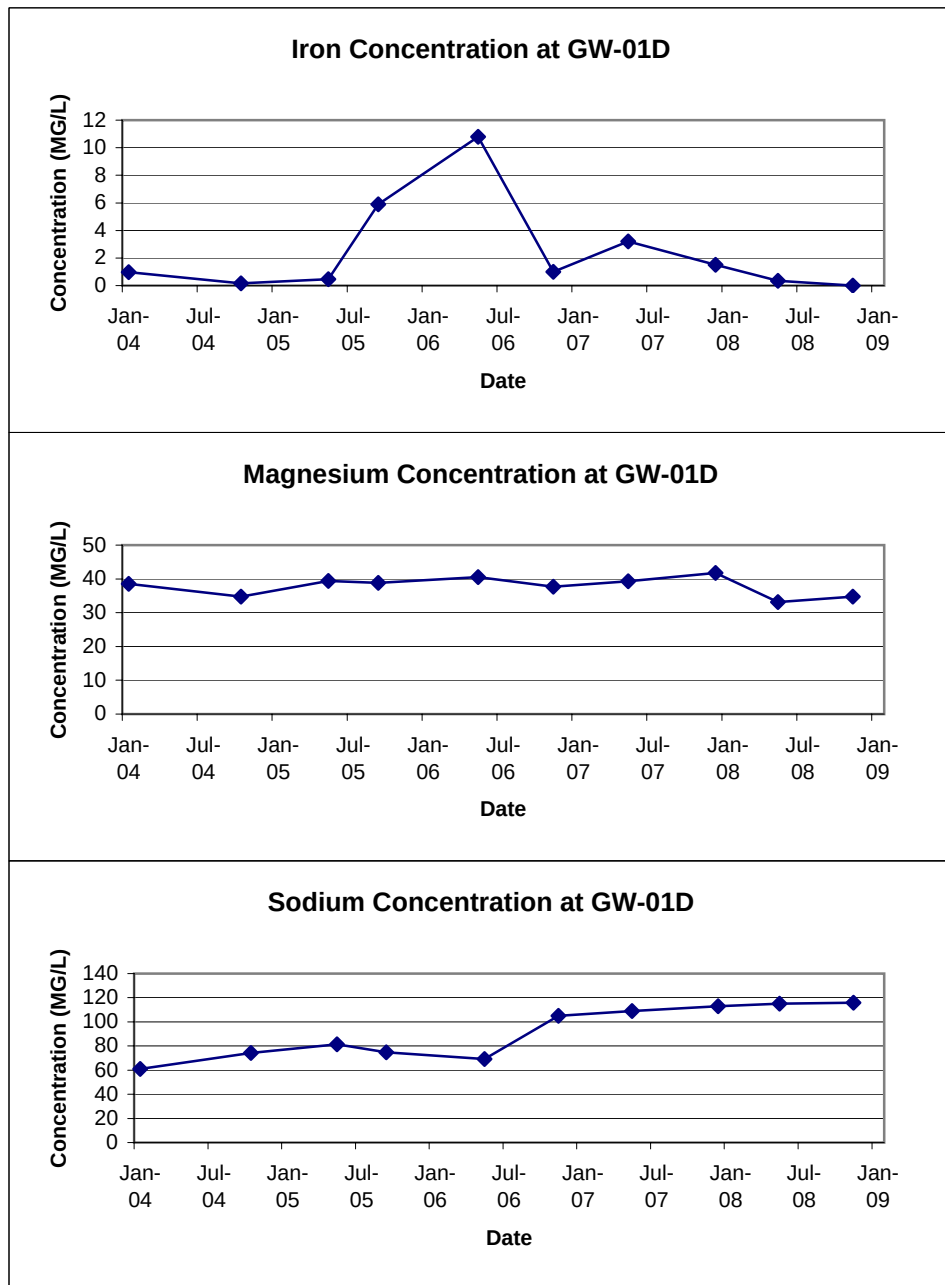


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-1S

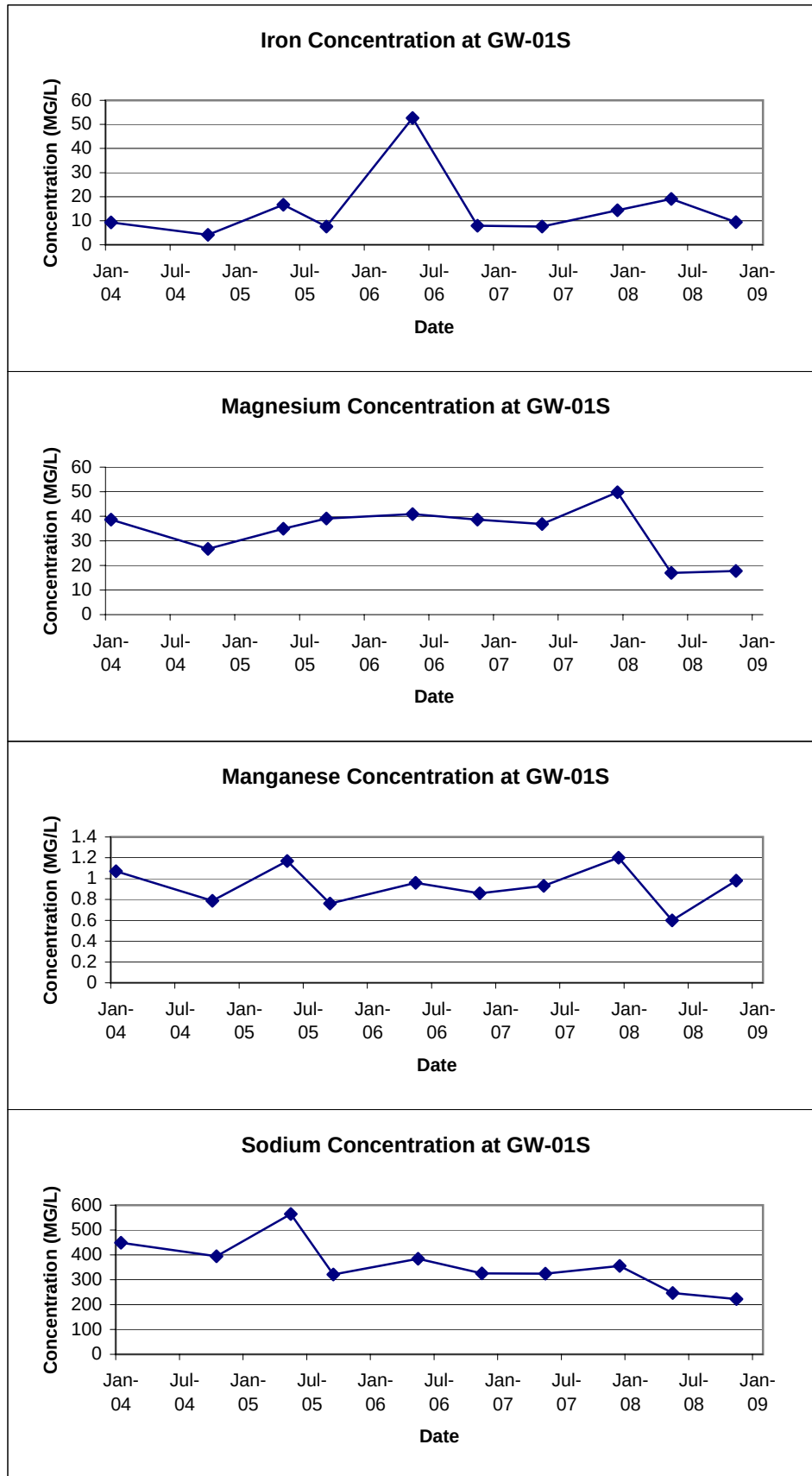


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3D

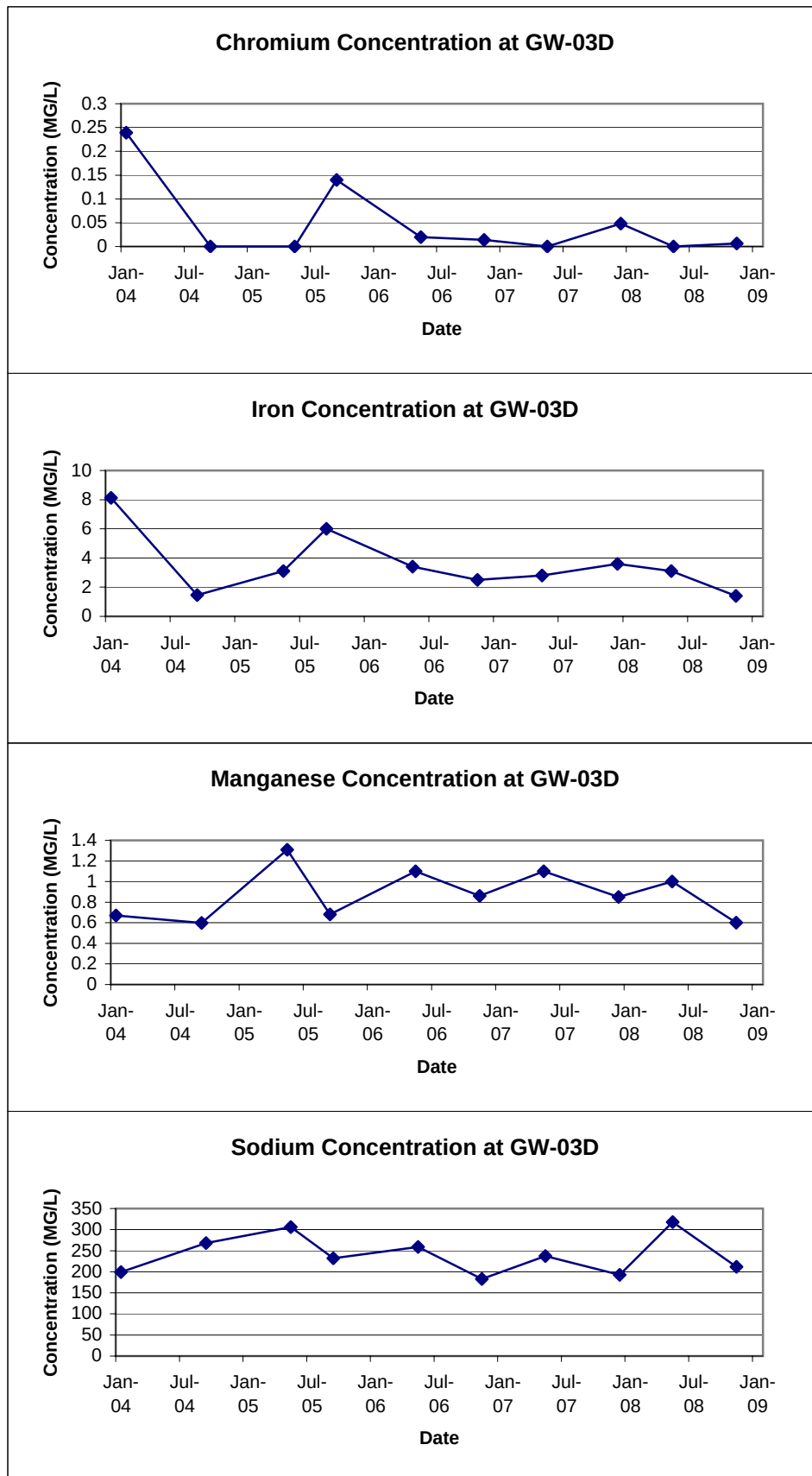


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-3S

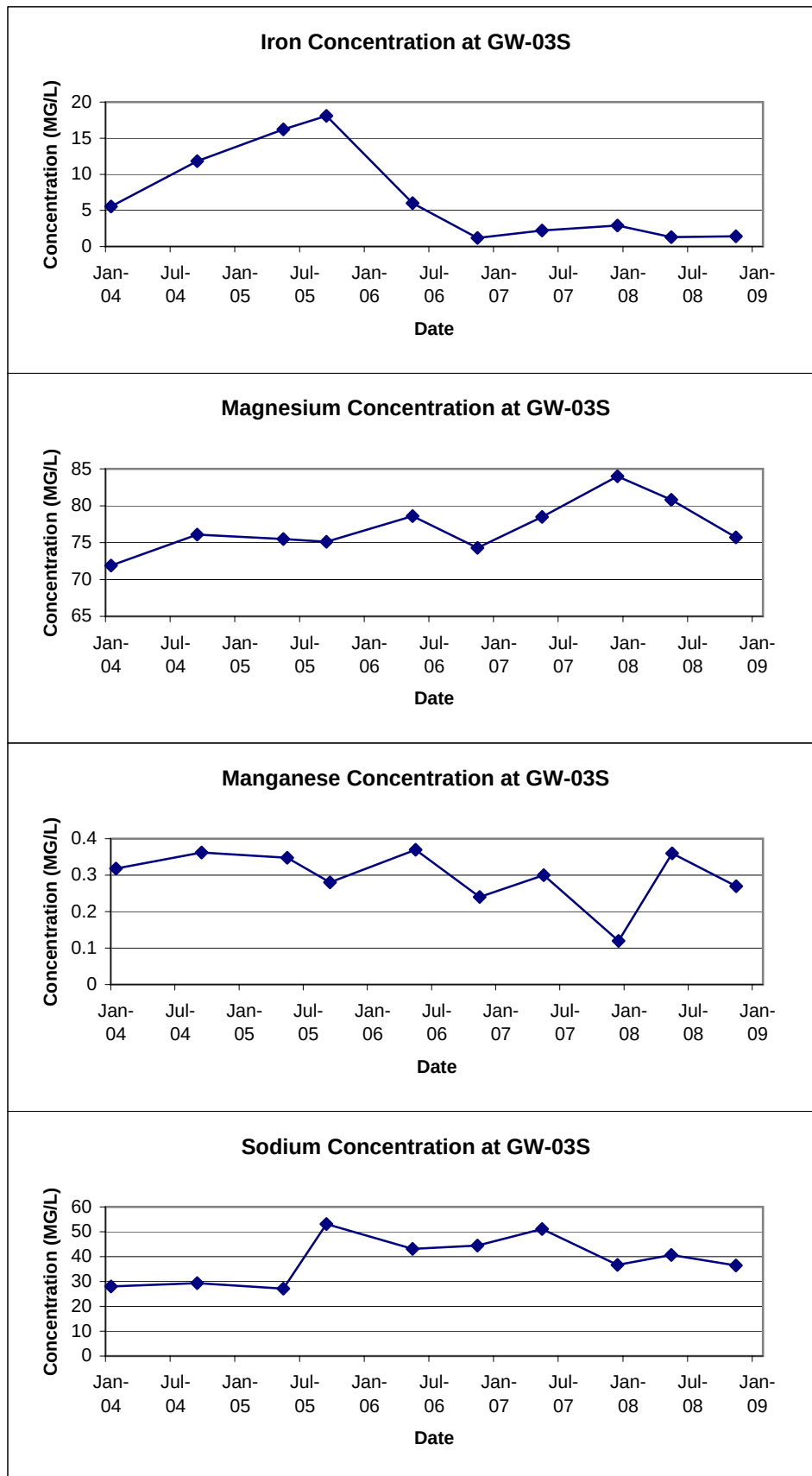


FIGURE E-5
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04D

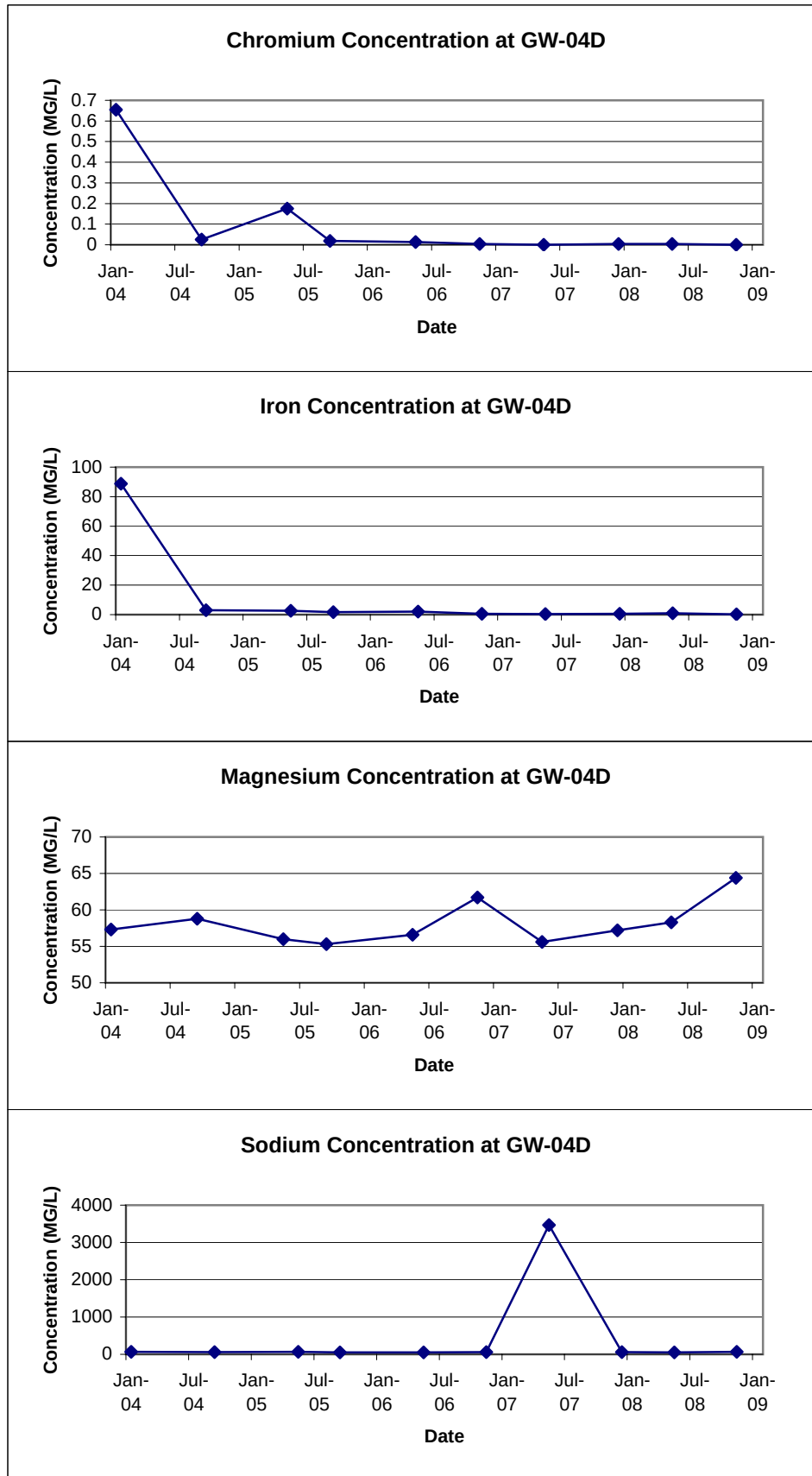


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-4S

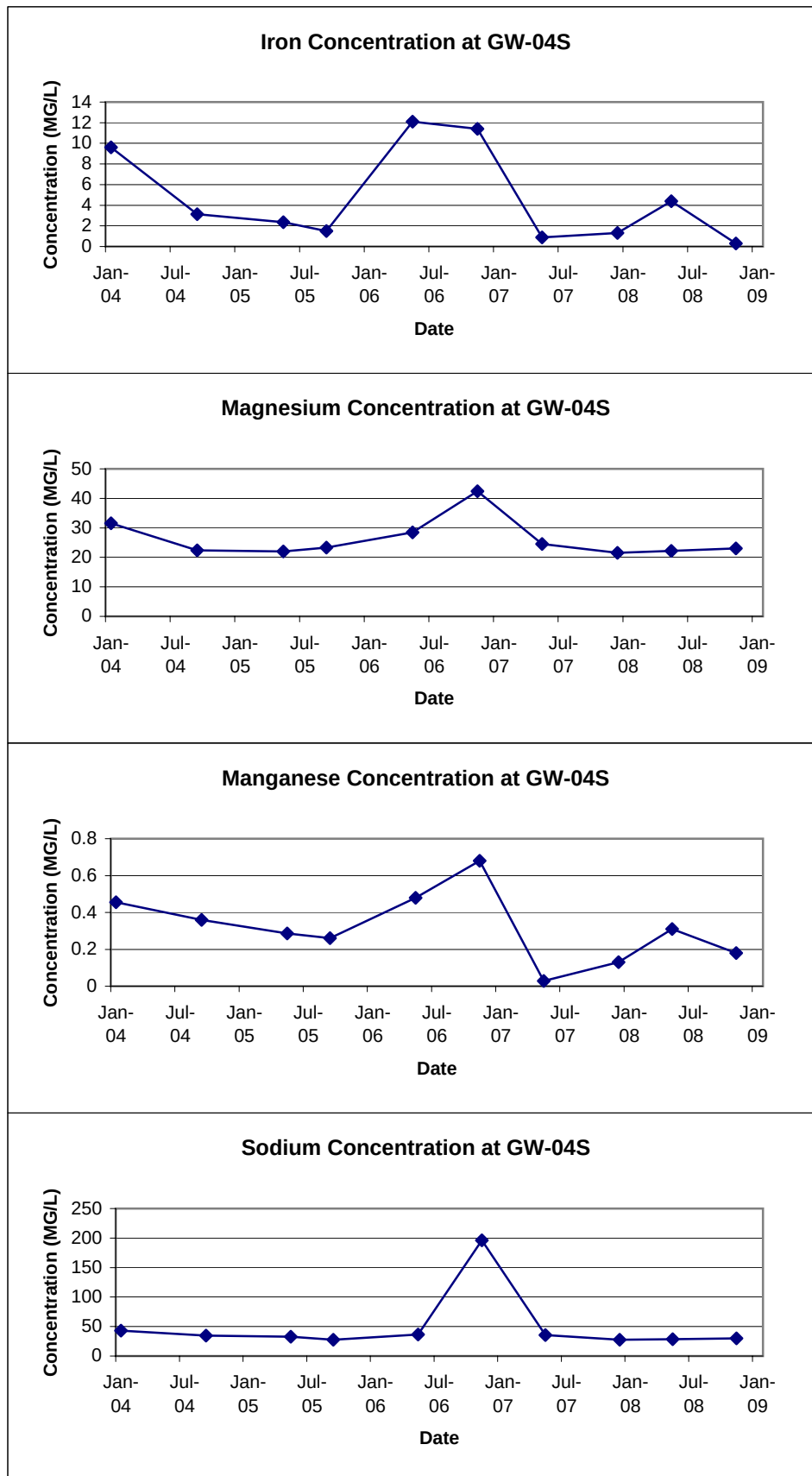


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7D

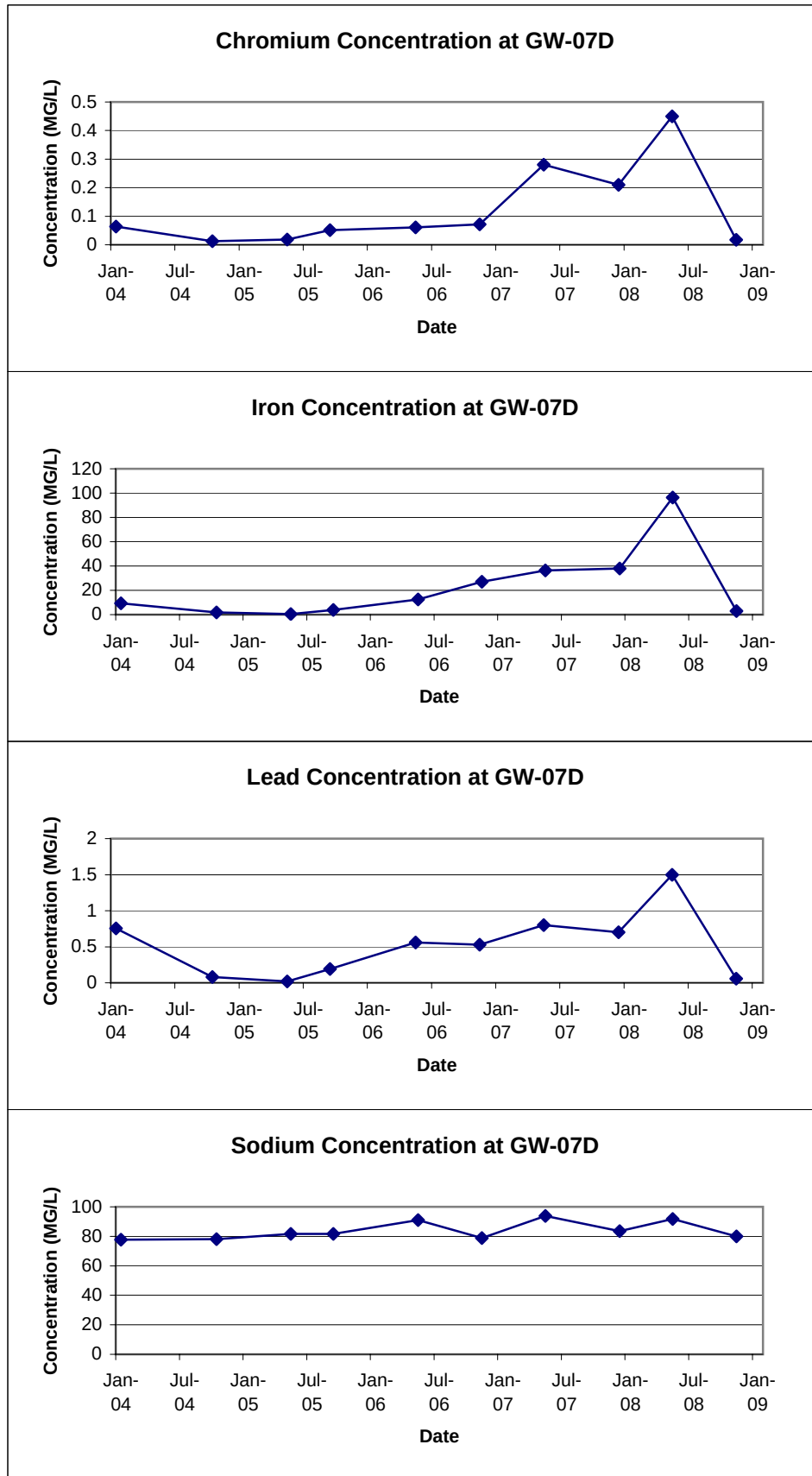


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-7S

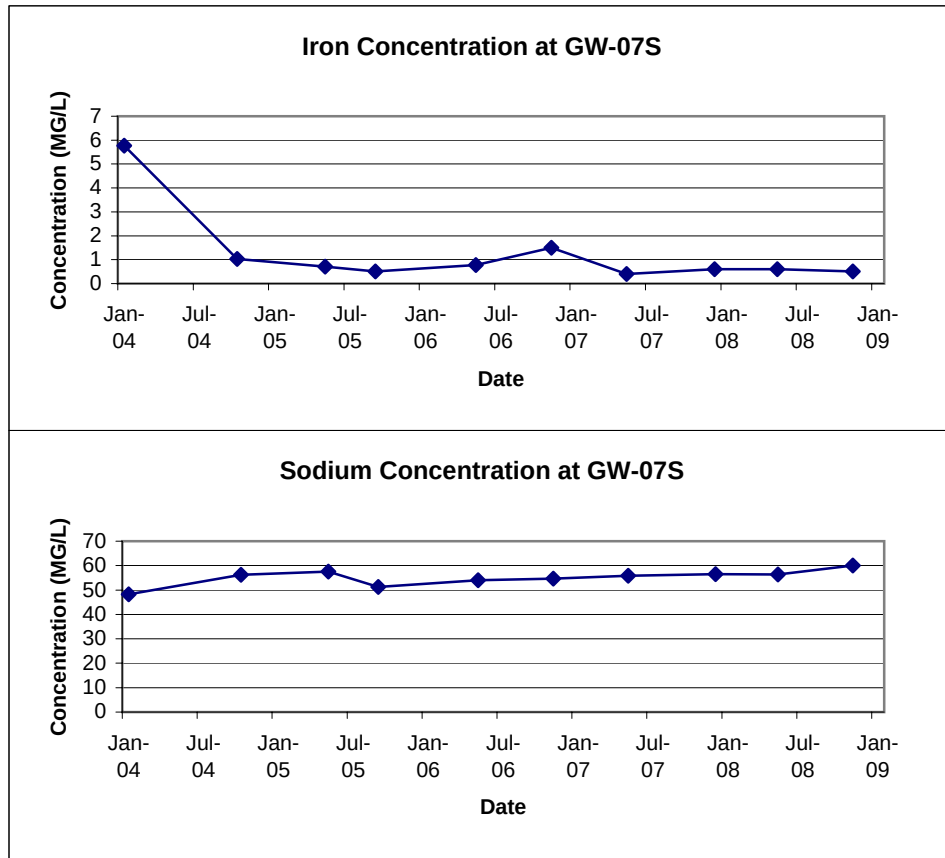


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8D

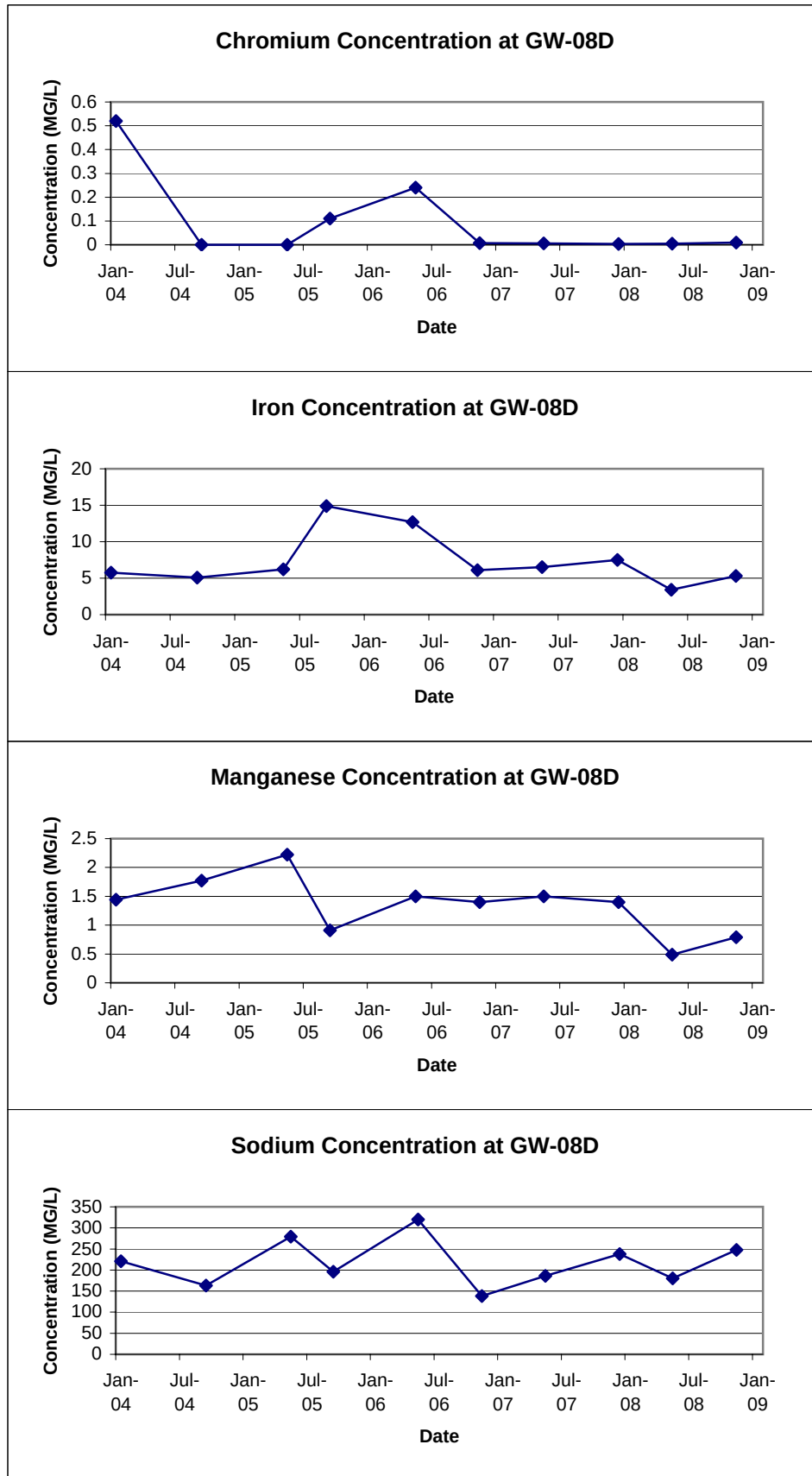


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-8SR

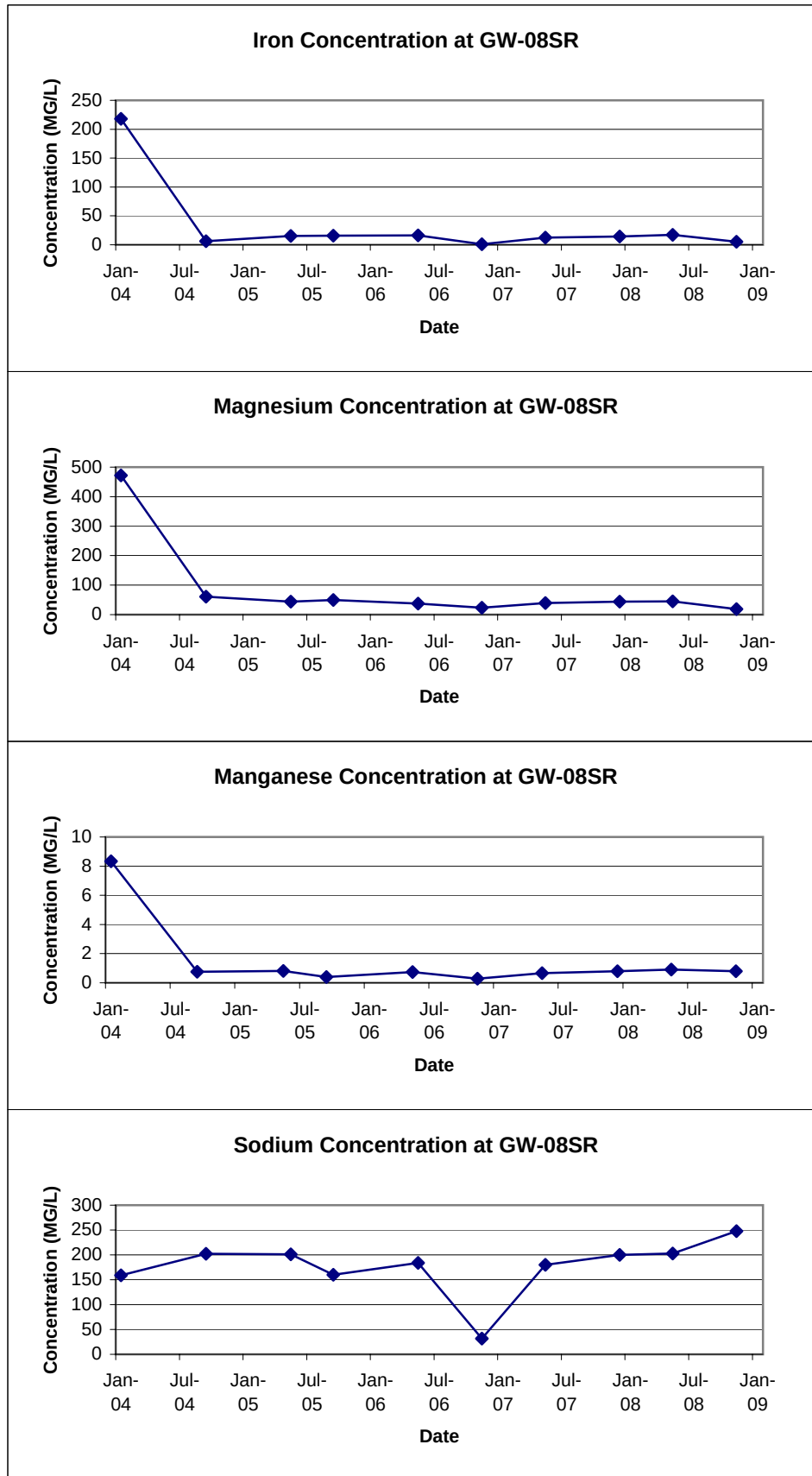


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

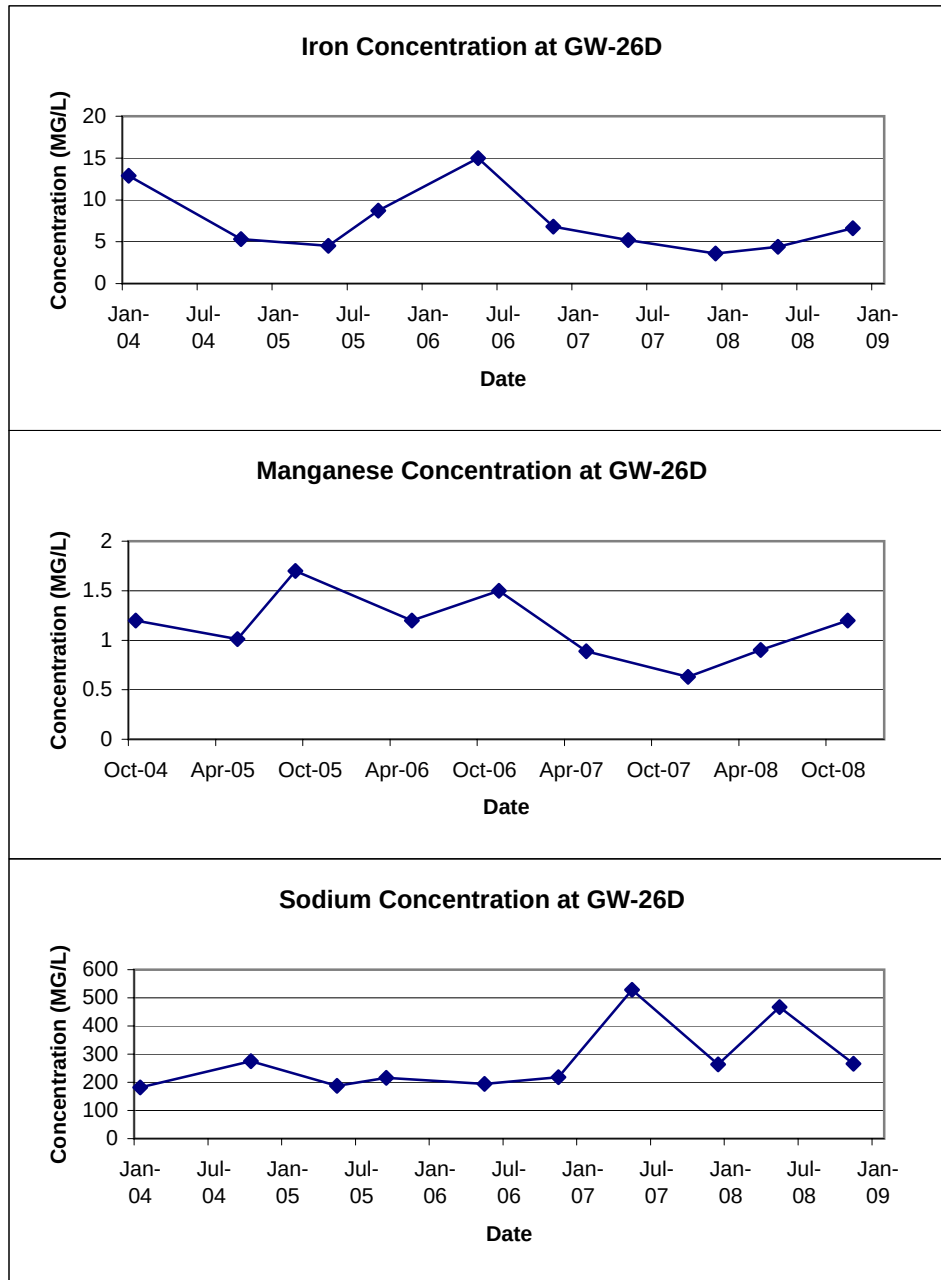


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

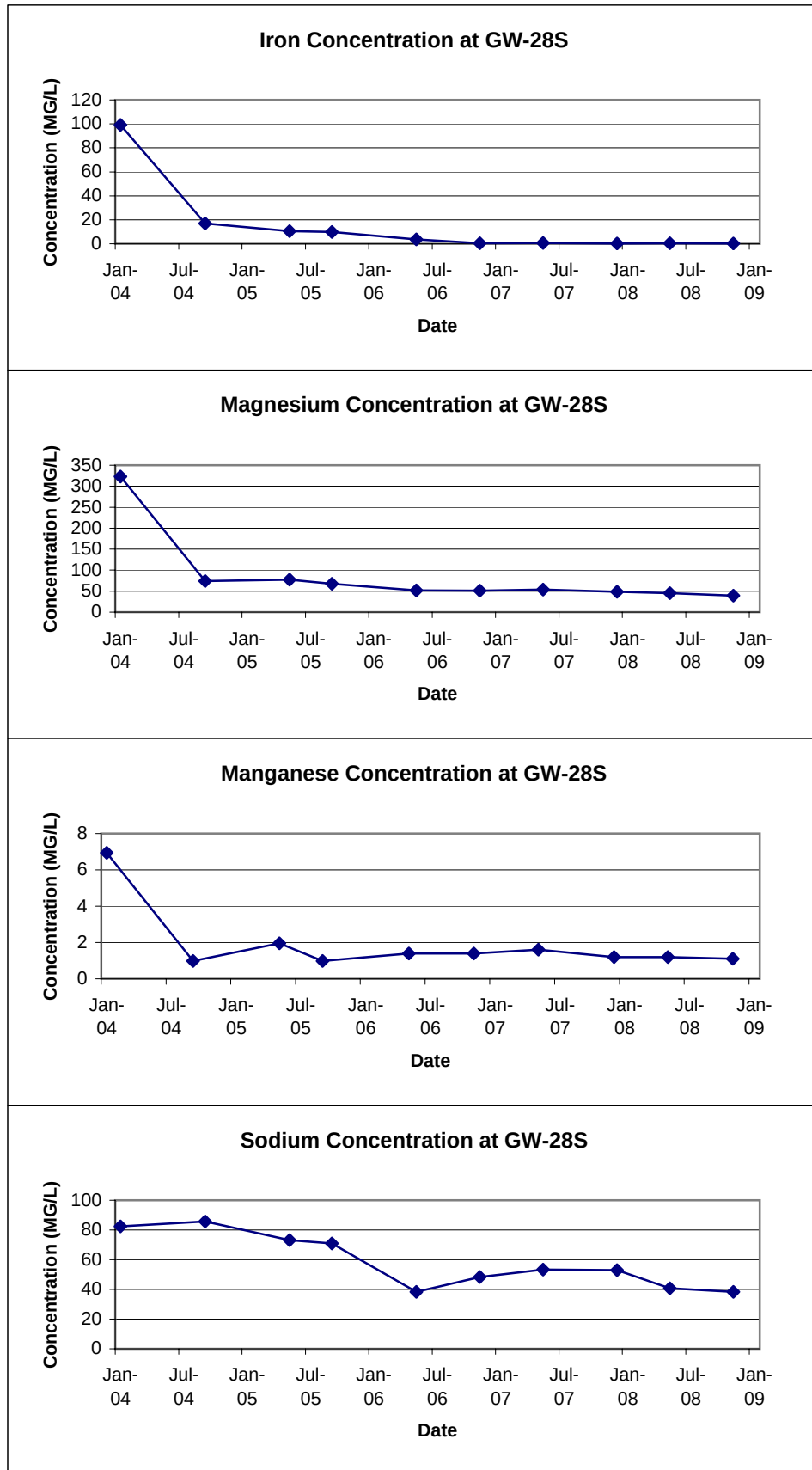


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

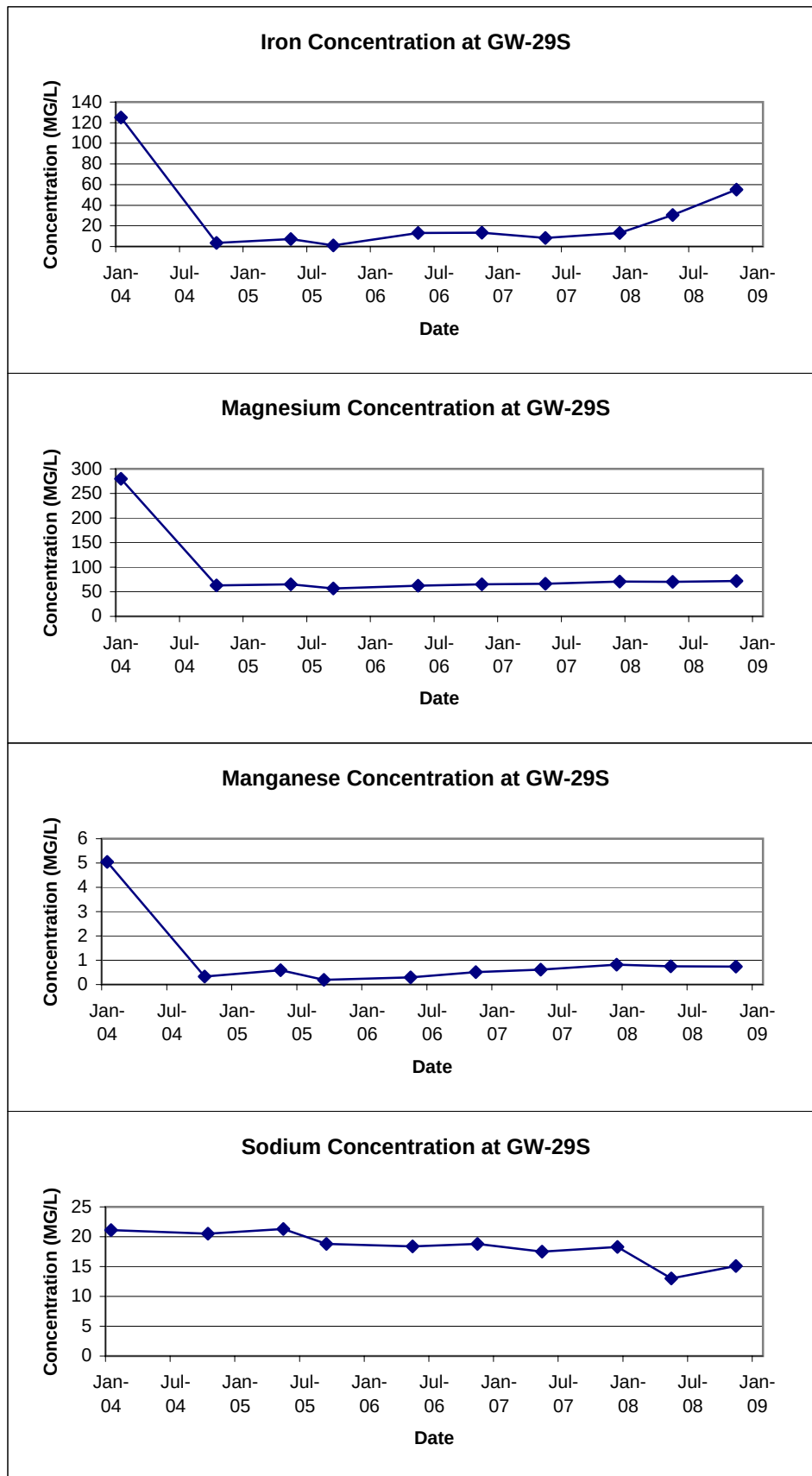


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

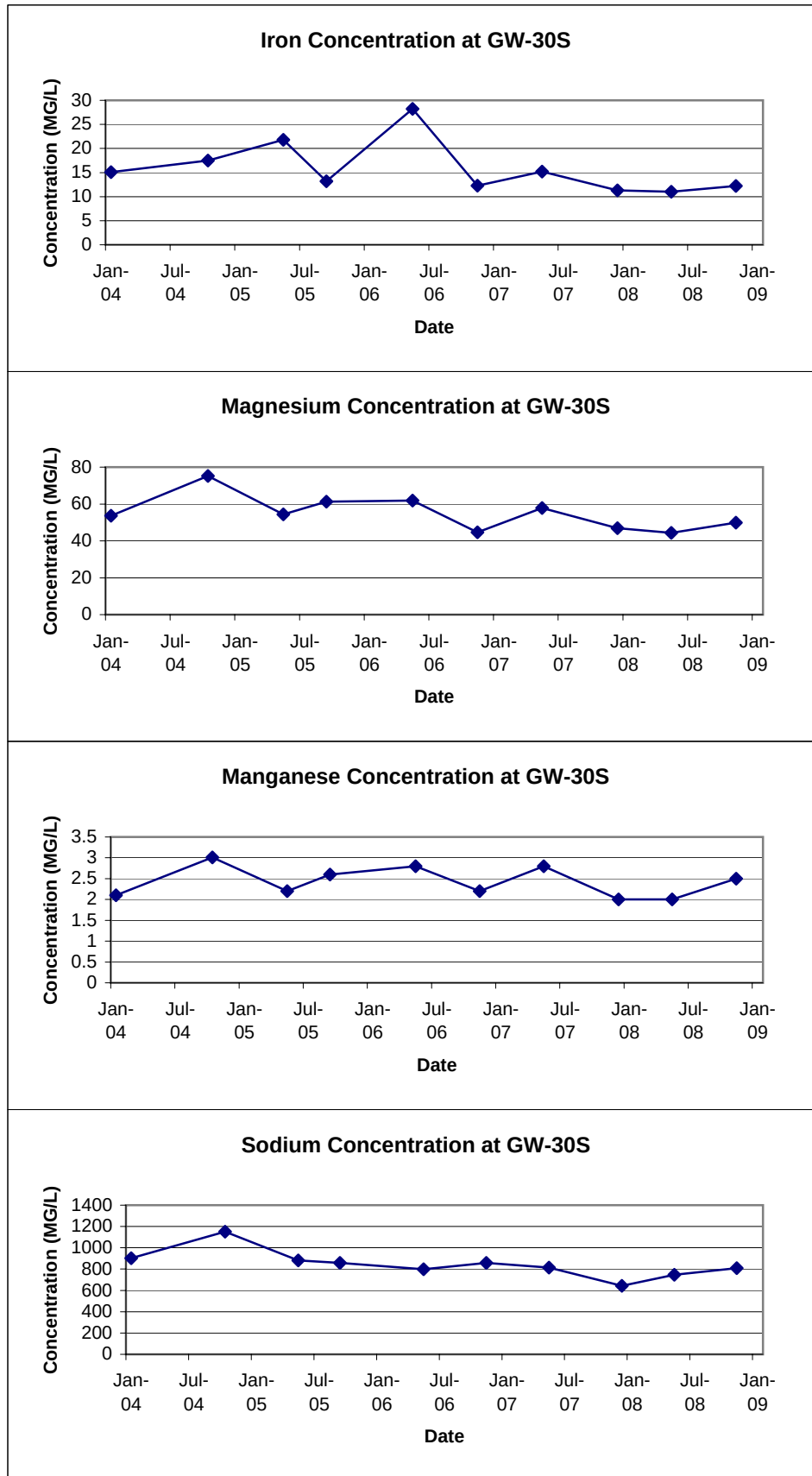


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

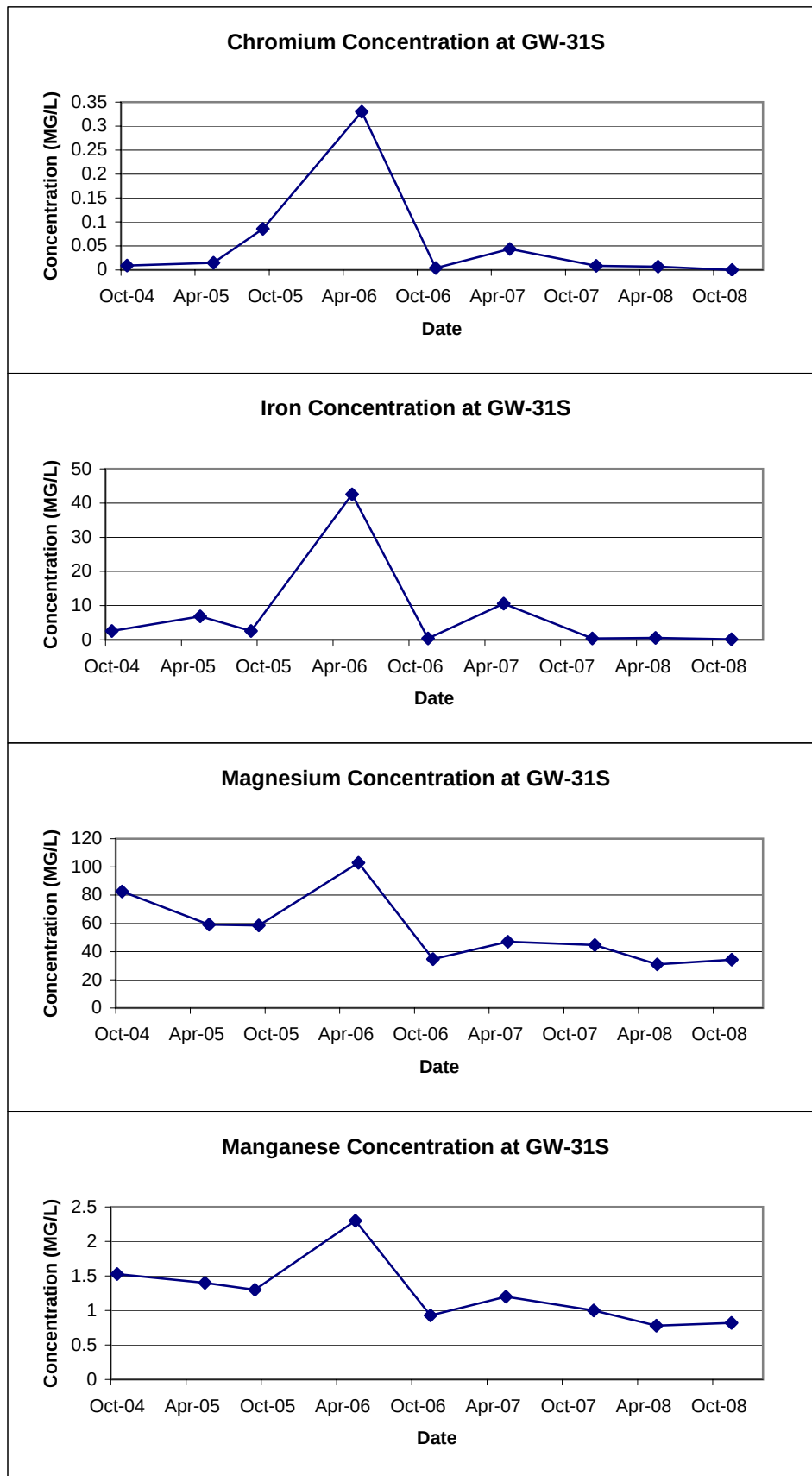


FIGURE E-16
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-32S

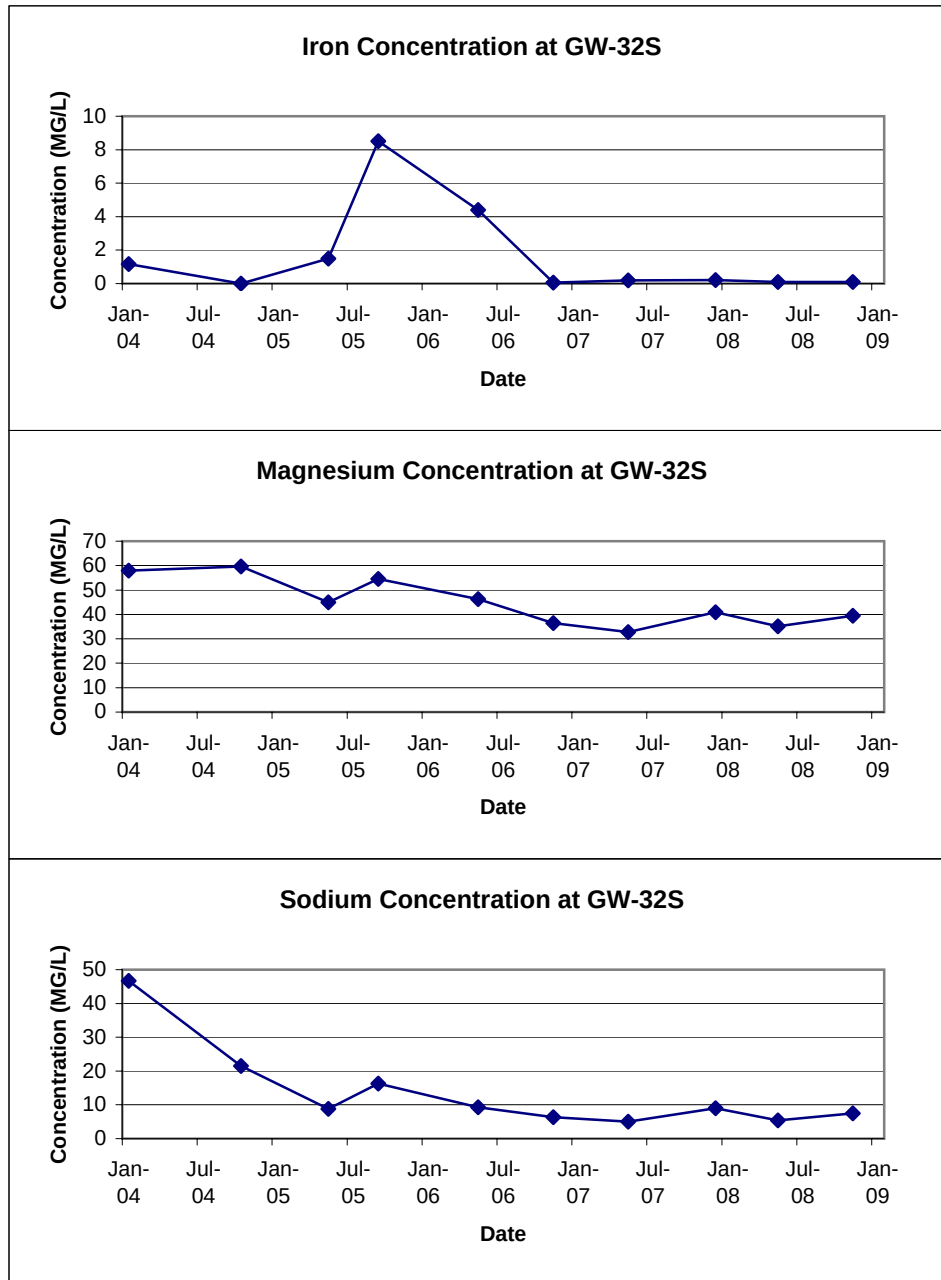


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

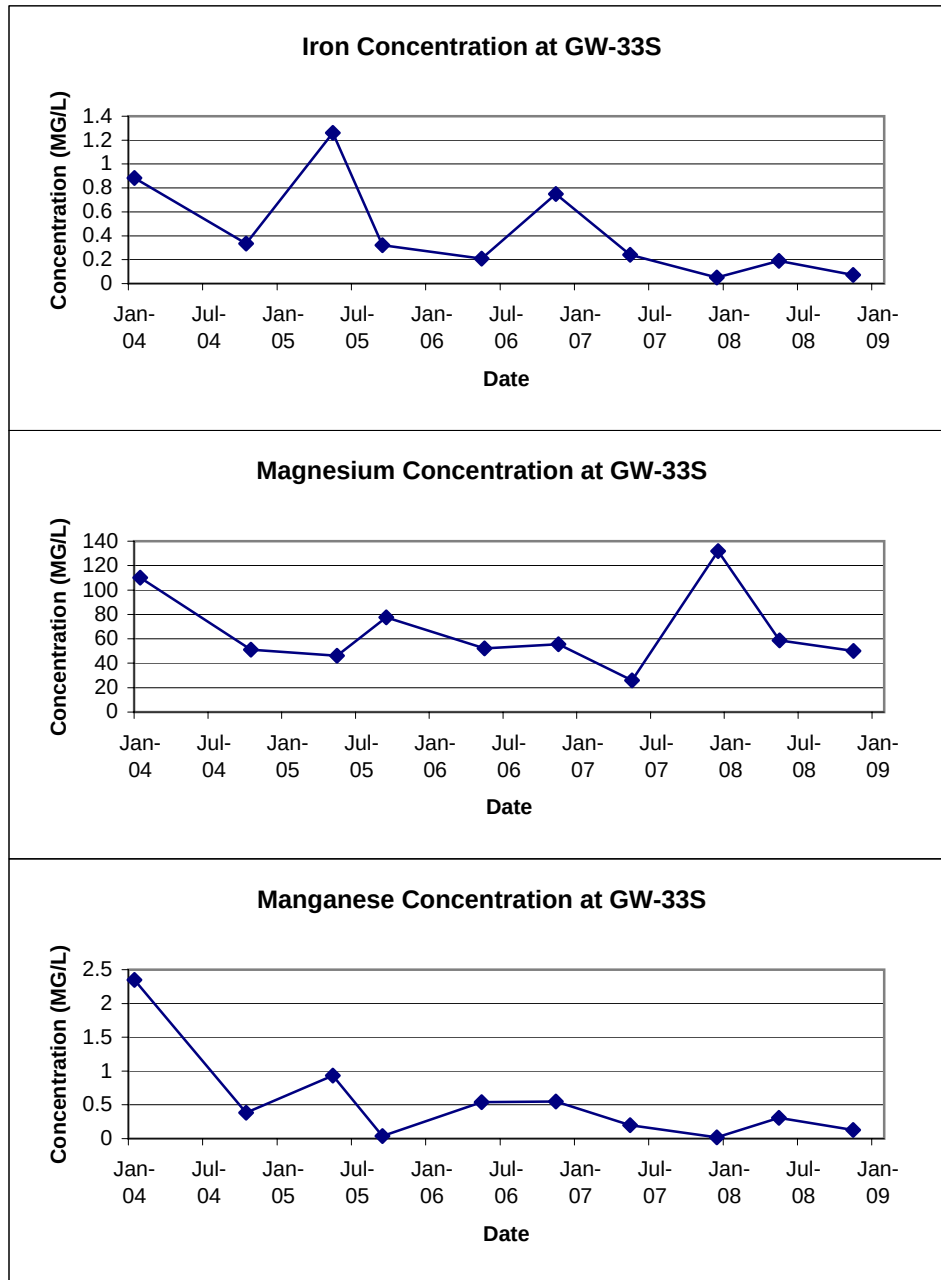


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

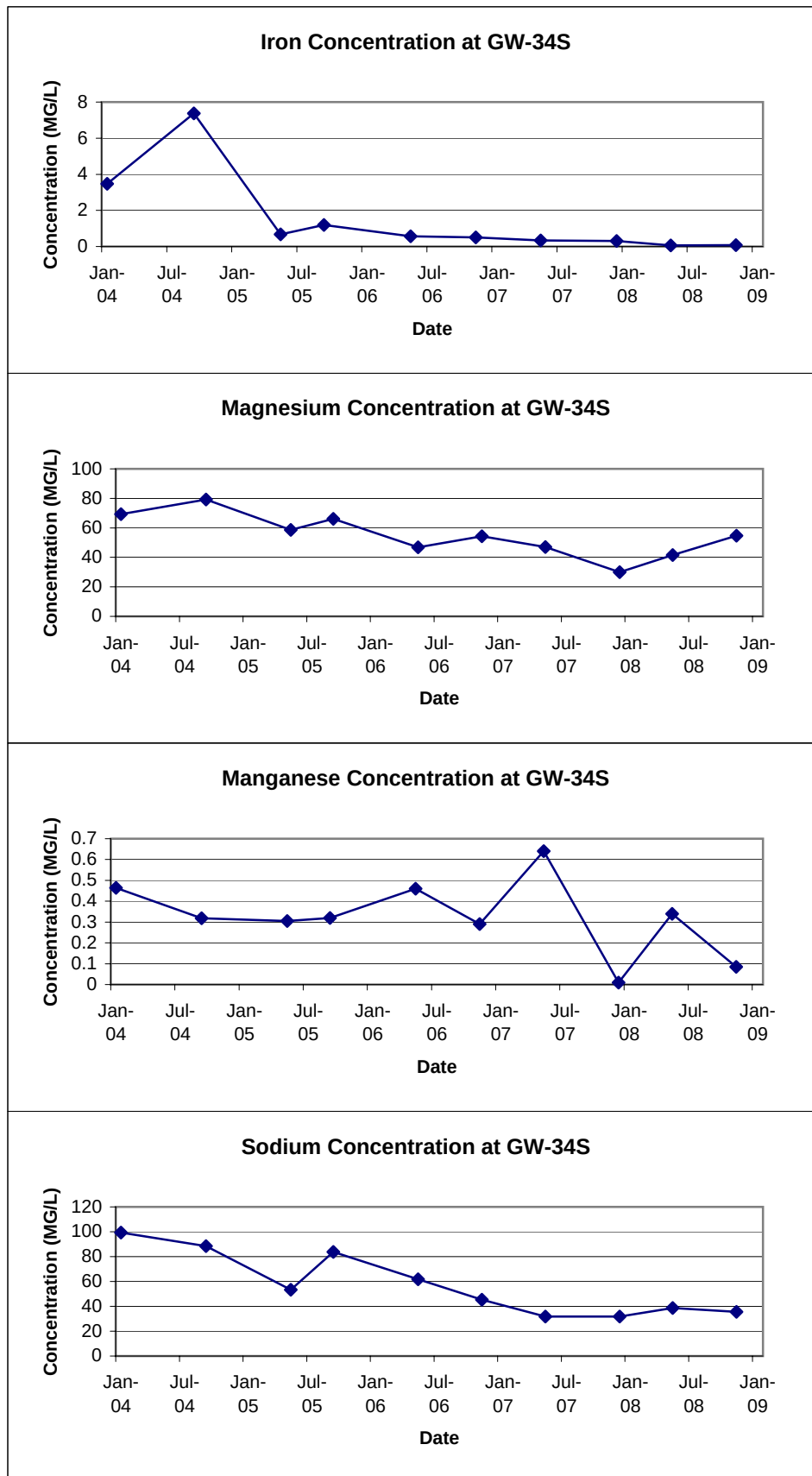
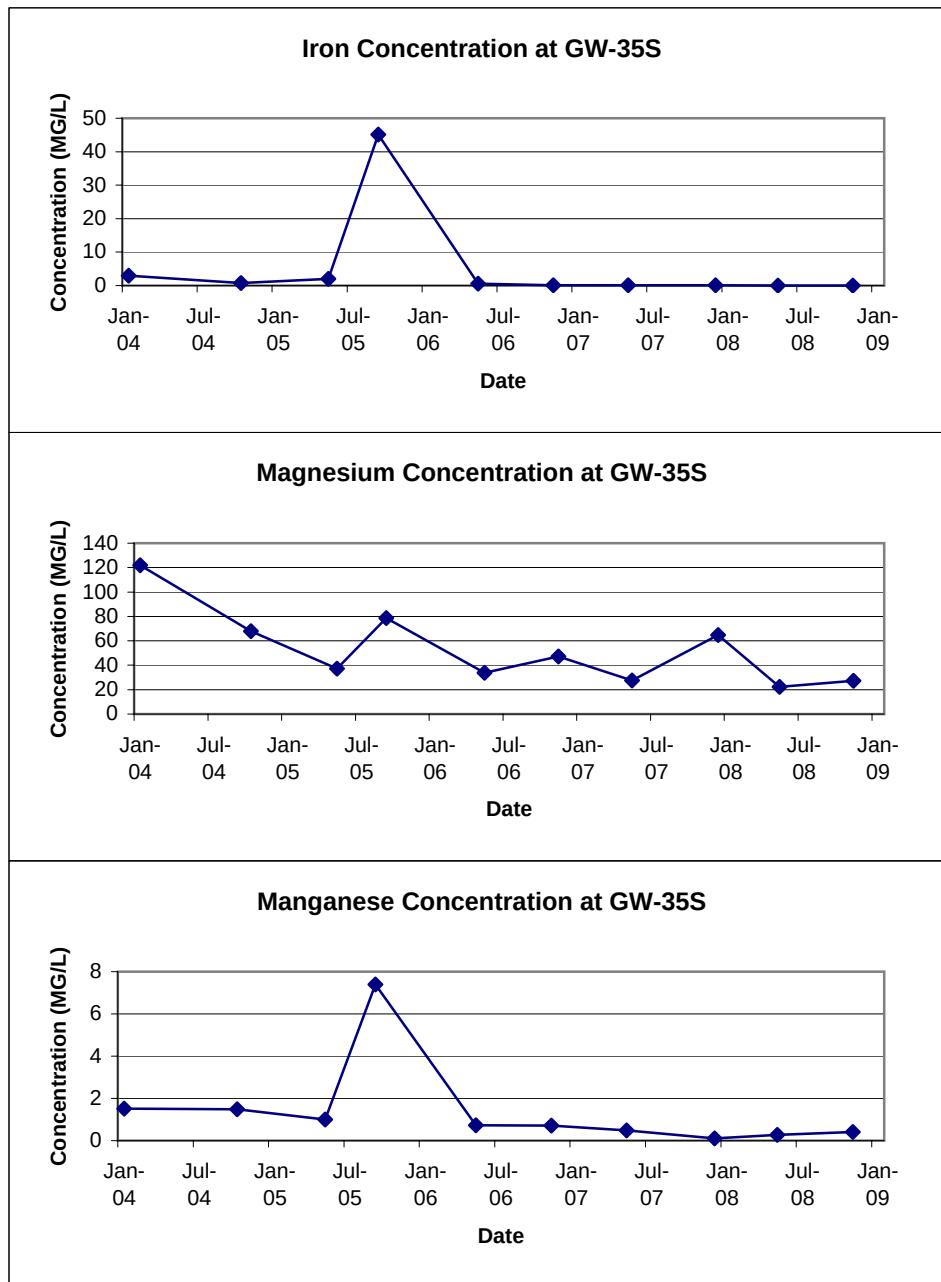


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMIT NO. 05-12-CH016

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

**PERMIT NO. 05-12-CH016
USEPA Category 40 CFR Part 403**

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

THE TOWN OF CHEEKTOWAGA

to discharge wastewater from a facility located at:

**PFOHL BROTHERS LANDFILL REMEDIATION SITE
1000 AERO DRIVE
CHEEKTOWAGA, NEW YORK 14225**

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

Issuance of this permit is based upon a permit application filed on **November 3, 2005** analytical data.
This permit is granted in accordance with discharge limitations, monitoring requirements and other
conditions set forth in Parts I and II hereof.

Effective this 1st day of April, 2006

To Expire the 31st day of March, 2009



General Manager

Signed this 30th day of March, 2006

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

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

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

Footnotes are explained on page 5.

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

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

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

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

B. DISCHARGE MONITORING REPORTING REQUIREMENTS

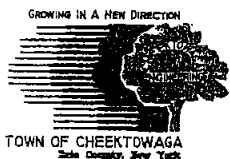
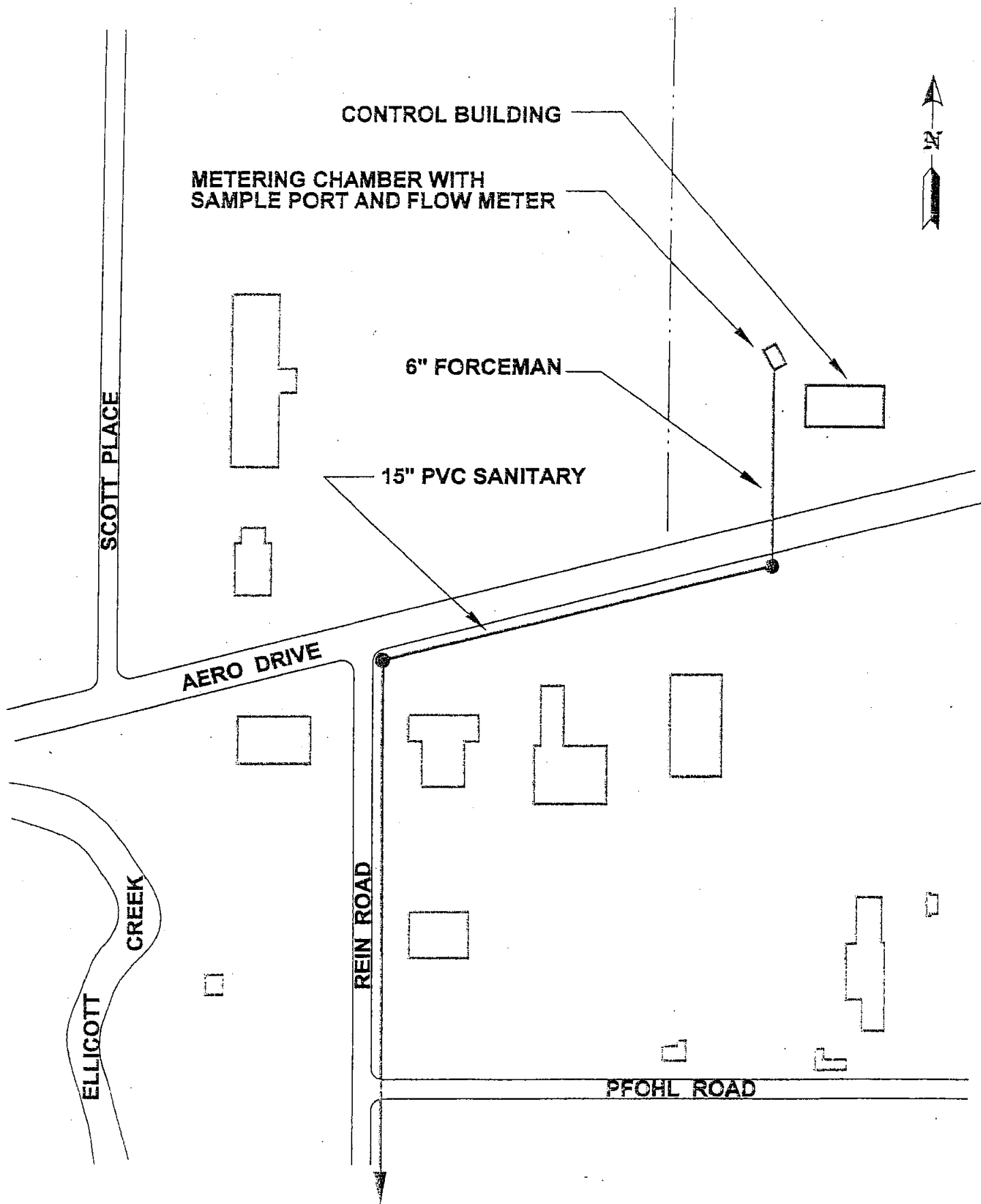
During the period beginning the effective date of this permit and lasting until the expiration date, discharge monitoring results shall be summarized and reported **quarterly** by the permittee on the days specified below:

Sample Point	Parameter	Reporting Requirements	
		Initial Report	Subsequent Reports
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2006	Every March 31 st , June 30 th , September 30 th and December 31 st
	USEPA Test Methods 608, 624 and 625 & T Mercury	March 31, 2008	

PART I: SPECIFIC CONDITIONS

C. SPECIAL REQUIREMENTS

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



TOWN OF CHEEKTOWAGA
CHEEKTOWAGA ENGINEERING DEPT.
ALEXANDER COMMUNITY CENTER
275 ALEXANDER AVE.
CHEEKTOWAGA, NEW YORK 14221
PHONE: (716) 897-7288
FAX: (716) 897-7299

PFOHL BROTHERS LANDFILL SITE

DRAWN BY:	MARK J. CHRISTEL
DATE:	10/28/2002
REVISED:	-
SCALE:	NONE

EXHIBIT

1

FILE: (M: PFOHL BROS.)

APPENDIX G

DISCHARGE REPORT SUMMARY TABLES

SAMPLING FIELD SHEET

URS

Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Bill Pugh, P.E. Phone: 716-897-7288

Installation:

Sample Point: SP-001

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

Date: 9/25 Crew: R. Murphy, R. Piurek, T. Ifkovich

Weather: 72° F, clear

Sampling Device: NA

Time of Installation: 15:10 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: No wells were pumping at the time of sample setup.
PLC display volumes: WW-01 (493,654 gals), WW-02 (42,656 gals), WW-03 (208,888 gals),
WW-04 (80,481 gals), WW-05 (649,716 gals), WW-06 (552,683 gals) & MH-25 (2,270,003 gals).

Date: 9/29/08 Crew: R. Murphy, T. Urban, T. Ifkovich

Weather: 61° F, overcast

Time of Collection: 14:50

Field Measurements:

14:50 pH Calibration: Buffer 7- 7 Buffer 4- 4 Buffer 10- 10
(time/initial)

pH Measurement: 7.1

Temperature: 18.2°C

Identification: EFF-092908

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were pumping at the time of sample pickup.
PLC display volumes: WW-01 (493,654 gals), WW-02 (42,656 gals), WW-03 (208,888 gals),
WW-04 (80,481 gals), WW-05 (705,531 gals), WW-06 (552,683 gals) & MH-25 (2,325,787 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
SEPTEMBER 2008**

Sample ID	EFF-0092908			
Matrix	Effluent Water			
Date Sampled	9/29/2008			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.3	0.14	2.34	No
Total Cadmuim	ND ⁽¹⁾	NA ⁽²⁾	1.17	No
Total Chromium	ND	NA	1.17	No
Total Copper	ND	NA	3.74	No
Total Lead	ND	NA	1.17	No
Total Nickel	ND	NA	3.27	No
Total Zinc	0.018	0.008	5.84	No
Total Suspended Solids	ND	NA	250 ⁽³⁾	No
pH ⁽⁴⁾	7.1	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		55,784	140,000	No

Notes:

- (1) ND = Not Detected
- (2) NA = Not Applicable
- (3) Discharge Limitation in units of mg/L
- (4) pH measurement and Discharge Limitation in Standard Units
- (5) Total Flow reported in gallons, sample was collected over 96 hour period due to low flow

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

SAMPLING FIELD SHEET

URS

Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

Contact: Bill Pugh, P.E. Phone: 716-897-7288

Installation:

Sample Point: SP-001

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

Date: 12/16/08 Crew: R. Murphy, R. Piurek, T. Ifkovich

Weather: 28° F, partly cloudy

Sampling Device: NA

Time of Installation: 11:58 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Wells WW-05 and WW-06 were pumping at the time of sample setup.
PLC display volumes: WW-01 (493,842 gals), WW-02 (42,333 gals), WW-03 (208,888 gals),
WW-04 (127,315 gals), WW-05 (2,292,009 gals), WW-06 (2,445,062 gals) & MH-25 (5,884,851 gals).

Date: 12/17/08 Crew: R. Murphy, R. Piurek, T. Ifkovich

Weather: 34° F, overcast

Time of Collection: 12:08

Field Measurements:

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

pH Measurement: 7.8

Temperature: 9.4°C

Identification: EFF-121708

Physical Observations: _____

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were pumping at the time of sample pickup.
PLC display volumes: WW-01 (493,842 gals), WW-02 (42,314 gals), WW-03 (208,888 gals),
WW-04 (127,315 gals), WW-05 (2,312,331 gals), WW-06 (2,495,260 gals) & MH-25 (5,955,223 gals).

Reviewed By: _____ Date: _____
(Supervisor)

TABLE 1

**PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
DECEMBER 2008**

Sample ID	EFF-121708			
Matrix	Effluent Water			
Date Sampled	12/17/2008			
Parameter	Result	Mass Loading	Discharge Limitation	Violations
	(mg/L)	(lbs/day)	(lbs/day)	(Y/N)
Total Barium	0.24	0.14	2.34	No
Total Cadmuim	ND ⁽¹⁾	NA ⁽²⁾	1.17	No
Total Chromium	ND	NA	1.17	No
Total Copper	ND	NA	3.74	No
Total Lead	ND	NA	1.17	No
Total Nickel	ND	NA	3.27	No
Total Zinc	ND	NA	5.84	No
Total Suspended Solids	ND	NA	250 ⁽³⁾	No
pH ⁽⁴⁾	7.8	NA	5.0 - 12.0	No
Total Flow ⁽⁵⁾		70,372	140,000	No

Notes:

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

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

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich

Supervisor: J. Sundquist

Date(s) of Inspection: November 11-13, 2008

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-1S	Repaired	OK	OK	OK	3.34	14.94	Lock corroded
GW-1D	OK	OK	OK	OK	2.06	39.68	
GW-3S	OK	OK	OK	OK	2.58	13.24	
GW-3D	OK	OK	OK	OK	1.54	35.66	
GW-4S	OK	OK	OK	OK	4.03	16.23	
GW-4D	OK	OK	OK	OK	13.19	45.57	
GW-7S	OK	OK	OK	OK	4.30	35.04	
GW-7D	OK	OK	OK	Damaged	42.28	60.15	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich

Supervisor: J. Sundquist

Date(s) of Inspection: November 11-13, 2008

Well I.D. Number	Lock	Surface Seal	Protective Casing	Riser	Water Level (ft. BTOC)	Well Depth (ft. BTOC)	Other Comments
GW-8SR	OK	OK	OK	OK	5.21	13.04	
GW-8D	OK	OK	OK	OK	5.48	36.52	
GW-26D	OK	OK	OK	OK	6.4	40.70	
GW-28S	OK	OK	OK	OK	8.94	15.54	
GW-29S	OK	OK	OK	OK	7.47	20.02	
GW-30S	OK	OK	OK	OK	8.21	17.99	
GW-31S	OK	OK	OK	OK	2.18	9.58	
GW-32S	OK	OK	OK	OK	2.23	9.92	

Additional Comments:

WELL INSPECTION SUMMARY

Project Name: Pfohl Brothers Landfill

Project Number: 11175616.00000

Inspection Crew Members: R. Murphy, T. Ifkovich

Supervisor: J. Sundquist

Date(s) of Inspection: November 11-13, 2008

<i>Well I.D. Number</i>	<i>Lock</i>	<i>Surface Seal</i>	<i>Protective Casing</i>	<i>Riser</i>	<i>Water Level (ft. BTOC)</i>	<i>Well Depth (ft. BTOC)</i>	<i>Other Comments</i>
GW-33S	OK	OK	OK	OK	2.80	8.20	
GW-34S	OK	OK	OK	OK	2.75	10.01	
GW-35S	OK	OK	OK	OK	2.86	7.46	

Additional Comments:
