URS

January 31, 2020

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

Via Email: brian.sadowski@dec.ny.gov

Re: Semi-Annual Report January 2019 – June 2019
Pfohl Brothers Landfill, Town of Cheektowaga, New York

Dear Mr. Sadowski:

Enclosed is one copy of the January 2019 – June 2019 Semi-Annual Report for the Pfohl Brothers Landfill in Cheektowaga, New York. A hard copy has also been sent to Ms. Pamela Tames, P.E. of the United States Environmental Protection Agency.

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

Sincerely,

URS CORPORATION

Robert J. Murphy, P.G.
Project Manager

Enclosures

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

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SEMI ANNUAL REPORT
OPERATION AND MAINTENANCE
JANUARY 2019 TO JUNE 2019
PFOHL BROTHERS LANDFILL
CHEEKTOWAGA, NY

Submitted to:

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

Prepared by:

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

Prepared for:

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

JANUARY
2020

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APPENDICES

1.0 INTRODUCTION

1.1 Background

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

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

1.2 Operation and Maintenance Activities

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

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

2.0 GENERAL MAINTENANCE ACTIVITIES

Since completion of construction activities in 2002, personnel from the Town of Cheektowaga Engineering Department have performed general activities to ensure the physical operation of the landfill as intended by the design. The various O&M activities performed by the Town from January 2019 through June 2019 included the following actions:

- The amount of groundwater discharged through the collection system was recorded daily. 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 for this reporting period are attached in Appendix A.
- Total cumulative effluent flow rates and volumes were summarized on a monthly basis. The monthly totals for the period, including graphs showing daily total discharge (gallons) as a function of calendar day, are presented in Appendix B.
- The wet well pumps were shut down during wet weather flow conditions as necessary at various times throughout the year. Such actions were only taken upon request of the Buffalo Sewer Authority (BSA) during heavy storm events in order to reduce the hydraulic load on the BSA treatment system during such events. Shutdown events are recorded and included with the monthly flow data in Appendix B as previously requested by NYSDEC.
- Plowed snow to access the Control Building when necessary.
- Cleaned/replaced check valves as necessary at all six (6) wet wells and replaced surge suppressors and fuses as needed for pump station instrumentation equipment.
- Cleaned upper level equipment and applied corrosion inhibitor fluid.
- Inspected wet wells for excessive corrosion to critical equipment.
- Replaced security lock at WW-06.
- Replaced lower coupling on discharge hose at WW-03.
- A power auger was used by JW Danforth technicians to clean the upper portion of the discharge pipe at WW-05. This cleaning increased the discharge rate by 10 to 15 gallons per minute.

- Removed roadside litter/debris on the north and south sides of Aero Drive.

3.0 MONITORING ACTIVITIES

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

3.1 Groundwater Hydraulic Monitoring

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

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

3.2 Groundwater Quality Monitoring

This semi-annual round of groundwater sampling was conducted between May 22 and 24, 2019. All overburden and bedrock wells listed in Table 3.2 of the O&M plan were purged and sampled using dedicated/disposable equipment. Figure 3-1 shows the well locations. Low flow sampling techniques were used at most monitoring well locations with the exceptions noted below.

Passive diffusion bags (PDBs) were placed in three monitoring wells with low recharge rates (GW-04S, GW-07S, and GW-07D) on March 21, 2019. The PDBs were removed from the wells during the May 2019 sampling event, poured into the appropriate sample containers for analysis of volatile organic compounds (VOCs). Following removal of the PDBs, the three wells

were purged dry and sampled for field water quality parameters. The other required analytical parameters (i.e., semivolatile organic compounds [SVOCs] and metals) were collected after water levels recovered (the next day for GW-07D and GW-07S and later the same day for GW-04S).

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 included in Appendix D. Following collection, the samples were packed with ice in coolers and transported under chain-of-custody (CoC) control to Test America Laboratories of Amherst, New York.

Groundwater samples were analyzed for the parameters listed in Table 3.2 of the O&M plan as revised in accordance with Table 3-6 in the Semi Annual Report dated September 2007 (January through June 2007) and as approved by the December 6, 2006 and November 29, 2007 correspondence from the NYSDEC authorizing a reduction in the parameters list (included as Table 3-1 in this report). Table 3-2 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.

Laboratory Report

The groundwater analytical data package was prepared by Test America in accordance with NYSDEC Category A deliverable requirements. It was reviewed by a URS chemist for compliance with analytical method requirements and the following guidelines: *National Functional Guidelines for Superfund Organic Methods Data Review*, EPA-540-R-2017-002, January 2017; and *National Functional Guidelines for Inorganic Superfund Data Review*, EPA-540-R-2017-001, January 2017. Qualifications applied to the data include "J/UJ" (estimated concentration/estimated quantitation limit), "J+" (estimated concentration with possible high bias), and "U" (not detected).

URS prepared Data Applicability Report (DAR) following the guidelines provided in NYSDEC Division of Environmental Remediation (DER-10) *Technical Guidance for Site Investigation and Remediation, Appendix 2B,* dated May 2010. The DAR dated July 2019 is submitted separately from this report.

Results

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

Among the metals, iron, magnesium, manganese, and sodium routinely exceeded Class GA standards in most site wells. In addition, chromium was detected at concentrations exceeding its respective Class GA standard in wells GW-01D and GW-07D. Antimony, cadmium, lead, and nickel were also detected at concentrations exceeding their respective Class GA standards in well GW-07D.

Comparison to Historical Results

Organics

Results are consistent with historical results; there have been very few and infrequent detections of VOCs/SVOCs.

Metals

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

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

Trend Analysis

Organics

There is an insufficient number and frequency of detections to define trends.

Metals

A trend analysis of groundwater parameters that routinely exceed Class GA groundwater standards was performed and is presented in Figures E-1 through E-19 of Appendix E. A review of the trend analysis indicated that no significant changes or trends in concentrations of any of the parameters exceeding groundwater standards have occurred over the semi-annual sampling events. Notable trends are summarized below ("--" indicates no discernable trend):

Figure	Monitoring Well	Parameters Routinely Exceeding Groundwater Standards and Trend			
		Iron	Magnesium	Manganese	Sodium
E-1	**GW-01D**	--	--	--	Upward
E-2	**GW-01S**	--	--	Upward	Downward
E-3	**GW-03D**	Downward	--	Downward	Downward
E-4	**GW-03S**	--	Upward	--	Upward
E-5	**GW-04D**	--	Upward	--	--
E-6	**GW-04S**	--	Upward	Downward	--
E-7	**GW-07D**	--	Upward	--	--
E-8	**GW-07S**	--	Upward	--	--
E-9	**GW-08D**	Downward	--	Downward	--
E-10	**GW-08S**	--	--	--	--
E-11	**GW-26D**	Downward	--	Downward	Upward
E-12	**GW-28S**	--	--	--	Downward
E-13	**GW-29S**	--	--	--	Downward
E-14	**GW-30S**	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)	Downward (with seasonal variation)
E-15	**GW-31S**	--	--	--	--
E-16	**GW-32S**	--	Downward	--	Seasonal Variation
E-17	**GW-33S**	--	--	--	--
E-18	**GW-34S**	--	Downward	Seasonal Variation	Downward
E-19	**GW-35S**	--	--	--	--

3.3 Groundwater Discharge Monitoring

URS completed two quarterly sampling events (March 2019 and June 2019) of the groundwater collection system discharge since the previous semi-annual report. The sampling

was performed in accordance with the requirements of Discharge Permit Nos. 16-04-CH016 and 19-04-CH016 between the Buffalo Sewer Authority (BSA) and the Town of Cheektowaga. A copy of the permits, which shows the monitoring parameters and associated discharge limits, is included as Appendix F.

During the sampling events in March 2019 and June 2019, each regulated parameter was below the limits set by the permits. Copies of the data summary tables that were included with the monitoring reports submitted to the BSA are included as Appendix G.

3.4 Monitoring Well Inspections

During the May 2019 groundwater sampling event, a well inspection was performed. All wells appeared to be in good condition with the exception of previously existing damage to the risers on GW-07D, GW-01S, and GW-01D. The monitoring well inspection logs may be found in Appendix H.

4.0 SUMMARY AND RECOMMENDATIONS

General Maintenance: The Town will continue to maintain mechanical equipment at the landfill on an as-needed basis and operate the groundwater collection and discharge system as designed. The Town will also continue regular inspections, mow the cap once per year, and plow snow to access the Control Building, 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, as designed. Continued quarterly monitoring is recommended.

Groundwater Quality Monitoring: Groundwater sample results indicate that only low levels of SVOCs and metals are present. Similar concentrations of most parameters were found during previous sampling events. The next round of groundwater sampling will be conducted in November 2019. Low flow sampling techniques will be used. Passive diffusion bags will be used again for VOC analyses at the three wells (GW-04S, GW-07S, and GW-07D) that go dry when using low flow sampling.

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

TABLES

TABLE 3-1

APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

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

LOCATIONS

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

FREQUENCY

semi-annually for overburden and bedrock groundwater

PARAMETERS

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

TABLE 3-1 (continued)

APPROVED REVISION OF TABLE 3.2 FROM THE O&M PLAN

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

PARAMETERS (cont'd)

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

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2019

Location ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Sample ID			GW-01D	GW-01S	GW-03D	GW-03S	GW-04D
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/22/19	05/22/19	05/23/19	05/23/19	05/22/19
Parameter	**Units**	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Acetone	UG/L	50	4.5 J		3.8 J		3.5 J
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3			1.9 J		
1,4-Dichlorobenzene	UG/L	3			2.8 J		
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Antimony	MG/L	0.003					
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.081	0.19	0.090	0.096	0.10
Cadmium	MG/L	0.005				0.0013	
Chromium	MG/L	0.05	0.058			0.0058	0.0026 J
Copper	MG/L	0.2	0.0031 J				
Iron	MG/L	0.3	2.4	7.7	1.2	0.69	0.20
Lead	MG/L	0.025			0.0031 J		
Magnesium	MG/L	35	35.2	24.3	17.2	83.0	81.0
Manganese	MG/L	0.3	0.045	1.2	0.27	0.88	0.022
Nickel	MG/L	0.1	0.013		0.0047 J	0.062	
Sodium	MG/L	20	98.8	177	187	100	95.3
Zinc	MG/L	2	0.012		0.0026 J	0.0082 J	0.035

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

Flags assigned during chemistry validation are shown.

Concentration Exceeds

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

NA - Not Analyzed.

Only Detected Results Reported.

TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2019

Location ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Sample ID			GW-04S	GW-07D	GW-07D	GW-07S	GW-07S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/22/19	05/22/19	05/23/19	05/22/19	05/23/19
Parameter	**Units**	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5			NA		NA
Acetone	UG/L	50	3.8 J	4.4 J	NA	3.7 J	NA
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3		NA		NA	
1,4-Dichlorobenzene	UG/L	3		NA		NA	
bis(2-Ethylhexyl)phthalate	UG/L	5	3.3 J	NA	3.4 J	NA	
Metals							
Antimony	MG/L	0.003		NA	0.010 J	NA	
Arsenic	MG/L	0.025		NA	0.0080 J	NA	
Barium	MG/L	1	0.12	NA	0.17	NA	0.39
Cadmium	MG/L	0.005	0.00052 J	NA	0.0054	NA	0.0040
Chromium	MG/L	0.05	0.0071	NA	1.8	NA	0.0092
Copper	MG/L	0.2	0.0031 J	NA	0.16	NA	0.0016 J
Iron	MG/L	0.3	1.8	NA	48.4	NA	0.40
Lead	MG/L	0.025		NA	0.68	NA	0.0036 J
Magnesium	MG/L	35	28.0	NA	39.0	NA	43.6
Manganese	MG/L	0.3	0.13	NA	0.36	NA	0.092
Nickel	MG/L	0.1	0.0056 J	NA	0.87	NA	0.078
Sodium	MG/L	20	31.2	NA	74.1	NA	57.7
Zinc	MG/L	2	0.0058 J	NA	0.33	NA	0.0032 J

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

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TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2019

Location ID			GW-08D	GW-08D	GW-08SR	GW-26D	GW-28S
Sample ID			FD-20190523	GW-08D	GW-08SR	GW-26D	GW-28S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/23/19	05/23/19	05/23/19	05/23/19	05/24/19
Parameter	**Units**	*	Field Duplicate (1-1)				
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5				1.0 J	
Acetone	UG/L	50	5.2 J	6.0 J	4.9 J	4.5 J	
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Antimony	MG/L	0.003					
Arsenic	MG/L	0.025					
Barium	MG/L	1	0.071	0.070	0.083	0.13	0.080
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05	0.042	0.046			
Copper	MG/L	0.2	0.0018 J	0.0019 J			
Iron	MG/L	0.3	0.63	0.62	6.4	2.4	0.20
Lead	MG/L	0.025					
Magnesium	MG/L	35	16.1	15.8	51.4	16.3	25.9
Manganese	MG/L	0.3	0.031	0.032	0.60	0.34	1.0
Nickel	MG/L	0.1	0.011	0.010		0.0015 J	0.0019 J
Sodium	MG/L	20	203	200	114	351	12.3
Zinc	MG/L	2	0.0056 J	0.0060 J			

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

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TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2019

Location ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Sample ID			GW-29S	GW-30S	GW-31S	GW-32S	GW-33S
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			05/24/19	05/24/19	05/24/19	05/24/19	05/24/19
Parameter	**Units**	*					
Volatile Organic Compounds							
1,2-Dichloroethene (total)	UG/L	5					
Acetone	UG/L	50		4.1 J	4.2 J	3.3 J	5.5 J
Semivolatile Organic Compounds							
1,3-Dichlorobenzene	UG/L	3					
1,4-Dichlorobenzene	UG/L	3					
bis(2-Ethylhexyl)phthalate	UG/L	5					
Metals							
Antimony	MG/L	0.003					
Arsenic	MG/L	0.025	0.025				
Barium	MG/L	1	0.16	0.098	0.081	0.050	0.038
Cadmium	MG/L	0.005					
Chromium	MG/L	0.05					
Copper	MG/L	0.2					
Iron	MG/L	0.3	14.6	4.6	2.2		
Lead	MG/L	0.025					
Magnesium	MG/L	35	55.1	28.9	25.9	26.5	24.9
Manganese	MG/L	0.3	0.66	0.63	0.86	0.67	0.025
Nickel	MG/L	0.1			0.0026 J	0.0020 J	
Sodium	MG/L	20	7.7	26.4	3.0	2.7	2.4
Zinc	MG/L	2					0.0017 J

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

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TABLE 3-2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
PFOHL BROTHERS LANDFILL SITE
MAY 2019

Location ID			GW-34S	GW-35S
Sample ID			GW-34S	GW-35S
Matrix			Groundwater	Groundwater
Depth Interval (ft)			-	-
Date Sampled			05/23/19	05/23/19
Parameter	**Units**	*		
Volatile Organic Compounds				
1,2-Dichloroethene (total)	UG/L	5		
Acetone	UG/L	50	3.6 J	4.8 J
Semivolatile Organic Compounds				
1,3-Dichlorobenzene	UG/L	3		
1,4-Dichlorobenzene	UG/L	3		
bis(2-Ethylhexyl)phthalate	UG/L	5		
Metals				
Antimony	MG/L	0.003		
Arsenic	MG/L	0.025		
Barium	MG/L	1	0.13	0.091
Cadmium	MG/L	0.005		
Chromium	MG/L	0.05		
Copper	MG/L	0.2		
Iron	MG/L	0.3	0.095	
Lead	MG/L	0.025		
Magnesium	MG/L	35	36.6	23.0
Manganese	MG/L	0.3	0.35	0.091
Nickel	MG/L	0.1	0.0065 J	
Sodium	MG/L	20	17.2	2.2
Zinc	MG/L	2		

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

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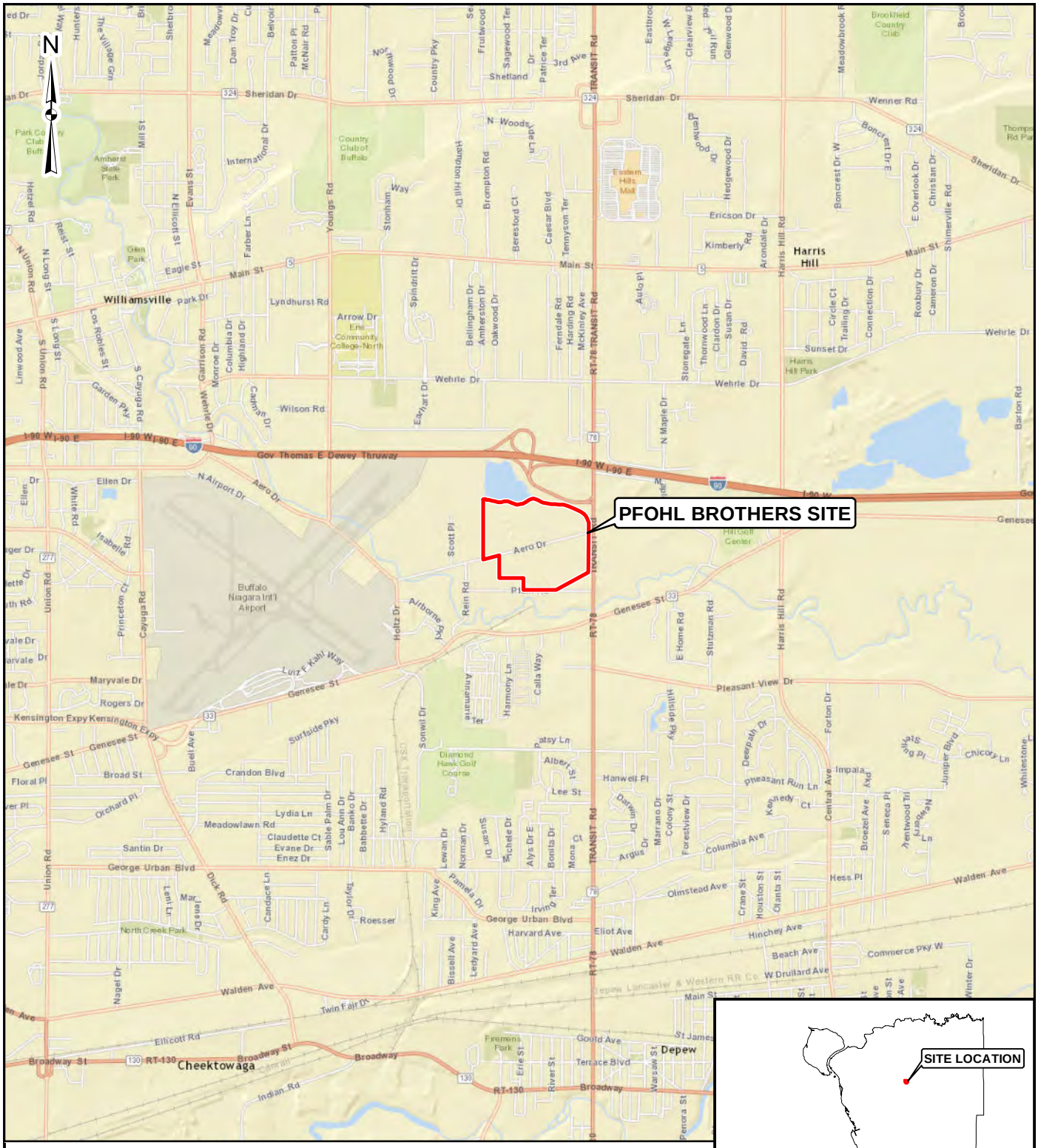
FIGURES



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URS

PFOHL BROTHERS LANDFILL
SITE LOCATION MAP

FIGURE 1-1

Legend

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

400 0 400 Feet

PFOHL BROTHERS LANDFILL
MONITORING LOCATIONS

URS

FIGURE 3-1

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

APPENDIX A

EXAMPLE DAILY INSPECTION SHEETS

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 2/5/19

Time 1418

Weather conditions Cldy

Read by: JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	0	2792
WW-2	4.6	0	0	162
WW-1	5.1	25.2	126948 3	7205
WW-6	8.2	47.0	3083480	16870
WW-4	8.7	29.4	508150	7969
WW-5	9.3	15.3	693827	498

Flow Totalizer at Meter chamber 7458871

Heat Trace

Outside temp T = 34

Current A = 2.1

Set point SP = 40

Surge Suppressor events 417486

Motor Control Center

Volts 480 volts

Amps 18 amps

Which WW was running?

(1) 2 3 4 5 6

Filter Checked Changed

Comments and/or Current Conditions

✓ OK

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 5/10/19

Time 11:31

Weather conditions Cldy

Read by: JWN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	0	174	2792
WW-2	4.7	0	0	162
WW-1	4.9	0	1736575	7501
WW-6	7.4	57.2	4903537	17401
WW-4	6.9	0	1297564	8396
WW-5	6.6	31.3	1703203	1235

Flow Totalizer at Meter chamber

Heat Trace

Outside temp T = 54°

Current **A** = 0

Set point **SP** = 40°

Surge Suppressor events 417535

Motor Control Center

Volts 480 **volts**

Amps 9 **amps**

Which WW was running?

1 2 3 4 5 6

Filter **Checked** **Changed**

Comments and/or Current Conditions

Pfohl Brothers Landfill Site

Daily Logsheet

Town of Cheektowaga

Date 6/21/19

Time 1036

Weather conditions Clearing

Read by: JHN

	Level of Water from bottom (ft.)	Flow gallons / minute	Flow Totals gallons	Pump Run Time Hrs.
WW-3	99.0	6	174	2792
WW-2	4.7	0	0	162
WW-1	4.8	23.4	1760789	7518
WW-6	7.5	48.8	5518056	17570
WW-4	8.6	21.8	1319537	8413
WW-5	9.0	19.1	2177106	1491

Flow Totalizer at Meter chamber 12681686

Heat Trace

Outside temp **T** = 72

Current **A** = 0

Set point **SP** = 40

Surge Suppressor events 417547

Motor Control Center

Volts 480 **volts**

Amps 12 **amps**

Which WW was running?

1 2 3 4 5 6

Filter **Checked** **Changed**

Comments and/or Current Conditions

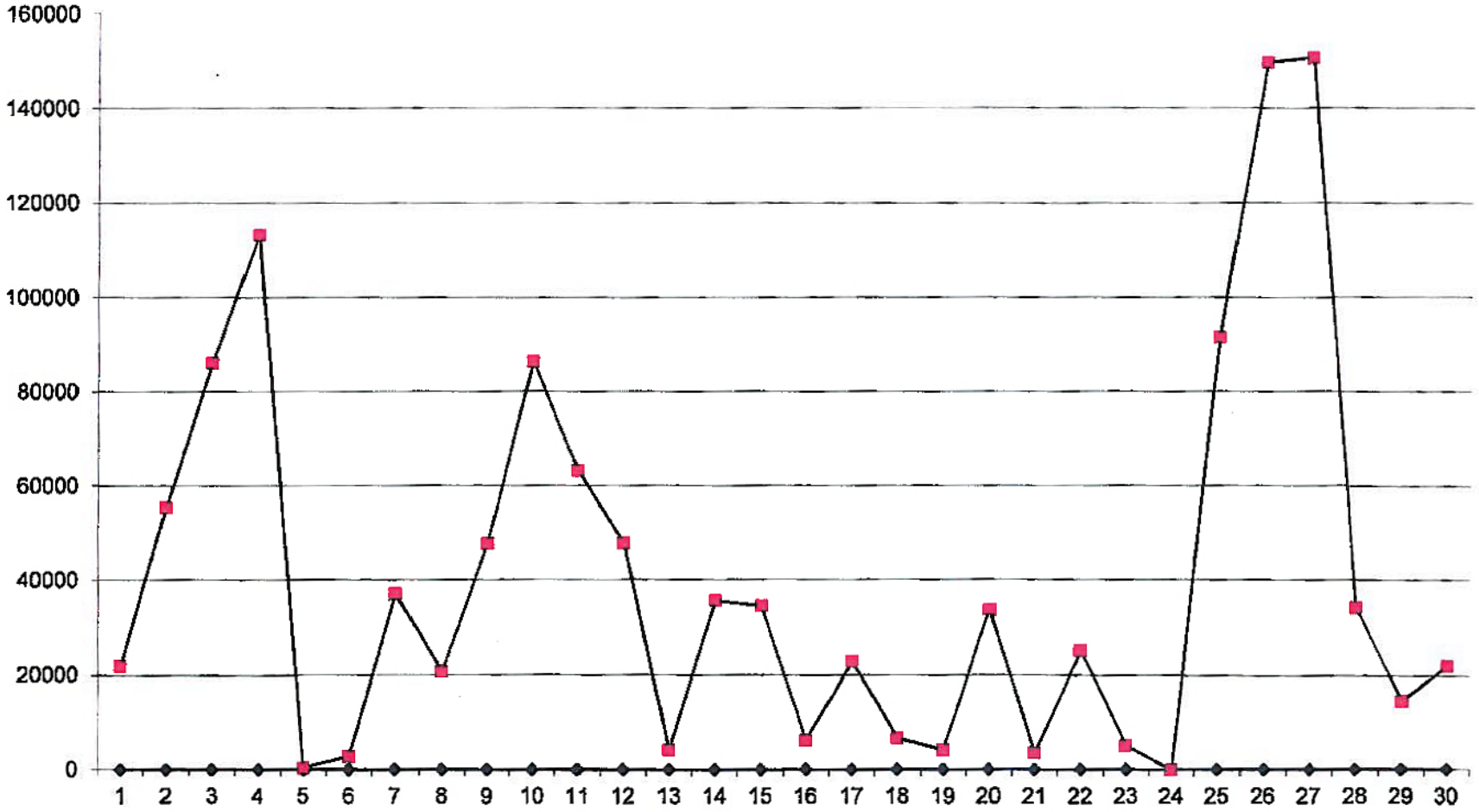
APPENDIX B

MONTHLY FLOW SUMMARIES
JANUARY 2019 – JUNE 2019

Direct Discharge Flow Data

12/31/2018		6174052	15,289	
Jan-19	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Notes**
1		6,195,897	21,845	09:57 enable
2		6,251,337	55,440	
3		6,337,514	86,177	
4		6,450,722	113,207	
5		6,451,068	346	
6		6,453,819	2,751	
7		6,490,853	37,033	
8		6,511,585	20,732	13:58 inhibit
9		6,559,315	47,730	10:39 enable
10		6,645,715	86,400	
11		6,708,826	63,110	
12		6,756,606	47,780	
13		6,760,667	4,061	
14		6,796,381	35,713	
15		6,830,941	34,560	
16		6,837,150	6,209	
17		6,860,051	22,901	
18		6,866,693	6,642	
19		6,870,823	4,130	
20		6,904,597	33,774	
21		6,908,105	3,507	
22		6,933,202	25,097	
23		6,938,299	5,064	15:02 inhibit
24		6,938,266	0	
25		7,029,884	91,618	06:05 enable
26		7,179,567	149,683	
27		7,330,322	150,754	
28		7,364,602	34,280	
29		7,379,199	14,597	
30		7,401,303	22,104	
31		7,419,811	18507	
		1,245,759	**1,245,752**	

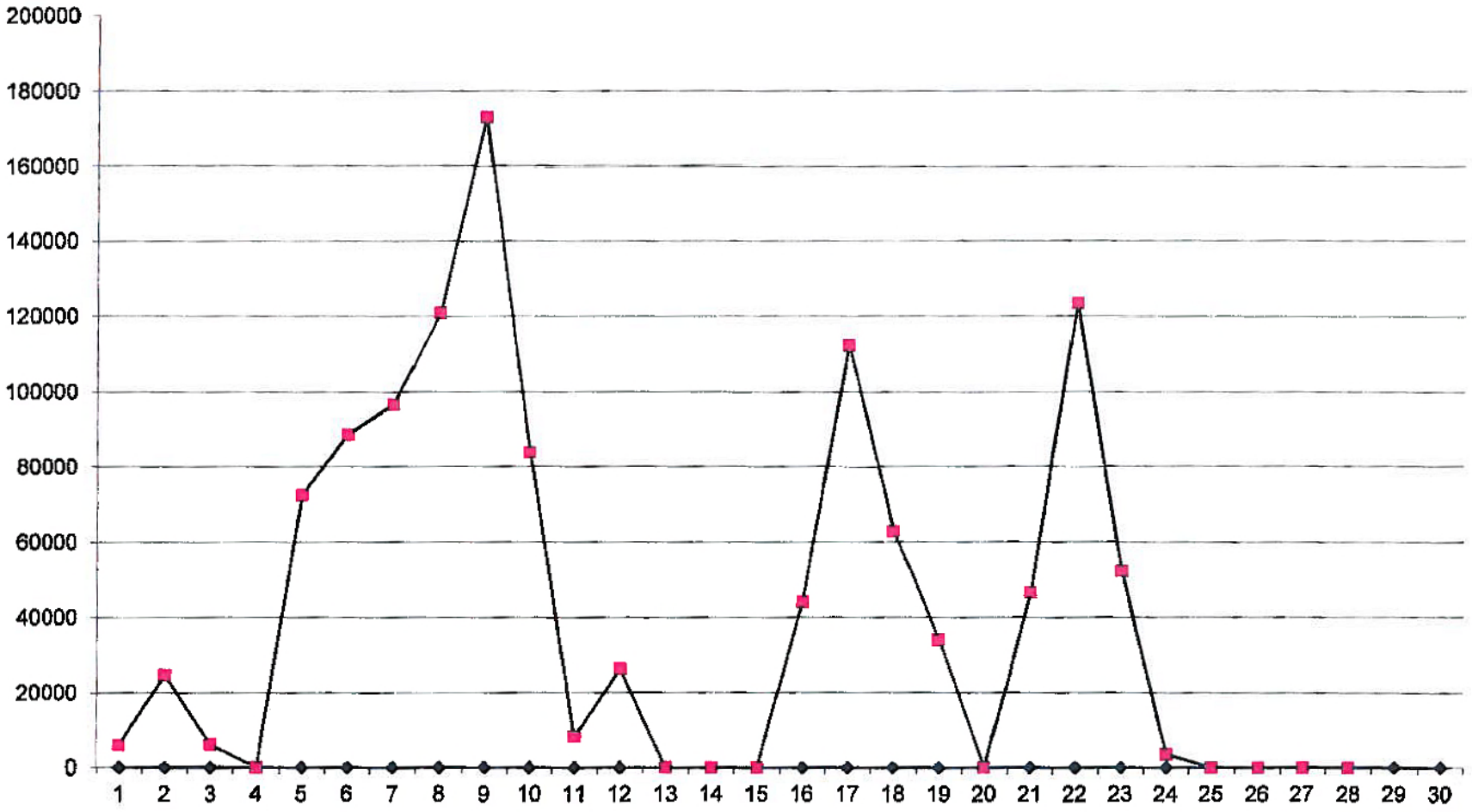
January
2019



Direct Discharge Flow Data

1/31/2019		7419811	18,507	
Feb-19	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Notes**
1		7,425,649	5,838	
2		7,456,436	24,661	
3		7,456,436	6,126	13:12 inhibit
4		7,456,436	0	
5		7,529,044	72,608	13:52 enable
6		7,617,712	88,668	12:06 inhibit
7		7,714,443	96,731	09:35 enable / 23:02 inhibit
8		7,835,344	120,901	07:09 enable
9		8,008,250	172,906	
10		8,091,983	83,732	
11		8,100,093	8,110	
12		8,126,329	26,236	21:27 inhibit
13		8,126,329	0	
14		8,126,329	0	
15		8,126,329	0	
16		8,170,536	44,206	15:03 enable
17		8,283,005	112,469	
18		8,345,937	62,931	
19		8,379,979	34,042	
20		8,379,979	0	
21		8,426,565	46,585	
22		8,549,900	123,335	
23		8,602,175	52,275	
24		8,605,709	3,534	10:12 inhibit
25		8,605,709	0	
26		8,605,709	0	
27		8,605,709	0	
28		8,605,709	0	
29				
30				
31				
		1,185,898	**1,185,894**	

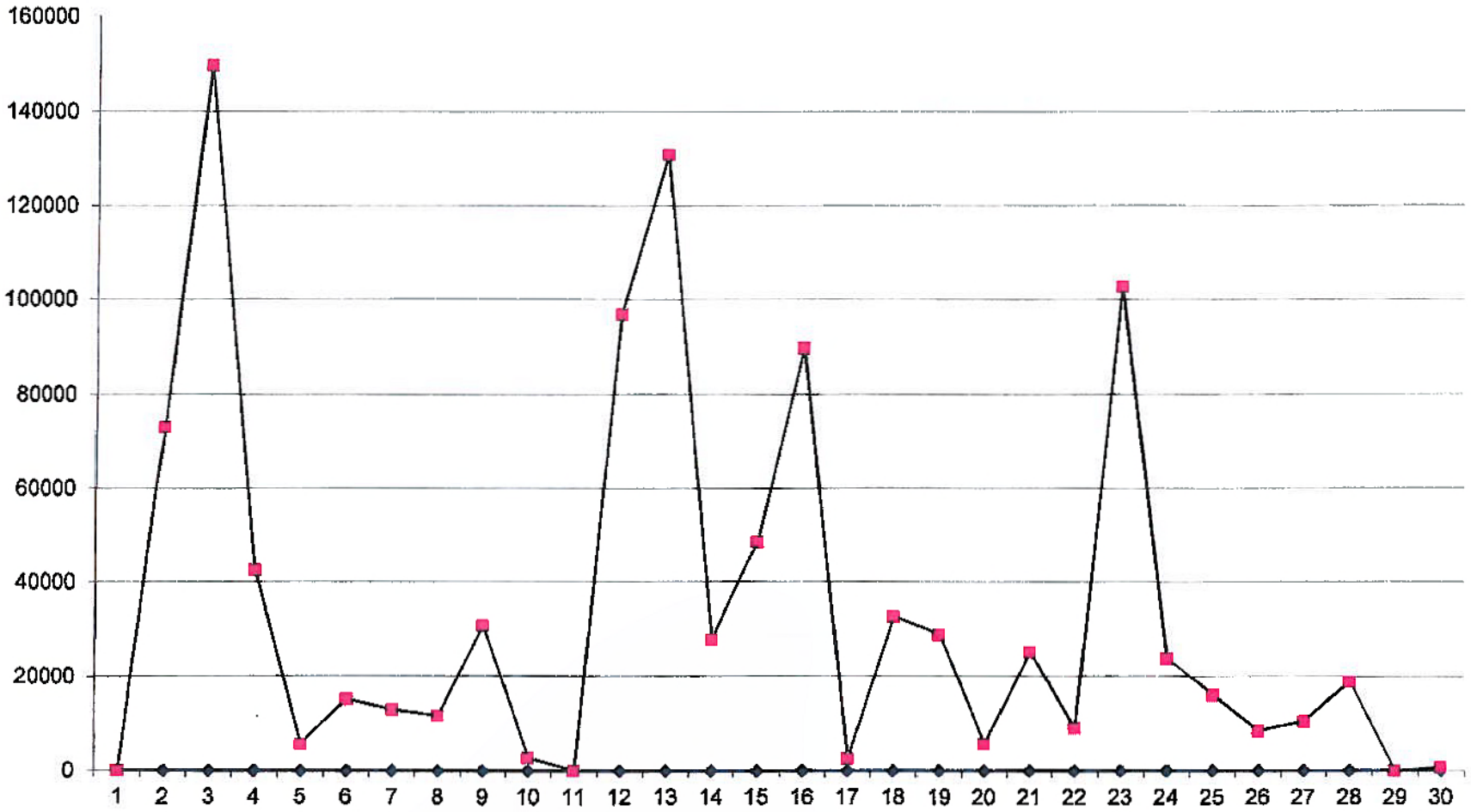
February
2019



Direct Discharge Flow Data

2/28/2019		8605709	0	
Mar-19	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Notes**
1		8,605,709	0	
2		8,678,782	73,073	12:17 enable
3		8,828,542	149,760	
4		8,871,147	42,605	
5		8,876,874	5,727	
6		8,892,079	15,205	
7		8,905,051	12,972	
8		8,916,746	11,695	
9		8,947,532	30,786	
10		8,950,216	2,684	03:02 inhibit
11		8,950,216	0	
12		9,046,970	96,754	07:50 enable
13		9,177,733	130,763	
14		9,205,580	27,847	
15		9,254,291	48,711	
16		9,344,131	89,840	
17		9,346,792	2,661	
18		9,379,539	32,747	
19		9,408,339	28,800	
20		9,414,105	5,766	
21		9,439,202	25,097	
22		9,448,352	9,150	
23		9,551,066	102,714	
24		9,574,871	23,805	
25		9,590,948	16,077	
26		9,599,531	8,583	
27		9,610,071	10,540	
28		9,628,955	18,884	
29		9,628,955	0	
30		9,629,618	663	20:37 inhibit
31		9,629,618	0	
		1,023,909	**1,023,909**	

March
2019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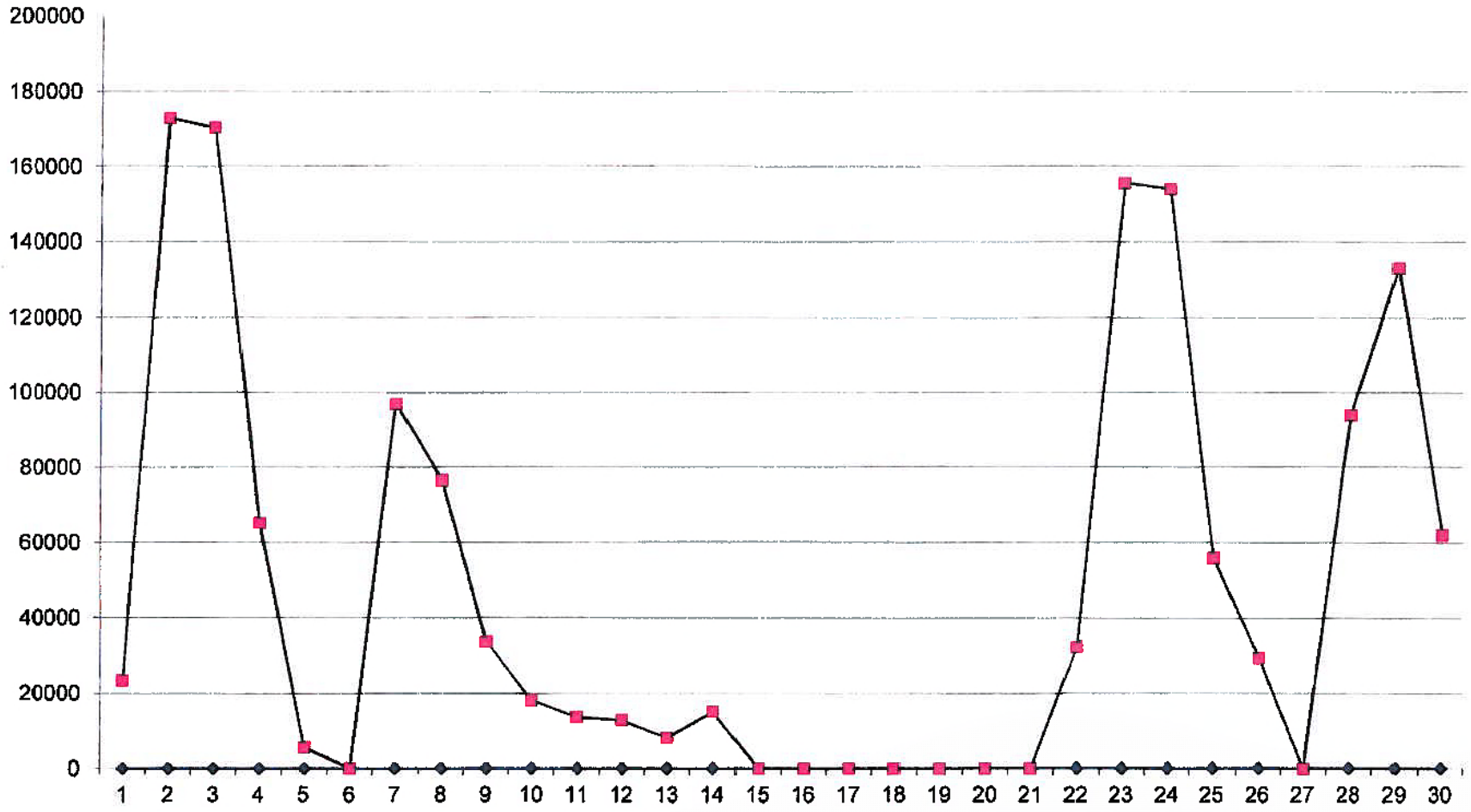
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Direct Discharge Flow Data

3/31/2019		9629618	0	
Apr-19	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Notes**
1		9,653,095	23,477	20:39 enable
2		9,825,895	172,800	
3		9,996,056	170,161	
4		10,061,288	65,232	
5		10,066,868	5,580	
6		10,066,868	0	
7		10,163,792	96,924	
8		10,240,418	76,626	05:18 inhibit 15:17 enable
9		10,274,152	33,734	
10		10,292,291	18,139	
11		10,305,960	13,669	
12		10,318,827	12,867	
13		10,326,909	8,082	
14		10,341,993	15,084	15:23 inhibit
15		10,341,993	0	
16		10,341,993	0	
17		10,341,993	0	
18		10,341,993	0	
19		10,341,993	0	
20		10,341,993	0	
21		10,341,993	0	
22		10,374,420	32,427	18:58 enable
23		10,530,045	155,625	
24		10,684,118	154,073	
25		10,739,972	55,854	
26		10,769,483	29,511	13:37 inhibit
27		10,769,483	0	
28		10,863,552	94,069	07:24 enable
29		10,996,814	133,262	
30		11,058,985	62,171	
31				
		1,429,367	**1,429,367**	

April
2019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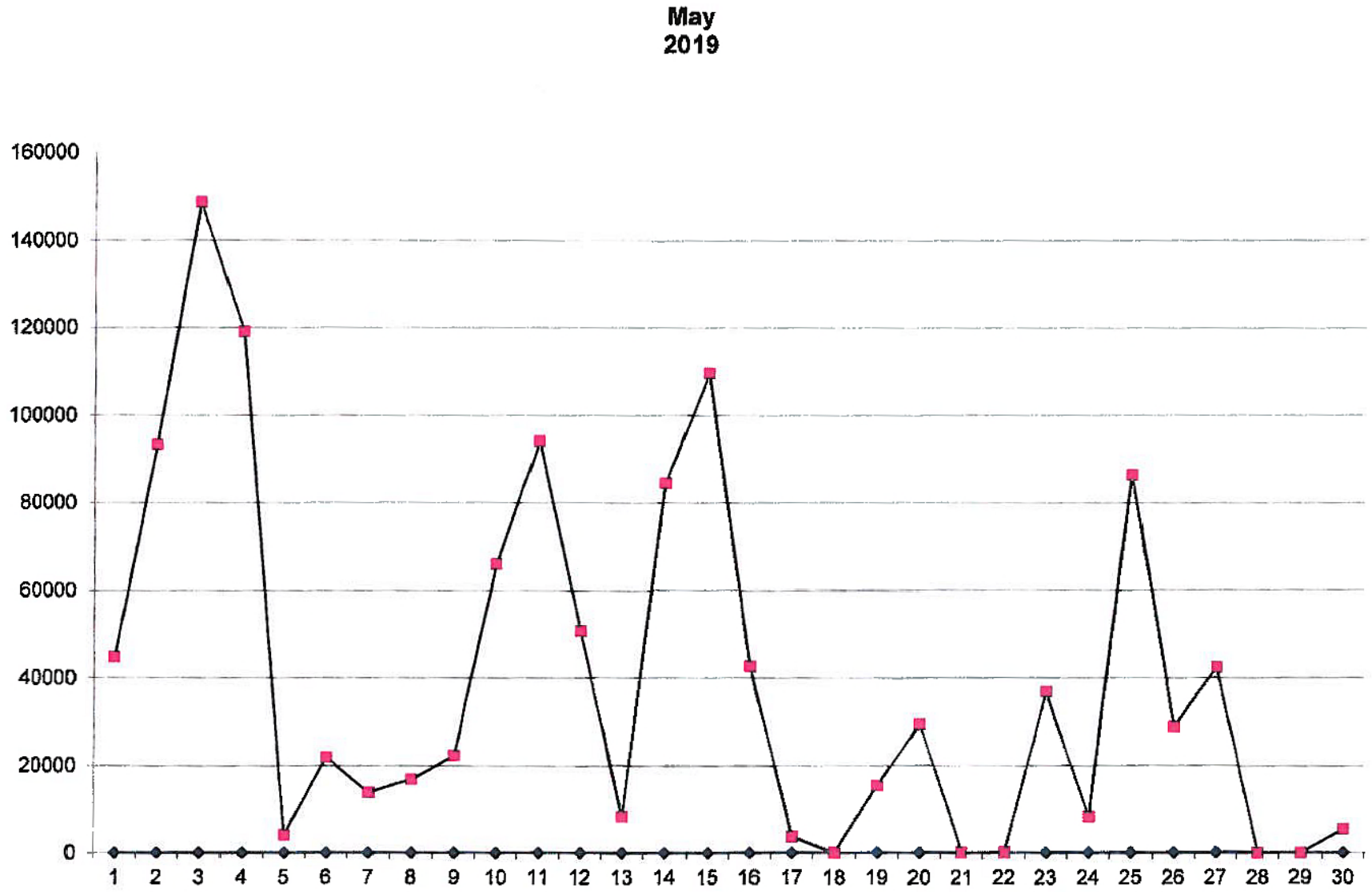
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Direct Discharge Flow Data

4/30/2019		11058985	62,171	
May-19	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Notes**
1		11,103,742	44,757	20:41 inhibit
2		11,197,205	93,463	08:25 enable
3		11,345,852	148,647	
4		11,464,867	119,015	
5		11,468,883	4,016	
6		11,490,859	21,976	
7		11,504,742	13,883	
8		11,521,561	16,819	
9		11,543,884	22,323	
10		11,609,747	65,863	00:01 inhibit 11:28 enable
11		11,703,843	94,096	
12		11,754,470	50,627	
13		11,762,678	8,208	03:46 inhibit
14		11,847,195	84,517	08:24 enable
15		11,956,764	109,569	23:17 inhibit
16		11,999,363	42,599	04:10 enable
17		12,003,083	3,720	
18		12,003,083	0	
19		12,018,506	15,423	
20		12,047,914	29,408	
21		12,047,914	0	
22		12,047,914	0	
23		12,084,702	36,788	
24		12,092,830	8,128	
25		12,179,215	86,385	
26		12,208,125	28,910	
27		12,250,565	42,440	
28		12,250,565	0	10:11 inhibit 10:34 enable
29		12,250,565	0	
30		12,255,985	5,420	
31		12,298,953	42968	
		1,239,968	**1,239,968**	


May
2019
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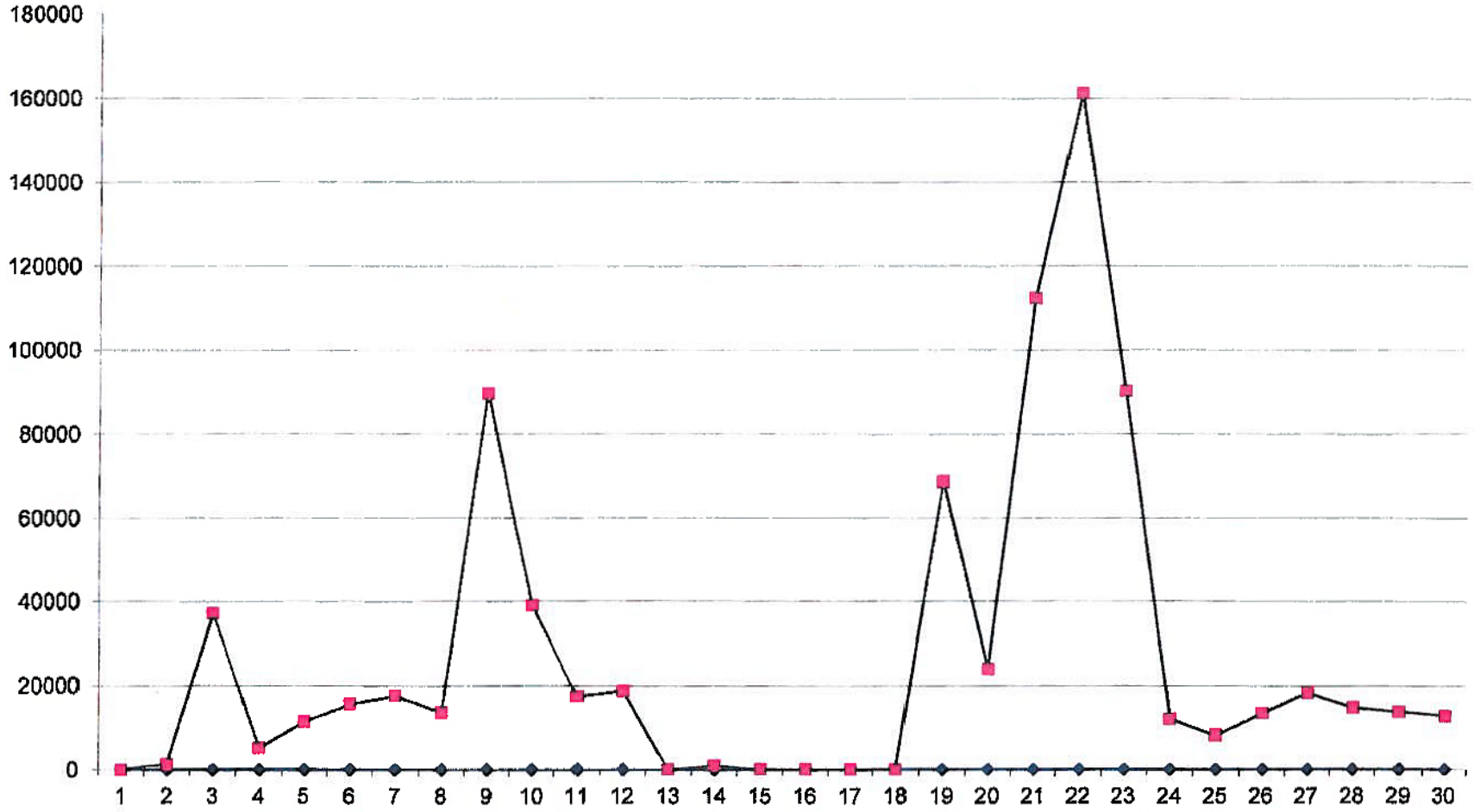
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Direct Discharge Flow Data

5/31/2019		12298953	42,968	
Jun-19	**Time; 11:58pm unless otherwise stated**	**Totalizer Reading (Gallons)**	**Daily Total Discharge (Gallons)**	**Notes**
1		12,298,953	0	
2		12,300,236	1,283	
3		12,337,296	37,060	
4		12,342,311	5,015	
5		12,353,647	11,336	
6		12,369,273	15,626	16:57 inhibit
7		12,386,909	17,636	03:55 enable
8		12,400,486	13,577	
9		12,490,176	89,690	
10		12,529,193	39,017	19:42 inhibit
11		12,546,650	17,457	07:15 enable
12		12,565,393	18,743	
13		12,565,393	0	
14		12,566,256	863	00:29 inhibit
15		12,566,256	0	
16		12,566,256	0	
17		12,566,256	0	
18		12,566,256	0	
19		12,634,903	68,647	12:41 enable / 22:57 inhibit
20		12,658,982	24,079	
21		12,771,258	112,276	07:17 enable
22		12,932,538	161,280	
23		13,022,802	90,264	
24		13,034,864	12,062	
25		13,043,004	8,140	
26		13,056,450	13,446	
27		13,074,743	18,293	
28		13,089,569	14,826	
29		13,103,392	13,823	
30		13,116,300	12,908	
		817,347	**817,347**	

June
2019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APPENDIX C

HYDRAULIC MONITORING TABLES

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2019

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-01D	1073088.634	1117968.213	694.41	NM	696.12	D	1						
MNW								3/21/2019 1218	2.41	693.71	0.00	693.71	
MNW								5/22/2019 1228	2.91	693.21	0.00	693.21	
MNW								6/19/2019 1531	2.48	693.64	0.00	693.64	
GW-01S	1073087.779	1117961.500	694.53	NM	696.19	S	1						
MNW								3/21/2019 1223	3.38	692.81	0.00	692.81	
MNW								5/22/2019 1227	4.02	692.17	0.00	692.17	
MNW								6/19/2019 1530	3.76	692.43	0.00	692.43	
GW-03D	1073819.106	1114602.426	692.35	NM	693.88	D	1						
MNW								3/21/2019 1033	1.55	692.33	0.00	692.33	
MNW								5/22/2019 0906	1.71	692.17	0.00	692.17	
MNW								6/19/2019 1430	1.66	692.22	0.00	692.22	
GW-03S	1073812.622	1114605.762	692.61	NM	693.80	S	1						
MNW								3/21/2019 1034	2.04	691.76	0.00	691.76	
MNW								5/22/2019 0907	2.56	691.24	0.00	691.24	
MNW								6/19/2019 1430	2.30	691.50	0.00	691.50	
GW-04D	1072289.432	1114685.625	690.89	NM	692.75	D	1						
MNW								3/21/2019 1232	11.45	681.30	0.00	681.30	
MNW								5/22/2019 1510	12.14	680.61	0.00	680.61	
MNW								6/19/2019 1518	11.91	680.84	0.00	680.84	
GW-04S	1072284.456	1114685.127	690.76	NM	692.72	S	1						
MNW								3/21/2019 1232	3.94	688.78	0.00	688.78	
MNW								5/22/2019 1509	4.24	688.48	0.00	688.48	
MNW								6/19/2019 1517	3.83	688.89	0.00	688.89	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2019

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-07D	1071242.458	1117669.925	697.15	NM	699.94	D	1						
MNW								3/21/2019 1140	47.34	652.60	0.00	652.60	
MNW								5/22/2019 1011	42.39	657.55	0.00	657.55	
MNW								6/19/2019 1525	56.58	643.36	0.00	643.36	
GW-07S	1071238.157	1117666.265	697.47	NM	699.51	S	1						
MNW								3/21/2019 1141	4.14	695.37	0.00	695.37	
MNW								5/22/2019 1012	4.75	694.76	0.00	694.76	
MNW								6/19/2019 1524	4.31	695.20	0.00	695.20	
GW-08D	1073713.617	1116795.328	695.28	NM	697.79	D	1						
MNW								3/21/2019 1044	5.52	692.27	0.00	692.27	
MNW								5/22/2019 0920	5.72	692.07	0.00	692.07	
MNW								6/19/2019 1442	5.64	692.15	0.00	692.15	
GW-08SR	1073714.172	1116786.343	695.08	NM	697.50	S	1						
MNW								3/21/2019 1044	5.02	692.48	0.00	692.48	
MNW								5/22/2019 0921	5.18	692.32	0.00	692.32	
MNW								6/19/2019 1441	5.13	692.37	0.00	692.37	
GW-26D	1071698.573	1115997.470	696.01	NM	698.50	D	1						
MNW								3/21/2019 1128	6.35	692.15	0.00	692.15	
MNW								5/22/2019 0957	6.55	691.95	0.00	691.95	
MNW								6/19/2019 1510	6.48	692.02	0.00	692.02	
GW-28S	1073129.479	1117648.927	698.60	NM	700.95	S	1						
MNW								3/21/2019 1054	8.66	692.29	0.00	692.29	
MNW								5/22/2019 0927	9.01	691.94	0.00	691.94	
MNW								6/19/2019 1448	8.60	692.35	0.00	692.35	

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 C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2019

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-29S	1072552.638	1117761.993	697.50	NM	699.63	S	1						
MNW								3/21/2019 1110	6.77	692.86	0.00	692.86	
MNW								5/22/2019 0942	8.02	691.61	0.00	691.61	
MNW								6/19/2019 1458	6.64	692.99	0.00	692.99	
GW-30S	1072096.109	1117743.563	693.67	NM	696.58	S	1						
MNW								3/21/2019 1115	7.50	689.08	0.00	689.08	
MNW								5/22/2019 0946	7.59	688.99	0.00	688.99	
MNW								6/19/2019 1501	7.48	689.10	0.00	689.10	
GW-31S	1071786.280	1117191.441	695.84	NM	698.62	S	1						
MNW								3/21/2019 1121	3.01	695.61	0.00	695.61	
MNW								5/22/2019 0950	3.04	695.58	0.00	695.58	
MNW								6/19/2019 1504	2.93	695.69	0.00	695.69	
GW-32S	1071613.793	1116364.200	696.19	NM	698.37	S	1						
MNW								3/21/2019 1125	2.71	695.66	0.00	695.66	
MNW								5/22/2019 0952	3.23	695.14	0.00	695.14	
MNW								6/19/2019 1507	3.01	695.36	0.00	695.36	
GW-33S	1072165.625	1115561.866	695.94	NM	698.24	S	1						
MNW								3/21/2019 1132	3.78	694.46	0.00	694.46	
MNW								5/22/2019 1001	4.92	693.32	0.00	693.32	
MNW								6/19/2019 1511	3.55	694.69	0.00	694.69	
GW-34S	1072979.205	1114730.200	692.51	NM	694.77	S	1						
MNW								3/21/2019 1023	2.71	692.06	0.00	692.06	
MNW								5/22/2019 0851	2.84	691.93	0.00	691.93	
MNW								6/19/2019 1422	3.06	691.71	0.00	691.71	

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 C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2019

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
GW-35S	1071701.925	1115985.585	696.19	NM	697.39	S	1						
MNW								3/21/2019 1120	3.67	693.72	0.00	693.72	
MNW								5/22/2019 0957	3.35	694.04	0.00	694.04	
MNW								6/19/2019 1513	4.77	692.62	0.00	692.62	
MH-01	1073806.665	1114810.501	698.62	NM	698.62	NA	1						
MH								3/21/2019 1028	10.12	688.50	0.00	688.50	
MH								5/22/2019 0857	9.87	688.75	0.00	688.75	
MH								6/19/2019 1426	9.26	689.36	0.00	689.36	
MH-03	1073736.789	1115259.334	699.40	NM	699.40	NA	1						
MH								3/21/2019 1038	11.00	688.40	0.00	688.40	
MH								5/22/2019 0914	10.91	688.49	0.00	688.49	
MH								6/19/2019 1436	10.12	689.28	0.00	689.28	
MH-07	1073838.229	1116243.757	696.82	NM	696.82	NA	1						
MH								3/21/2019 1040	9.22	687.60	0.00	687.60	
MH								5/22/2019 0917	8.95	687.87	0.00	687.87	
MH								6/19/2019 1438	8.37	688.45	0.00	688.45	
MH-10	1073540.729	1117381.524	703.01	NM	703.01	NA	1						
MH								3/21/2019 1052	14.43	688.58	0.00	688.58	
MH								5/22/2019 0924	14.42	688.59	0.00	688.59	
MH								6/19/2019 1446	14.43	688.58	0.00	688.58	
MH-15	1072531.567	1117761.125	699.02	NM	699.02	NA	1						
MH								3/21/2019 1110	14.79	684.23	0.00	684.23	
MH								5/22/2019 0941	14.54	684.48	0.00	684.48	
MH								6/19/2019 1457	12.86	686.16	0.00	686.16	

NM - No Measurement

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

Type:

MH	Manhole Monitoring Point
MNW	Monitoring Well
SG	Staff Gauge

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TABLE C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2019

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
MH-16	1072133.714	1117748.238	698.57	NM	698.57	NA	1						
MH								3/21/2019 1114	14.53	684.04	0.00	684.04	
MH								5/22/2019 0945	14.24	684.33	0.00	684.33	
MH								6/19/2019 1500	12.50	686.07	0.00	686.07	
MH-17	1071813.137	1117180.019	702.16	NM	702.16	NA	1						
MH								3/21/2019 1122	18.14	684.02	0.00	684.02	
MH								5/22/2019 0948	17.86	684.30	0.00	684.30	
MH								6/19/2019 1503	16.12	686.04	0.00	686.04	
MH-20	1071756.395	1115997.024	706.20	NM	706.20	NA	1						
MH								3/21/2019 1126	19.76	686.44	0.00	686.44	
MH								5/22/2019 0956	19.75	686.45	0.00	686.45	
MH								6/19/2019 1509	19.70	686.50	0.00	686.50	
MH-22	1072158.023	1115589.309	698.05	NM	698.05	NA	1						
MH								3/21/2019 1131	9.02	689.03	0.00	689.03	
MH								5/22/2019 1000	9.00	689.05	0.00	689.05	
MH								6/19/2019 1513	8.61	689.44	0.00	689.44	
MH-25	1072483.928	1114820.313	698.17	NM	698.17	NA	1						
MH								3/21/2019 1006	9.71	688.46	0.00	688.46	
MH								5/22/2019 0847	9.47	688.70	0.00	688.70	
MH								6/19/2019 1416	8.74	689.43	0.00	689.43	
SG-01	1073882.887	1114813.101	NM	NM	690.00	NA	1						
SG								3/21/2019 1030	-0.72	690.72	0.00	690.72	
SG								5/22/2019 0900	-0.70	690.70	0.00	690.70	
SG								6/19/2019 1427	Dry		NM		Dry

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 C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2019

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
SG-02	1073738.27	1116805.85	NM	NM	690.00	NA	1						
SG								3/21/2019 1046	-3.34	693.34	0.00	693.34	
SG								5/22/2019 0920	-3.23	693.23	0.00	693.23	
SG								6/19/2019 1443	-3.25	693.25	0.00	693.25	
WW-01	1073676.903	1115710.476	NM	NM	684.02	NA	1						
MH								3/21/2019 0930	-4.2	688.22	0.00	688.22	
MH								5/22/2019 0800	-4.5	688.52	0.00	688.52	
MH								6/19/2019 1345	-5.2	689.22	0.00	689.22	
WW-02	1073684.724	1116792.311	NM	NM	684.18	NA	1						
MH								3/21/2019 0930	-4.7	688.88	0.00	688.88	
MH								5/22/2019 0800	-4.7	688.88	0.00	688.88	
MH								6/19/2019 1345	-4.80	688.98	0.00	688.98	
WW-03	1073140.339	1117618.499	NM	NM	683.80	NA	1						
MH								3/21/2019 1050	-5.03	688.83	0.00	688.83	
MH								5/22/2019 0928	-4.94	688.74	0.00	688.74	
MH								6/19/2019 1450	-4.95	688.75	0.00	688.75	
WW-04	1072057.563	1117610.508	NM	NM	676.62	NA	1						
MH								3/21/2019 0930	-6.9	683.52	0.00	683.52	
MH								5/22/2019 0800	-7.1	683.72	0.00	683.72	
MH								6/19/2019 1345	-9.1	685.72	0.00	685.72	
WW-05	1071661.368	1116370.876	NM	NM	676.14	NA	1						
MH								3/21/2019 0930	-5.8	681.94	0.00	681.94	
MH								5/22/2019 0800	-7.5	683.64	0.00	683.64	
MH								6/19/2019 1345	-9.5	685.64	0.00	685.64	

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 C-1
PFOHL BROTHERS LANDFILL SITE
GROUNDWATER ELEVATIONS
JANUARY - JUNE 2019

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
WW-06	1072988.420	1114811.518	NM	NM	681.89	NA	1						
MH								3/21/2019 0930	-7.2	689.09	0.00	689.09	
MH								5/22/2019 0800	-7.3	689.19	0.00	689.19	
MH								6/19/2019 1345	-7.8	689.69	0.00	689.69	

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

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TABLE C-2
PFOHL BROTHERS LANDFILL SITE
OVERBURDEN HYDRAULIC GRADIENT

WELL PAIR:	WW-1	*	Level	WW-2	GW-8SR	Level	SG-02	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft)
3/21/2019	688.22	---	---	688.88	692.48	3.60	693.34	4.46
5/22/2019	688.52	---	---	688.88	692.32	3.44	693.23	4.35
6/19/2019	689.22	---	---	688.98	692.37	3.39	693.25	4.27

WELL PAIR:	WW-3	GW-28S	Level	WW-4	*	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/21/2019	688.83	692.29	3.46	683.52	---	---
5/22/2019	688.74	691.94	3.20	683.72	---	---
6/19/2019	688.75	692.35	3.60	685.72	---	---

WELL PAIR:	WW-5	GW-32S	Level	WW-6	GW-34S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/21/2019	681.94	695.66	13.72	689.09	692.06	2.97
5/22/2019	683.64	695.14	11.50	689.19	691.93	2.74
6/19/2019	685.64	695.36	9.72	689.69	691.71	2.02

WELL PAIR:	MH-1	SG-1	Level	MH-15	GW-29S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/21/2019	688.50	690.72	2.22	684.23	692.86	8.63
5/22/2019	688.75	690.70	1.95	684.48	691.61	7.13
6/19/2019	689.36	DRY	NA	686.16	692.99	6.83

WELL PAIR:	MH-16	GW-30S	Level	MH-17	GW-31S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/21/2019	684.04	689.08	5.04	684.02	695.61	11.59
5/22/2019	684.33	688.99	4.66	684.30	695.58	11.28
6/19/2019	686.07	689.10	3.03	686.04	695.69	9.65

WELL PAIR:	MH-20	GW-35S	Level	MH-22	GW-33S	Level
	Water Level	Water Level	Difference	Water Level	Water Level	Difference
DATE	(ft amsl)	(ft amsl)	(ft)	(ft amsl)	(ft amsl)	(ft)
3/21/2019	686.44	693.72	7.28	689.03	694.46	5.43
5/22/2019	686.45	694.04	7.59	689.05	693.32	4.27
6/19/2019	686.50	692.62	6.12	689.44	694.69	5.25

Notes:

* = No corresponding monitoring well.

NA = Not applicable

APPENDIX D

GROUNDWATER PURGE AND SAMPLE COLLECTION LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01S

Date: 5/22/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 4.02' Depth to Well Bottom: 14.94' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 6.7 Estimated Purge Volume (liters): 10.5

Sample ID: GW-01S Sample Time: 13:25 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

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

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:35	8.16	12.76	1.18	3.54	224	-87	210	4.02
12:40	7.88	10.24	1.24	2.88	210	-88	210	4.41
12:45	7.51	9.61	1.37	2.12	198	-89	210	4.88
12:50	7.41	9.47	1.55	1.58	132	-91	210	4.95
12:55	7.38	9.30	1.61	1.25	95.2	-90	210	5.00
13:00	7.37	9.15	1.63	1.03	135	-90	210	5.15
13:05	7.36	9.10	1.68	0.95	109	-90	210	5.15
13:15	7.36	9.12	1.73	0.88	64.9	-90	210	5.15
13:20	7.37	8.99	1.75	0.84	54.0	-91	210	5.20
13:25	7.37	9.06	1.76	0.80	60.9	-91	210	5.20
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-01D

Date: 5/22/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 2.91' Depth to Well Bottom: 39.65' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 90.7 Estimated Purge Volume (liters): 45.5

Sample ID: GW-01D Sample Time: 14:42 QA/QC: MS/MSD

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:37	7.65	11.20	1.23	3.35	50.9	-87	700	2.91
13:42	7.72	10.36	1.26	1.62	9.1	-110	700	2.96
13:47	7.73	10.24	1.26	1.24	12.2	-115	700	2.96
13:52	7.73	9.24	1.29	0.99	17.3	-120	700	2.96
13:57	7.73	9.23	1.30	0.89	14.7	-122	700	2.96
14:02	7.73	9.14	1.30	0.80	21.0	-124	700	2.96
14:07	7.71	9.10	1.30	0.74	23.1	-127	700	2.96
14:12	7.70	9.05	1.30	0.72	20.9	-130	700	2.96
14:17	7.69	9.00	1.30	0.67	17.8	-139	700	2.96
14:22	7.68	8.98	1.31	0.66	20.1	-148	700	2.96
14:27	7.64	8.95	1.31	0.65	13.0	-158	700	2.96
14:32	7.63	8.97	1.31	0.63	13.6	-163	700	2.96
14:37	7.61	8.96	1.31	0.62	12.6	-169	700	2.96
14:42	7.59	8.91	1.31	0.61	10.1	-173	700	2.96
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03S

Date: 5/23/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 2.43' Depth to Well Bottom: 13.22' Well Diameter: 2" Screen Length:

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

Sample ID: GW-03S Sample Time: 10:10 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:45	7.50	15.82	1.69	2.53	15.0	-6	185	2.43
9:50	7.41	15.37	1.67	1.80	10.0	-31	185	4.33
9:55	7.43	14.29	1.68	1.44	7.7	-30	185	4.98
10:00	7.45	13.22	1.71	1.10	4.0	-27	185	5.64
10:05	7.45	13.55	1.69	0.96	1.9	-27	185	6.20
10:10	7.46	13.43	1.69	1.02	2.7	-29	185	6.71
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-03D

Date: 5/23/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 1.71' Depth to Well Bottom: 35.70' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 84.0 Estimated Purge Volume (liters): 36.0

Sample ID: GW-03D Sample Time: 11:23 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:23	7.86	10.98	1.56	2.80	16.3	-19	600	1.71
10:28	7.58	9.69	1.60	0.89	1.3	-71	600	1.71
10:33	7.60	9.60	1.61	0.81	0.8	-72	600	1.71
10:38	7.56	9.49	1.61	0.72	0.9	-74	600	1.71
10:43	7.52	9.42	1.61	0.65	0.3	-75	600	1.71
10:48	7.51	9.54	1.61	0.62	0.4	-77	600	1.71
10:53	7.52	9.54	1.61	0.60	0.6	-79	600	1.71
10:58	7.53	9.51	1.61	0.60	0.4	-80	600	1.71
11:03	7.52	9.43	1.61	0.60	1.0	-80	600	1.71
11:08	7.69	9.27	1.62	0.83	1.0	-80	600	1.71
11:13	7.58	9.25	1.62	0.66	0.8	-80	600	1.71
11:18	7.55	9.21	1.62	0.63	0.5	-81	600	1.71
11:23	7.53	9.18	1.62	0.61	0.6	-81	600	1.71
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04S

Date: 5/22/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 4.24' Depth to Well Bottom: 16.23' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 7.4 Estimated Purge Volume (liters): 11.0

Sample ID: GW-4S Sample Time: VOC's- 15:15/ SVOC's and Metals- 16:50 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information: Placed passive diffusion bag (PDB) in well 3/21/19, sampled VOCs from PDB at 15:15 on 5/22/19. Well historically goes dry at very low purge rates (<75ml/min). Bailed dry and sampled for SVOCs and Metals after recovery at 16:50.

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:25	8.55	11.77	0.548	6.96	3.7	-48	Initial	
15:27	8.69	9.68	0.531	7.27	22.8	-48	0.75 gallons	
15:28	8.00	8.90	0.540	6.43	151	-45	1.5 gallons	
15:29	8.19	8.53	0.538	6.76	367	-42	2.25 gallons	
	Allow Recharge						3.0 gallons	Dry
16:50	8.64	10.09	0.572	5.22	273.0	-250.0		12.57
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-04D

Date: 5/22/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 12.14' Depth to Well Bottom: 45.57' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 82.6 Estimated Purge Volume (liters): 12.0

Sample ID: GW-4D Sample Time: 16:40 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:40	7.67	12.77	1.82	2.97	18.8	-85	200	12.14
15:45	7.61	12.02	1.83	2.02	19.0	-120	200	12.42
15:50	7.50	11.72	1.85	1.50	19.2	-179	200	12.75
15:55	7.52	12.01	1.85	1.05	17.9	-198	200	12.91
16:00	7.53	11.35	1.89	0.96	13.2	-211	200	13.05
16:05	7.55	10.89	1.90	0.82	11.6	-227	200	13.22
16:10	7.55	11.01	1.89	0.75	10.1	-241	200	13.30
16:15	7.56	11.22	1.88	0.69	9.8	-258	200	13.45
16:20	7.57	11.09	1.90	0.67	8.2	-266	200	13.55
16:25	7.58	11.16	1.90	0.64	6.4	-277	200	13.62
16:30	7.59	10.55	1.94	0.65	4.3	-276	200	13.70
16:35	7.56	10.49	1.95	0.63	6.1	-279	200	13.75
16:40	7.57	10.48	1.96	0.61	3.7	-252	200	13.80
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

WELL PURGING LOG

URS Corporation

SITE NAME: Pfohl Brothers Landfill WELL NO.: GW-07S

PROJECT NO.: 60411174

STAFF: Rob Murphy, Tom Urban

DATE(S): 5/22/19 and 5/23/19

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	35.33	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	4.75	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	30.58	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)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	8.0	8"	2.60

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

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	Initial	2	4	6	8	Sample					
pH	8.18	8.20	8.12	8.21	8.03	8.15					
SPEC. COND. (mS/cm)	0.737	0.736	0.741	0.741	0.736	0.784					
DO (mg/l)	3.60	5.52	4.49	6.68	9.33	8.36					
TEMPERATURE (^{0}C)	10.57	9.62	10.51	10.39	10.30	11.06					
TURBIDITY (NTU)	11.1	23.5	63.8	103	417	17.7					
ORP (millivolts)	-56	-50	-28	-16	-2	48					
TIME	11:52	11:54	12:00	12:05	12:10	7:55 on 5/23/19					

COMMENTS: 10:45 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/21/19
11:45 - Begin hand bailing well.
12:10 - Well dry after removing 8 gallons.
5/23/2019 07:50 - Return to well, depth to water = 4.75 feet.
07:55 - Collect sample for SVOCs and Metals.

WELL PURGING LOG

URS Corporation

SITE NAME: Pfohl Brothers Landfill WELL NO.: GW-07D

PROJECT NO.: 60411174

STAFF: Rob Murphy, Tom Urban

DATE(S): 5/22/19 and 5/23/19

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	60.83	1"	0.040
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	42.39	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	18.44	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)	=	12.2	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	12.2	8"	2.60

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

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	Init	3	6	9	12.2	Sample					
pH	7.70	8.11	7.86	7.87	7.99	8.24					
SPEC. COND. (mS/cm)	0.795	0.745	0.789	0.838	0.869	0.930					
DO (mg/l)	3.61	6.36	8.04	9.31	8.16	9.83					
TEMPERATURE (^{0}C)	15.23	12.91	12.55	12.45	12.48	13.35					
TURBIDITY (NTU)	4.7	14.3	23.3	35.9	61.4	169					
ORP (millivolts)	-60	-63	-49	-63	-70	49					
TIME	11:10	11:15	11:25	11:30	11:40	7:45 on 5/23/19					

COMMENTS: 10:55 - Fill VOCs from passive diffusion bag (PDB), PDB was installed on 3/21/19
11:10 - Begin hand bailing well.
11:40 - Well dry after removing 12.2 gallons.
5/23/2019 07:40 - return to well, depth to water = 59.29 feet.
07:45 - Collect sample for SVOCs and Metals.

Strong Sulfur Odor

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08SR

Date: 5/23/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 5.15' Depth to Well Bottom: 13.02' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.9 Estimated Purge Volume (liters): 9.8

Sample ID: GW-8SR Sample Time: 14:09 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:20	7.32	11.83	1.45	3.21	70.8	-41	200	5.15
13:25	7.21	11.61	1.43	2.34	64.7	-48	200	6.10
13:30	7.24	11.55	1.36	1.42	64.0	-50	200	6.68
13:35	7.26	11.51	1.31	1.11	50.1	-51	200	7.01
13:40	7.28	11.46	1.26	0.93	31.9	-52	200	7.37
13:45	7.25	11.43	1.34	0.82	16.1	-55	200	7.68
13:50	7.23	11.59	1.41	0.78	14.7	-57	200	7.76
13:55	7.19	11.85	1.53	0.76	15.2	-60	200	7.82
14:00	7.18	11.84	1.57	0.74	13.2	-61	200	7.85
14:03	7.17	11.87	1.63	0.73	12.4	-62	200	7.90
14:06	7.16	11.86	1.66	0.70	11.5	-64	200	7.95
14:09	7.16	11.77	1.68	0.70	11.0	-65	200	8.04
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-08D

Date: 5/23/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 5.69' Depth to Well Bottom: 36.54' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 76.2 Estimated Purge Volume (liters): 43.2

Sample ID: GW-8D Sample Time: 13:10 QA/QC: Field Dup. FD-20190523

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12:10	7.62	9.91	1.81	4.56	70.6	-51	720	5.69
12:15	7.52	9.81	1.76	3.08	45.2	-29	720	5.69
12:20	7.49	9.61	1.71	1.83	21.0	-12	720	5.69
12:25	7.49	9.50	1.71	1.48	19.3	-6	720	5.69
12:30	7.49	9.52	1.71	1.33	11.8	-1	720	5.69
12:35	7.49	9.57	1.71	1.24	13.7	2	720	5.69
12:40	7.49	9.60	1.71	1.17	10.0	3	720	5.69
12:45	7.49	9.59	1.71	1.12	10.4	6	720	5.69
12:50	7.50	9.64	1.71	1.10	7.0	8	720	5.69
12:55	7.52	9.64	1.71	1.07	6.9	8	720	5.69
13:00	7.52	9.62	1.71	1.03	5.1	10	720	5.69
13:05	7.50	9.60	1.71	1.02	6.7	11	720	5.69
13:10	7.52	9.68	1.71	1.02	6.1	12	720	5.69
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-26D

Date: 5/23/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 6.50' Depth to Well Bottom: 40.70' Well Diameter: 4" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 84.5 Estimated Purge Volume (liters): 45.6

Sample ID: GW-26D Sample Time: 16:20 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:20	7.56	11.72	2.57	3.28	80.5	-66	760	6.50
15:25	7.42	11.34	2.59	2.12	79.4	-67	760	6.50
15:30	7.38	11.34	2.58	1.49	49.4	-66	760	6.50
15:35	7.38	11.41	2.58	1.06	77.9	-67	760	6.50
15:40	7.32	11.22	2.61	0.95	46.6	-69	760	6.50
15:45	7.31	11.24	2.61	0.74	7.7	-65	760	6.50
15:50	7.33	11.24	2.60	0.65	8.4	-66	760	6.50
15:55	7.36	11.12	2.61	0.61	7.6	-69	760	6.50
16:00	7.37	11.10	2.61	0.58	5.8	-70	760	6.50
16:05	7.37	11.10	2.61	0.55	4.8	-71	760	6.50
16:10	7.37	11.11	2.60	0.53	4.7	-71	760	6.50
16:15	7.37	11.04	2.61	0.52	4.4	-72	760	6.50
16:20	7.37	11.05	2.60	0.51	4.1	-72	760	6.50
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-28S

Date: 5/24/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 9.12' Depth to Well Bottom: 15.52' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 3.9 Estimated Purge Volume (liters): 6.5

Sample ID: GW-28S Sample Time: 8:11 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
7:35	6.57	13.57	0.540	4.04	4.2	195	180	9.12
7:40	7.51	9.70	0.625	3.02	8.4	122	180	10.06
7:45	7.67	9.38	0.616	2.29	5.2	82	180	10.44
7:50	7.68	10.64	0.589	1.90	8.5	66	180	10.63
7:55	7.69	11.14	0.579	1.77	7.5	56	180	10.77
8:00	7.68	11.44	0.577	1.65	5.6	51	180	10.86
8:05	7.68	11.65	0.578	1.46	5.5	48	180	10.88
8:08	7.68	10.96	0.592	1.46	7.0	46	180	10.91
8:11	7.67	11.16	0.590	1.34	6.9	44	180	10.94
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-29S

Date: 5/24/2019 Sampling Personnel: Rob Murphy, Tom Urban 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: 8.32' Depth to Well Bottom: 20.04' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 7.2 Estimated Purge Volume (liters): 8.6

Sample ID: GW-29S Sample Time: 9:10 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:30	7.27	11.31	0.846	3.03	200	-71	270	8.32
8:35	7.18	10.43	0.858	1.84	358	-82	215	10.22
8:40	7.19	10.34	0.864	1.44	301	-83	215	10.65
8:45	7.20	10.22	0.877	1.20	251	-86	215	11.17
8:50	7.22	10.31	0.902	1.08	148	-88	200	11.31
8:55	7.24	10.48	0.936	0.95	81.8	-91	200	11.45
9:00	7.26	10.60	0.942	0.87	47.7	-94	200	11.56
9:05	7.28	10.80	0.945	0.82	51.2	-96	200	11.66
9:10	7.29	10.80	0.949	0.80	53.4	-97	200	11.75
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-30S

Date: 5/24/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 7.65' Depth to Well Bottom: 17.97' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 6.4 Estimated Purge Volume (liters): 12.6

Sample ID: GW-30S Sample Time: 10:00 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
9:25	7.73	14.19	0.793	4.44	567	-36	360	7.65
9:30	7.55	9.16	0.813	2.33	314	-56	360	7.70
9:35	7.51	9.01	0.811	1.54	134	-73	360	7.71
9:40	7.48	8.97	0.822	1.27	88.2	-77	360	7.71
9:45	7.46	8.93	0.830	0.99	26.1	-80	360	7.71
9:50	7.45	8.92	0.851	0.89	15.6	-83	360	7.71
9:55	7.45	8.93	0.866	0.79	10.0	-85	360	7.71
10:00	7.45	8.97	0.871	0.74	7.7	-87	360	7.71
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-31S

Date: 5/24/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 3.20' Depth to Well Bottom: 9.57' Well Diameter: 2" Screen Length:

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

Sample ID: GW-31S Sample Time: 10:45 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
10:15	7.13	13.30	0.609	3.20	19.5	-4	130	3.20
10:20	7.45	13.29	0.630	1.40	10.3	-43	130	3.84
10:25	7.41	13.75	0.625	1.09	3.1	-37	130	4.00
10:30	7.41	14.04	0.614	0.84	5.0	-43	130	4.26
10:35	7.42	14.12	0.614	0.75	3.5	-53	130	4.48
10:40	7.43	13.88	0.618	0.70	5.1	-59	130	4.65
10:45	7.43	13.50	0.620	0.70	4.1	-63	130	4.78
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-32S

Date: 5/24/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 3.38' Depth to Well Bottom: 9.93' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.0 Estimated Purge Volume (liters): 7.0

Sample ID: GW-32S Sample Time: 11:39 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:04	7.90	11.25	0.520	3.51	0.1	-35	200	3.38
11:09	7.85	10.15	0.540	1.24	0.0	-30	200	4.00
11:14	7.82	9.92	0.563	1.39	0.5	-27	200	4.04
11:19	7.80	9.74	0.578	1.17	0.7	-25	200	4.10
11:24	7.83	9.73	0.578	1.02	0.9	-25	200	4.15
11:29	7.83	9.69	0.584	0.95	0.6	-24	200	4.19
11:34	7.81	9.72	0.582	0.86	0.0	-23	200	4.19
11:39	7.80	9.81	0.580	0.83	0.0	-23	200	4.19
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-33S

Date: 5/24/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 4.96' Depth to Well Bottom: 8.21' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 2.0 Estimated Purge Volume (liters): 5.5

Sample ID: GW-33S Sample Time: 12:25 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:50	7.97	13.03	0.533	2.03	0.5	13	230	4.96
11:55	7.81	12.27	0.547	2.31	0.4	7	175	6.00
12:00	7.82	12.25	0.548	3.99	0.6	12	140	6.21
12:05	7.83	12.08	0.563	3.40	0.0	16	140	6.30
12:10	7.80	12.17	0.571	2.70	0.0	19	140	6.36
12:15	7.78	12.18	0.580	2.21	0.0	21	140	6.43
12:20	7.77	12.20	0.581	2.22	0.0	22	140	6.47
12:25	7.75	12.12	0.584	2.12	0.0	23	140	6.52
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-34S

Date: 5/23/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 2.75' Depth to Well Bottom: 10.01' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 4.5 Estimated Purge Volume (liters): 6.3

Sample ID: GW-34S Sample Time: 9:15 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
8:30	6.83	16.03	1.12	2.74	2.6	98	140	2.75
8:35	7.34	15.40	1.09	1.63	2.1	2	140	3.66
8:40	7.32	14.74	1.10	1.33	1.6	-8	140	3.81
8:45	7.31	14.37	1.09	1.19	0.9	-12	140	3.87
8:50	7.33	13.68	1.05	1.05	0.8	-10	140	3.92
8:55	7.41	13.34	0.979	0.99	0.4	-11	140	3.92
9:00	7.40	13.69	0.945	0.90	0.3	-6	140	3.92
9:05	7.39	13.72	0.912	0.79	1.1	-5	140	3.96
9:10	7.39	13.84	0.891	0.74	0.5	-4	140	4.80
9:15	7.38	13.90	0.884	0.71	0.3	-3	140	3.98
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: 60411174 Site: Pfohl Brothers Well I.D.: GW-35S

Date: 5/23/2019 Sampling Personnel: Rob Murphy, Tom Urban Company: URS Corporation

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

Measuring Point: Below Top of Riser Initial Depth to Water: 3.24' Depth to Well Bottom: 7.46' Well Diameter: 2" Screen Length:

Casing Type: Stainless Steel Volume in 1 Well Casing (liters): 2.6 Estimated Purge Volume (liters): 4.9

Sample ID: GW-35S Sample Time: 15:10 QA/QC:

Sample Parameters: VOCs, SVOCs, and TAL Metals

Other Information:

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:35	7.97	17.35	0.531	2.69	4.9	-22	140	3.24
14:40	7.72	15.15	0.554	1.74	1.7	-18	140	3.55
14:45	7.71	15.02	0.557	1.28	1.2	-18	140	3.58
14:50	7.70	14.92	0.559	0.99	0.4	-18	140	3.60
14:55	7.70	15.13	0.560	0.90	0.0	-18	140	3.60
15:00	7.71	14.77	0.557	0.82	0.1	-18	140	3.64
15:05	7.71	14.74	0.557	0.75	0.0	-18	140	3.64
15:10	7.71	14.54	0.558	0.74	0.0	-18	140	3.64
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: *Pfohl Brothers Landfill* Project Number: *60411174*

Sampling Crew Members: *R. Murphy, T. Urban* Supervisor: *R. Murphy*

Date of Sampling: *May 22, 2019*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-07S	GW-07S	19.7	30.3	10:45	Groundwater	VOCs	Not Applicable
GW-07D	GW-07D	46.2	46.2	10:55	Groundwater		Not Applicable
GW-01S	GW-01S	6.7	10.5	13:25	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-01D	GW-01D	90.8	45.5	14:42	Groundwater		Not Applicable
GW-01D-MS	GW-01D	90.8	45.5	14:42	Groundwater		Not Applicable
GW-01D-MSD	GW-01D	90.8	45.5	14:42	Groundwater		Not Applicable
GW-04S	GW-04S	7.4	11.0	15:15&16:50	Groundwater		Not Applicable

Additional Comments: All wells were purged using low flow methods until parameter stabilization with the exception of wells GW-04S, GW-07D, and GW-07S that were sampled for VOCs using passive diffusion bags (PDBs). GW-04S, GW-07D, and GW-07S were then purged dry. Remaining parameters were collected after recovery at GW-04S.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: *Pfohl Brothers Landfill* Project Number: *60411174*

Sampling Crew Members: *R. Murphy, T. Urban* Supervisor: *R. Murphy*

Date of Sampling: *May 22, 2019*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-04D	GW-04D	82.6	12.0	16:40	Groundwater	VOCs/SVOCs/ Metals	Not Applicable

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: *Pfohl Brothers Landfill* Project Number: *60411174*

Sampling Crew Members: *R. Murphy, T. Urban* Supervisor: *R. Murphy*

Date of Sampling: *May 23, 2019*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-07D	GW-07D	46.2	45.4	7:45	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-07S	GW-07S	19.7	30.3	7:55	Groundwater		Not Applicable
GW-34S	GW-34S	4.5	6.3	9:15	Groundwater		Not Applicable
GW-03S	GW-03S	6.7	4.6	10:10	Groundwater		Not Applicable
GW-03D	GW-03D	84.0	36.0	11:23	Groundwater		Not Applicable
GW-08D	GW-08D	76.2	43.2	13:10	Groundwater		Not Applicable
FD-20190523	GW-08D	76.2	43.2	13:10	Field Duplicate		Not Applicable

Additional Comments: GW-07D and GW-07S were sampled for SVOCs and Metals after recharging overnight.
All other wells were purged using low flow methods until parameter stabilization.

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: *Pfohl Brothers Landfill* Project Number: *60411174*

Sampling Crew Members: *R. Murphy, T. Urban* Supervisor: *R. Murphy*

Date of Sampling: *May 23, 2019*

Sample I.D. Number	***Well Number***	***Well Volume (liters)***	***Volume Purged (liters)***	***Sample Time***	***Sample Description***	***Analysis Required***	***Chain-of-Custody Number***
GW-08SR	GW-08SR	4.9	9.8	14:09	Groundwater	VOCs/SVOCs/ TAL Metals	Not Applicable
GW-35S	GW-35S	2.6	4.9	15:10	Groundwater		Not Applicable
GW-26D	GW-26D	84.5	45.6	16:20	Groundwater		Not Applicable
TB-20190522-23	-	-	-	-	Trip Blank	VOCs	Not Applicable

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

GROUNDWATER SAMPLING - SAMPLE COLLECTION DATA SHEET

Project Name: *Pfohl Brothers Landfill* Project Number: *60411174*

Sampling Crew Members: *R. Murphy, T. Urban* Supervisor: *R. Murphy*

Date of Sampling: *May 24, 2019*

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	3.9	6.5	8:11	Groundwater	VOCs/SVOCs/ Metals	Not Applicable
GW-29S	GW-29S	7.2	8.6	9:10	Groundwater		Not Applicable
GW-30S	GW-30S	6.4	12.6	10:00	Groundwater		Not Applicable
GW-31S	GW-31S	3.9	3.9	10:45	Groundwater		Not Applicable
GW-32S	GW-32S	4.0	7.0	11:39	Groundwater		Not Applicable
GW-33S	GW-33S	2.0	5.5	12:25	Groundwater		Not Applicable
TB-20190524	-	-	-	-	Trip Blank	VOCs	Not Applicable

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

APPENDIX E

GROUNDWATER TREND ANALYSIS

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

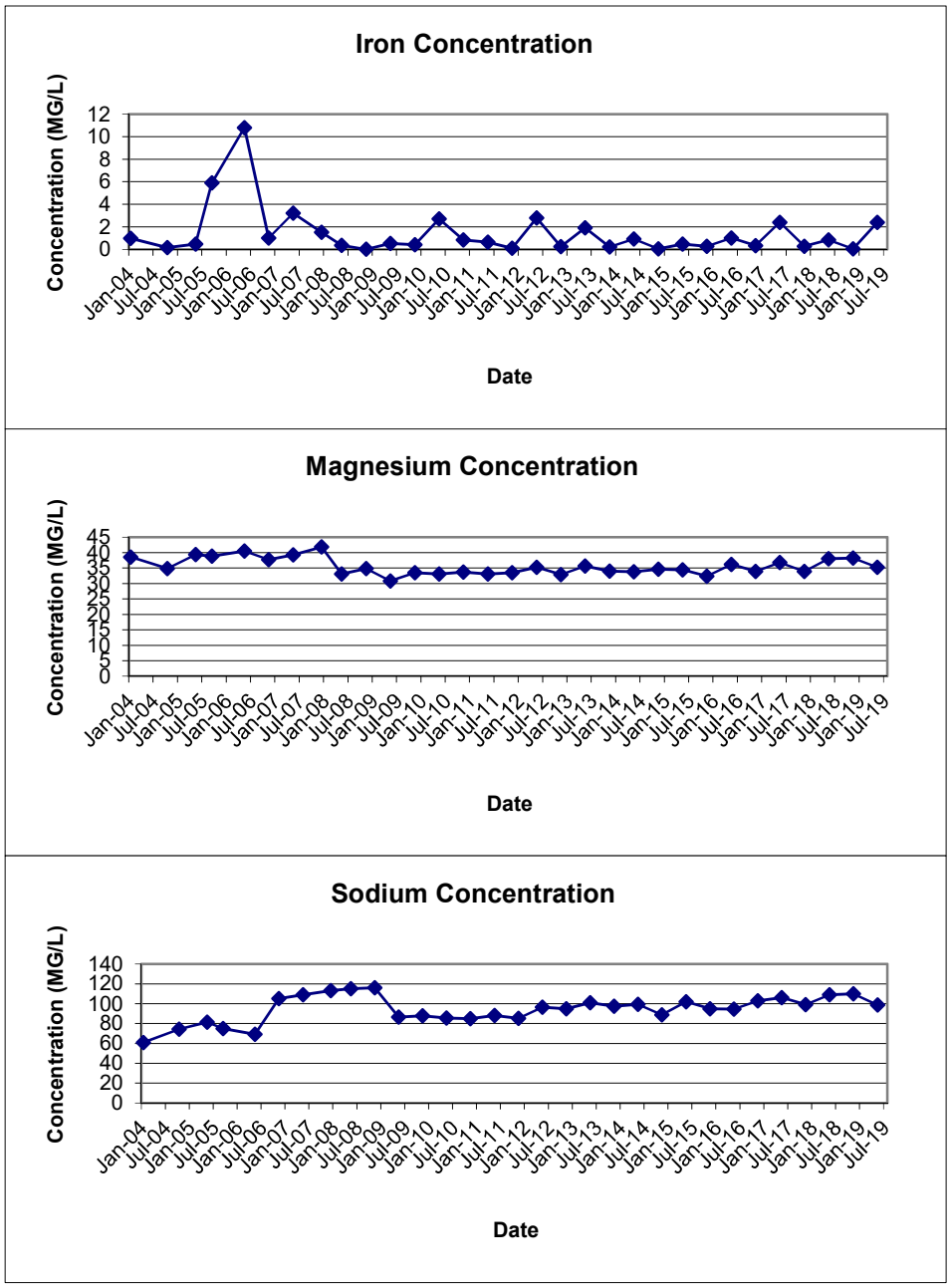


FIGURE E-2
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-01S

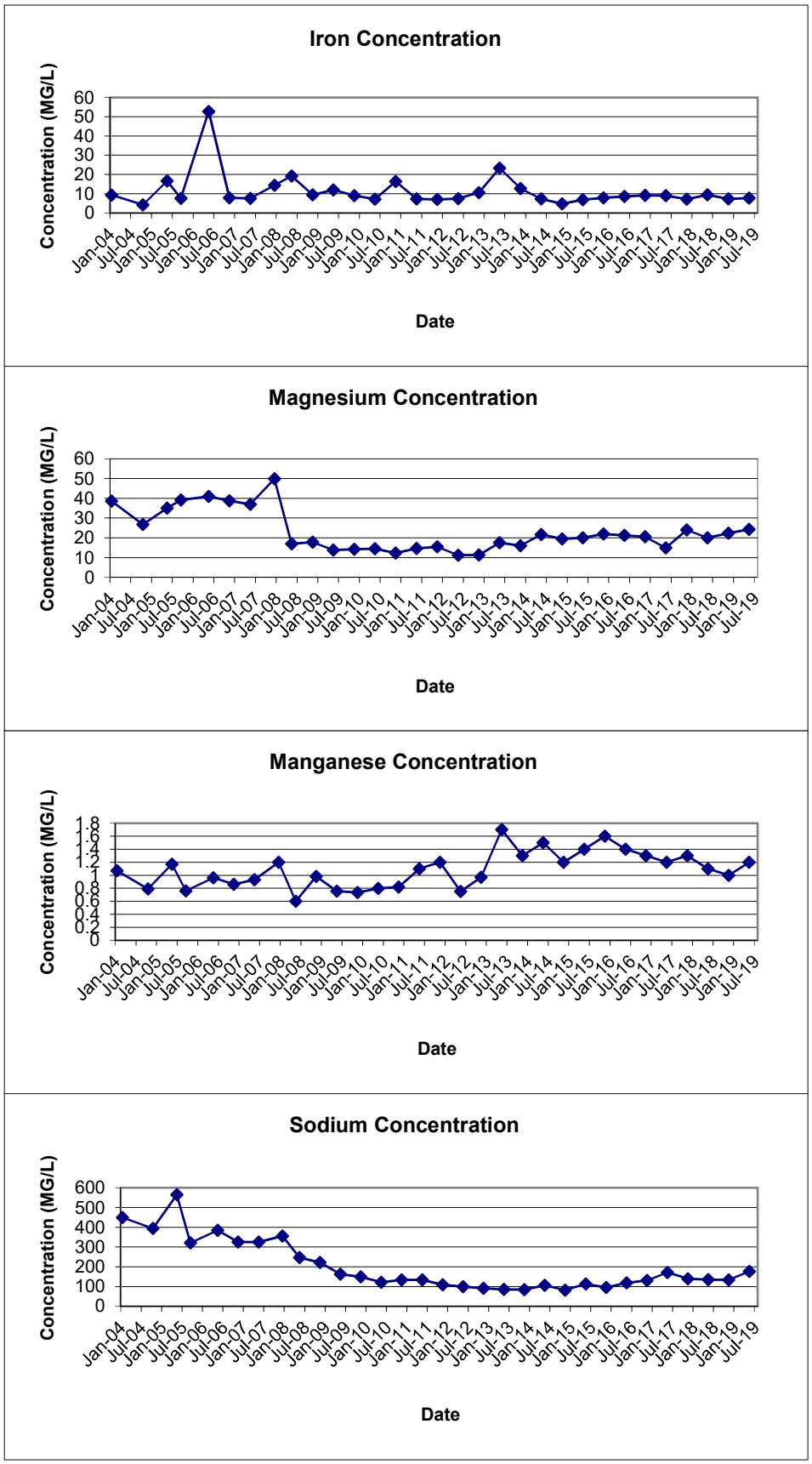


FIGURE E-3
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03D

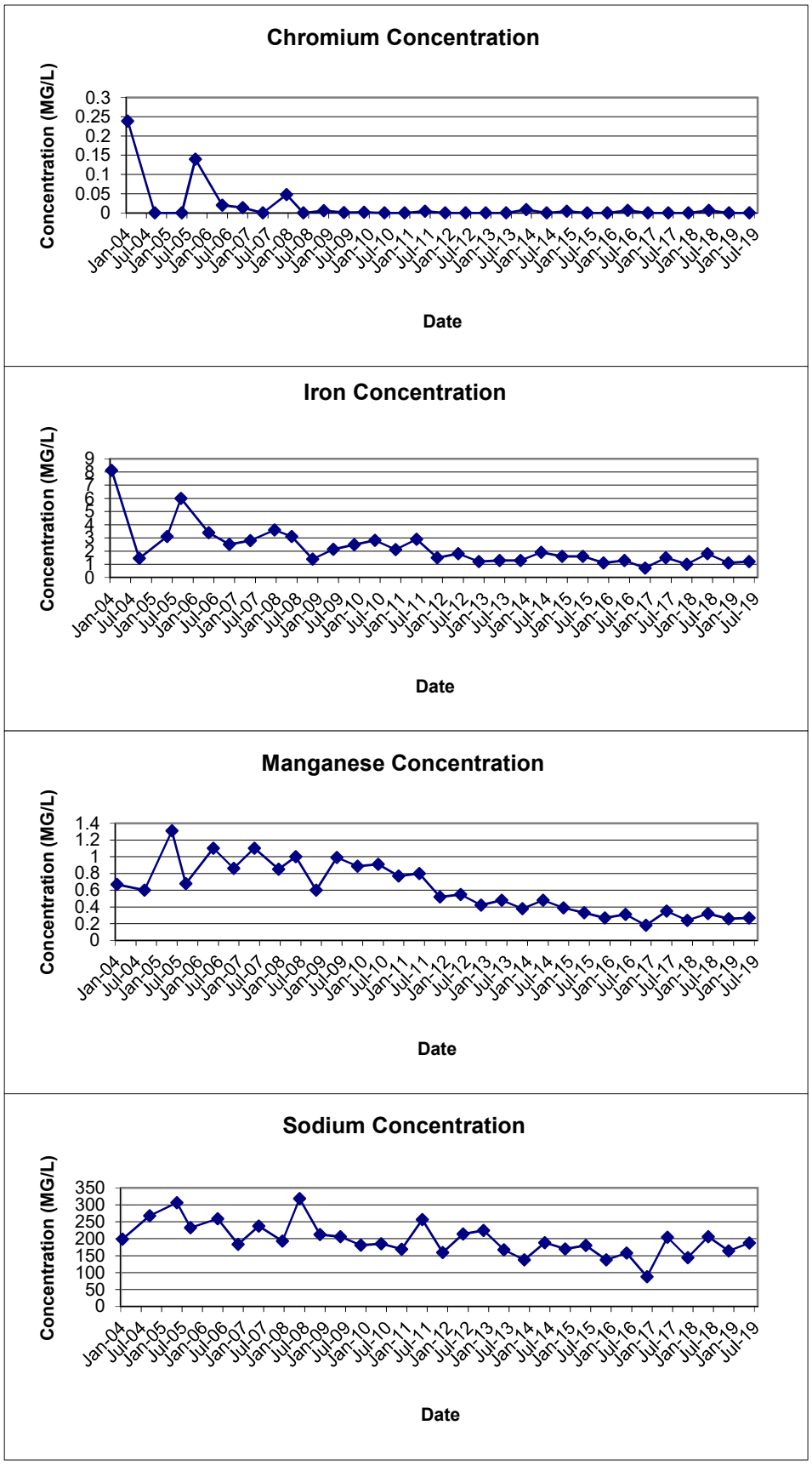
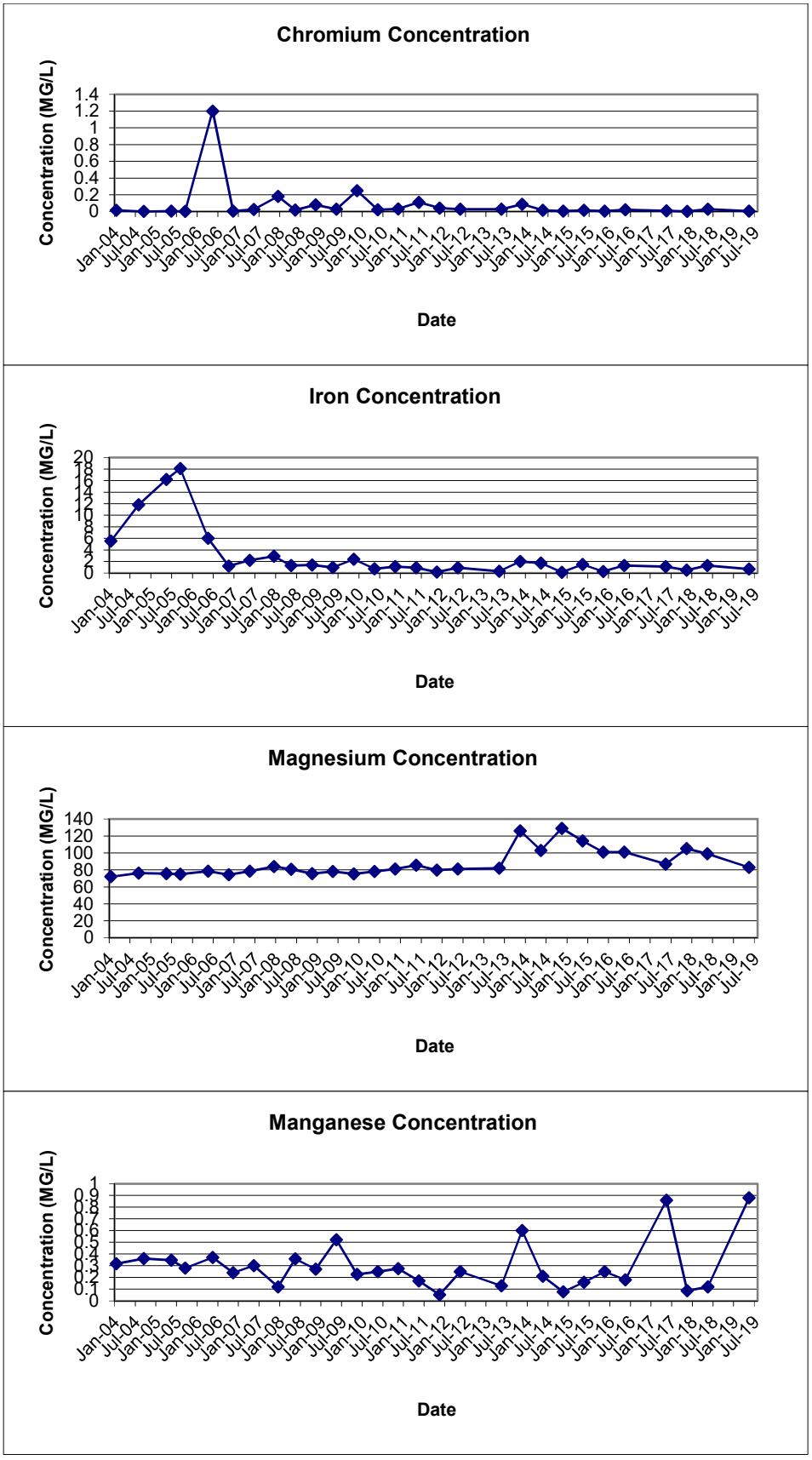
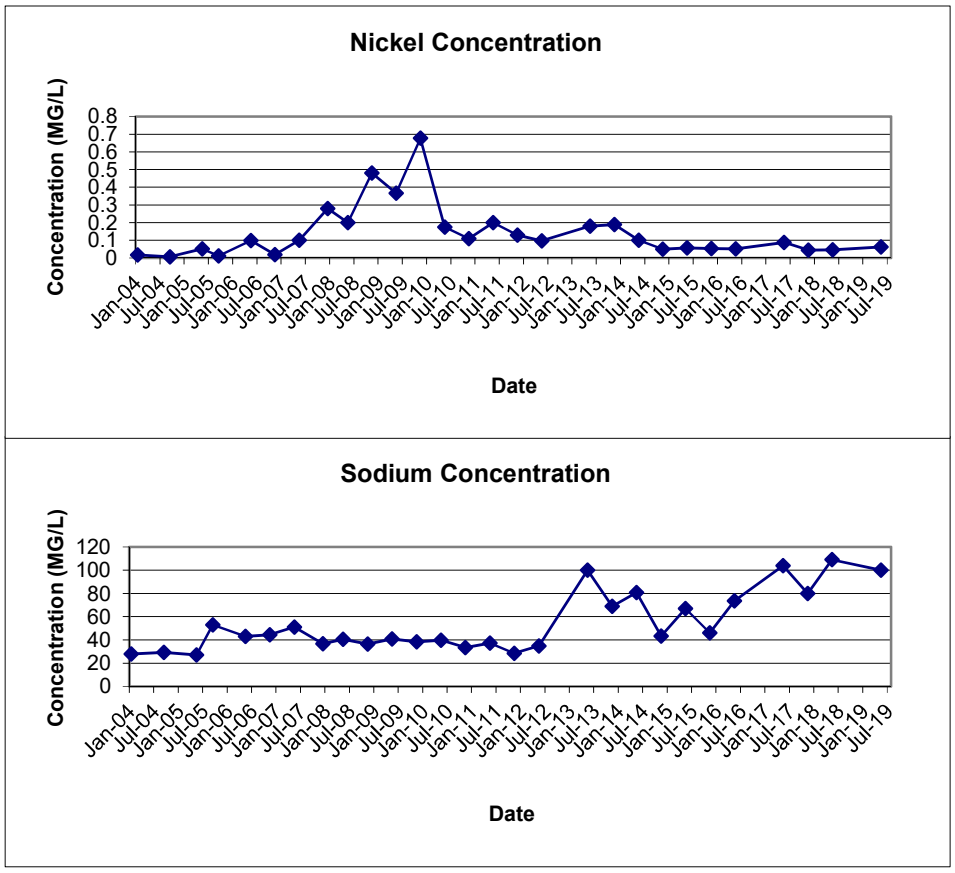


FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03S



Well was Dry and was not sampled in November 2016

FIGURE E-4
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-03S



Well was Dry and was not sampled in November 2016

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

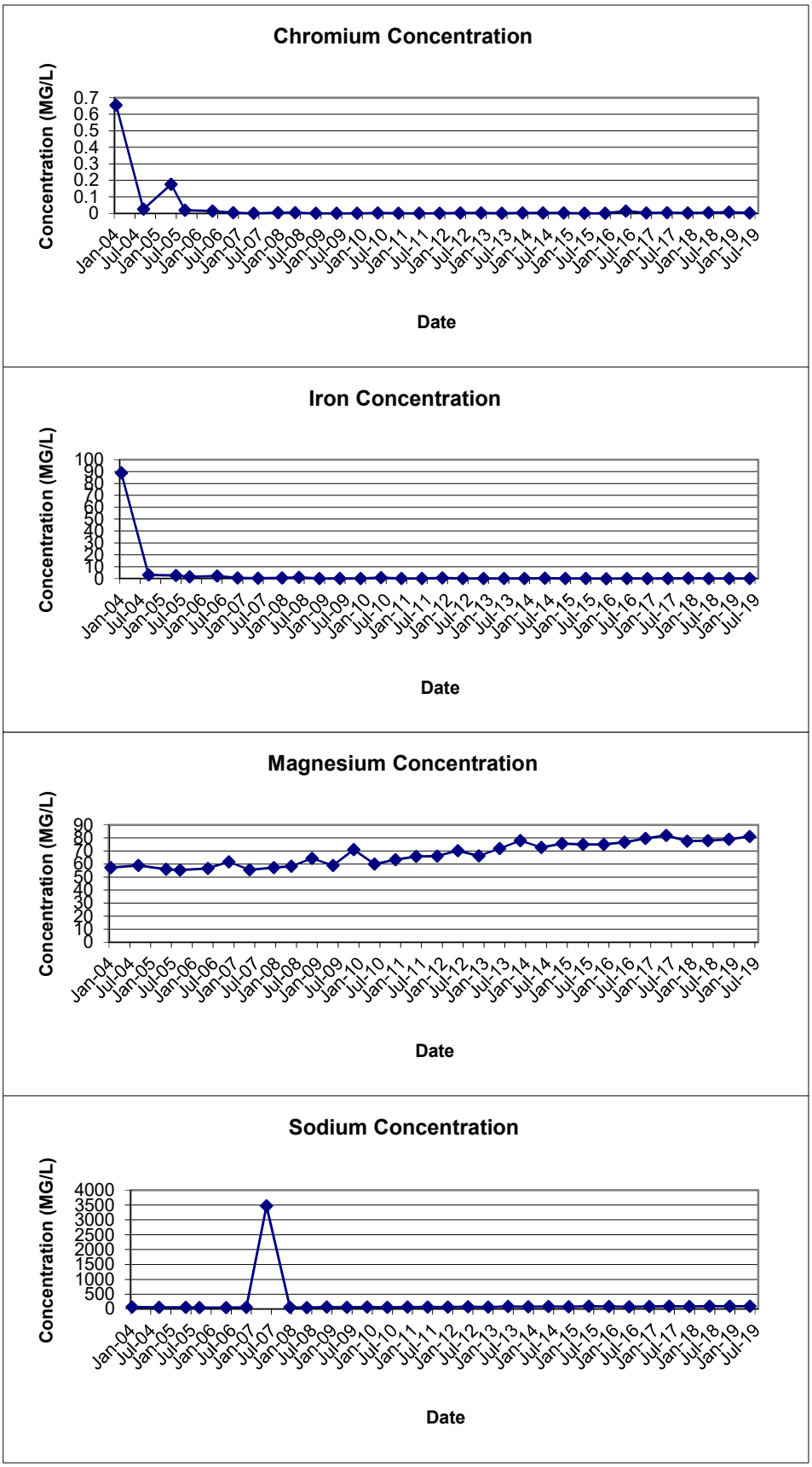


FIGURE E-6
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-04S

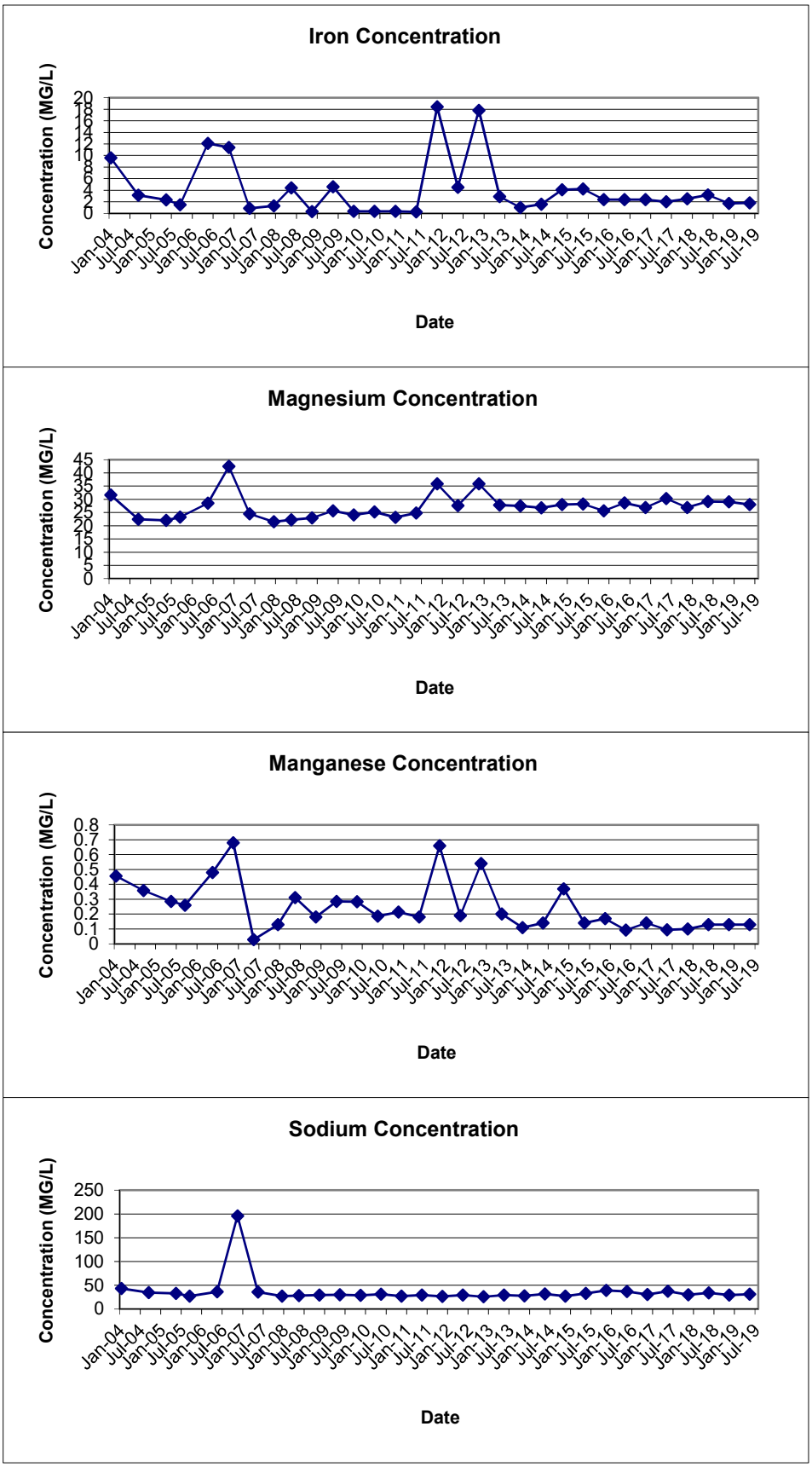


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

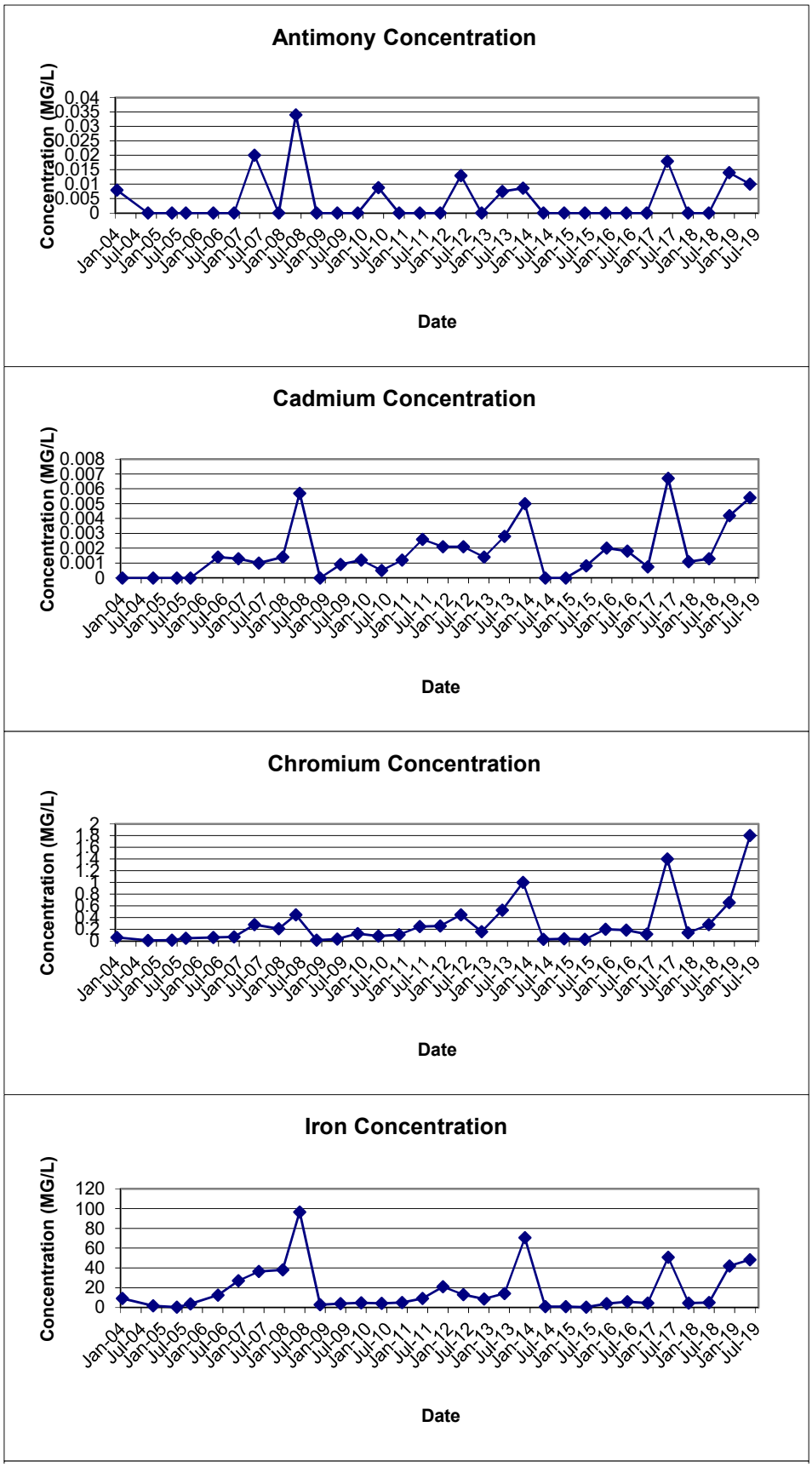


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

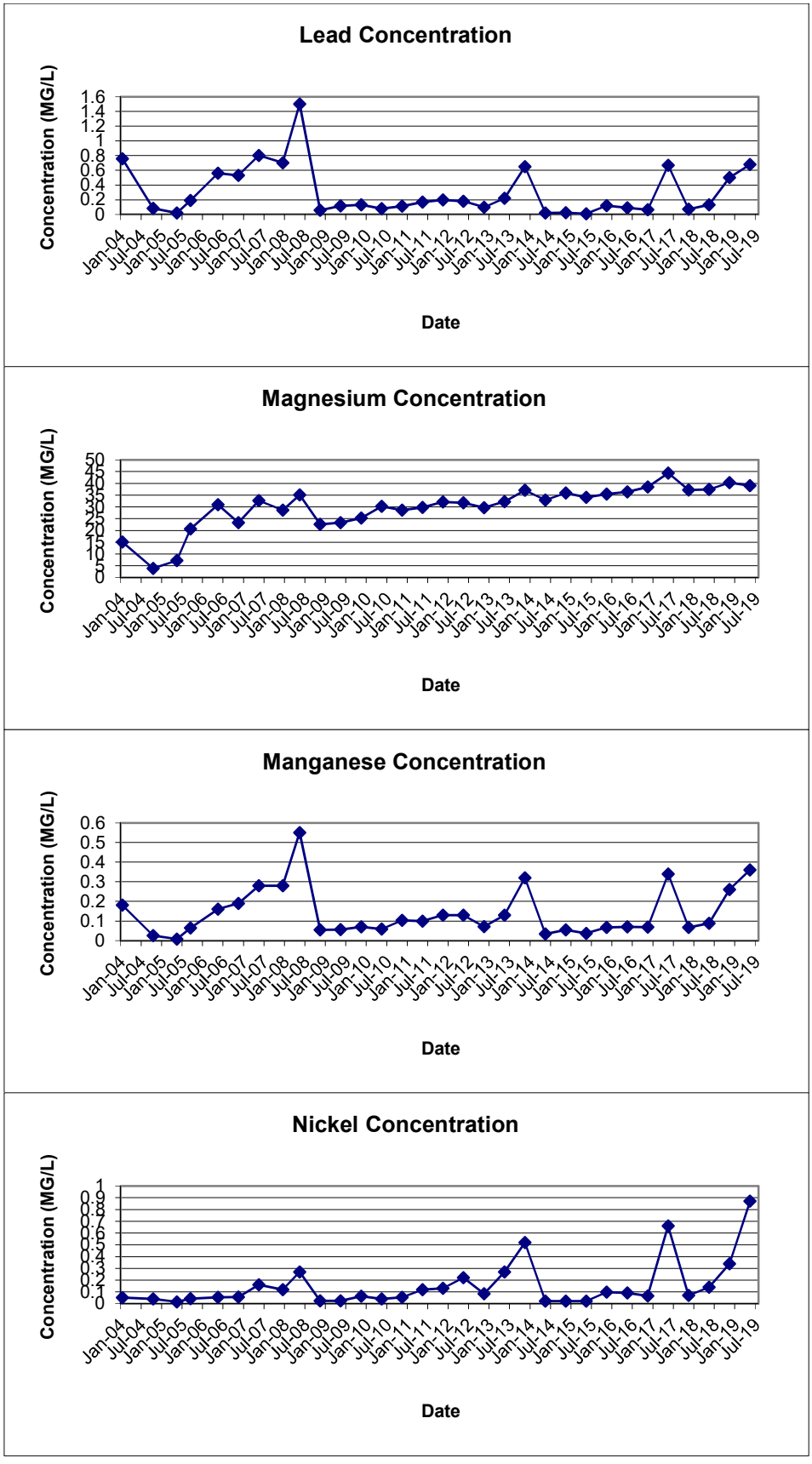


FIGURE E-7
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07D

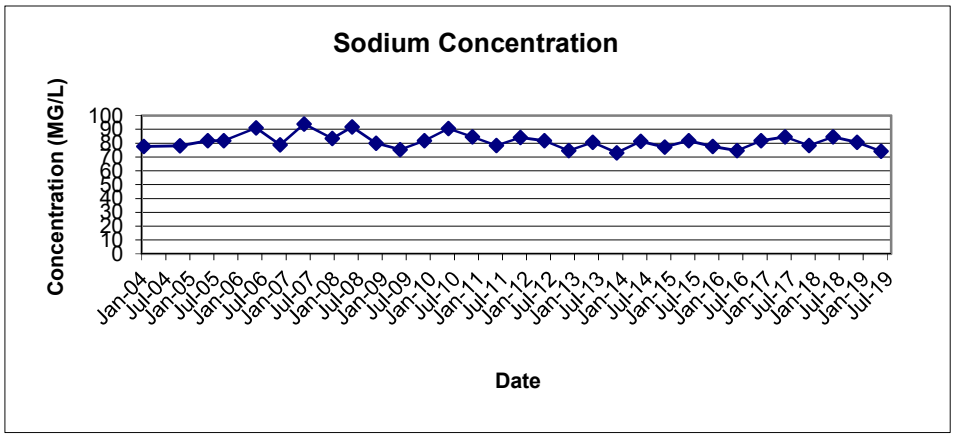


FIGURE E-8
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-07S

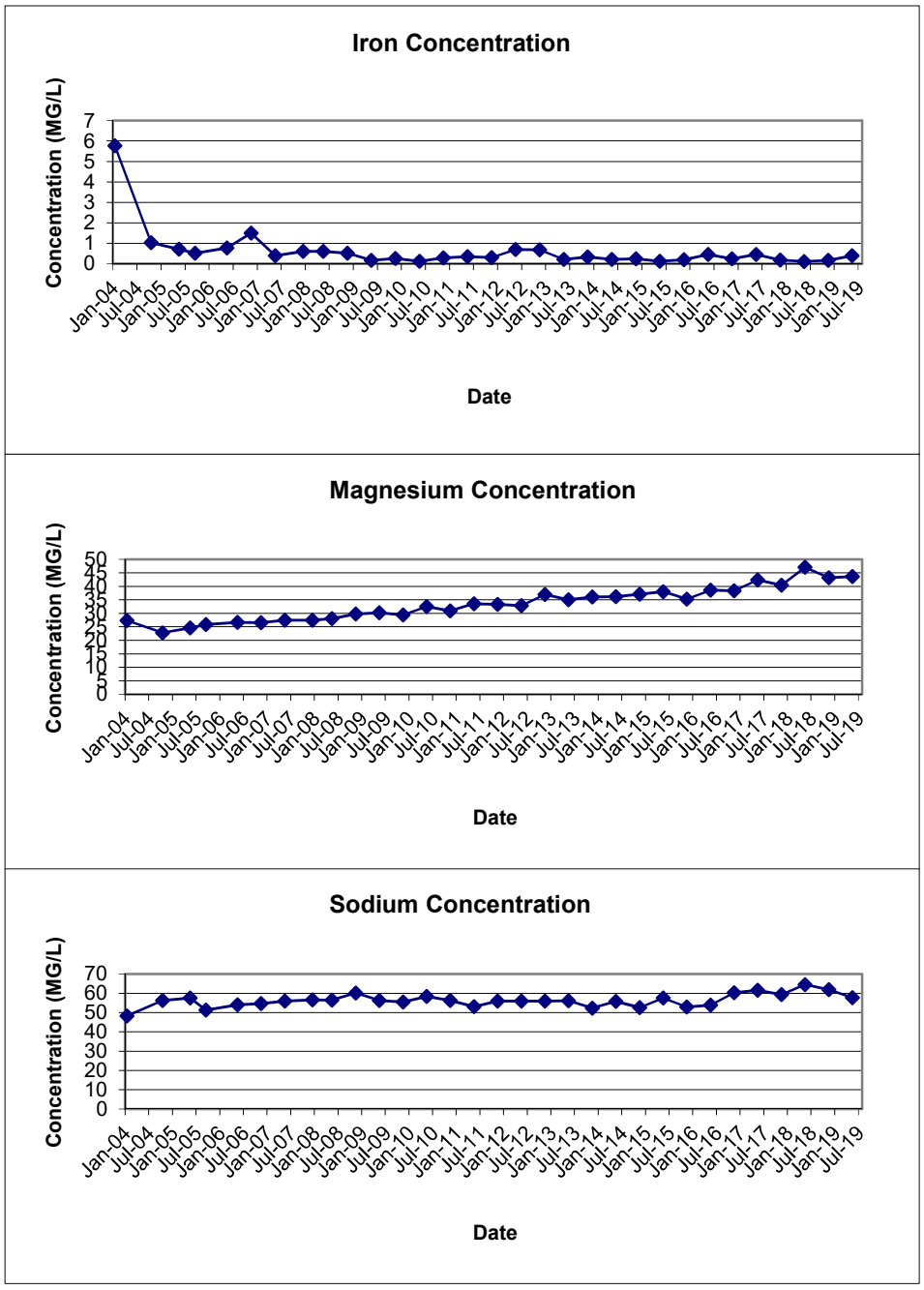


FIGURE E-9
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08D

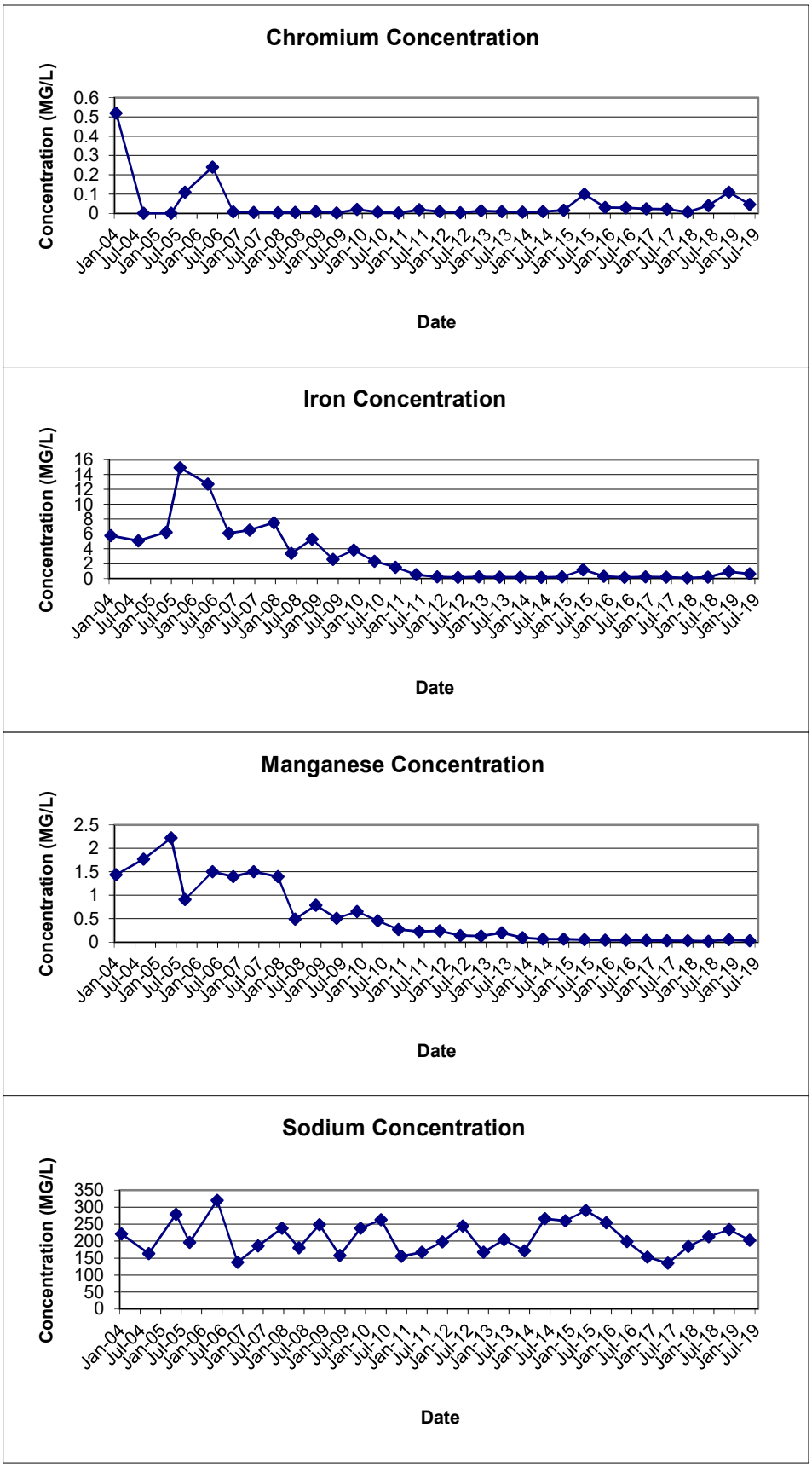


FIGURE E-10
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-08SR

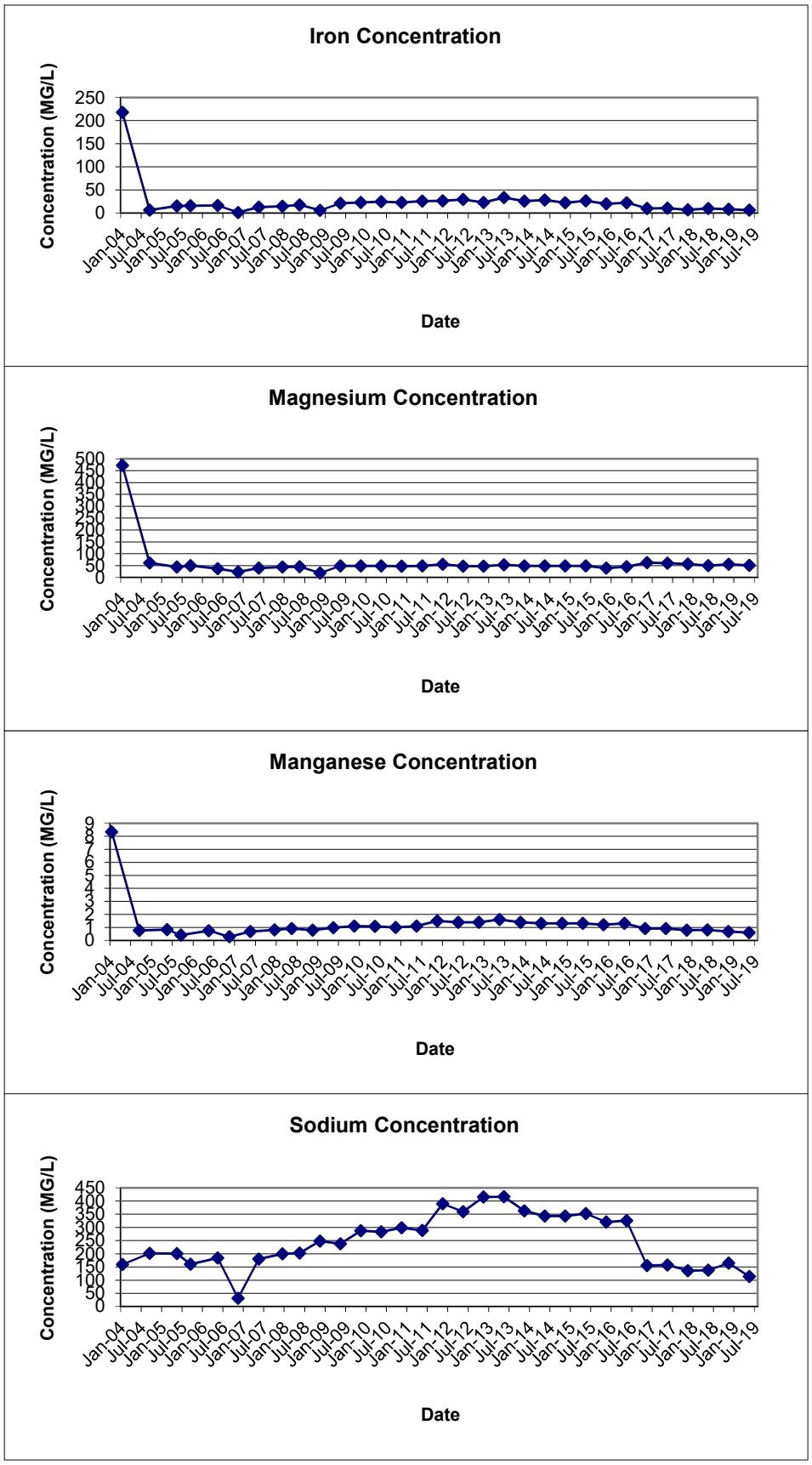


FIGURE E-11
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-26D

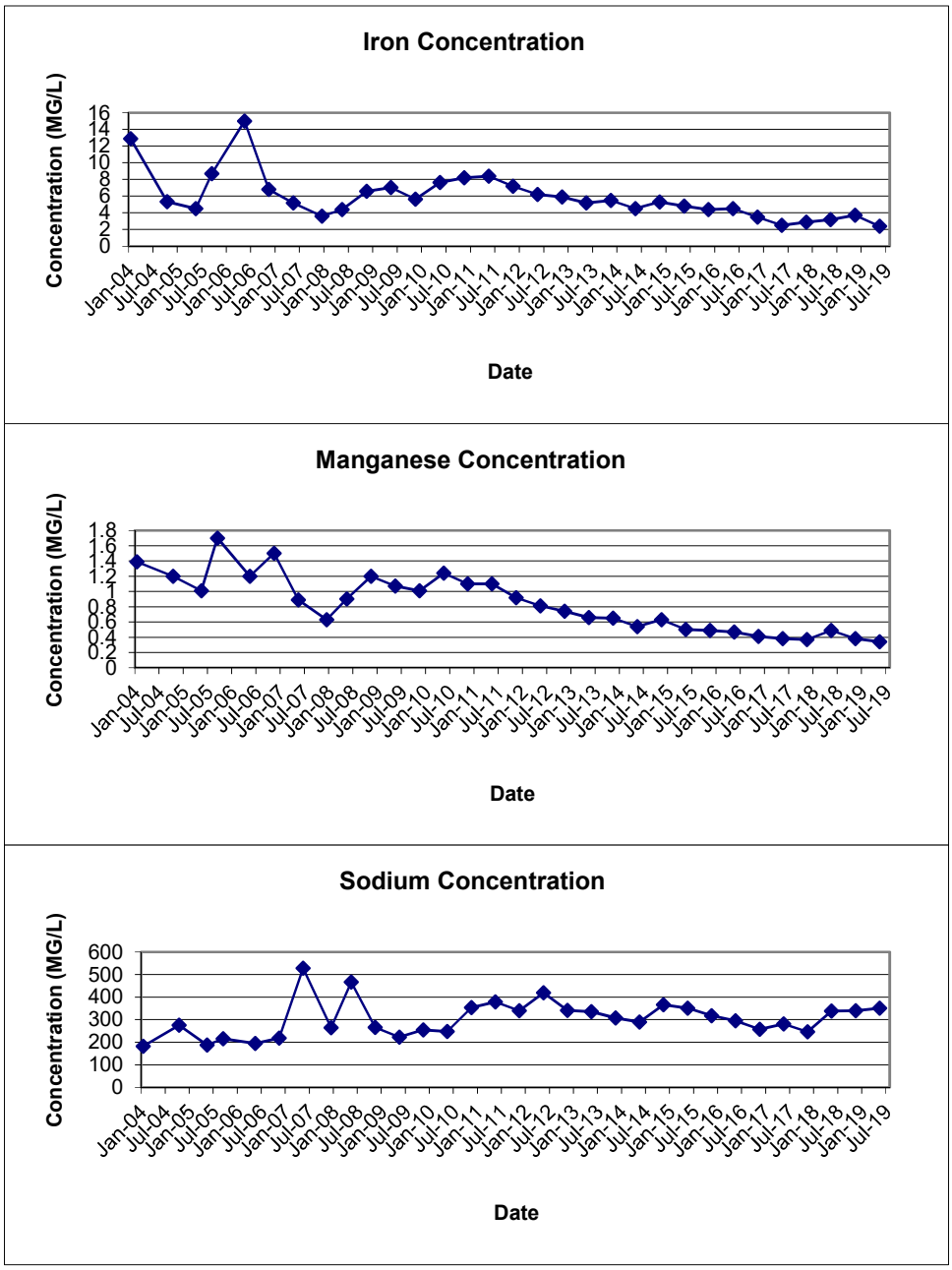


FIGURE E-12
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-28S

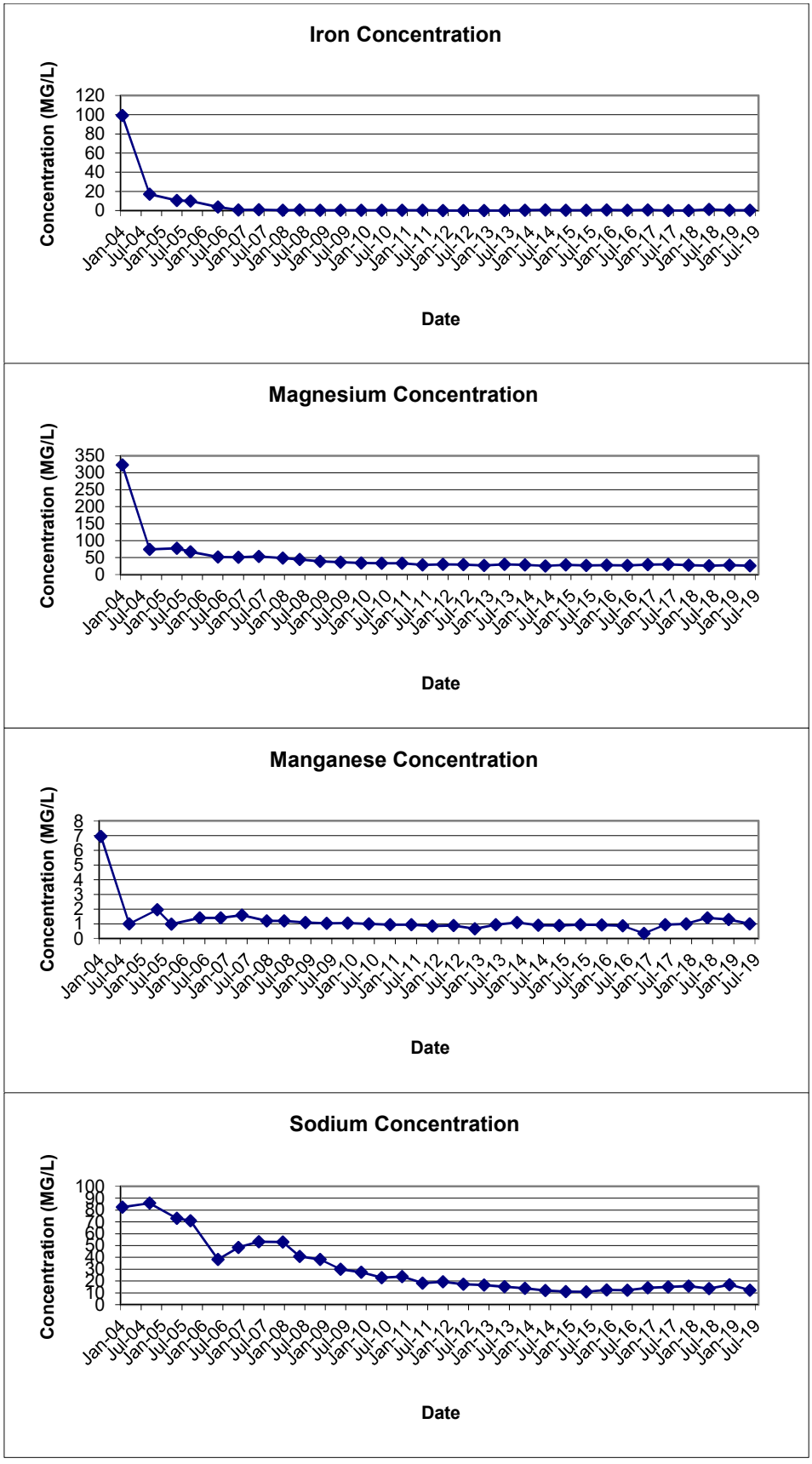


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

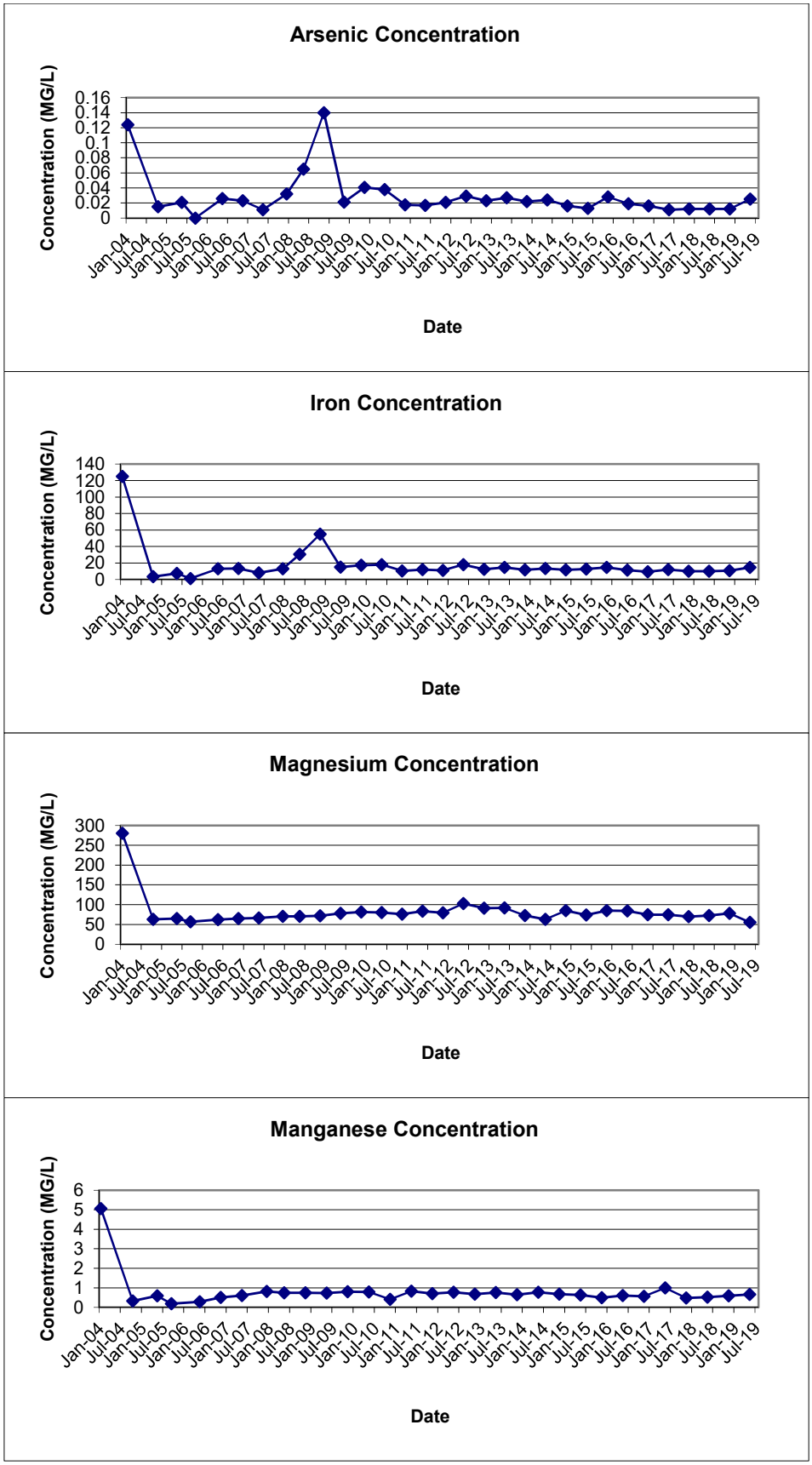


FIGURE E-13
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-29S

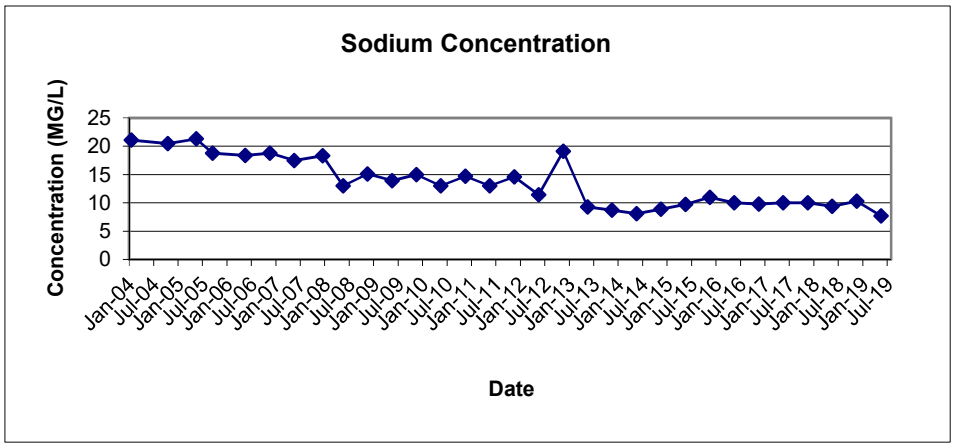


FIGURE E-14
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-30S

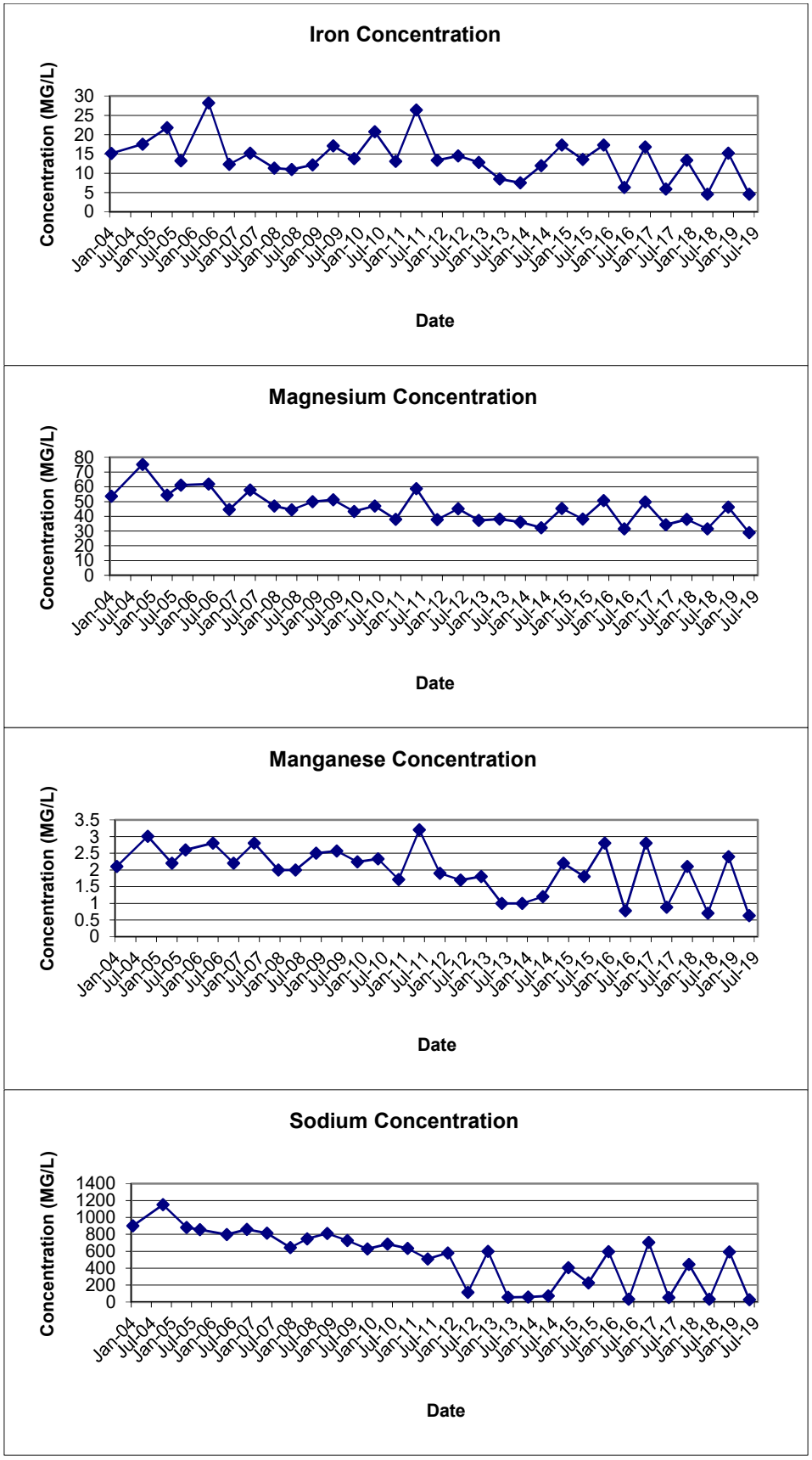


FIGURE E-15
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-31S

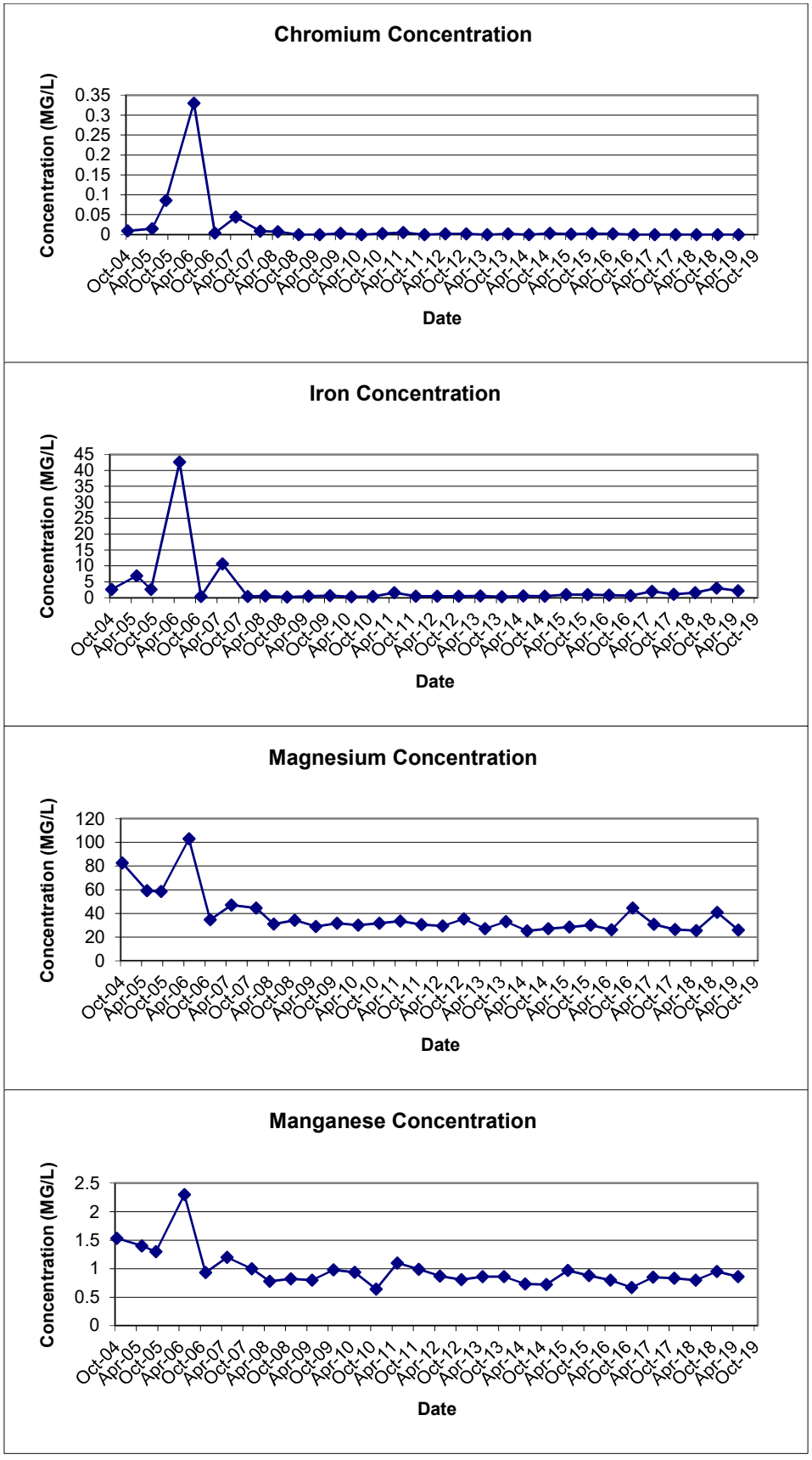


FIGURE E-16
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-32S

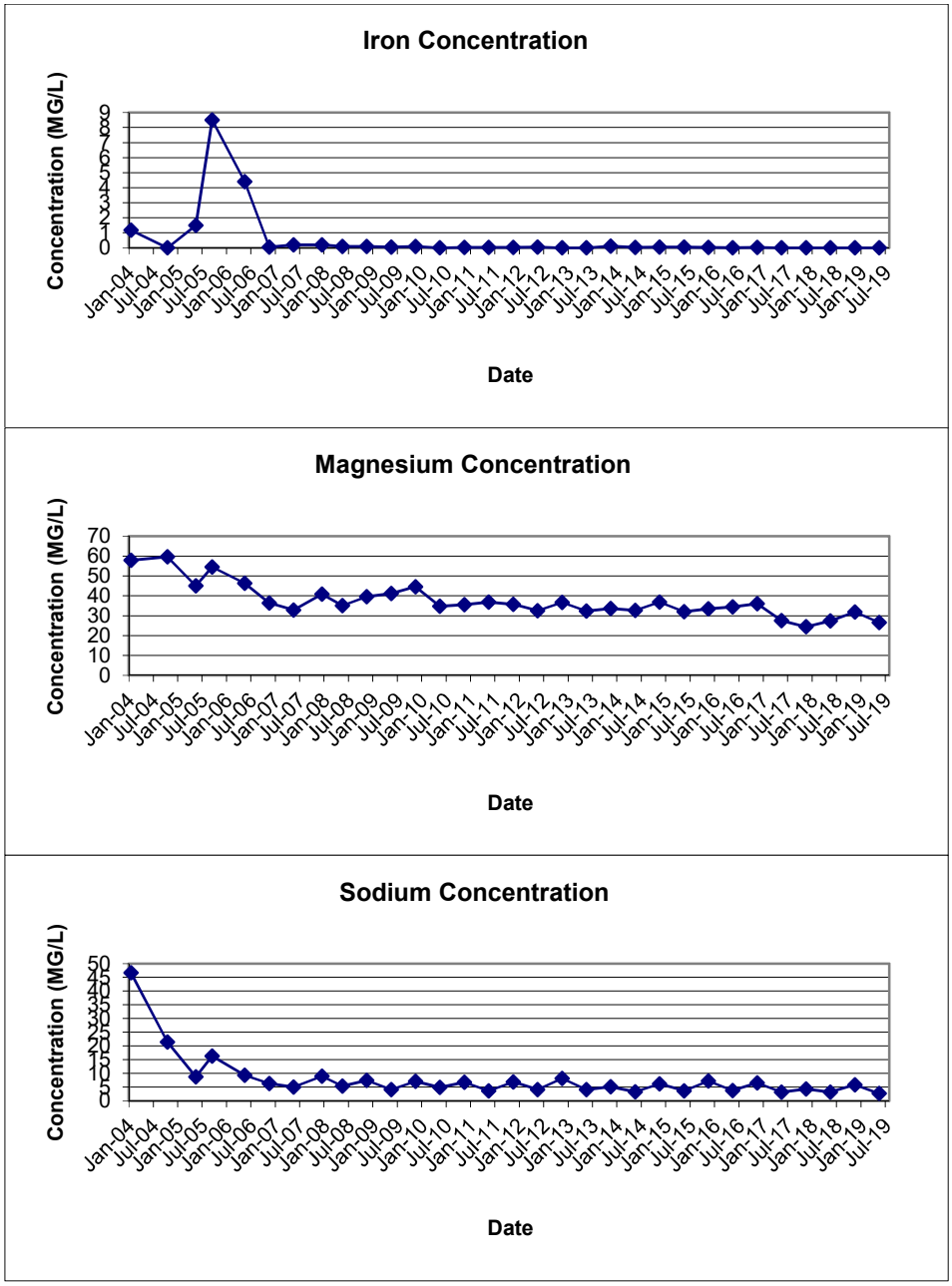


FIGURE E-17
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-33S

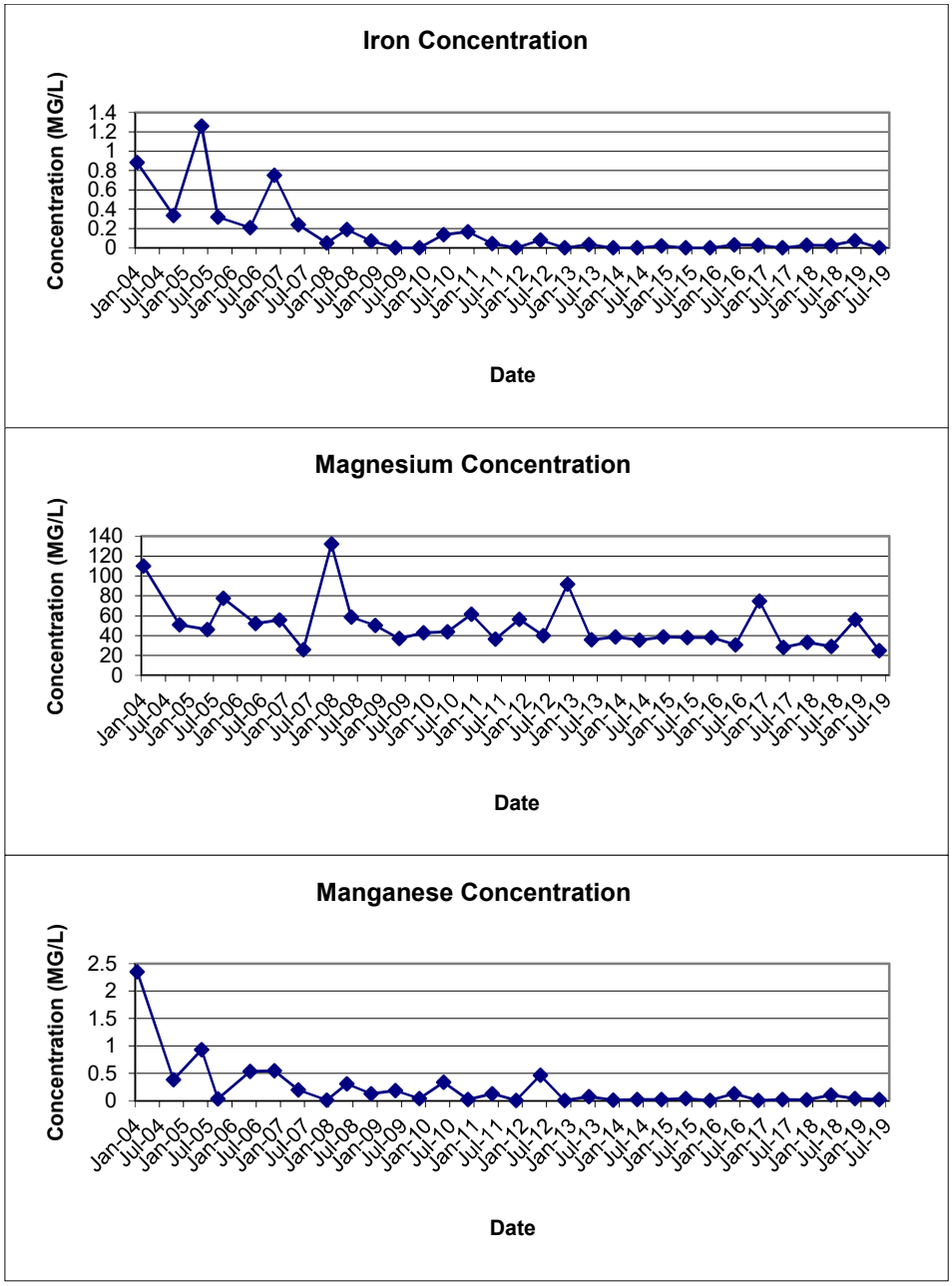


FIGURE E-18
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-34S

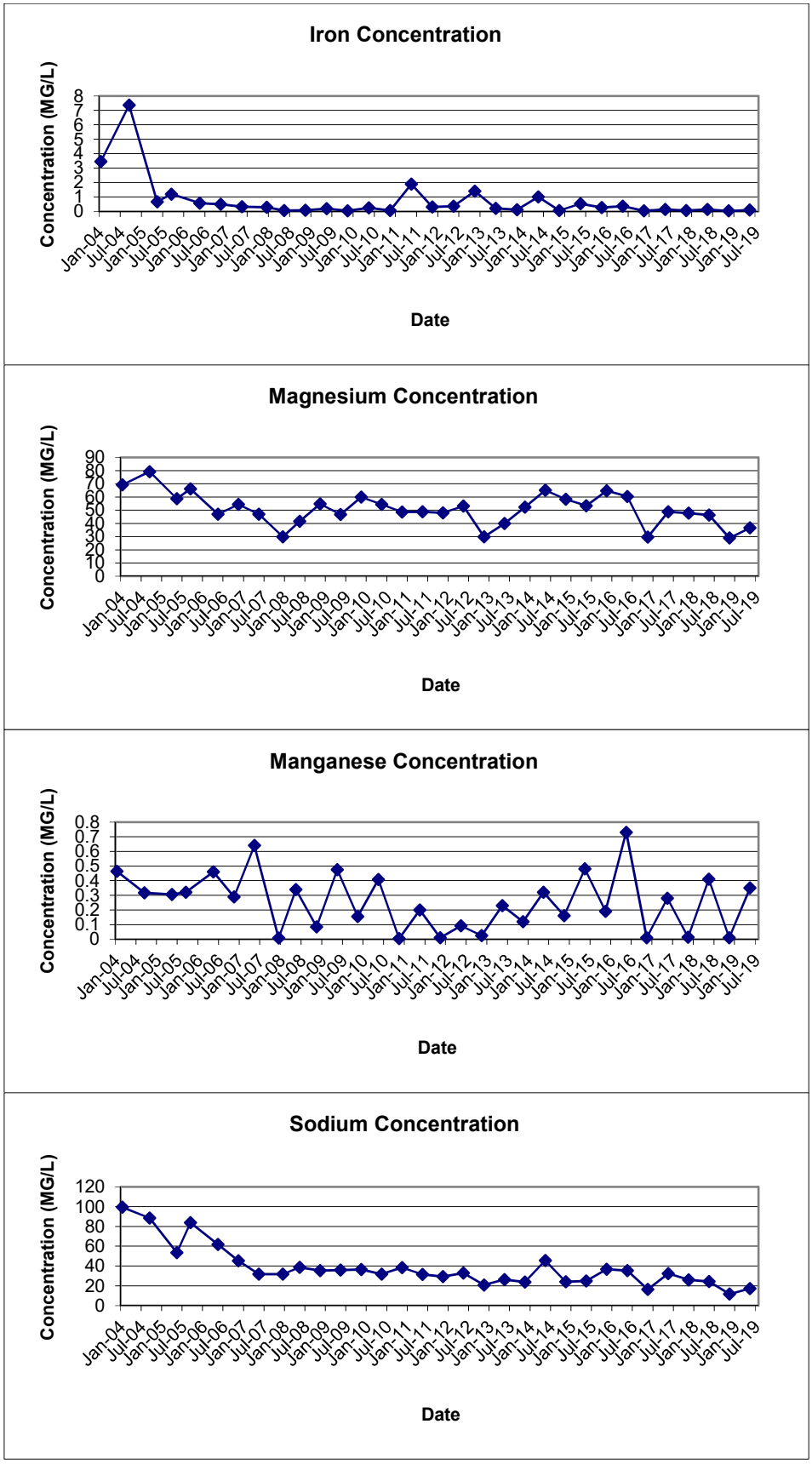
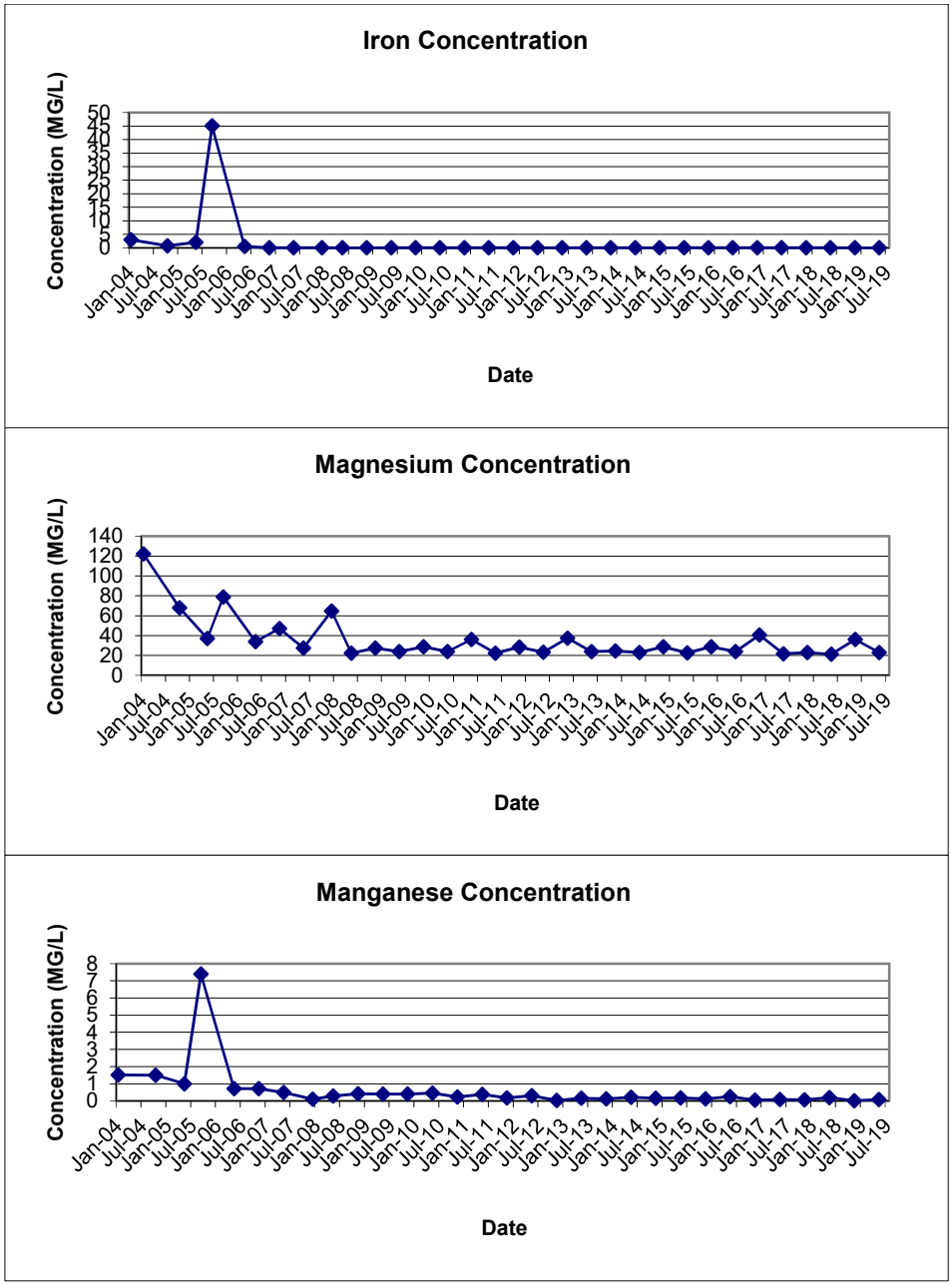


FIGURE E-19
TRENDS OF PARAMETERS ROUTINELY EXCEEDING GROUNDWATER STANDARDS
IN MONITORING WELL GW-35S



APPENDIX F

BSA PERMITS 16-04-CH016 AND 19-04-CH016

AUTHORIZATION TO DISCHARGE UNDER THE BUFFALO POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT NO. 16-04-CH016
USEPA Category 40 CFR Part 403

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

THE TOWN OF CHEEKTOWAGA

to discharge wastewater from a facility located at:

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

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

Issuance of this permit is based upon a permit application filed on **July 6, 2016** 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, 2016

To Expire the 31st day of March, 2019

General Manager

Signed this 11th **day of** July **, 2016**

PART I: SPECIFIC CONDITIONS

A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

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

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

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

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

Sample		Discharge Limitations[1]	Sampling Requirements	
Point	**Parameter**	**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		**Reporting Requirements**	
Point	**Parameter**	**Initial Report**	**Subsequent Reports**
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2016	Every March 31st, June 30th, September 30th and December 31st
	USEPA Test Methods 608, 624 and 625 & T Mercury	June 30, 2016	

* Please submit new discharge application 6 months prior to the expiration of this permit*

PART I: SPECIFIC CONDITIONS

C. SPECIAL REQUIREMENTS

1. Mass limits based on an average discharge of 140,100 gpd.

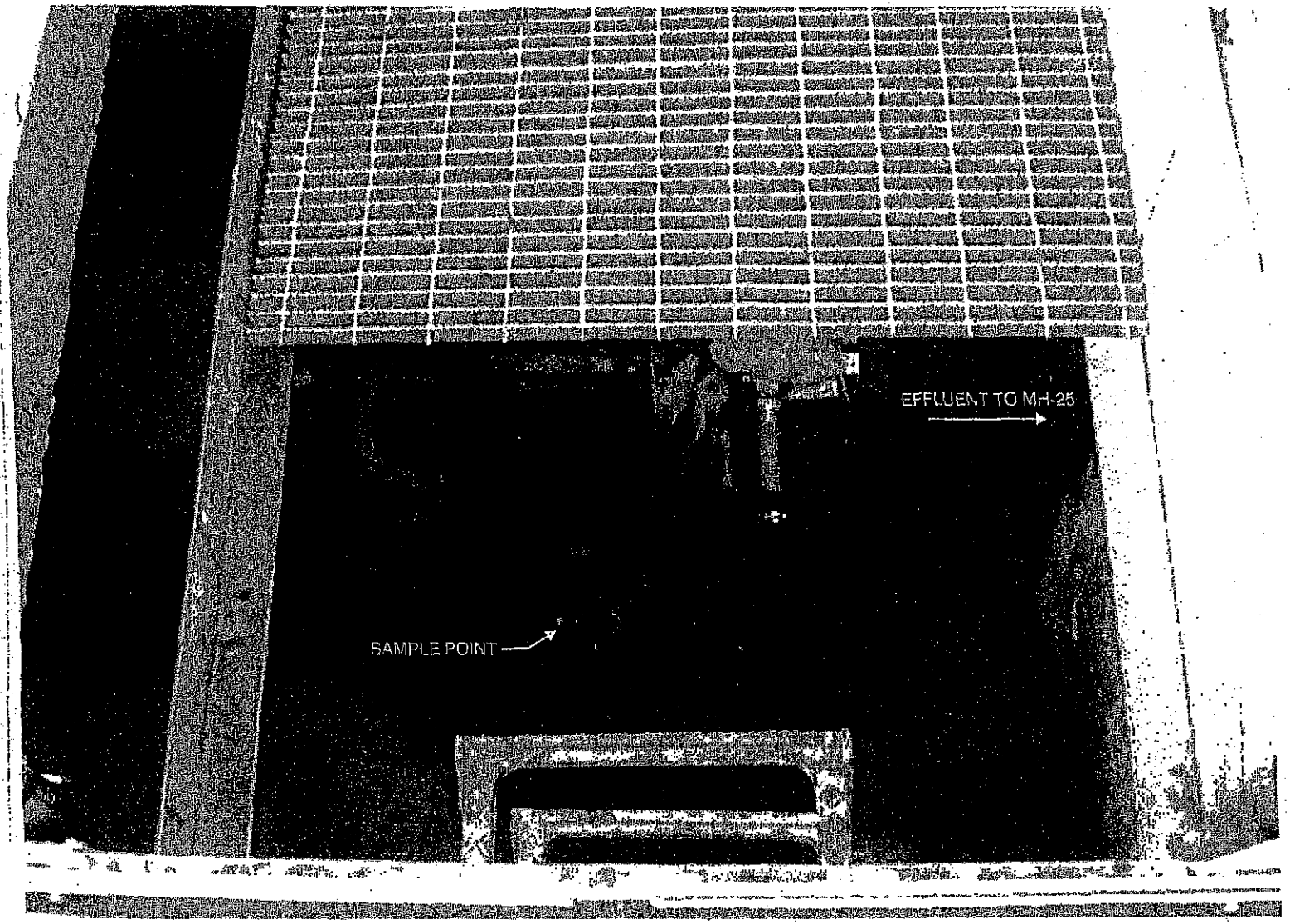
2. Composite samples may be time proportioned.

3. Four grab samples must be collected at equally spaced intervals throughout the sample day. The four (4) grab samples must be composited by a NYSDOH certified laboratory prior to analysis.

4. The permittee must report any compound whose concentration is equal to or greater than 0.01 mg/L. The permittee is not authorized to discharge any of the parameters evaluated by these test procedures which may cause or contribute to a violation of water quality standards or harm the sewerage system. Any parameter detected may, at the discretion of the BSA, be specifically limited and incorporated in this permit.

5. Surchargeable over 250 mg/L.

6. Flow is an action level only. If the permittee consistently exceeds this level, the BSA must be notified so that this permit can be modified.



URS

PFOHL BROTHERS LANDFILL
EFFLUENT SAMPLE POINT

FIGURE 1

PART II GENERAL CONDITIONS

A. MONITORING AND REPORTING

1. Local Limits

Except as otherwise specified in this permit, the permit holder shall comply with all specific prohibitions, limits on pollutants or pollutant parameters set forth in the Buffalo Sewer Authority Sewer Use Regulations, as amended from time to time, and such prohibitions, limits and parameters shall be deemed pretreatment standards for purposes of the Clean Water Act

2. Definitions

Definitions of terms contained in this permit are as defined in the Town of Cheektowaga Local Law No. 2 and the Buffalo Sewer Authority Sewer Use Regulations.

3. Discharge Sampling Analysis

All Wastewater discharge samples and analyses and flow measurements shall be representative of the volume and character of the monitored discharge. Methods employed for flow measurements and sample collections and analyses shall conform to the Buffalo Sewer Authority "Sampling Measurement and Analytical Guidelines Sheet."

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of the permit, the Permittee shall record the information as required in the "Sampling Measurement and Analytical Guidelines Sheet."

5. Additional Monitoring by Permittee

If the Permittee monitors any pollutants at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in 40 CFR Part 136 the results of such monitoring shall be included in the calculation and reporting of values required under Part I, B. Such increased frequency shall also be indicated.

6. Reporting

All reports prepared in accordance with this Permit shall be submitted to:

PAT BOWEN
Town Engineer
275 Alexander Ave.
Cheektowaga, New York, 14211

All self-monitoring reports shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines Sheet." These reporting requirements shall not relieve the Permittee of any other reports, which may be required by the

Measurement and Analytical Guidelines Sheet." These reporting requirements shall not relieve the Permittee of any other reports, which may be required by the N.Y.S.D.E.C. or the U.S.E.P.A.

7. Certification Statement

All self-monitoring reports shall include the following certification statement, signed by the preparer of the report:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing

B. PERMITTEE REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit and with the information contained in the TC/BPDES Permit Application on which basis this permit is granted. In the event of any facility expansions, production increases, process modifications or the installation, modification or repair of any pretreatment equipment which may result in new, different or increased discharges of pollutants, a new TC/BPDES Permit Application must be submitted prior to any change. Following receipt of an amended application, the BSA may modify this permit to specify and limit any pollutants not previously limited. In the event that the proposed change will be covered under an applicable Categorical Standard, a Baseline Monitoring Report must be submitted at least ninety (90) days prior to any discharge.

2. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation shall be retained at this facility for a minimum of three (3) years, or longer if requested by the General Manager and/or Town Engineer.

3. Slug Control Plan

Upon written notification by the BSA that a slug control plan is necessary for the permittee, the plan shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines" sheet. Within 90 days of the BSA notification, the permittee must implement the slug control plan

4. Notification of Slug, Accidental Discharge or Spill

In the event that a slug, accidental discharge or any spill occurs at the facility for which this permit is issued, it is the responsibility of the Permittee to immediately notify the B.S.A. Treatment Plant of the quantity and character of such discharge. During normal business hours, Monday- Friday, 7:30 AM – 3:00 PM call 716-851-4664, ext 5374. After normal business hours call 716-851-4664, ext 600. For all slug discharges, and when requested by the B.S.A. following an accidental discharge or spill, within five (5) days following all such discharges, the Permittee shall submit a report describing the character and duration of the discharge, the cause of the discharge, and measures taken or that will be taken to prevent a recurrence of such discharge.

5. Noncompliance Notification

If, for any reason, the Permittee does not comply with or will be unable to comply with any discharge limitation specified in this permit, the Permittee or their assigns must verbally notify the Industrial Waste Section at 716-851-4664 ext. 5374 within twenty-four (24) hours of becoming aware of the violation. The Permittee shall provide the Industrial Waste Section with the following information, in writing, within five (5) days of becoming aware of such condition:

a. a description of the discharge and cause of noncompliance and;

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

Additionally, the permittee shall repeat the sampling and analysis and sumbit these results of the report analysis to the Industrial Waste Section within 30 days after becoming aware of these violations

6. Adverse Impact

The Permittee shall take all reasonable steps to minimize any adverse impact to the Buffalo and Town Sewerage System resulting from noncompliance with any discharge limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

7. Waste Residuals

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters, shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the Buffalo or Town Sewer System.

8. Power Failures

In order to maintain compliance with the discharge limitations and prohibitions of

this permit, the Permittee shall provide an alternative power source sufficient to operate the wastewater control facilities; or, if such alternative power source is not provided the Permittee shall halt, reduce or otherwise control production and/or controlled discharges upon the loss of power to the wastewater control facilities.

9. Treatment Upsets

a. Any industrial user which experiences an upset in operations that places it in a temporary state of noncompliance, which is not the result of operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation, shall inform the Industrial Waste Section immediately upon becoming aware of the upset. Where such information is given verbally, a written report shall be filed by the user within five (5) days. The report shall contain:

(i) A description of the upset, its cause(s) and impact on the discharger's compliance status.

(ii) The duration of noncompliance, including exact dates and times of noncompliance, and if the noncompliance is continuing, the time by which compliance is reasonably expected to be restored

(iii) All steps taken or planned to reduce, eliminate, and prevent recurrence of such an upset.

b. An industrial user which complies with the notification provisions of this Section in a timely manner shall have an affirmative defense to any enforcement action brought by the Industrial Waste Section/Town Engineer for any noncompliance of the limits in this permit, which arises out of violations attributable to and alleged to have occurred during the period of the documented and verified upset.

10. Treatment Bypasses

a. A bypass of the treatment system is prohibited unless the following conditions are met:

(i) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; or

(ii) There was no feasible alternative to the bypass, including the use of auxiliary treatment or retention of the wastewater; and

(iii) The industrial user properly notified the Industrial Waste Section as described in paragraph b. below.

b. Industrial users must provide immediate notice to the Industrial Waste Section upon delivery of an unanticipated bypass. If necessary, the Industrial Waste Section may require the industrial user to submit a written report explaining the cause(s), nature, and duration of the bypass, and the steps being taken to prevent its recurrence.

c. An industrial user may allow a bypass to occur which does not cause

pretreatment standards or requirements to be violated, but only if it is for essential maintenance to ensure efficient operation of the treatment system. Industrial users anticipating a bypass must submit notice to the Industrial Waste Section at least ten (10) days in advance. The Industrial Waste Section may only approve the anticipated bypass if the circumstances satisfy those set forth in paragraph a. above.

C. PERMITTEE RESPONSIBILITIES

1. Permit Availability

The originally signed permit must be available upon request at all times for review at the address stated on the first page of this permit.

2. Inspections

The Permittee shall allow the representatives of the Buffalo Sewer Authority or Town of Cheektowaga upon the presentation of credentials and during normal working hours or at any other reasonable times, to have access to and copy any records required in this permit; and to sample any discharge of pollutants.

3. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities for which this permit has been issued the permit shall become null and void. The succeeding owner shall submit a completed Town of Cheektowaga/ Buffalo Sewer Authority permit application prior to discharge to the sewer system.

D. PERMITTEE LIABILITIES

1. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to the following:

a. Violation of any terms or conditions of this permit,

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts,

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

2. Imminent Danger

In the event there exists an imminent danger to health or property, the permitter reserves the right to take immediate action to halt the permitted discharge to the sewerage works.

3. Civil and Criminal Liability

Nothing in this permit shall relieve the Permittee from any requirements, liabilities, or penalties under provisions of the Town of Cheektowaga Local Law No. 2, the "Sewer Regulations of the Buffalo Sewer Authority" or any Federal, State and/or local laws or regulations.

E. NATIONAL PRETREATMENT STANDARDS

If a pretreatment standard or prohibition (including any Schedule of Compliance specified in such pretreatment standard or prohibition) is established under Section 307 (b) of the Act for a pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with such pretreatment standard or prohibition.

F. PLANT CLOSURE

In the event of plant closure, the Permittee is required to notify the Industrial Waste Section/Town Engineer in writing as soon as an anticipated closure date is determined, but in no case later than five (5) days of the actual closure.

G. CONFIDENTIALITY

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Buffalo Sewer Authority or Town Engineer of the Town of Cheektowaga. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

H. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

Revised March 17, 2014 by LS

AUTHORIZATION TO DISCHARGE UNDER THE BUFFALO POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT NO. 19-04-CH016
USEPA Category 40 CFR Part 403

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

THE TOWN OF CHEEKTOWAGA

to discharge wastewater from a facility located at:

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

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

Issuance of this permit is based upon a permit application filed on **February 19, 2019** 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, 2019

To Expire the 31st day of March, 2022

General Manager

Signed this 20th **day of** March **, 2019**

PART I: SPECIFIC CONDITIONS

A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

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

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

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

A. DISCHARGE LIMITATIONS & MONITORING REQUIREMENTS

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

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

Footnotes are explained on page 5.

PART I: SPECIFIC CONDITIONS

B. DISCHARGE MONITORING REPORTING REQUIREMENTS

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

Sample		**Reporting Requirements**	
Point	**Parameter**	**Initial Report**	**Subsequent Reports**
001	All except USEPA Test Methods 608, 624, 625 & T Mercury	June 30, 2019	Every March 31st, June 30th, September 30th and December 31st
	USEPA Test Methods 608, 624 and 625 & T Mercury	June 30, 2019	

* Please submit new discharge permit application 6 months prior to the expiration of this permit*

PART I: SPECIFIC CONDITIONS

C. SPECIAL REQUIREMENTS

1. Mass limits based on an average discharge of 140,100 gpd.

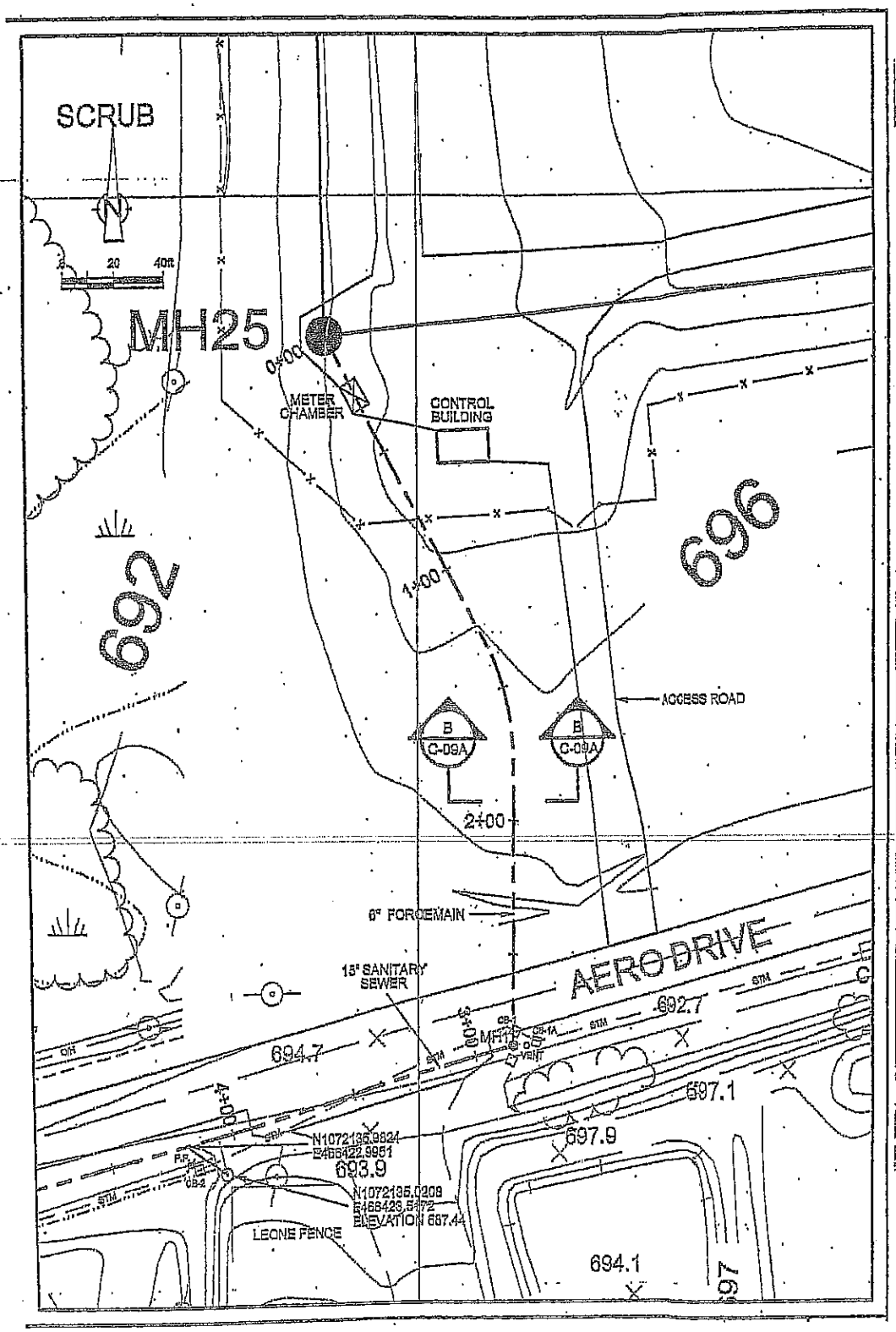
2. Composite samples may be time proportioned.

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.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N
20
40ft
MH25
0+00
METER CHAMBER
CONTROL BUILDING
692
696
1+00
ACCESS ROAD
B
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B
C-09A
2+00
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692.7
694.7
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697.1
697.9
4+00
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693.9
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ELEVATION 687.44
LEONE FENCE
694.1
697

PART II GENERAL CONDITIONS

A. MONITORING AND REPORTING

1. Local Limits

Except as otherwise specified in this permit, the permit holder shall comply with all specific prohibitions, limits on pollutants or pollutant parameters set forth in the Buffalo Sewer Authority Sewer Use Regulations, as amended from time to time, and such prohibitions, limits and parameters shall be deemed pretreatment standards for purposes of the Clean Water Act

2. Definitions

Definitions of terms contained in this permit are as defined in the Town of Cheektowaga Local Law No. 2 and the Buffalo Sewer Authority Sewer Use Regulations.

3. Discharge Sampling Analysis

All Wastewater discharge samples and analyses and flow measurements shall be representative of the volume and character of the monitored discharge. Methods employed for flow measurements and sample collections and analyses shall conform to the Buffalo Sewer Authority "Sampling Measurement and Analytical Guidelines Sheet."

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of the permit, the Permittee shall record the information as required in the "Sampling Measurement and Analytical Guidelines Sheet."

5. Additional Monitoring by Permittee

If the Permittee monitors any pollutants at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in 40 CFR Part 136 the results of such monitoring shall be included in the calculation and reporting of values required under Part I, B. Such increased frequency shall also be indicated.

6. Reporting

All reports prepared in accordance with this Permit shall be submitted to:

Patrick Bowen, P.E.
Town Engineer
275 Alexander Ave.
Cheektowaga, New York, 14211

All self-monitoring reports shall be prepared in accordance with the BSA "Sampling Measurement and Analytical Guidelines Sheet." These reporting requirements shall not relieve the Permittee of any other reports, which may be required by the

N.Y.S.D.E.C. or the U.S.E.P.A.

B. PERMITTEE REQUIREMENTS

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit and with the information contained in the TC/BPDES Permit Application on which basis this permit is granted. In the event of any facility expansions, production increases, process modifications or the installation, modification or repair of any pretreatment equipment which may result in new, different or increased discharges of pollutants, a new TC/BPDES Permit Application must be submitted prior to any change. Following receipt of an amended application, the BSA may modify this permit to specify and limit any pollutants not previously limited. In the event that the proposed change will be covered under an applicable Categorical Standard, a Baseline Monitoring Report must be submitted at least ninety (90) days prior to any discharge.

2. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation shall be retained at this facility for a minimum of three (3) years, or longer if requested by the General Manager and/or Town Engineer.

3. Notification of Slug, Accidental Discharge or Spill

In the event that a slug, accidental discharge or any spill occurs at the facility for which this permit is issued, it is the responsibility of the Permittee to immediately notify the B.S.A. Treatment Plant at 883-1820 of the quantity and character of such discharge. If requested by the B.S.A., within five (5) days following all such discharges, the Permittee shall submit a report describing the character and duration of the discharge, the cause of the discharge, and measures taken or that will be taken to prevent a recurrence of such discharge.

4. Noncompliance Notification

If, for any reason, the Permittee does not comply with or will be unable to comply with any discharge limitation specified in this permit, the Permittee or their assigns must verbally notify the Industrial Waste Section at 883-1820 within twenty-four (24) hours of becoming aware of the violation. The Permittee shall provide the Industrial Waste Section with the following information, in writing, within five (5) days of becoming aware of such condition:

a. a description of the discharge and cause of noncompliance and;

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

5. Adverse Impact

The Permittee shall take all reasonable steps to minimize any adverse impact to the Buffalo and Town Sewerage System resulting from noncompliance with any discharge limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

6. Waste Residuals

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters and/or the treatment of intake waters, shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the Buffalo or Town Sewer System.

7. Power Failures

In order to maintain compliance with the discharge limitations and prohibitions of this permit, the Permittee shall provide an alternative power source sufficient to operate the wastewater control facilities; or, if such alternative power source is not provided the Permittee shall halt, reduce or otherwise control production and/or controlled discharges upon the loss of power to the wastewater control facilities.

8. Treatment Upsets

a. Any industrial user which experiences an upset in operations that places it in a temporary state of noncompliance, which is not the result of operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation, shall inform the Industrial Waste Section immediately upon becoming aware of the upset. Where such information is given verbally, a written report shall be filed by the user within five (5) days. The report shall contain:

   (i) A description of the upset, its cause(s) and impact on the discharger's compliance status.

   (ii) The duration of noncompliance, including exact dates and times of noncompliance, and if the noncompliance is continuing, the time by which compliance is reasonably expected to be restored

   (iii) All steps taken or planned to reduce, eliminate, and prevent recurrence of such an upset.

b. An industrial user which complies with the notification provisions of this Section in a timely manner shall have an affirmative defense to any enforcement action brought by the Industrial Waste Section/Town Engineer for any noncompliance of the limits in this permit, which arises out of violations attributable to and alleged to have occurred during the period of the documented and verified upset.

9. Treatment Bypasses

a. A bypass of the treatment system is prohibited unless the following conditions are met:

(i) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; or

(ii) There was no feasible alternative to the bypass, including the use of auxiliary treatment or retention of the wastewater; and

(iii) The industrial user properly notified the Industrial Waste Section as described in paragraph b. below.

b. Industrial users must provide immediate notice to the Industrial Waste Section upon delivery of an unanticipated bypass. If necessary, the Industrial Waste Section may require the industrial user to submit a written report explaining the cause(s), nature, and duration of the bypass, and the steps being taken to prevent its recurrence.

c. An industrial user may allow a bypass to occur which does not cause pretreatment standards or requirements to be violated, but only if it is for essential maintenance to ensure efficient operation of the treatment system. Industrial users anticipating a bypass must submit notice to the Industrial Waste Section at least ten (10) days in advance. The Industrial Waste Section may only approve the anticipated bypass if the circumstances satisfy those set forth in paragraph a. above.

C. PERMITTEE RESPONSIBILITIES

1. Permit Availability

The originally signed permit must be available upon request at all times for review at the address stated on the first page of this permit.

2. Inspections

The Permittee shall allow the representatives of the Buffalo Sewer Authority or Town of Cheektowaga upon the presentation of credentials and during normal working hours or at any other reasonable times, to have access to and copy any records required in this permit; and to sample any discharge of pollutants.

3. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities for which this permit has been issued the permit shall become null and void. The succeeding owner shall submit a completed Town of Cheektowaga/ Buffalo Sewer Authority permit application prior to discharge to the sewer system.

D. PERMITTEE LIABILITIES

1. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to the following:

a. Violation of any terms or conditions of this permit,

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts,

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

2. Imminent Danger

In the event there exists an imminent danger to health or property, the permitter reserves the right to take immediate action to halt the permitted discharge to the sewerage works.

3. Civil and Criminal Liability

Nothing in this permit shall relieve the Permittee from any requirements, liabilities, or penalties under provisions of the Town of Cheektowaga Local Law No. 2, the "Sewer Regulations of the Buffalo Sewer Authority" or any Federal, State and/or local laws or regulations.

4. Penalties for Violations of Permit Conditions

The "Sewer Regulations of the Buffalo Sewer Authority" and Town of Cheektowaga Local Law No. 2, provide that any person who violates a B.P.D.E.S. permit condition is liable to the Authority and/or the Town for a civil penalty of up to $10,000 per day for each violation. Any person who willfully or negligently violates permit conditions will be referred to the New York State Attorney General.

E. NATIONAL PRETREATMENT STANDARDS

If a pretreatment standard or prohibition (including any Schedule of Compliance specified in such pretreatment standard or prohibition) is established under Section 307 (b) of the Act for a pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with such pretreatment standard or prohibition.

F. PLANT CLOSURE

In the event of plant closure, the Permittee is required to notify the Industrial Waste Section/Town Engineer in writing as soon as an anticipated closure date is determined, but in no case later than five (5) days of the actual closure.

G. CONFIDENTIALITY

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Buffalo Sewer Authority or Town Engineer of the Town of Cheektowaga. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

H. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

APPENDIX G

DISCHARGE REPORT SUMMARY TABLES

SAMPLING FIELD SHEET

Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

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

Installation:

Sample Point: SP-001

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

Date: 3/21/19 Crew: R. Murphy, K. McGovern

Weather: 40° F, partly cloudy

Sampling Device: NA

Time of Installation: 09:55 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Well WW-05 was running at the time of sample set-up.
PLC display volumes: WW-01 (1,586,699 gals), WW-02 (0 gals), WW-03 (174 gals),
WW-04 (782,894 gals), WW-05 (1,266,226 gals), WW-06 (3,886,184 gals) & MH-25 (9,426,272 gals).

Date: 3/22/19 Crew: R. Murphy, K. McGovern

Weather: 40° F, cloudy, light rain

Time of Collection: 09:55

Field Measurements:

10:00/RJM
(time/initial)

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

pH Measurement: 7.52

Temperature: 8.2°C

Identification: EFF-032219

Physical Observations:

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.
PLC display volumes: WW-01 (1,586,699 gals), WW-02 (0 gals), WW-03 (174 gals),
WW-04 (782,894 gals), WW-05 (1,282,671 gals), WW-06 (3,886,184 gals) & MH-25 (9,441,767 gals).

Reviewed By: Robert J Murphy Date: 3/22/19
(Supervisor)

TABLE 1

PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS MARCH 2019

Sample ID	EFF-032219			
Matrix	Effluent Water			
Date Sampled	3/22/2019			
Parameter	**Result**	**Mass Loading**	**Discharge Limitation**	**Violations**
	(mg/L)	**(lbs/day)**	**(lbs/day)**	**(Y/N)**
Total Barium	0.32	0.04	2.34	No
Total Cadmuim	<(1) 0.0005	< 0.0001	1.17	No
Total Chromium	< 0.0010	< 0.0001	1.17	No
Total Copper	0.0032 J	0.0004	3.74	No
Total Lead	< 0.0030	< 0.0004	1.17	No
Total Nickel	0.0041 J	0.001	3.27	No
Total Zinc	0.014 B	0.002	5.84	No
Total Suspended Solids	28.4	NA(2)	250 (3)	No
pH (4)	7.52	NA	5.0 - 12.0	No
Total Flow (5)		15,495	140,100	No

Notes:

(1) < = Compound not detected, method detection limit shown
(2) NA = Not Applicable
(3) Discharge Limitation in units of mg/L
(4) pH measurement and Discharge Limitation in Standard Units
(5) Total Flow reported in gallons, sample was collected over a 24 hour period
J= Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
B= Compound was found in the blank and sample.

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

SAMPLING FIELD SHEET

Client Name: Pfohl Brothers Landfill

Address: Aero Drive, Cheektowaga, NY

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

Installation:

Sample Point: SP-001

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

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

Weather: 80° F, sunny

Sampling Device: NA

Time of Installation: 14:15 Type of Sample: Composite

Sample Interval: NA Sample Volume: NA

Comments and Observations: Wells WW-01, WW-04, WW-05, WW-06 running at the time of sample set-up.
PLC display volumes: WW-01 (1,737,905 gals), WW-02 (0 gals), WW-03 (174 gals),
WW-04 (1,298,647 gals), WW-05 (2,158,706 gals), WW-06 (5,471,187 gals) & MH-25 (12,572,317 gals).

Date: 6/20/19 Crew: R. Murphy, T. Urban

Weather: 67° F, cloudy, rain

Time of Collection: 14:15

Field Measurements:

14:15/RJM
(time/initial)

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

pH Measurement: 7.18

Temperature: 18.3°C

Identification: EFF-062019

Physical Observations:

Laboratory: TestAmerica, Buffalo, NY

Comments: No wells were running at the time of sample collection.
PLC display volumes: WW-01 (1,750,936 gals), WW-02 (0 gals), WW-03 (174 gals),
WW-04 (1,310,563 gals), WW-05 (2,169,210 gals), WW-06 (5,498,127 gals) & MH-25 (12,634,903 gals).

Reviewed By: Robert J Murphy Date: 6/20/19
(Supervisor)

TABLE 1

PFOHL BROTHERS LANDFILL - EFFLUENT MONITORING
ANALYTICAL RESULTS, TOTAL FLOW, AND MASS LOADINGS
JUNE 2019

Sample ID	EFF-062019			
Matrix	Effluent Water			
Date Sampled	6/20/2019			
Parameter	**Result**	**Mass Loading**	**Discharge Limitation**	**Violations**
	(mg/L)	**(lbs/day)**	**(lbs/day)**	**(Y/N)**
Total Barium	0.25	0.13	2.34	No
Total Cadmuim	<(1) 0.0005	< 0.0003	1.17	No
Total Chromium	< 0.0010	< 0.0005	1.17	No
Total Copper	0.0062 J	0.0032	3.74	No
Total Lead	< 0.0030	< 0.0016	1.17	No
Total Nickel	0.0023 J	0.001	3.27	No
Total Zinc	0.015	0.008	5.84	No
Total Suspended Solids	14.4	NA(2)	250 (3)	No
pH (4)	7.52	NA	5.0 - 12.0	No
Total Flow (5)		62,586	140,100	No

Notes:

(1) < = Compound not detected, method detection limit shown
(2) NA = Not Applicable
(3) Discharge Limitation in units of mg/L
(4) pH measurement and Discharge Limitation in Standard Units
(5) Total Flow reported in gallons, sample was collected over a 24 hour period
J= Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
B= Compound was found in the blank and sample.

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

APPENDIX H

MONITORING WELL INSPECTION LOGS

WELL INSPECTION SUMMARY

Project Name: *Pfohl Brothers Landfill* Project Number: *60411174*

Inspection Crew Members: *R. Murphy, T. Urban* Supervisor: *R. Murphy*

Date(s) of Inspection: *May 22, 2019*

Well I.D. Number	*Lock*	*Surface Seal*	*Protective Casing*	*Riser*	*Water Level (ft. BTOC)*	*Well Depth (ft. BTOC)*	*Other Comments*
GW-01S	OK	OK	OK	Bulged	4.02	14.94	
GW-01D	OK	OK	OK	Bulged	2.91	39.65	
GW-03S	OK	OK	OK	OK	2.56	13.22	
GW-03D	OK	OK	OK	OK	1.71	35.70	
GW-04S	OK	OK	OK	OK	4.24	16.23	
GW-04D	OK	OK	OK	OK	12.14	45.57	
GW-07S	OK	OK	OK	OK	4.75	35.33	
GW-07D	OK	OK	OK	Damaged	42.39	60.83	

Additional Comments: _____

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WELL INSPECTION SUMMARY

Project Name: *Pfohl Brothers Landfill* Project Number: *60411174*

Inspection Crew Members: *R. Murphy, T. Urban* Supervisor: *R. Murphy*

Date(s) of Inspection: *May 22, 2019*

Well I.D. Number	*Lock*	*Surface Seal*	*Protective Casing*	*Riser*	*Water Level (ft. BTOC)*	*Well Depth (ft. BTOC)*	*Other Comments*
GW-08SR	OK	OK	OK	OK	5.18	13.02	
GW-08D	OK	OK	OK	OK	5.72	36.54	
GW-26D	OK	OK	OK	OK	6.55	40.70	
GW-28S	OK	OK	OK	OK	9.01	15.52	
GW-29S	OK	OK	OK	OK	8.02	20.04	
GW-30S	OK	OK	OK	OK	7.59	17.97	
GW-31S	OK	OK	OK	OK	3.04	9.57	
GW-32S	OK	OK	OK	OK	3.23	9.93	

Additional Comments: _____

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WELL INSPECTION SUMMARY

Project Name: *Pfohl Brothers Landfill* Project Number: *60411174*

Inspection Crew Members: *R. Murphy, T. Urban* Supervisor: *R. Murphy*

Date(s) of Inspection: *May 22, 2019*

Well I.D. Number	*Lock*	*Surface Seal*	*Protective Casing*	*Riser*	*Water Level (ft. BTOC)*	*Well Depth (ft. BTOC)*	*Other Comments*
GW-33S	OK	OK	OK	OK	4.92	8.21	
GW-34S	OK	OK	OK	OK	2.84	10.01	
GW-35S	OK	OK	OK	OK	3.35	7.46	

Additional Comments: _____

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