

450 Montbrook Lane Knoxville, TN 37919 865-691-5052 phone 865-691-6485 fax

Via Fedex

July 31, 2020

Ms. Patricia Pierre Central New York Remedial Section New York Remediation Branch Emergency and Remedial Response Division U.S. Environmental Protection Agency, Region II 20th Floor, 290 Broadway New York, New York 10007

Subject: Annual Progress Report for July 2019 through June 2020 Operations, Maintenance and Long Term-Monitoring Activities Pollution Abatement Services (PAS) Site, Oswego, NY

Dear Patricia:

This Annual Progress Report (Annual Report) is submitted pursuant to *Consent Decree 98-CV0112-NPMGJD (Consent Decree)* and details the operation, maintenance, and long-term monitoring activities at the Pollution Abatement Services (PAS) Site (Site) in Oswego, NY. This Annual Report covers the period July 1, 2019 through June 30, 2020 and is consistent with the requirements of Paragraph 30 of the Consent Decree. Our next annual progress report will be submitted on or before July 31, 2021 and will document work completed between the period July 1, 2020 and June 30, 2021.

The data for this report are presented in three attachments as discussed below. Attachment I presents graphs, figures and tables documenting long-term monitoring trends for the Site. Figures showing the Site, the Long Term Monitoring wells, the groundwater potentiometric surface contours and vertical hydraulic gradients are included in (Section I-A). Graphs showing groundwater elevations at the slurry wall well pairs are presented in (Section I-B). Semi-annual groundwater and leachate sampling results are included in (Section I-C). Tables showing the leachate volume removed from the Site LCW wells, the performance standards and additional Site well sample results are provided in (Section I-D). Attachment II of this report contains a description of the actions completed under the Consent Decree for each quarter of this reporting period. Site maintenance and monitoring records and leachate removal and disposal records for each quarter of the reporting period are also included in Attachment II. The PAS Site Institutional Control Implementation Plan Annual Certification is provided in Section B-6 of Attachment II and documents that the requirements of the Institutional Control Plan were satisfied during this reporting period. Finally, Attachment III of this report provides a description and schedule of the actions planned during the next reporting period (July 2020 - June 2021).

SUMMARY OF LEACHATE REMOVAL ACTIVITIES

During this reporting period (July 2019 – June 2020) PAS leachate was treated and disposed at the City of Oswego POTW. A total of 180,000 gallons were removed from the containment system and discharged to the City of Oswego POTW. (Attachment I-D, Table 1).

HYDRAULIC CONTROL OF SLURRY WALL CONTAINMENT SYSTEM

The effectiveness of the hydraulic control of the slurry wall containment system is evaluated based on a review of water level elevations used to determine hydraulic gradients, both horizontal and vertical, around and beneath the containment system. Its effectiveness is also evaluated by determining whether the water level elevations are maintained below the top of the slurry wall at its downgradient extent. Horizontal gradients around the containment system are calculated using quarterly water level elevations recorded at the SWW-series monitoring wells which are located around the perimeter of the slurry wall as shown in Attachment I-B. Vertical gradients beneath the containment system are calculated based on the difference in the water level potentiometric surface in the overburden and the bedrock monitoring wells located in the vicinity of the containment system. Figures showing the potentiometric water surfaces for both the bedrock and overburden monitoring wells for each of the quarterly water level monitoring events are presented in Attachment I-A (Set 3).

The water level data for the upgradient SWW wells SWW1/2 and SWW3/4 show the regional groundwater is consistent with the past few years. The horizontal gradients at well pairs SWW-5/6 and SWW-11/12 are influenced by both leachate pumping and seasonal regional water level elevations, while horizontal gradients at other SWW well pairs are primarily affected by regional water level elevations outside the containment system. During the reporting period, the water levels at SWW-5 and SWW-11, the two interior SWW wells at the downgradient extent of the slurry wall, remained stable and showed the continued inward gradient pattern of recent years. Generally, the charts indicate that leachate pumping at the rates prescribed effectively maintains hydraulic control to the degree practicable, although seasonal levels outside the containment system influence the gradients.

The vertical gradient figures shown in Attachment I-A indicate that vertical gradients are also seasonally affected by the regional water levels outside the containment system. The vertical hydraulic gradient plots presented show upward gradient trends over most of the Site during the summer and fall, and upward gradients over the downgradient portion of the site including the LCW4 and LCW2 areas during the winter and spring periods. This is due to stable water levels inside the containment system. Vertical gradients typically trend downward during late summer when regional water levels are relatively low. This summer experienced shift from that pattern indicating the success of pumping.

The routine elevation monitoring conducted during this reporting period indicates hydraulic control of the slurry wall containment system is maintained through routine operation of the leachate collection system. This observation remains consistent with the observations reported in



previous annual reports.

LONG-TERM GROUNDWATER MONITORING RESULTS

The long-term groundwater quality monitoring results and trends for the downgradient monitoring wells LR-8 and M-21 are presented graphically for the period from May 2000 to May 2020 in Attachment I-C. LR-6 was last sampled in 2017 and indicated concentrations continued ot be below the performance standards with only 1,1 dichloroethane detected consistent with historical concentrations in LR-6. The historical VOC concentrations at these wells are also presented in tabular format in Figure 2 in Attachment I-A. Semi-annual groundwater quality monitoring results indicate that VOC-concentrations (mainly chlorobenzene showing highest results) continue to fluctuate at low part per billion levels at the downgradient monitoring wells LR-8 and M-21. In accordance with the prior annual reports, LR-6 was not sampled during this reporting period and will be sampled again in 2022 prior to the next EPA 5-year review. Monitoring results at LR-8, the long-term monitoring well located closest to the downgradient extent of the slurry wall, remained low during the 2019-2020 period. Chlorobenzene concentrations fluctuated from ND to 10.1 ug/L in May 2020 above the performance standard of 5 ug/L. The other performance parameters were at or near ND levels. Monitoring results for downgradient well M-21, which is located south of Mitchell Street and north of the slurry wall containment system, were near ND for all performance parameters except chlorobenzene which was detected at 5.91 ug/L in May 2020. Recent trends for VOC constituents in the two monitoring wells show chlorobenzene as the parameter of highest concentration in both wells, and a seasonal variation of slightly higher concentrations for chlorobenzene in the fall versus the spring for LR-8 with the exception of fall 2019 and slightly higher concentrations for chlorobenzene in the spring versus the fall for M-21.

Well OD-3 was sampled for the Consent Decree performance standards in November 2019. Chlorobenzene was detected at 10.5 ug/L versus 16.3 ug/L observed in 2019. This was the only performance parameter detected above the performance standard of 5 ug/L. The 2019 observation is consistent with the historical gradually declining observations at OD-3. The current data along with historic data is provided in Table 3.

Graphs showing leachate concentrations at LCW-2 and LCW-4 during the period May 2000 to May 2020 are also included in Attachment I-C. Leachate VOC concentrations in leachate collection well LCW-2, located in the downgradient collection trench, and well LCW-4, located in the central collection trench, showed leachate quality results consistent with historic concentrations. LCW-4 VOC concentrations continued to be higher than VOC concentrations reported at LCW-2. Consistent with historical trends, Xylene continued to be the performance parameter with the highest concentration in the LCW-4 location. Chlorobenzene was the constituent with the highest concentration in LCW-2 over the period. Concentrations at both LCW locations, inside the containment area, remained above the concentrations of wells outside the containment area and the performance standards. The concentrations at LCW-2.

Although some constituents including chlorobenzene fluctuated near the performance standard in the downgradient wells, the long-term monitoring results continued to support the findings that

2019 Annual Report July 31, 2020 Page 4 of 4

hydraulic control of the containment system controls VOC concentrations downgradient of the slurry wall containment system and that the Site remedies continue to be protective of human health and the environment.

If you have any questions, please call me at (865) 691-5052.

Sincerely, *de maximis, inc*

dsr for

Clay McClarnon

CMC/dsr

Attachments

 cc: PAS Oswego Steering Committee Marla Weider, Esq. USEPA Payson Long, NYSDEC, Div. of Hazardous Waste Remediation Brian Rogers, NYSDEC Region 7 Office Ian Ushe, NYDOH, Office of Public Health

ANNUAL PROGRESS REPORT

PAS OSWEGO SUPERFUND SITE

OSWEGO, NEW YORK

July 2020

Submitted By:

 $\frac{\nabla}{de \ maximis, \ inc.}$

450 Montbrook Lane Knoxville, TN 37919 (865) 691-5052

LIST OF ATTACHMENTS

<u>ATTACHMENT I – FIGURES, TABLES AND GRAPHS</u>

I – A Figure 1 – Existing Site Wells

Figure 2 – Historical VOC Concentrations

Figure Set 3 -<u>Potentiometric Surfaces and Inferred Vertical Hydraulic Gradient Figures</u> Figure 2019-Q3-A - Potentiometric Surfaces – 8/6/2019 Figure 2019-Q3-B - Inferred Vertical Hydraulic Gradient – 8/6/2019 Figure 2019-Q4-A - Potentiometric Surfaces – 11/5/2019 Figure 2019-Q4-B - Inferred Vertical Hydraulic Gradient – 11/5/2019 Figure 2020-Q1-A - Potentiometric Surfaces – 2/11/2020 Figure 2020-Q1-B - Inferred Vertical Hydraulic Gradient – 2/11/2020 Figure 2020-Q2-A - Potentiometric Surfaces – 5/4/2020 Figure 2020-Q2-B - Inferred Vertical Hydraulic Gradient – 5/4/2020

- I B Slurry Wall Groundwater Elevation Charts
- I C Long Term Monitoring Groundwater and Leachate Quality Graphs
- I D Table 1 Historical Leachate Removal Summary Table 2 – Consent Decree Performance Standards Table 3 – Additional Bedrock Groundwater Monitoring Results

ATTACHMENT II – ACTIONS COMPLETED

- $II A \quad 3^{rd} \text{ Quarter } 2019$
 - A-1 Groundwater Elevation Data
 - A-2 Site Inspection Checklist
 - A-3 Leachate Disposal Checklist
 - A-4 Quarterly POTW Discharge Reports 3rd Quarter 2019
- $II B \quad \underline{4^{th} \ Quarter \ 2019}$
 - B-1 Groundwater Elevation Data
 - B-2 Site Inspection Checklist
 - B-3 Leachate Disposal Checklist
 - B-4 Semi-Annual Leachate and Groundwater Monitoring Data (November 2019)
 - B-5 Quarterly POTW Discharge Reports 4th Quarter 2019
 - B-6 Institutional Controls Certification Memorandum
 - B-7 Emerging Contaminant Report (Data Collected November 2020)

II - C <u>1st Quarter 2020</u>

- C-1 Groundwater Elevation Data
- C-2 Site Inspection Checklist
- C-3 Leachate Disposal Checklist
- C-4 Quarterly POTW Discharge Reports 1st Quarter 2020

$II - D \quad \underline{2^{nd} \ Quarter \ 2020}$

- D-1 Groundwater Elevation Data
- D-2 Site Inspection Checklist
- D-3 Leachate Disposal Checklist
- D-4 Semi-Annual Leachate and Groundwater Monitoring Data (May 2020)
 D-5 Quarterly POTW Discharge Reports 2nd Quarter 2020

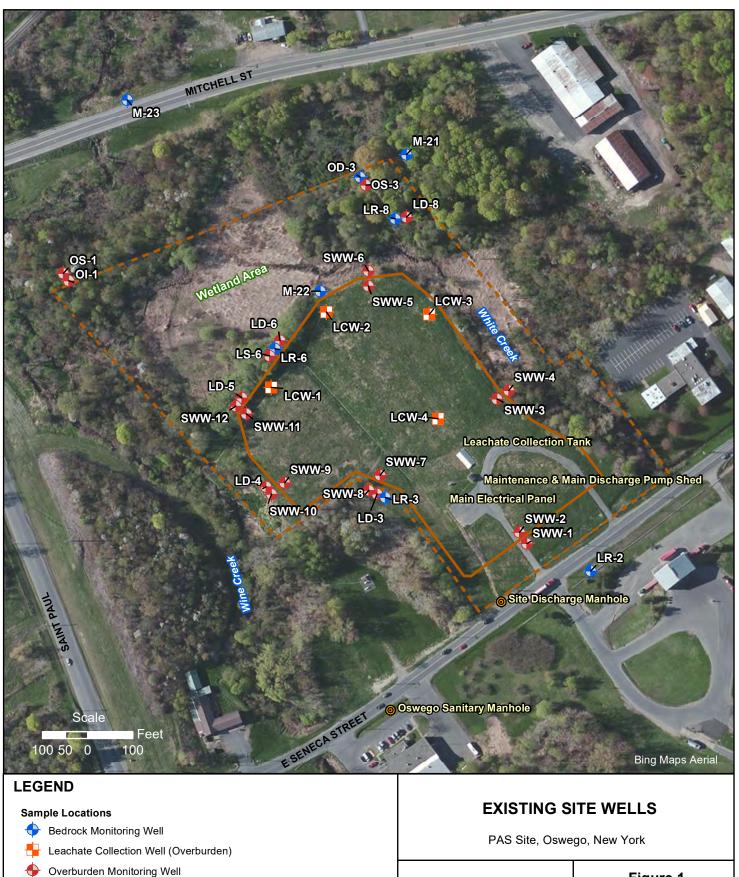
ATTACHMENT III – ACTIONS PLANNED

Future Report III –

ATTACHMENT I

FIGURES, TABLES AND GRAPHS

I-A FIGURES



- Manhole
- Fence (Site Boundary)
- Slurry Wall

Project No.: 3131 Plot Date: 4 May 2012 Arc Operator: BJAR Reviewed by:

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Figure 1



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Map Legend:

- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden
 Monitoring Well
- Fence (Site Boundary)
- Slurry Wall



Notes: VOC concentration values displayed in tables are measured in ug/L.

Data Qualifier Definitions: ND = Not detected NS = Not Sampled J = Estimated concentration (less than sample quantitation limit) J+ = Estimated, may be biased high

Basemap Source: esri World Imagery

Spatial Projection:

Coordinate System: UTM Zone 18N Units: Meters Datum: NAD83

Plot Info:

Created For: PAS Project No.: 1547-3131 Plot Date: 7/27/2020 Arc Operator: JNR Reviewed by: BF

Figure 2

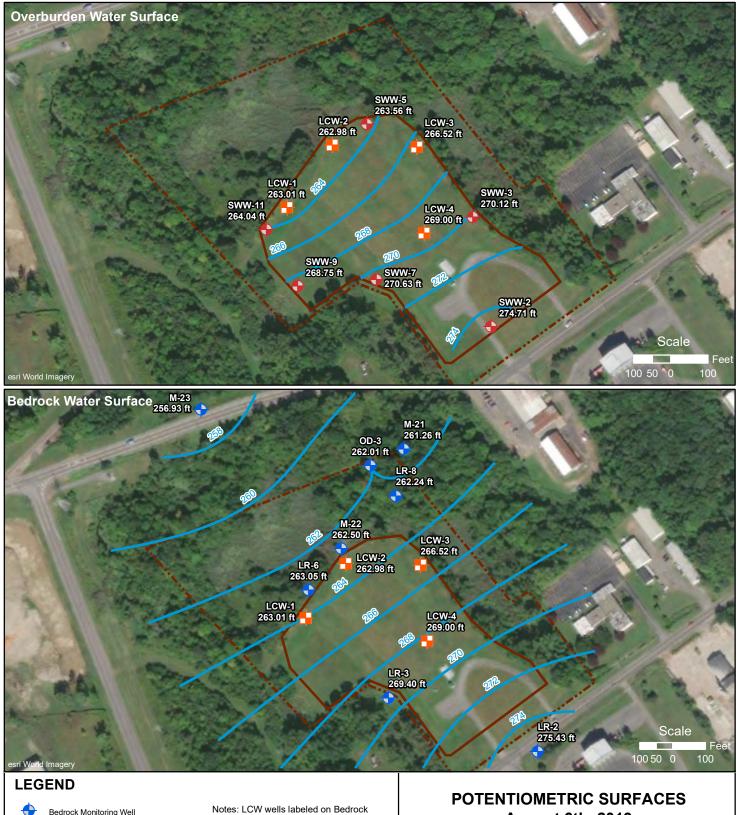
Historical Concentrations of VOCs of Concern Detected in Consent Decree Wells (1998-2020)

Pollution Abatement Servcies Site Oswego, New York



60 Plato Boulevard East, St. Paul, Minnesota 55107 Main Phone: (651) 842-4224 www.ddmsinc.com

FIGURE SET 3 HYDRAULIC GRADIENT



August 6th, 2019

PAS Site, Oswego, New York



60 Plato Boulevard East, Suite 150 Saint Paul, Minnesota 55107 Main Phone: (651) 842-4224 www.ddmsinc.com

Figure 2019-Q3-A

Bedrock Monitoring Well

Leachate Collection Well (Overburden)

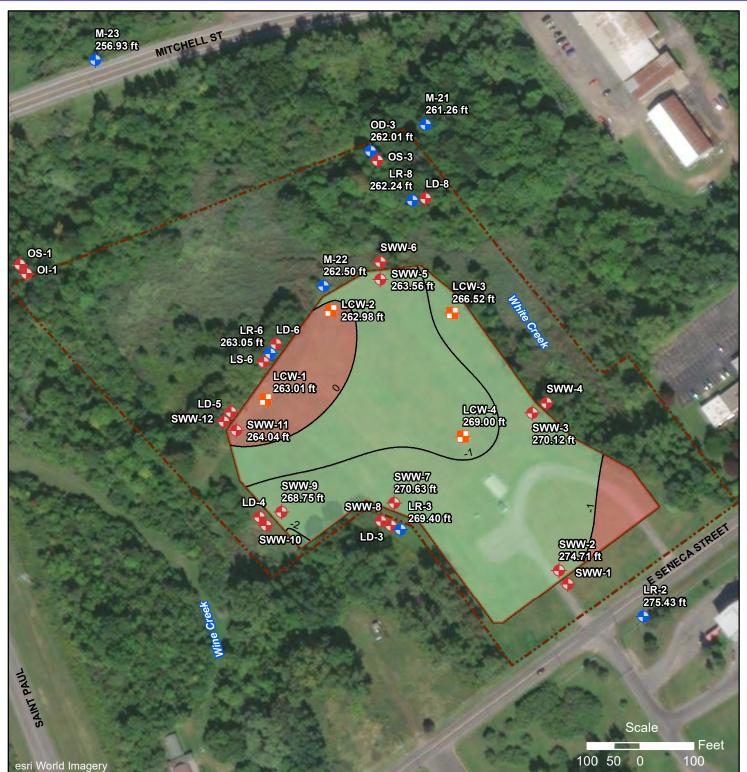
Overburden Monitoring Well

Potentiometric Surface Contours (ft) Fence (Site Boundary)

Slurry Wall

Water Surface map for reference only and were not used in creation of the potentiometric surface.

Linear kriging was used to determine both potentiometric surfaces. Bedrock contours within the containment system are inferred from the identified bedrock wells.



LLG	
+	Bedrock Monitoring Well
+	Leachate Collection Well (Overburden)
•	Overburden Monitoring Well
1.1	Fence (Site Boundary)
	Line of Potentiometric Surface Difference (ft)
	Upward Vertical Hydraulic Gradient
	Downward Vertical Hydraulic Gradient
	Slurry Wall

Notes:

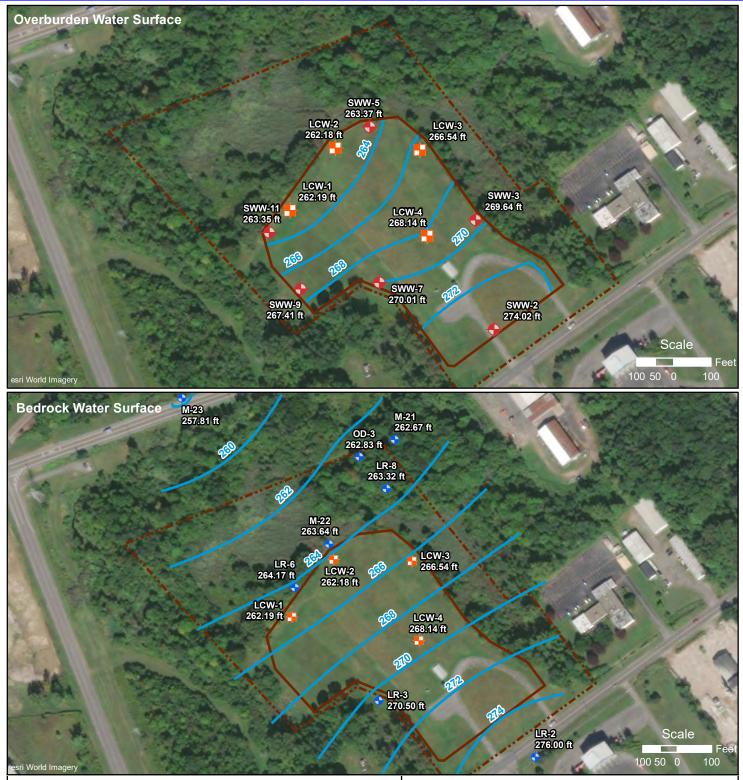
Overburden wells within the slurry wall were used to calculate the overburden potentiometric surface. Bedrock wells outside the slurry wall were used to calculate bedrock potentiometric surface. The bedrock potentiometric surface was subtracted from the overburden surface to produce the inferred vertical hydraulic gradient.

Negative gradient values indicate an upward hydraulic gradient.

INFERRED VERTICAL HYDRAULIC GRADIENT - August 6th, 2019







- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden Monitoring Well
- Fence (Site Boundary)
- Slurry Wall

Notes: LCW wells labeled on Bedrock Water Surface map for reference only and were not used in creation of the potentiometric surface.

Linear kriging was used to determine both potentiometric surfaces. Bedrock contours within the containment system are inferred from the identified bedrock wells.

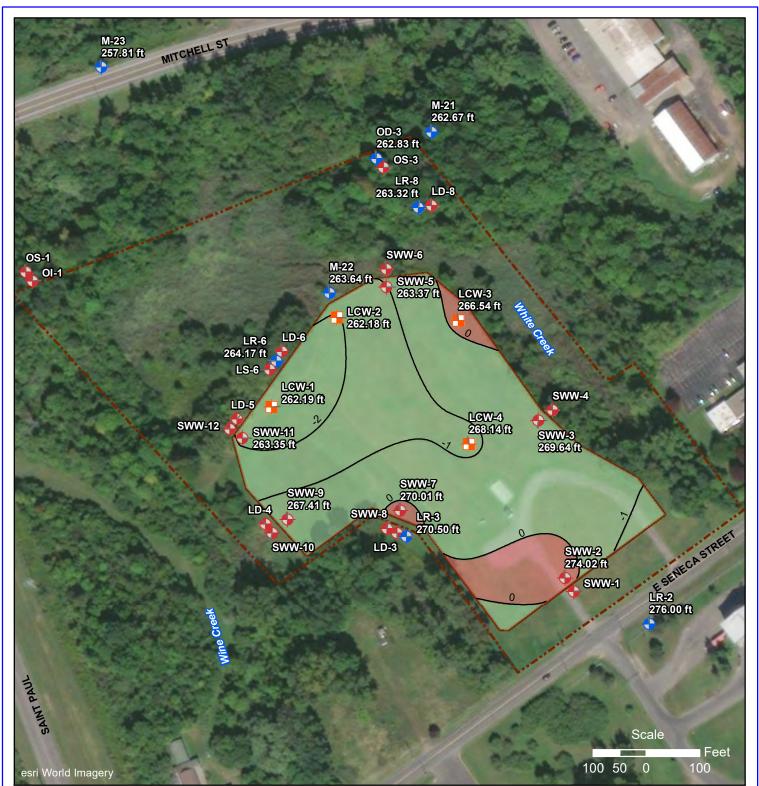
POTENTIOMETRIC SURFACES November 5, 2019

PAS Site, Oswego, New York



Project No.: 3131 Plot Date: 7/5/2019 Arc Operator: JNR Reviewed by: BF





1.1

Fence (Site Boundary)

Slurry Wall

Line of Potentiometric Surface Difference (ft)

Upward Vertical Hydraulic Gradient

Downward Vertical Hydraulic Gradient

Notes:

Overburden wells within the slurry wall were used to calculate the overburden potentiometric surface. Bedrock wells outside the slurry wall were used to calculate bedrock potentiometric surface. The bedrock potentiometric surface was subtracted from the overburden surface to produce the inferred vertical hydraulic gradient.

Negative gradient values indicate an upward hydraulic gradient.

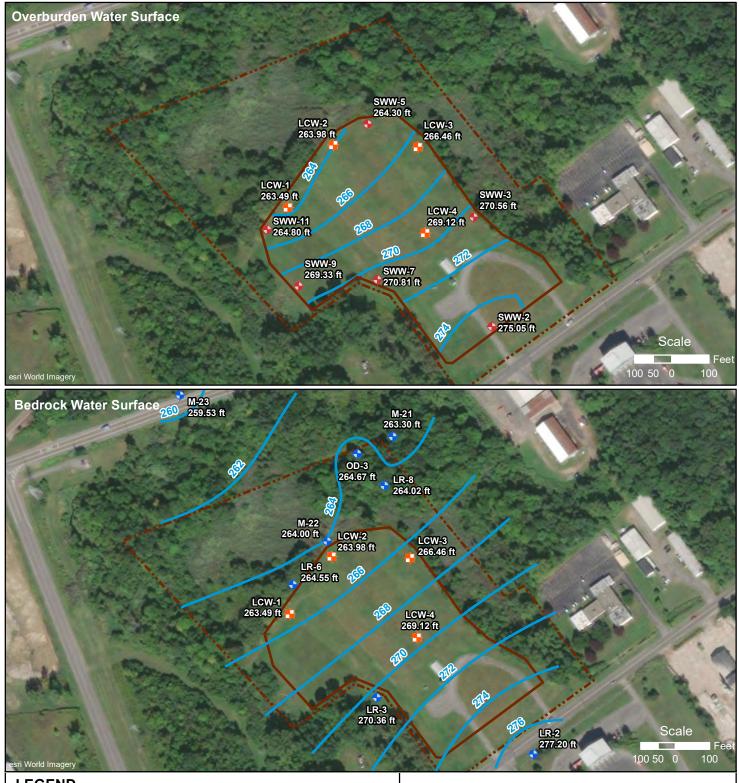
INFERRED VERTICAL HYDRAULIC GRADIENT - November 5, 2019

PAS Site, Oswego, New York





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Bedrock Monitoring Well

Leachate Collection Well (Overburden)

Overburden Monitoring Well

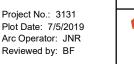
Fence (Site Boundary)
 Slurry Wall

Notes: LCW wells labeled on Bedrock Water Surface map for reference only and were not used in creation of the potentiometric surface.

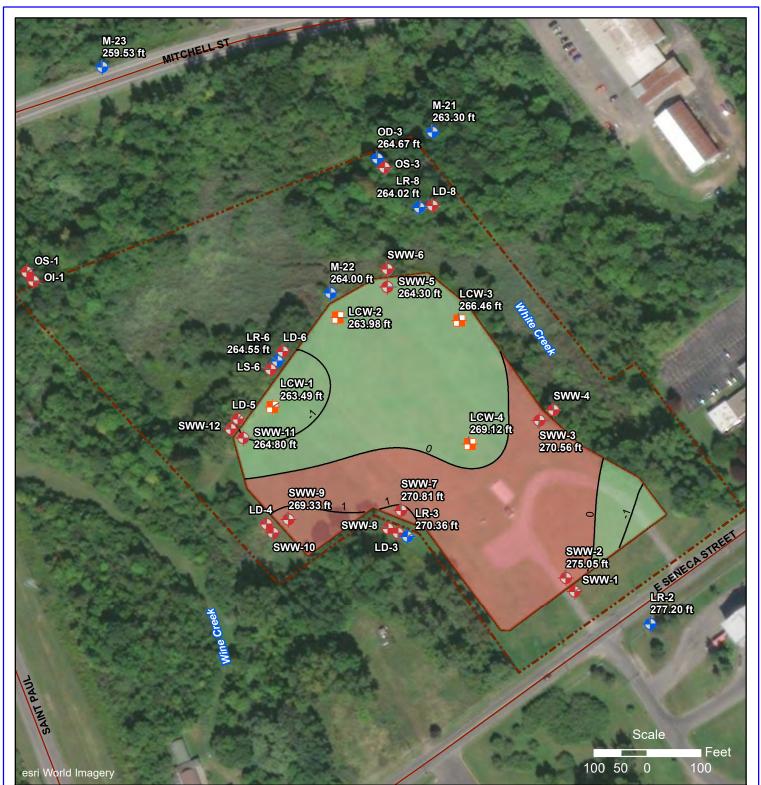
Linear kriging was used to determine both potentiometric surfaces. Bedrock contours within the containment system are inferred from the identified bedrock wells.

POTENTIOMETRIC SURFACES Febuary 11, 2020









Fence (Site Boundary) StreetSegmentPublic_CUT Line of Potentiometric Surface Difference (ft) Upward Vertical Hydraulic Gradient Downward Vertical Hydraulic Gradient

Slurry Wall

Notes:

Overburden wells within the slurry wall were used to calculate the overburden potentiometric surface. Bedrock wells outside the slurry wall were used to calculate bedrock potentiometric surface. The bedrock potentiometric surface was subtracted from the overburden surface to produce the inferred vertical hydraulic gradient.

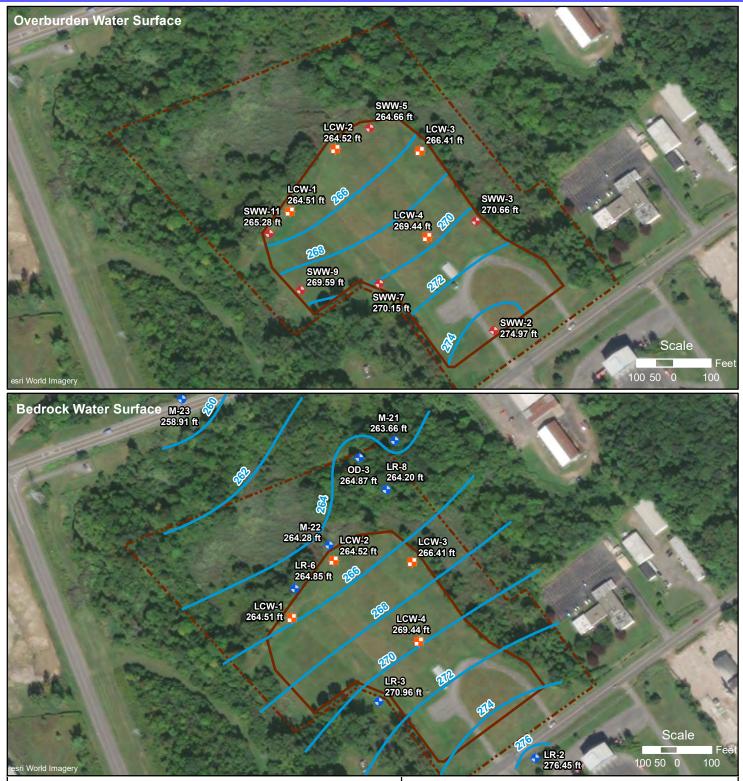
Negative gradient values indicate an upward hydraulic gradient.

INFERRED VERTICAL HYDRAULIC GRADIENT - Febuary 11, 2020









- Bedrock Monitoring Well
- Leachate Collection Well (Overburden)
- Overburden Monitoring Well
- ✓ Fence (Site Boundary)Slurry Wall

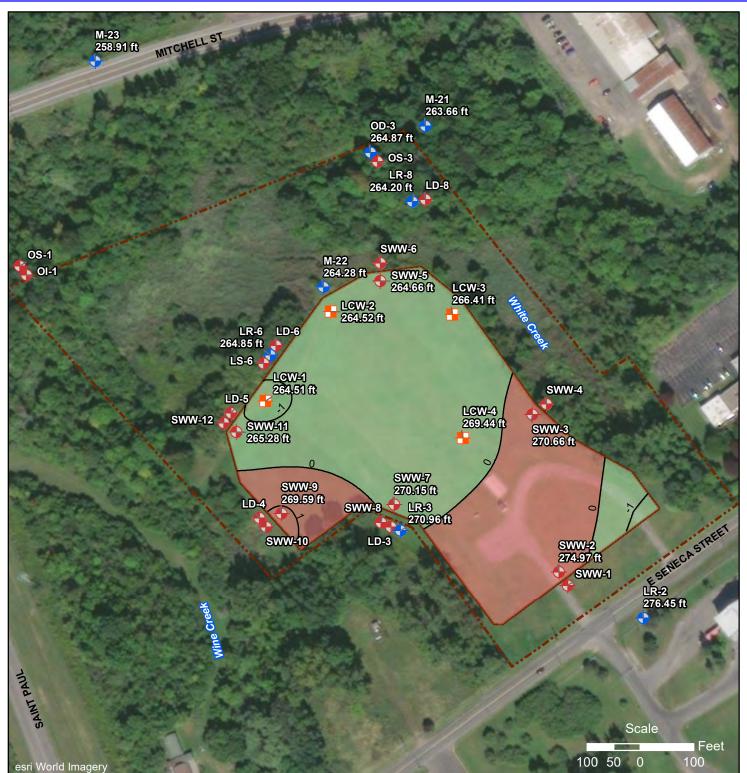
Notes: LCW wells labeled on Bedrock Water Surface map for reference only and were not used in creation of the potentiometric surface.

Linear kriging was used to determine both potentiometric surfaces. Bedrock contours within the containment system are inferred from the identified bedrock wells.

POTENTIOMETRIC SURFACES May 4, 2020







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Fence (Site Boundary)
 Line of Potentiometric Surface Difference (ft)
 Upward Vertical Hydraulic Gradient
 Downward Vertical Hydraulic Gradient
 Slurry Wall

Notes:

Overburden wells within the slurry wall were used to calculate the overburden potentiometric surface. Bedrock wells outside the slurry wall were used to calculate bedrock potentiometric surface. The bedrock potentiometric surface was subtracted from the overburden surface to produce the inferred vertical hydraulic gradient.

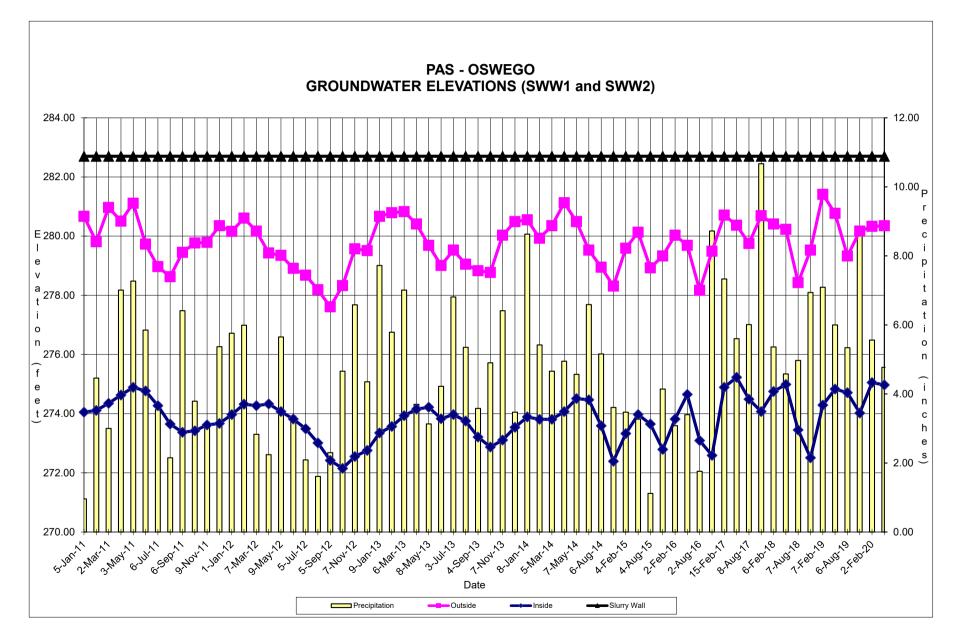
Negative gradient values indicate an upward hydraulic gradient.

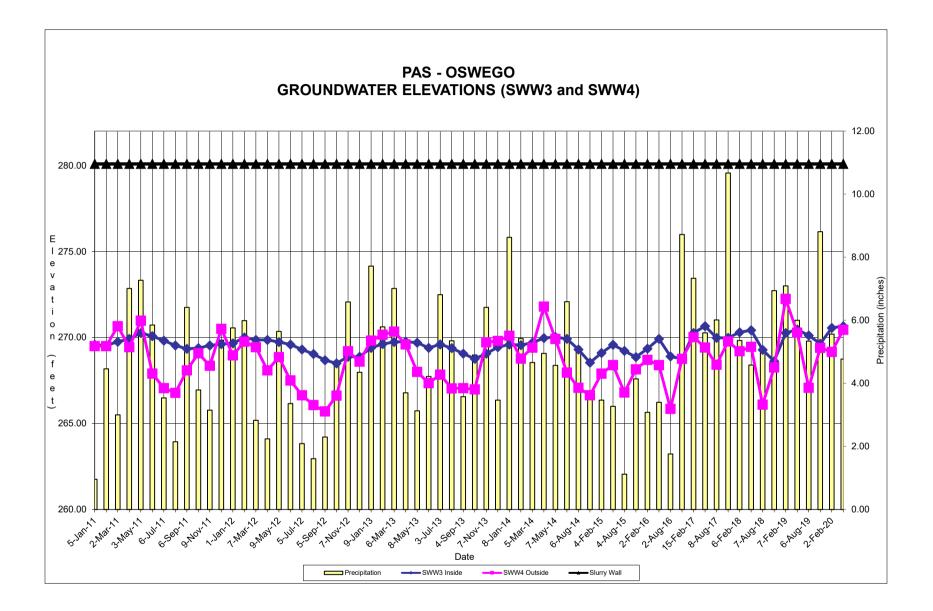
INFERRED VERTICAL HYDRAULIC GRADIENT - May 4th, 2020



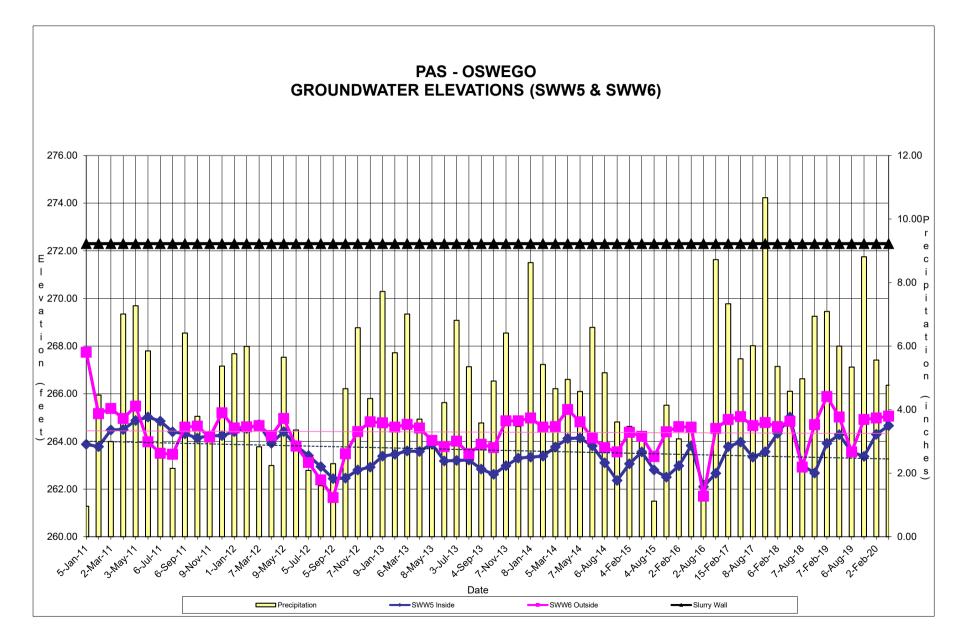


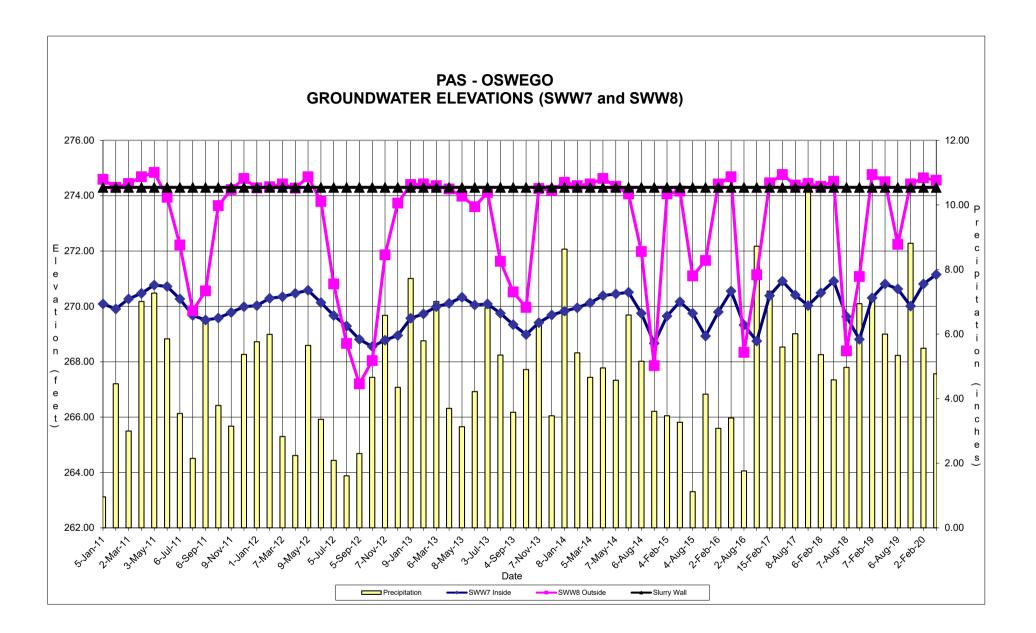
I-B SLURRY WALL

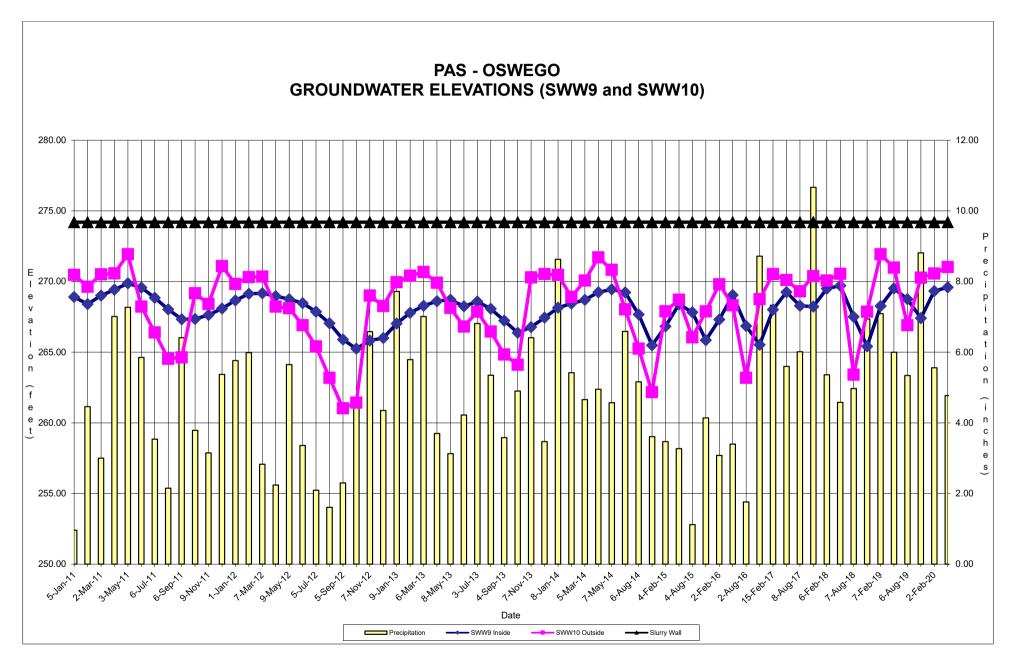




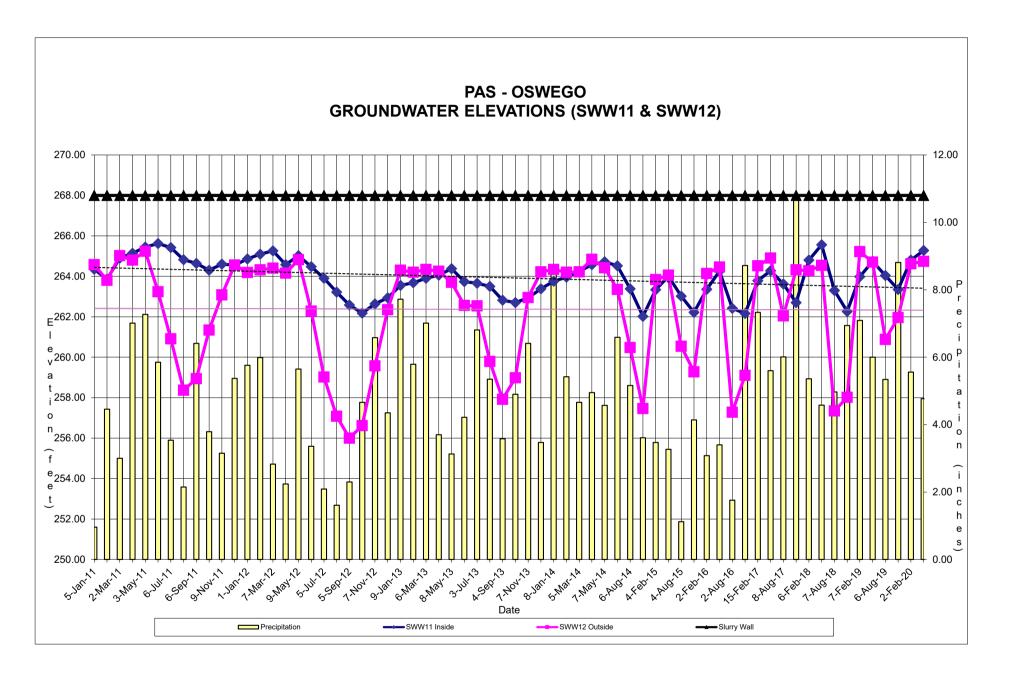
Prepared by de maximis, inc. 7/27/2020



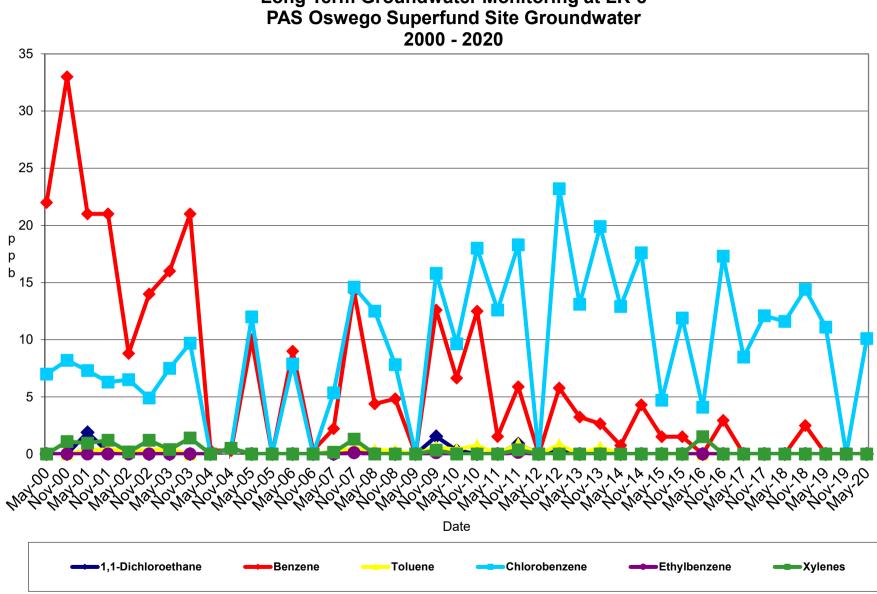




Prepared by de maximis, inc. 7/27/2020

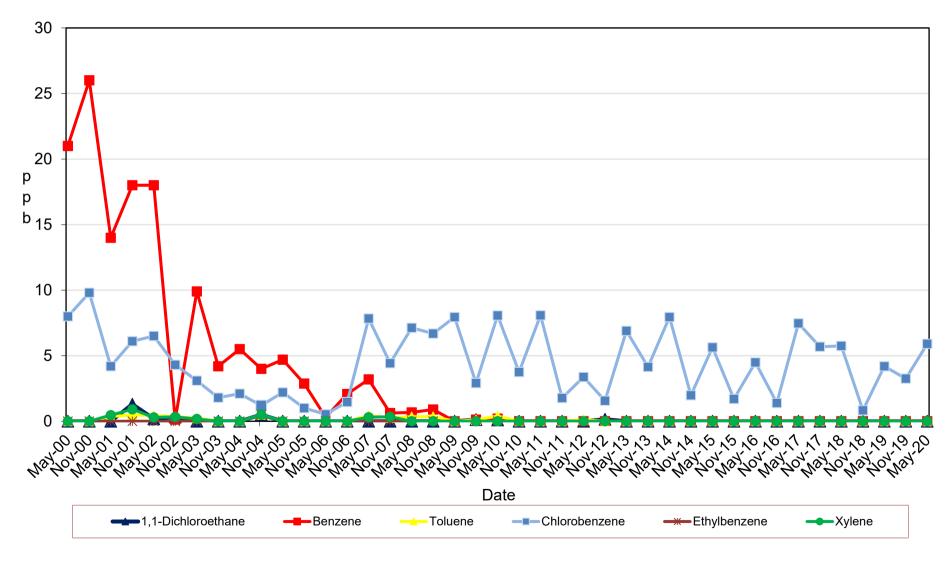


I-C GRAPHS

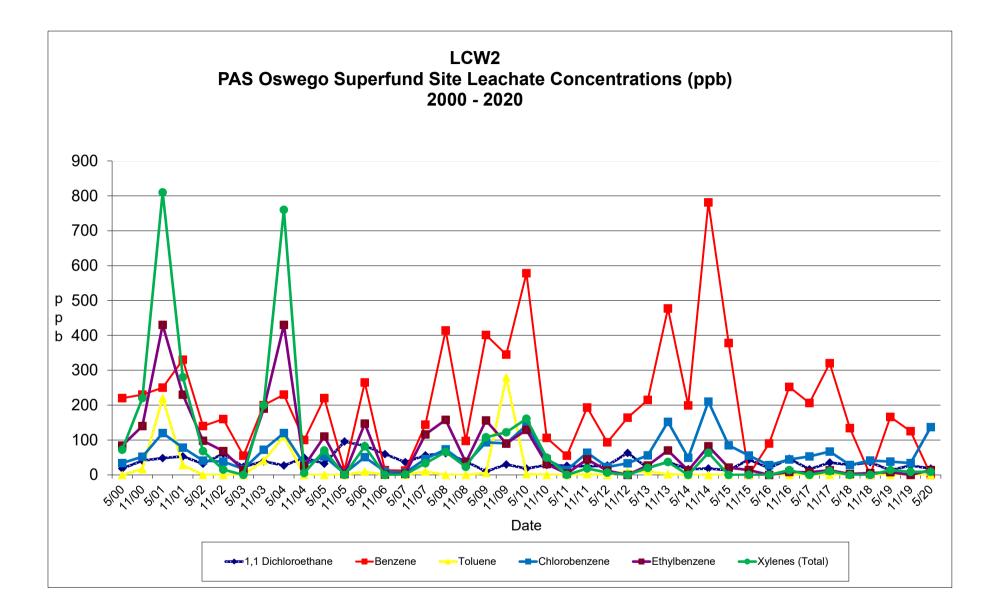


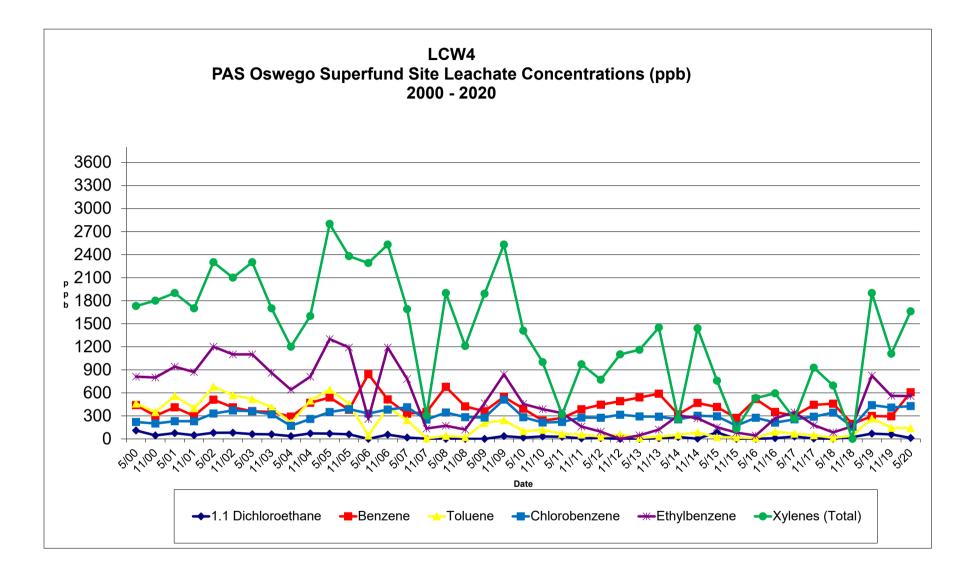
Long Term Groundwater Monitoring at LR-8

Long Term Groundwater Monitoring at M-21 PAS Oswego Superfund Site Groundwater 2000 - 2020



LCW GRAPHS

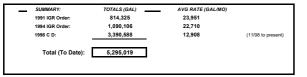




I - D TABLES

TABLE 1 HISTORICAL LEACHATE REMOVAL SUMMARY (Gallons) Pollution Abatement Services Superfund Site Oswego, New York

r	9	1 IGR Ord	er			94 IGR Order				98 Conse	nt Decree																				
Month	1992	1993	1994	1994	1995	1996	1997	1998	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Jan		20,170	30,067		25,445	25,441	25,972	21,485		9,979	15,706	10,506	9,751	10,537	9,962	10,472	9,972	9,683	9,503	20,184	10,918	10,000	10,005	10,000	10,000	10,000	10,000	10,010	10,000	10,500	10,000
Feb	18,937	20,283	29,661		25,830	23,457	22,316	12,924		16,056	9,687	10,294	10,444	9,904	9,899	10,300	10,030	9,620	9,656	11,200	11,293	10,010	10,000	10,000	10,000	10,000	10,000	10,005	10,000	10,500	10,000
Mar	20,314	20,347	29,602		24,852	25,098	24,257	25,455		15,785	8,927	10,484	10,307	9,896	10,573	10,149	9,812	0	9,500	20,125	11,000	10,000	10,000	10,000	10,000	10,000	10,000	10,005	10,000	10,500	10,000
Apr	20,140	30,403	29,051		22,815	22,187	26,793	26,009		28,110	9,352	19,609	8,463	10,211	9,765	9,947	9,795	10,058	8,575	19,600	10,995	10,010	10,000	10,000	10,000	10,125	10,000	10,005	10,000	10,500	10,000
May	20,620	30,803	29,199		23,690	23,718	24,840	23,935		13,566	26,160	10,158	8,868	10,117	10,503	10,215	9,743	9,693	7,712	20,047	11,000	10,020	20,000	20,000	20,000	20,200	20,000	20,005	20,000	20,000	20,000
Jun	20,030	30,244	20,481		24,586	23,924	23,830	20,052		20,685	25,292	10,055	9,822	10,518	10,105	10,193	9,885	10,110	9,474	19,000	10,950	10,005	20,000	20,000	20,000	20,400	20,000	20,005	20,000	20,000	20,000
Jul	20,270	31,069	20,655		23,450	25,402	25,340	20,411		10,121	20,416	10,470	10,255	10,197	10,292	10,100	9,902	9,472	10,144	18,873	0	10,000	20,000	20,000	20,130	20,700	20,000	20,005	20,500	20,000	1
Aug	20,363	31,404	25,690		24,188	25,129	19,677	20,292		21,832	23,597	9,368	10,254	10,403	10,306	10,025	9,839	9,781	10,200	19,600	19,000	10,020	20,000	20,000	20,000	20,200	20,130	20,005	20,500	20,000	
Sep	20,807	31,232	25,677		18,343	21,514	20,417	20,520		10,255	20,407	10,473	9,907	10,566	10,456	9,672	9,499	9,616	10,000	19,000	12,800	20,005	20,000	20,000	20,000	20,700	20,000	19,895	20,500	20,000	1
Oct	19,421	31,114	14,815	0	23,288	24,541	17,867	16,458		10,255	17,563	10,226	10,400	8,196	10,717	9,773	9,802	0	10,871	18,806	20,000	20,005	20,000	20,000	20,000	20,000	20,000	20,005	20,500	20,000	1
Nov	20,409	30,239		25,562	20,133	20,589	18,564		8,185	10,250	9,042	9,355	10,435	9,908	10,486	9,987	9,692	9,497	10,750	19,068	20,000	20,005	10,000	10,000	10,000	10,100	10,000	10,005	10,500	10,000	
Dec	20,497	30,311		25,121	22,544	22,347	19,498		10,238	10,816	10,463	9,214	9,686	10,130	10,359	9,833	9,779	9,603	10,900	11,009	20,000	10,010	10,000	10,000	10,000	10,000	10,000	10,000	10,500	10,000	1
Totals	221,808	337,619	254,898	50,683	279,164	283,347	269,371	207,541	18,423	177,710	196,613	130,212	118,592	120,583	123,423	120,666	117,750	97,133	117,285	216,512	157,956	150,090	180,005	180,000	180,130	182,425	180,130	179,950	183,000	182,000	80,000
Average					- -																										
Removal	20,164	28,135	25,490	16,894	23,264	23,612	22,448	20,754	9,212	14,809	16,384	10,851	9,883	10,049	10,285	10,056	9,813	8,094	9,774	18,043	13,163	12,508	15,000	15,000	15,011	15,202	15,011	14,996	15,250	15,167	13,333
Per Month																															1



- 1) Used CECOS Niagara Falls for lechate treatment/disposal beginning in May 1996 DuPont Deepwater used for treatment/disposal prior to May 96.
- 2) BBLES completed removal work at the end of July 2000; OBG began in August 2000.
- 3) Leachate collection well LCW4 pumped per 11/15/99 LCW4 pumping protocol as approved by EPA.
- 4) Leachate disposed at Clean Harbors facilities at Bristol CT from Mar05 to Oct07 and Baltimore MD from Nov07 to Jun07.
- 5) Leachate disposed at the Auburn Watewater Treatment Plant in Auburn, NY starting Jul 31 2008 to present.
- 6) Leachate disposed at the City of Oswego Wastewater Treatment Plant in Oswego, NY starting October 28, 2010 to present.

Table 2

PAS Site Oswego, New York

<u>Consent Decree</u> Performance Standards

Volatile Organic Compounds in Ground Water and Leachate										
Constituent	Analysis	Performance Standard ug/L								
Benzene	8260B	0.7								
Chlorobenzene	8260B	5								
1,1-Dichloroethane	8260B	5								
Ethylbenzene	8260B	5								
Toluene	8260B	5								
Xylenes	8260B	5								

Notes:

1. ug/L = micrograms per liter which equates to parts per billion (ppb).

TABLE 3 PAS OSWEGO SUPERFUND SITE

ADDITIONAL BEDROCK GROUNDWATER MONITORING RESULTS

	Perf Std					Additional	monitoring v	vell MW-22					Additio	nal mon wel	I MW-23						Additiona	I monitoring	well OD-3						
LTM CONSTITUENT	(ug/l)	Apr 06	May 06	May 09	May 14	Nov 14	May 15	Nov 15	May 16	Nov 16	Nov 17	Apr 18	Apr 06	May 06	May 09	Apr 06	May 06	May 14	Nov 14	May 15	Nov 15	May 16	Nov 16	May 17	Apr 17	Nov 17	May-18	Nov-18	Nov
enzene	0.7	0.12J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	1.25	ND	0.85	ND	ND	ND	ND	1.27	0.2
hlorobenzene	5	1J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11J	ND	ND	26.3	ND	19.2	ND	16.5	ND	ND	ND	ND	16.3	10
1-Dichloroethane	5	ND	0.14J	ND	1.27	ND	0.12J	0.30J	0.30J	0.30J	0.30J	0.30J	0.86	0.9	0.82	ND	ND	ND	ND	ND	0.13J	ND	0.5	ND	ND	ND	ND	ND	N
hylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	N
oluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16J	ND	ND	ND	0.31	ND	0.26J	ND	ND	ND	ND	0.28	0.1

NOTES: 1. Additional downgradient bedrock wells M-22, M-23 and OD-3 monitored during April and May 2006 pursuant to January 25, 2006 letter to EPA and EPA approval letter dated February 2, 2006. M-22 and OD-3 sampled in 2014 and 2015 pursuant to March 21, 2014 letter and EPA approval. Sampling of MW-22, LR-6 and OD-3 will be sampled in Fall 2022 to allow for use in EPA 5 yr review. 2. All results ug/L

ATTACHMENT II

ACTIONS COMPLETED

II - A 3RD QUARTER REPORT 2019



<u>QUARTERLY PROGRESS REPORT – 3rd QUARTER 2019</u> Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: Pollution Abatement Services Site Oswego, New York

PERIOD COVERED: July – September (3rd Quarter) 2019

ACTIONS TAKEN DURING QUARTER:

- Leachate removal and site maintenance and monitoring activities were conducted at the Pollution Abatement Services (PAS) site (Site), in Oswego, NY by OBG Operations LLC (OBG) consistent with the PAS Site Operation, Maintenance and Long-term Monitoring Plan (Work Plan).
- A total of 60,000 gallons of leachate were removed from the Site during the period of July, August, and September 2019. The specific quantities removed are 20,000 gallons in July, 20,000 gallons in August and 20,000 gallons in September. Details of the leachate removal for each month, along with historical leachate removal documentation are described in this progress report.
- During the months of July September 2019, leachate was pumped monthly from the PAS Site. The leachate was pumped into the City of Oswego East Side Wastewater Treatment Plant in accordance with City of Oswego Industrial User Permit no. 6-2019-20.
- Quarterly groundwater elevation monitoring was performed on August 6, 2019. Quarterly groundwater elevation monitoring results for the SWW- series monitoring wells (SWW-1 through SWW-12), leachate collection wells (LCW-1 through LCW-4), M-series wells (M-21 through M-23), LR-series wells (LR-2, 3, 6 and 8), LD-series wells (LD-3, 4, 5, 6, and 8), along with wells OS-1, OS-3, OI-1, OD-3 and LS-6 were recorded on the Pre-Pumping Well Monitoring Level Form. (Attachment A-1)
- Site maintenance activities were conducted monthly in combination with the monthly leachate removal event. The Site Inspection Checklist was used to document the land cap, leachate discharge system, leachate collection system and general Site conditions. (Attachment A-2) Monthly Site maintenance activities included the following:
 - Inspected the perimeter security fence of the Site. No discrepancies were reported at the time of the inspection.
 - The Site single French drainage system and two (2) concrete troughs were visually inspected and cleared of grass. No discrepancies were reported at the time of the inspection.
 - Visually inspected the Site slurry-wall containment vegetated cap for signs of burrowing vermin or surface anomalies. A woodchuck was reported under the shed during July and August inspections but was absent in September.
 - Visually inspected the leachate collection system pumping equipment to verify proper operation. The field technician inspected each pump control panel to ensure control



systems were generally free of rodents, insects, and were properly operating. The leachate holding tank was visually inspected for integrity, as were the leachate tanks steel protective roof and wood structure.

- The Site wooden utility shed and leachate pumping equipment, including centrifuge discharge pump, flow meter, suction hose, pump oils levels, heat trace power panel, interior lighting, exterior and interior shed structure, and main power distribution panel were inspected. No discrepancies were reported at the time of the inspection.
- On July 3, August 6, and September 11, 2019, OBG performed the monthly pre-pumping collection system inspection for leachate collection wells LCW-1, 2, 3 & 4, along with inspection of the leachate discharge pumping system. Observations were recorded on the Site Inspection Checklist. In advance of each leachate removal event, OBG informed the City of Oswego POTW of the anticipated discharge. (Attachment A-2)
- Upon completing the monthly leachate collection system inspections, OBG manually energized the four leachate collection pumps, identified as LCW-1, LCW-2, LCW-3, and LCW-4, in order to pump the planned volume of leachate into the leachate collection tank. The run time from each leachate collection pump, along with the leachate tank level taken upon completion of well pumping, was recorded on the Leachate Disposal Checklist. (Attachment A-3)
- During the months of July, August, and September 2019, OBG pumped a combined total of 60,000 gallons of leachate from LCW 1, 2, 3 & 4 into the leachate collection tank and then then into the City of Oswego POTW. The volume and flow rate of each leachate discharge was recorded onto the Leachate Disposal Checklist, as was leachate water pH, and temperature. The amount discharged was recorded onto the Leachate Disposal Checklist. No leachate was shipped to Auburn New York during the period. Therefore, no bill of lading was generated in this period. (Attachment A-3)
- Upon completing each monthly leachate discharge the tank suction hoses were placed back into the leachate hold tank and the leachate pump system was shut down and prepared for storage. The concrete leachate hold tank was secured, as was the wooden maintenance shed. Upon the completion of monthly Site activities, the Site metal access gates were closed and padlocked.
- The PAS Oswego Site quarterly discharge report for the 3rd quarter of 2019 for the City of Oswego was submitted on October 7, 2019 in accordance with Permit 6-2019-20. The quarterly report to the City of Auburn was submitted on October 2, 2019. The quarterly reports for Auburn do not follow annual quarters. Therefore, the quarterly report for Auburn included June, July, and August 2019. (Attachment A-4)

DOCUMENTATION OF REMOVAL ACTIVITIES FOR PREVIOUS QUARTER



- The Groundwater Pre-Pumping Well Monitoring Level Form for August 6, 2019 is attached to this report. (Attachment A-1)
- The Site Inspection Checklist for July 3, August 6 and September 11, 2019 are attached to this report. (Attachment A-2)
- The Leachate Disposal Checklist for the July 3, August 6 and September 11, 2019 are attached to this report. (Attachment A-3)
- The PAS POTW Quarterly Discharge reports submitted on October 2, 2019 to the City of Auburn and the report submitted to the City of Oswego on October 7, 2019 are attached to this report. (Attachment A-4)

A – 1 GROUNDWATER ELEVATION DATA

O'Brien & Gere Operation (O'Brien & Gere) PAS Oswego Site Oswego, New York Pre-Pumping Well Monitoring Levels

	8-6-		Range Verific	Technician -	MARTI	Monthly C	Neck-	Measure	ments	Month -	August	2019
Well Number	Riser Elevation	Average Well Level	Low Well Level	High Well Level	Well Level (1st) Check	Well Level	Well With (based on hi range	hin Range	Well Level Check (3rd) (If "NO" & well is not within targeted range)		NOTES	
SWW1	289.33	10.51	9.58	11.16	10.00	10,00	V					
SWW2	289.37	15.84	14.88	16.36	14.66	14.66		V	14,66			_
SWW3	286.50	17.10	16.52	17.60	16.38	16.38	1000	V	16.38			
SWW4	283.60	16.76	15.18	18.00	16,52	16.52	V	1	1			
SWW5	277.02	13.31	12.26	14.92	13.46	13,46	V			1		
SWW6	273.06	9.67	8.40	11.36	9.50	9.50	~					
SWW7	277.93	8.27	7.52	8.64	7.30	7,30		1	7.30			_
SWW8	278.24	7.14	3.86	9.90	6.00	6.00	V					
SWW9	285.55	17.76	17.26	18.70	16.80	16.80		V	16.80			
SWW10	280.43	14.93	11.12	17.24	13.52	13.52	1			12		
SWW11	273.50	9.45	8.42	11.08	9.46	9.46	1			1		
SWW12	272.82	13.27	10.78	15.74	11.94	11.94	V					
LCW-1	272.21	9.11	7.50	10.84	9.20	9.20	V					
LCW-2	274.44	11.36	9.76	13.08	11,46	11.46	V					
LCW-3	284.36	17.99	17.71	18.50	17.84	17,84	V					
LCW-4	285.70	17.76	17.10	18.48	16,70	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		V	16,70			
OS-1	272.10	12.95	9.82	16.48	12,10	12.10						
01-1	272.00	13.30	10.20	16.08	12.86	12,86	V	1				
OS-3	277.89	16.73	15.42	18.40	15,90	1590	V					
OD-3	277.85	16.57	15.24	18.20	15.84	15.84	V					
LD-3	278.62	7.30	4.22	10.26	838		V					
LD-4	279.25	13.94	11.38	16.22	12.90		V	1	1			-
LD-5	272.94	13.87	11.28	16.38	12.56		/			- i		
LS-6	274.14	14.05	12.16	16.32	13,46							
LD-6	274.03	13.35	11.64	15.80	12,94			1				
LD-8	272.83	9.88	8.54	11.28	9.64			<u> </u>				_
LR-2	289.85	14.59	13.55	15.70	14,42			1				
LR-3	278.06	9.55	7.68	11.40	8.66		-					
LR-6	274.39	11.76	10.32	13.70	11.34			1				
LR-8	273.42	11.29	10.16	12.88	11.18		V					
M-21	272.32	10.90	9.72	12.42	11.06	1 1 1 1	V	· · · ·				
M-22	273.88	11.72	10.32	13.66	11,38					1		
M-23	270.49	13.57	12.42	14.54		13.54	-					

A – 2 SITE INSPECTION CHECKLIST

Site Inspection Checklist (V2)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 7-3-19

Time_____7:45

Field Technician <u>MARTIN Koenwe</u>cke

Weather Conditions <u>Summy 70</u>

	Che	ck V	(tasks completed in each event)
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
Land Cap			
Signs of burrowing vermin	~		UNDER SHED - WOOD CHUCK
Land cap irregularities (note			
anomaly)	1		OK
French drainage system clear and			
function able	1		Yes
Concrete trough clear and			
function able	V		OK
Leachate Discharge System			
City of Oswego sanitary discharge			
valve positioned "Open"	V		Yes
Discharge Pump inspected &			
operational	V		Yes
Discharge pump oil level verified			
prior to use.	V		Yes
Discharge pump drained of			
residual water (drained upon	-		
completion of monthly discharge)	V		Yes
Heat trace system operational &			
verified in the "ON" position			
(Applicable Oct - May)	V		off
Flow totalizer operational. Flow			
readings recorded onto			
"Leachate Discharge Form"	v		Yes
Leachate Collection System	n an Ala Na Bh		
Leachate holding tank visually			
inspected for structural integrity			OK

1

7-3-19

* .			
Leachate holding tank metal roof			
inspected for structural integrity	1		OK
Leachate tank access doors			
locked (post pump out)	14		Yes
Pump power panel(s) secured		5	
Monitoring Wells (MW)			
Locks installed	~		Yes
MW's marked & identifiable	V		OK
General Site Condition			
Trees & brush cleared off security	· · ·		
fence	V		WORK IN PROGRESS
Perimeter security fence intact &			
free of damage	14		OK
Site access driveway inspected &			4
free on snow & damage	V		Yes
Security access gates / Padlock &			
chain serviceable	V	{	Yes
Site gate signage intact	V		Yes
Interior & exterior of utility			
storage shed inspected for			
damage & secure with locks	V		OK
Fire extinguisher serviceable,			
inspected, and inspection			i i i i i i i i i i i i i i i i i i i
recorded	V		Yes
Spill control material inspected &			N
adequate	1		Yes
PPE available and utilized as			
required	V		Yes
Emergency contact information			
posted within shed	V		Yes
Additional remarks (use separate s	heét	is re	auired)
PUMDED 20,000 GAL			eactivity To City of Oswego Pota
web whacker aroun	1774	Her	
Site Neers MOWIN		500	ad 3
	- /		
	····		· · · · · · · · · · · · · · · · · · ·

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Site Inspection Checklist (V2)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 8-6-19

Time 7. \$5

Field Technician MARTIN Koennecke

Weather Conditions <u>Summer</u> 40" V/Thurber Storm S

Check V (tasks completed in each event) **Inspection Features** Remarks (indicate accomplishment of each maintenance task) Monthly Quarterly Land Cap Signs of burrowing vermin V WEODCHUCK UNDER SHED Land cap irregularities (note) anomaly) 1 OK French drainage system clear and OK function able 1 Concrete trough clear and OK function able V Leachate Discharge System City of Oswego sanitary discharge Yes valve positioned "Open" V Discharge Pump inspected & V Yes operational Discharge pump oil level verified Yes prior to use. V Discharge pump drained of residual water (drained upon Yes V completion of monthly discharge) Heat trace system operational & verified in the "ON" position off V (Applicable Oct - May) Flow totalizer operational. Flow readings recorded onto Yes "Leachate Discharge Form" V Leachate Collection System Leachate holding tank visually OK V inspected for structural integrity

8-6-19

	1 1	
Leachate holding tank metal roof		(3)
inspected for structural integrity	V	OK
Leachate tank access doors		
locked (post pump out)	V	yes
Pump power panel(s) secured	V	Yes
Monitoring Wells (MW)		
Locks installed	V	Yes
MW's marked & identifiable	V	Yes
General Site Condition		
Trees & brush cleared off security		
fence	V	WORK IN FROGRESS
Perimeter security fence intact &	1.0	
free of damage	V	OK
Site access driveway inspected &		
free on snow & damage	V	Yes
Security access gates / Padlock &		103
chain serviceable	V	Yes
Site gate signage intact	V	Yes
Interior & exterior of utility		
storage shed inspected for		
damage & secure with locks	V	OK
Fire extinguisher serviceable,		
inspected, and inspection		
recorded	V	Yes
Spill control material inspected &		10-
adequate	V	Yes
PPE available and utilized as		101
required	V	Yes
Emergency contact information		
posted within shed	V	Yes

Additional remarks (use separate sheet is required) <u>PUMPED 20,000 GALLONS LEACHATE TO OSWEGO POTW</u> <u>FINISHED MOUNING SITE; QUARTERLY WELL LEVELS</u>



Site Inspection Checklist (V2)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 9-11-19

Time 7:30

Field Technician MARTIN Keenwecke

Weather Conditions PARTly Sunny 70°

	Che	ck v	(tasks completed in each event)
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
Land Cap			
Signs of burrowing vermin	-		Nome VISABLY
Land cap irregularities (note			
anomaly)	V		OK
French drainage system clear and		-	
function able	V		OK
Concrete trough clear and			
function able	V		OK
Leachate Discharge System			
City of Oswego sanitary discharge			
valve positioned "Open"	V		Yes
Discharge Pump inspected &			
operational	V		Yes
Discharge pump oil level verified			
prior to use.	V		ADDED oil
Discharge pump drained of			
residual water (drained upon			
completion of monthly discharge)	11		Yes
Heat trace system operational &			
verified in the "ON" position	1		
(Applicable Oct - May)	V		0-ff
Flow totalizer operational. Flow			·
readings recorded onto	l		
"Leachate Discharge Form"	V		Yes
Leachate Collection System			
Leachate holding tank visually	}		
inspected for structural integrity	V	1	OK

9-11-19

Leachate holding tank metal roof		
inspected for structural integrity	V	OK
Leachate tank access doors		
locked (post pump out)	V	Xes
Pump power panel(s) secured		
Monitoring Wells (MW)		
Locks installed	V	Yes
MW's marked & identifiable	1	OK
General Site Condition		
Trees & brush cleared off security		
fence	ν	WORK IN PROGRESS
Perimeter security fence intact &		
free of damage	V	OK
Site access driveway inspected &		
free on snow & damage	V	Yes
Security access gates / Padlock &		
chain serviceable	V	Yes
Site gate signage intact	~	Yes
Interior & exterior of utility		
storage shed inspected for		
damage & secure with locks	V	Ves
Fire extinguisher serviceable,		
inspected, and inspection		
recorded	V	Yes
Spill control material inspected &		
adequate	V	OK
PPE available and utilized as		
required	V	Yes
Emergency contact information		
posted within shed	V	Yes

Additional remarks (use separate sheet is required)

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AUBURN WTP PERMIT SITE INSPECTION	PUMPED 20	0.000 9AL	Legettati	To OS	vego	POTU	
TRIMMED ADVID SHED AND TACK TELLING PRINTING OF SHE	AUBLER WTP	PERMIT	Site Ins	PECTION			
THE AROUND SHE AND THINK , TUCK UN FAMILING ON SHE	TRIMMED	A ROUND S	SHED AND T	Ank . Touch	- UP	PAINTING	ORSHOD

A – 3 LEACHATE DISPOSAL CHECKLIST

OBRIEN 5 GERE

4 to 112/14

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: <u>7-3-19</u>

Time: 7:45

Field Technician MARTIN Koenneck

Weather Conditions Summy 70°

Beginning Leachate		Pi	re-Discharge	Well Pump	ing	
Hold Tank Elevation (Inches)	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10"	LCW-1	7:50	11:20	10.5"	125 GPM	
	LCW-2	7:50	11:20			
	LCW-3	7:50	8:30			
	LCW-4	7:50	9:40 /	In Ten mitten!	V pumped)	
	L	L er,	(~	Total	20,130

	Ма	onthly Le	eachate D	To the City of	Oswego)		
Discharge #	Start Time	Stop Time	рН	Тетр	Totalizer Flow Total (Start)	Totalize Flow Tot (End)	영국이 있는 아파를 수영하는 것
Discharge #1	9:10	13:10	6.8	57°	1215165	12351	5 20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	<u>.</u>	ZOMA	0	14″			
	Semi-Aı	nnual Le	achate D	ischarge S	ampling (Per the City oj	^F Oswego Permit)
	Date	Sampl Locatio		nple S ume	ample Time	рН	Temperature
Sample #1				r			<u></u>



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 9-11-19

Time: 7.30

Field Technician MARTIN Koenneckie Weather Conditions PARTy Summy 70°

Pre-Discharge Well Pumping											
Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)						
LCW-1	7:40	11:30	14"								
LCW-2	7:40										
LCW-3	7:40										
LCW-4	7:40		THILLAN	tents							
	Well # LCW-1 LCW-2 LCW-3	Pumping Well #Pump Start TimeLCW-117:40LCW-217:40LCW-317:40	Pumping Well # Pump Start Time Pump Stop Time LCW-1 11:40 11:30 LCW-2 7:40 11:30 LCW-3 17:40 8:00	Pumping Well #Pump Start TimePump Stop TimeEnding Tank ElevationLCW-117:4011:3014"LCW-217:4011:3014"LCW-317:408:0014	Pumping Well #Pump Start TimePump Stop TimeEnding Tank ElevationFlow Rate (est.)LCW-117:4011-30141LCW-2714011.30141LCW-317:408:00141						

_	IVIC	onthly Le	ego)					
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge	
Discharge #1	9:15	13:10	6.8	60°	1255165	1275165	20,000	
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum				
	85	85 20 min		16 "				
	Semi-Annual Le		achate Di	ischarge S	Sampling (Pe	er the City of Osw	vego Permit)	
	Date Sampl				ample Time	рН Те	mperature	
Compute #1	ple #1							

O'BRIEN & GERE

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 8-40-19

Time: 7:45

Field Technician MARTIN Koennecke

Weather Conditions Suna 70° W/ THUNDER STORMS

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping										
	Pumping \Vell #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)					
10.5"	LCW-1	9:20	12:15	12"							
	LCW-2	9:20	12:15								
	LCW-3	9:20	9:50								
	LCW-4	9:20	1050	INTER,	nitionly RU	N					
					Total	20,457					

	Monthly Leachate Discharge Pumping (To the City of Oswego)											
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge					
Discharge #1	10:50	14:45	6.8	55°	1235165	1255165	20,000					
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum								
	83.	Donie	0	14"								
	Semi-Ai	nnual Le	achate Di	ischarge S	Sampling (Pe	r the City of Osv	vego Permit)					
	Date	Sampl	6. The second	nple S ume	Sample Time	pH Te	mperature					
Sample #1												

A – 4 QUARTERLY POTW DISCHARGE REPORTS



450 Montbrook Lane Knoxville, TN 37919 (865) 691-5052 (865) 691-9835 FAX

October 2, 2019

Mr. Tim O'Brien Department of Municipal Utilities 35 Bradley Street Auburn, New York 13021

Re: 3rd Quarter PAS Oswego Monitoring Report 2019

Dear Mr. O'Brien,

This letter confirms that the PAS Oswego Site has not shipped or discharged any wastewater from the PAS Oswego collection system to the City of Auburn POTW during December 2017– September 2019. This has been due to the EPA allowance of an alternate disposal method.

- Cumulative gallons removed for discharge in Auburn 3rd Qtr. 2019 0
- Cumulative gallons removed for discharge in Auburn 2019 0

Since no wastewater was shipped or discharged to Auburn during the 3rd quarter of 2019, no analytical testing was required. However, we continue to perform Site maintenance and sampling activities under the Operation, Monitoring and Maintenance Program for the Site approved by EPA. The data associated with that program indicate little change in the characteristics of the Site wastewater.

Please contact me at (865) 691-5052, if you have any questions.

Sincerely, de maximis, inc.

clay mellamon

Clay McClarnon

CMC/dsr

cc: PAS Management Committee

https://demaximisinc.sharepoint.com/sites/Projects2/Shared Documents/Active/3131 - PA5/10 Permits-POTW/2019/Auburn/Auburn 3rd Qtr 2019 rpt.doc

Allentown, PA • Clinton, NJ • Greensboro, GA • Knoxville, TN • San Diego, CA Cortland, NY • Wheaton, IL • Sarasota, FL • Houston, TX • Windsor, CT • Waltham, MA

3 PAPER



450 Montbrook Lane Knoxville, TN 37919 (865) 691-5052 (865) 691-9835 FAX

October 2, 2019

Mr. Timothy L. O'Brien Industrial Pretreatment Coordinator 35 Bradley Street Auburn, NY 13021

Re: Industrial Pretreatment Program Zero Discharge Certification Statement:

Dear Mr. O'Brien

For the reporting quarter(s) of December 2017 to September 2019, I certify that for Pollution Abatement Services located in Oswego New York:

- There have been no changes to any of our processes resulting in the potential for the discharge from the process waste stream.
- 2. No discharge of process wastewater has occurred since December 7, 2017.

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 system, 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 violations.

Clay McClarnon

Name

Project Coordinator Title

October 1, 201 Date (865) 691-5052 Phone

https://demaximisinc.sharepoint.com/sites/Projects2/Shared Documents/Active/3131 - PAS/10 Permits-POTW/2019/Auburn/Auburn 3rd Qtr 2019 rpt.doc Allentown, PA • Clinton, NJ • Greensboro, GA • Knoxville, TN • San Diego, CA Cortland, NY • Wheaton, IL • Sarasota, FL • Houston, TX • Windsor, CT • Waltham, MA

PAPER



450 Montbrook Lane Knoxville, TN 37919 (865) 691-5052 (865) 691-9835 FAX

Via electronic mail

October 7, 2019

Mr. John McGrath Chief Operator Westside Wastewater Treatment Plant First Avenue & West Schuyler Streets Oswego, New York 13126 Labmanager@oswegony.org

Re: Quarterly Discharge Report – 3rd Quarter 2019 Pollution Abatement Services Site – Oswego, New York City of Oswego Wastewater Discharge Permit 6-2019-20

Dear Mr. McGrath:

This quarterly report is submitted in accordance with the City of Oswego Wastewater Discharge Permit 6-2019-20 (Permit) for discharge of leachate from the Pollution Abatement Services (PAS) Site into the City of Oswego's Eastside Wastewater Treatment Facility. This report covers the reporting period from July 2019 through September 2019.

The PAS Site discharged a total of 60,000 gallons of leachate to the Oswego sewer system during the third quarter of 2019.

Discharge to City of Oswego July 2019 - September 2019 60,000 gallons

If you need additional information, please call me at (865) 691-5052.

Sincerely, de maximis, inc.

Clay Mc Clam

Clay McClarnon

Attachments:

CC:

Dan Ramer – Chief Operator Eastside Wastewater Treatment Plant Robert Johnson – City Engineer PAS Oswego Site Management Committee

PAPER

TABLE 1- PAS OSWEGO SITE QUARTERLY REPORT FOR CITY OF OSWEGO (2019)LEACHATE DISCHARGE TO OSWEGO EASTSIDE WASTEWATER TREATMENT FACILITY

(Oswego SIU Wastwater Discharge Permit No.6-2019-20)

Discharge Quarter	4Q 2	018	1Q 2	019	2Q 2	019	30 2	2019
	Date Discharged	Gallons Discharged	Date Discharged	Gallons Discharged	Date Discharged	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged
	10/3/18	20,500	1/8/19	10,500	4/2/19	10,500	7/3/19	20,000
	54/6.8		46/6.8		44/6.8		57/6.8	
	11/7/18	10,500	2/11/19	10,500	5/8/19	20,000	8/6/19	20,000
	54/6.8		42/6.8		46/6.8		55/6.8	
	12/4/18	10,500	3/5/19	10,500	6/4/19	20,000	9/11/19	20,000
	52/6.8		42/6.8		50/6.8		60/6.8	
Total Discharged		41,500		31,500		50,500		60,000
Date Sampled*	11/15/2018					4/2/2019		
Analytes Antinomy Arsenic Beryllium Cadmium Chromium (total) Copper Cyanide Lead Mercury Nickel Selenium Silver Thallium Zinc	mg/L ND <0.010					mg/L ND <0.0025		mg/L
VOC** 1,1,1 TCA MeCL PCE Toluene TCE SVOC** BOD 5 TSS Phenolics pH	0.00117 ND <0.0001 0.00804 0.0112 0.00319 ND 11 36 ND <0.010 6.7					14 37 ND <0.034 6.7		

* Semi-annual sampling of PAS leachate discharge conducted in accordance with SIU Wastewater Discharge Permit No.6-2019-20.

** Analytes included for permit pollutant analysis performed every three years

Analyte values in bold exceed limit

ATTACHMENT I

.

OBRIEN 5 GERE

4 to 112/14

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: <u>7-3-19</u>

Time: 7:45

Field Technician MARTIN Koenneck

Weather Conditions Summy 70°

Beginning Leachate	Pre-Discharge Well Pumping											
Hold Tank Elevation (Inches)	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)						
10"	LCW-1	7:50	11:20	10.5"	125 GPM							
	LCW-2	7:50	11:20									
	LCW-3	7:50	8:30									
	LCW-4	7:50	9:40 /	In Ten mitten!	V pumped)							
	L	L er,	(~	Total	20,130						

	Monthly Leachate Discharge Pumping (To the City of Oswego)									
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalize Flow Tot (End)	한국의 문서대학교 전경 문국			
Discharge #1	9:10	13:10	6.8	57°	1215165	12351	05 20,000			
Pump Info	Flow Rate (GPM)	te Prime Pump Pump Time Pressure Vacuum								
	<u>.</u>	ZOMA	O	14"						
	Semi-Aı	nnual Le	achate Di	ischarge S	ampling (Per the City of	Oswego Permit)			
	Date	Sampl Locatio			ample Time	рН	Temperature			
Sample #1				,						

O'BRIEN & GERE

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 8-40-19

Time: 7:45

Field Technician MARTIN Koennecke

Weather Conditions Suna 70° W/ THUNDER STORMS

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping										
	Pumping \Vell #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)					
10.5"	LCW-1	9:20	12:15	12"							
	LCW-2	9:20	12:15								
	LCW-3	9:20	9:50								
	LCW-4	9:20	1050	INTER,	nitionly RU	N					
					Total	20,457					

	Monthly Leachate Discharge Pumping (To the City of Oswego)											
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge					
Discharge #1	10:50	14:45	6.8	55°	1235165	1255165	20,000					
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum								
	83.	Donie	0	14"								
	Semi-Ai	nnual Le	achate Di	ischarge S	Sampling (Pe	r the City of Osv	vego Permit)					
	Date	Sampl	6. The second	nple S ume	Sample Time	pH Te	mperature					
Sample #1												



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 9-11-19

Time: 7.30

Field Technician MARTIN Koenneckie Weather Conditions PARTy Summy 70°

Pre-Discharge Well Pumping											
Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)						
LCW-1	7:40	11:30	14"								
LCW-2	7:40										
LCW-3											
LCW-4	7:40		THILLAN	tents							
	Well # LCW-1 LCW-2 LCW-3	Pumping Well #Pump Start TimeLCW-117:40LCW-217:40LCW-317:40	Pumping Well # Pump Start Time Pump Stop Time LCW-1 11:40 11:30 LCW-2 7:40 11:30 LCW-3 17:40 8:00	Pumping Well #Pump Start TimePump Stop TimeEnding Tank ElevationLCW-117:4011:3014"LCW-217:4011:3014"LCW-317:408:0014	Pumping Well #Pump Start TimePump Stop TimeEnding Tank ElevationFlow Rate (est.)LCW-117:4011-30141LCW-217:4011.30141LCW-317:408:00141						

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)										
	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge				
Discharge #1	9:15	13:10	6.8	60°	1255165	1275165	20,000				
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum							
	85	20 m.n	O	16 "							
	Semi-Ar	nnual Le	achate Di	ischarge S	Sampling (Pe	er the City of Osw	vego Permit)				
	Date	Sampl			ample Time	рН Те	mperature				
Sample #1											

II - B 4TH QUARTER REPORT 2019



<u>QUARTERLY PROGRESS REPORT – 4th QUARTER 2019</u> Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: Pollution Abatement Services Site Oswego, New York

PERIOD COVERED: October – December (4th Quarter) 2019

ACTIONS TAKEN DURING QUARTER:

- Leachate removal and site maintenance and monitoring activities were conducted at the Pollution Abatement Services (PAS) site (Site), in Oswego, NY by OBG Operations LLC (OBG) consistent with the PAS Site Operation, Maintenance and Long-term Monitoring Plan (Work Plan).
- A total of 40,000 gallons of leachate were removed from the Site during the period of October, November, and December 2019. Specific quantities of leachate removed included 20,000 gallons in October, 10,000 gallons in November and 10,000 gallons in December. Details of the leachate removal for each month, along with historical leachate removal documentation are described in this progress report.
- During the months of October December 2019, leachate was pumped monthly from the PAS Site. The leachate was pumped into the City of Oswego East Side Wastewater Treatment Plant in accordance with City of Oswego Industrial User Permit no. 6-2019-20.
- Quarterly groundwater elevation monitoring was performed on November 5, 2019. Quarterly groundwater elevation monitoring results for the SWW- series monitoring wells (SWW-1 through SWW-12), leachate collection wells (LCW-1 through LCW-4), M-series wells (M-21 through M-23), LR-series wells (LR-2, 3, 6 and 8), LD-series wells (LD-3, 4, 5, 6, and 8), along with wells OS-1, OS-3, OI-1, OD-3 and LS-6 were recorded on the Pre-Pumping Well Monitoring Level Form. (Attachment B-1)
- Site maintenance activities were conducted monthly in combination with the monthly leachate removal event. The Site Inspection Checklist was used to document the land cap, leachate discharge system, leachate collection system and general Site conditions. (Attachment B-2) Monthly Site maintenance activities included the following:
 - Inspected the perimeter security fence of the Site. No discrepancies were reported at the time of the inspection. (Attachment B-8)
 - Site entrance and roadways were cleared of snow prior to the pumping event in December.
 - The Site single French drainage system and two (2) concrete troughs were visually inspected and cleared of accumulated grass. No discrepancies were reported at the time of the inspection.



- Visually inspected the Site slurry-wall containment vegetated cap for signs of burrowing vermin or surface anomalies. No other discrepancies were reported at the time of the inspection.
- Visually inspected the leachate collection system pumping equipment to verify proper operation. The field technician inspected each pump control panel to ensure control systems were generally free of rodents, and insects, and were properly operating. The leachate holding tank was visually inspected for integrity, as were the leachate tanks steel protective roof, and wood structure. No discrepancies were reported at the time of the inspection.
- The Site wooden utility shed and leachate pumping equipment, including centrifuge discharge pump, flow meter, suction hose, pump oils levels, heat trace power panel, interior lighting, exterior and interior shed structure and main power distribution panel were inspected. No discrepancies were reported at the time of the inspection.
- On October 8, November 6, and December 3, 2018, OBG performed the monthly prepumping collection system inspection for leachate collection wells LCW-1, 2, 3 & 4, along with inspection of the leachate discharge pumping system. Observations were recorded on the Site Inspection Checklist. (Attachment B-2)
- Upon completing the monthly leachate collection system inspections, OBG manually energized the four leachate collection pumps, identified as LCW-1, LCW-2, LCW-3, and LCW-4, in order to pump the planned volume of leachate into the leachate collection tank. The run time from each leachate collection pump, along with the leachate tank level taken upon completion of well pumping, was recorded on the Leachate Disposal Checklist. In advance of each leachate removal event, OBG informed the City of Oswego POTW of the anticipated discharge. (Attachment B-3)
- During the months of October, November, and December 2019, OBG pumped a combined total of 40,000 gallons of leachate from LCW 1, 2, 3 & 4 into the leachate collection tank and then into the City of Oswego POTW. The volume and flow rate of each leachate discharge was recorded onto the Leachate Disposal Checklist, as was leachate water pH, and temperature. The amount discharged was recorded onto the Leachate Disposal Checklist. No leachate was shipped to Auburn New York during the period. Therefore, no bill of lading was generated in this period. (Attachment B-3)
- Upon completing each monthly leachate discharge the leachate discharge pump and tank suctions hoses were placed back into the leachate hold tank and the leachate pump system was shut down and prepared for storage. The concrete leachate hold tank was secured, as was the wooden maintenance shed. Upon the completion of monthly Site activities, the Site metal access gates were closed and padlocked.
- On November 7, 2019, OBG performed the semi-annual groundwater sampling for monitoring wells LR-8, M-21, and leachate collection wells LCW2 and LCW4. Based on the 2019 Annual Report, well OD-3 was included in the sampling event. Sampling activities for long term monitoring wells were conducted using low-flow sampling protocols described in the Work Plan. Samples were preserved using industry standard methods, and delivered to Life Science Laboratories in East Syracuse, NY for analysis. (Attachment B-4)



- On November 7, 2019, the semiannual discharge sample required under the City of Oswego POTW permit was taken and hand delivered to Life Science Laboratories in East Syracuse, NY for analysis the data was included in the Oswego 4th quarter discharge report.
- The PAS Oswego Site quarterly discharge report for the 4th quarter of 2019 for the City of Oswego was submitted on January 10, 2020 in accordance with Permit 6-2019-20. The quarterly report to the City of Auburn was submitted on January 10, 2020. (Attachment B-5)
- The Institutional Control inspection was performed on November 5, 2019. This included interviews with the Industrial Precision Products facility manager and review of City and County records. (Attachment B-6)
- On November 7, 2019, OBG performed sampling of per and polyfluorinated compounds and 1,4 Dioxane in accordance with the approved sampling plan. The data are presented in the Emerging Contaminant report submitted on March 4, 2020. (Attachment-B7)

DOCUMENTATION OF REMOVAL ACTIVITIES FOR PREVIOUS QUARTER

- The Groundwater Pre-Pumping Well Monitoring Level Form for November 5, 2019 is attached to this report. (Attachment B-1)
- The Site Inspection Checklist for October 8, November 5, and December 3, 2019 are attached to this report. (Attachment B-2)
- The Leachate Disposal Checklist for the October 8, November 6 and December 3, 2019 are attached to this report. (Attachment B-3)
- The validated lab report for the Semi-annual Groundwater sampling of LR-8, M-21 and the sampling for, LCW2, LCW4 and OD-3 performed on November 5, 2019 is attached to this report. (Attachment B-4)
- The PAS Quarterly Discharge reports submitted on January 10, 2020 to the City of Oswego and the report submitted to the City of Auburn on January 10, 2020 are attached to this report. (Attachment B-5)
- The Institutional Control inspection and record review is attached. (Attachment B-6)
- The Emerging Contaminant report submitted on March 4, 2020. (Attachment B-7)

B – 1 GROUNDWATER ELEVATION DATA

O'Brien & Gere Operation PAS Site Oswego, New York Pre-Pumping Monitoring Well Levels

5-Nov-19

Well	Ground	Riser	Nov-19				Within Rar	nge?		Ground-Water
Number	Elevation	Elevation	Reading 1	Reading 2	Reading 3	Average	Low	High	Y / N	Elevation
SWW1	286.2	289.33	9.16	9.16	9.16	9.75	8.62	11.62	Yes	280.17
SWW2	286.3	289.37	15.35	15.35	15.35	16.38	15.3	17.4	Yes	274.02
SWW3	286	286.5	16.86	16.86	16.86	17.35	16.52	17.96	Yes	269.64
SWW4	282.9	283.6	14.2	14.2	14.2	15.02	13.44	17.12	Yes	269.4
SWW5	275.9	277.02	13.65	13.65	13.65	13.6	12.55	14.66	Yes	263.37
SWW6	270.9	273.06	8.14	8.14	8.14	8.73	7.95	9.58	Yes	264.92
SWW7	273.3	277.93	7.92	7.92	7.92	8.75	7.9	9.43	Yes	270.01
SWW8	275.7	278.24	3.82	3.82	3.82	5.91	3.8	11.38	Yes	274.42
SWW9	283.3	285.55	18.14	18.14	18.14	18.74	17.32	20.06	Yes	267.41
SWW10	279.3	280.43	10.16	10.16	10.16	12.63	9.71	18.65	Yes	270.27
SWW11	271	273.5	10.15	10.15	10.15	9.98	8.81	11.48	Yes	263.35
SWW12	270.2	272.82	10.86	10.86	10.86	11.52	8.5	15.36	Yes	261.96
LCW-1	271.4	272.21	10.02	10.02	10.02	9.72	8.2	10.98	Yes	262.19
LCW-2	272.6	274.44	12.26	12.26	12.26	11.97	10.44	13.22	Yes	262.18
LCW-3	283.3	284.36	17.82	17.82	17.82	18.09	17.4	19.56	Yes	266.54
LCW-4	283.8	285.7	17.56	17.56	17.56	18.78	16.64	19.8	Yes	268.14
OS-1	269.63	272.1	11.9	11.9	11.9	12.09	8.4	16.6	Yes	260.2
0I-1	269.14	272	12.52	12.52	12.52	12.65	11.1	15.26	Yes	259.48
OS-3	274.63	277.89	15.22	15.22	15.22	16.04	13.56	18.58	Yes	262.67
OD-3	274.96	277.85	15.02	15.02	15.02	15.88	13.4	18.42	Yes	262.83
LD-3	275.8	278.62	4.18	4.18	4.18	6.63	4.18	11.77	No	274.44
LD-4	276.3	279.25	10.6	10.6	10.6	12.54	9.85	17.15	Yes	268.65
LD-5	270.02	272.94	11.82	11.82	11.82	12.57	8.8	15.86	Yes	261.12
LS-6	271.4	274.14	12.74	12.74	12.74	12.99	9.56	15.78	Yes	261.4
LD-6	270.09	274.03	11.25	11.25	11.25	11.69	9.9	13.88	Yes	262.78
LD-8	269.9	272.83	8.8	8.8	8.8	9.76	6.8	15.38	Yes	264.03
LR-2	287.5	289.85	13.85	13.85	13.85	13.6	12.63	14.96	Yes	276
LR-3	275.5	278.06	 7.56	7.56	7.56	9.05	7.4		Yes	270.5
LR-6	270.9	274.39	10.22	10.22	10.22	11.08	10.05	12.72		264.17
LR-8	270	273.42	10.1	10.1	10.1	10.79	9.45	12.84	Yes	263.32
M-21	270.28	272.32	9.65	9.65	9.65	10.4	9.17	12.5	Yes	262.67
M-22	270.4	273.88	10.24	10.24	10.24	11.06	10	12.62	Yes	263.64
M-23	267.98	270.49	 12.68	12.68	12.68	12.87	12.22	14.25	Yes	257.81

B – 2 SITE INSPECTION CHECKLIST

Site Inspection Checklist (V2)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 10-8-19

Time_____7:50

Field Technician MARTIN Koennecke

Weather Conditions Surry 47°

Check V (tasks completed in each event)								
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)					
Land Cap								
Signs of burrowing vermin	V		NONE VISABLE					
Land cap irregularities (note								
anomaly)	V		OK					
French drainage system clear and function able	~		ok					
Concrete trough clear and								
function able	v		OK					
Leachate Discharge System								
City of Oswego sanitary discharge	1							
valve positioned "Open"	V		Ves					
Discharge Pump inspected &								
operational	V		Yes					
Discharge pump oil level verified								
prior to use.	V		Yes					
Discharge pump drained of			· · · · · · · · · · · · · · · · · · ·					
residual water (drained upon								
completion of monthly discharge)	V		Yes					
Heat trace system operational &								
verified in the "ON" position								
(Applicable Oct - May)	V		TURNED ON					
Flow totalizer operational. Flow								
readings recorded onto								
"Leachate Discharge Form"	V		Yes					
Leachate Collection System								
Leachate holding tank visually								
inspected for structural integrity	1		l ok					

1

10-8-19

Leachate holding tank metal roof		
inspected for structural integrity	1	OK
Leachate tank access doors		
locked (post pump out)	V	Yes
Pump power panel(s) secured	1	Yes
Monitoring Wells (MW)		
Locks installed	V	yes
MW's marked & identifiable	V	oK
General Site Condition		· · · · · · · · · · · · · · · · · · ·
Trees & brush cleared off security		
fence	v	work in Progress
Perimeter security fence intact &		
free of damage	V	OK
Site access driveway inspected &		
free on snow & damage	V	oK
Security access gates / Padlock &		
chain serviceable	1	Yes
Site gate signage intact	V	Yes
Interior & exterior of utility		
storage shed inspected for		
damage & secure with locks	V	Yes
Fire extinguisher serviceable,		
inspected, and inspection		
recorded	1/	Yes
Spill control material inspected &		
adequate	1/	yes
PPE available and utilized as		
required	v	Yes
Emergency contact information		
posted within shed	1/	Yes

Additional remarks (use separate sheet is required) <u>PUMPED 20,000 cpul Lewettate To CITY of OSWeys PoTW</u>



Site Inspection Checklist (V2)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date <u>M-6-19</u>

Time 7:30

Field Technician MARTIN Koennacke

Weather Conditions PSunny 40°

Check \mathbf{V} (tasks completed in each event)

Inspection Features	Monthly	Quarterly	Remarks (Indicate accomplishment of each maintenance task)
Land Cap			
Signs of burrowing vermin	1		None VISABLE
Land cap irregularities (note			
anomaly)	V		OK
French drainage system clear and			5 c
function able	V		Yes
Concrete trough clear and			N /
function able	V		Yes
Leachate Discharge System			
City of Oswego sanitary discharge			
valve positioned "Open"	V		Yes
Discharge Pump inspected &			
operational	V		Yes
Discharge pump oil level verified		1	
prior to use.	V		Yes
Discharge pump drained of			
residual water (drained upon			
completion of monthly discharge)	V		Yes
Heat trace system operational &			
verified in the "ON" position			
(Applicable Oct - May)	V		ON
Flow totalizer operational. Flow			
readings recorded onto			
"Leachate Discharge Form"	6		Yes
Leachate Collection System	· ·		
Leachate holding tank visually	<u>.</u>		·
inspected for structural integrity	V		OK

ļ	/	-	6	 19

	~ <i>w</i> ·	
Leachate holding tank metal roof		
inspected for structural integrity	V	ok
Leachate tank access doors		
locked (post pump out)	V	Yes
Pump power panel(s) secured	~	Yes Yes
Monitoring Wells (MW)		
Locks installed	V	Yes
MW's marked & identifiable	V	OK
General Site Condition		
Trees & brush cleared off security		
fence	V	WORK IN PROGRESS
Perimeter security fence intact &		
free of damage	V	OK
Site access driveway inspected &		
free on snow & damage	\vee	OK
Security access gates / Padlock &		
chain serviceable	V	Yes
Site gate signage intact	V	Yes
Interior & exterior of utility		
storage shed inspected for		
damage & secure with locks	V	SHINGELS REPLACED ON EDGE
Fire extinguisher serviceable,		
inspected, and inspection		
recorded	V	Yes
Spill control material inspected &		
adequate	٧	Yes
PPE available and utilized as		
required	V	Yes
Emergency contact information		e .
posted within shed	1	Yes

Additional remarks (use separate sheet is required)

PUMPED	10,000	cest h	eacthate To	DSWE	240 POTU	2 Quarter	x well	Levels
Semi A	mint	Leurth	te sampt	es TAK	n Per	OSwenn	Perm	eiT
			mpling Do.				·	
			carwells		5000-3	LR-2	11-5-	19
10-29-14	site	maintern	ce - Fence	Line, 6	THO CONC	Lete TREACH	t clest	norg
			2 - Fence					-

2

Site Inspection Checklist (v2)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date /2 - 3 - 19

Time 7: 30

Field Technician MARTIN Koennecke

Weather Conditions P. Sunny 25

	Che	ck V	(tasks completed in each event)
Inspection Features			Remarks (indicate accomplishment of each maintenance task)
	Monthly	Quarterly	
	Σ	Qua	
Land Cap			
Signs of burrowing vermin			NONE VISABLE
Land cap irregularities (note			
anomaly)	1		oK
French drainage system clear and			
function able	V		SNOW COVERED
Concrete trough clear and			
function able	V		SNOW COVERED -OK
Leachate Discharge System			
City of Oswego sanitary discharge			
valve positioned "Open"	V		Yes
Discharge Pump inspected &			
operational	V		Yes
Discharge pump oil level verified			
prior to use.	V		Yes
Discharge pump drained of			
residual water (drained upon			
completion of monthly discharge)	V		Yes
Heat trace system operational &			
verified in the "ON" position			
(Applicable Oct - May)	V		ON
Flow totalizer operational. Flow		-	
readings recorded onto			
"Leachate Discharge Form"	V		Yes
Leachate Collection System	1 (A) (37) 		
Leachate holding tank visually			
inspected for structural integrity	\checkmark		OK

12-3-19

Leachate holding tank metal roof			
inspected for structural integrity	~		OK
Leachate tank access doors			
locked (post pump out)	V		Yes
Pump power panel(s) secured	V		Yes
Monitoring Wells (MW)		1.00	
Locks installed	V		Yes
MW's marked & identifiable	V		OK
General Site Condition		10000	All the second
Trees & brush cleared off security			and a second for the second
, fence	V		WORK IN PROGRESS
Perimeter security fence intact &			
free of damage	\mathbf{v}_{i}		oK
Site access driveway inspected &	. *		
free on snow & damage	V		PLOW DRIVE
Security access gates / Padlock &			
chain serviceable	V		Yes
Site gate signage intact	1		Ye5
Interior & exterior of utility	*		
storage shed inspected for			
damage & secure with locks	V	1	Yes
Fire extinguisher serviceable,			
inspected, and inspection			
recorded	V		Yes
Spill control material inspected &			
adequate	V		Yes
PPE available and utilized as			
required	V		Yes
Emergency contact information		.	
posted within shed	V		Yes

Additional remarks (use separate sheet is required) <u>PUMPED 10,000 GAllows LeacHate To CITY of OSWEGO POTW</u> <u>SITE SNOW COVERED, PLOWED DRIVE</u>

2

B – 3 LEACHATE DISPOSAL CHECKLIST



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 10-8-19

Time: 7:50

Field Technician MARTIN Koenneckie

Weather Conditions Sunny 47°

Beginning Leachate	Pre-Discharge Well Pumping							
Hold Tank Elevation (Inches)	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)		
14"	LCW-1	7:55	10:30 2	10"	12.8 6Pm			
	LCW-2	7:55	10:30 Jui	humithin				
	LCW-3	7:55	8:25					
	LCW-4	7:55	9:25	IN TERMITTERY &	UN			
					Total	10 200-		

18,780

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)									
	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge			
Discharge #1	9:20	13:20	6.8	540	1275165	1295165	20,000			
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum	10					
_	83	20min	0	16"						
					Sampling (Pe					
	Date	Sample	100 C	nple S ume	Sample Time	рН Те	emperature			
Sample #1										

Acres



PAS Site Oswego, New York

Leachate Discharge Form

Date: 1/-6-19

Time:____7.30

Field Technician MARTIN Koennecke

Weather Conditions P. Survey 40°

Well Pump.		Pre-Dis	charge Well P	umping	
	Pump Start Time	Pump Stop. Time	Tank Elevation	Flow Rate (est)	Gallons Pumped (est)
LCW-1	740	8:55	STAJT-10"	134 GPm	
LCW-2	740	8:55	<u>STANT-10"</u> STOP 43"		
LCW-3	740	8:00			
LCW-4	7:40	8:55			
			·	Total	10,065

A second second	
Addin Gradula in	
	The state of the second se
e Pumping(N	Tonthing
	<i>Carriery</i>
网络静生动的 计	- こと 浮い網道論というで登録に落める ショート
A STATE AND A STAT	
Totalizer	Totalizer Gallons
	(1) 化学校学校学校会学校、名前、大学院院校会学校教会学校研究。
Flow Total	Flow Discharge
LIVIT LULAI	1 IVII DISCHAISC

		· · · · · · · · · · · · · · · · · · ·			Although St. Parla	 A set as a second strategic fills at a set 		
Discharge #	Start Time	Stop Time	pH	Temp	Totalizer Flow Total	Totalizer Flow	Gallons Discharge	
	9:0î				(Start)	Total (End)		
Discharge #1	9:30	11:30	6,80	54°	1295165	1305165	10,000	
Discharge #2					, """ '			
Total							10,000	

Leachate Discharg

Leachate Discharge Sampling (Semi-Annually)

			Gomposite			1
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature
Sample #1	11-6-19	SAmple PORT	ZYAL	10:30	6.80	54°
Sample #2 (if required)						

C \A (Kevin)\All Projects\PAS Oswego\Forms\Checklist\PAS Leachate Disposal Checklist_V1_2010.docx



PAS Site Oswego, New York

Leachate Discharge Form

Date: 12-3-19

Sample #2 (if required)

C \A (Kevin)\All Projects\PAS Oswego\Forms\Checklist\PAS Leachate Disposal Checklist_V1_2010.docx

Time: <u>7.'30</u>

Field Technician MARTIN KOENNecke

Weather Conditions P-SUNN 25

Pre-Discharge Well Pumping

Well Pump.					
	Pump Start Time	Pump Støp, Time	Tank Elevation	Flow Rate (est)	Gallons Pumped (est)
LCW-1	8:15	9:40	START - 10"	112 68M	10,065
LCW-2	8:15	9:40	STOP - 43"		
LCW-3	8:15	8:30			
LCW-4	8:15	9:40			
		·		Total	10,065

Leachate Discharge Pumping(Monthly)

					eranen		A SAN ANA ANA ANA ANA ANA ANA ANA ANA AN
Discharge#	Start. Time	Stop Time	pĦ	Летр	Totalizer Flow Total	Totalizer. Flow	Gallons Discharge
	HIMC	LIUC			(Start)	Total (End)	Processo St
Discharge #1	9:50	11:50	6.8	52	1305165	1315165	10,000
Discharge #2							
Total	:						10,000
		I oachato	Dische	irae Sa	mpling (Sem	ii-Annuall	() ()

 Date
 Sample
 Sample
 Sample
 pH
 Temperature

 Sample #1
 Sample
 Volume
 Time
 Volume
 Volume

SEMIANNUAL LEACHATE AND GROUNDWATER MONTIORING DATA

B – 4



DATA VALIDATION

FOR

WATER MONITORING PAS Oswego OSWEGO, NEW YORK

ORGANIC ANALYSIS DATA Volatiles in Water Laboratory Job No. 1918677

Analyses Performed

By:

Life Sciences Laboratory East Syracuse, NY

For:

de maximis, Inc. Knoxville, TN 37919

Data Validation By:

ddms, Inc. St. Paul, Minnesota 55108

May 19, 2020

1547-3131/mmd/das PAS\1918677_voa



EXECUTIVE SUMMARY

Validation of the volatile organics analysis data prepared by Life Sciences Laboratories, Inc. for six water samples, one equipment blank, and one trip blank supporting the PAS Oswego (Site) Semi Annual Well Sampling event has been completed by de maximis Data Management Solutions, Inc. (ddms). The data were reported by the laboratory under Laboratory Job No. 1918677. The following samples were reported:

Equipment Blank	M-21	OD-3	LR-8	LCW-2
LCW-4	X-1	QC Trip Blar	nk	

Based on the validation effort, the following qualifiers were applied:

- Results for cyclohexane in samples Equipment Blank, LR-8, LCW-2, and QC Trip Blank were qualified as estimated (UJ) due to imprecision at the lower end of the calibration curve.
- Results for xylenes, total, in all samples except LCW-4 were qualified as estimated (J, UJ) due to imprecision at the lower end of the calibration curve.
- Results for styrene in all samples were qualified as estimated (UJ) due to imprecision at the lower end of the calibration curve.
- Results for acetone in all samples were qualified as estimated (UJ) due to elevated percent difference between the initial calibration and the second-source initial calibration verification standard.
- Results for chloroform in samples LCW-2 and LCW-4 and methylene chloride in sample LCW-4 were qualified not detected (U) at the reporting limit or reported value, whichever was greater, due to blank contamination.
- Results for acetone and 2-hexanone in all of the water samples were qualified as estimated biased low (UJ) due to low recovery in the matrix spike and/or matrix spike duplicate.
- Professional judgement was applied to qualify the result for 1,4-dichlorobenzene in sample M-21 as not-detected (U) at the reporting limit due poor mass spectral match and unacceptable secondary ion ratios.



• Results for all compounds in QC Trip Blank were qualified as estimated (J-, UJ) due to this QC sample being analyzed six days beyond holding time.

All other results were determined to be valid as reported. Details of the validation findings and conclusions based on review of the results for each quality control requirement are provided in the remaining sections of this report.

1.0 Introduction

This report presents the findings of the data validation assessment performed on the analyses of water samples collected on November 7, 2019, for the PAS Oswego semiannual well sampling event. This report details the review of samples submitted to the laboratory in the sample delivery group 1918677 and identifies quality issues which could affect the use of the sample data for decision-making purposes.

Analyses were performed in accordance with USEPA SW-846 Method 8260C. The laboratory provided a "CLP-type" data package for review.

The data validation assessment was performed in accordance with USEPA Region II <u>Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C</u>, SOP HW-24, Revision 4 (September 2014) as well as ddms' <u>Standard Operating Procedure</u>: <u>Validation and Review of Volatile Organic Data</u>; <u>ECS-SOP-003</u>. Where there was a discrepancy between the QC criteria in the guidelines and the QC criteria established in the analytical methodology, professional judgement was applied.

The data validation process is intended to evaluate data on a technical basis rather than a contract compliance basis for chemical analyses conducted under the referenced method. An initial assumption is that the data package is presented in accordance with the CLP requirements (or "CLP-like," as in this case). It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate and sufficient quality review prior to submission for validation.

During the validation process, laboratory data are verified against all available supporting documentation. Based on the findings of the validation, qualifier codes may have been added by the data validator. Validated results are, therefore, either qualified or unqualified. Unqualified results mean that the reported values may be used without reservation. Final validated results are annotated with the following codes as defined by the Region II Guidelines:

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.



- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

These codes are recorded on the Data Summary Forms contained in Attachment A of this validation report to indicate qualifications placed on the results based on the data review.

The data user is also cautioned that the validation effort is based on the raw data printouts as provided by the laboratory. Software manipulation cannot be routinely detected during validation; unless otherwise stated in the report, these kinds of issues are outside the scope of this review.

2.0 Volatile Organic Compounds

Y=ves

The tables below document the elements reviewed for each parameter. Only those quality excursions resulting in qualified data are presented below. Quality control excursions having no impact to sample results are not discussed.

Review Element	Acceptable?
Preservation and Technical Holding Times	N
Calibration (Initial Calibration [IC], IC Verification, Continuing Calibration)	Ν
Blanks	N
GC/MS Instrument Tunes	Y
Surrogates	Y
Laboratory Control Samples (LCS)	Y
Field Duplicates*	Y
Matrix Spike (MS) and Matrix Spike Duplicate (MSD)	Ν
Quantitation	Y
Compound Identification	N
Documentation (Completeness and	Y
Compliance)	
IA = Not Applicable	



N=no

2.1 Initial Calibration

Initial calibration target analyte percent relative standard deviations (%RSDs) were within Quality Control (QC) limits (20 %RSD) except for cyclohexane, o-xylene and styrene. In each case, a quadratic equation was used to describe the curve. Correlation coefficients were acceptable for all three compounds (>0.990). However, due to low recovery of the lowest standard(s), qualifications to sample results for cyclohexane and styrene below the second calibration standard (0.93 ug/L) and xylenes, total for the third calibration standard (2.325 ug/L) were required. The results for styrene in all samples were qualified as estimated (UJ) due to imprecision at the lower end of the calibration curve. The results for cyclohexane in samples Equipment Blank, LR-8, LCW-2, and Trip Blank were qualified as estimated (UJ) due to imprecision at the lower end of the calibration curve. The results for xylenes, total, in all samples except LCW-4, were qualified as estimated (J, UJ) due to imprecision at the lower end of the calibration curve.

2.2 Initial and Continuing Calibration Verification

Initial calibration verification standard percent recoveries were acceptable (+/- 20%) for all compounds except acetone. Acetone results in all samples were qualified as estimated (UJ) due to elevated percent difference between the initial calibration and the second-source initial calibration verification standard. Continuing calibration (CC) target analyte recoveries were acceptable for all compounds.

2.3 Blanks

Contamination was reported in the equipment blank and trip blank, as shown in the table below. Where contamination was present, but no qualifications were warranted, the information was not included in the table. When the concentration found in the sample(s) is less than ten times the maximum amount detected in the associated blank for methylene chloride and five times for chloroform, the sample concentration is qualified as not detected (U) at the RL or the reported concentration, whichever is greater. The table below summarizes the amount detected in the each blank and the samples affected.

Compound	MB (ug/L)	EB (ug/L)	TB (ug/L)	Samples Affected
chloroform	0.50 U	1.65	0.50 U	LCW-2 11/7/19
				LCW-4 11/7/19
methylene chloride	2.0 U	2.30	0.16 J	LCW-4 11/7/19



2.4 Field Duplicates (FD)

Sample X-1 was collected as a field duplicate to sample OD-3. The relative percent differences between these sample results were acceptable (\pm 30%) for all compounds.

2.5 Matrix Spike (MS)/MS Duplicate (MSD)

MS/MSD analyses were performed on LR-8. Percent recoveries were outside of allowable criteria (70-130%R; 30% RPD) as shown in the table below. When the recovery was below criteria, associated samples were qualified as estimated (UJ), with the potential for low bias.

Analyte	MS/MSD Recovery (%)	RPD (%)	Samples Affected	Qualifiers Applied
acetone	53/55	а	All field samples	UJ
2-hexanone	68 MS only	а	All field samples	UJ

a = acceptable

2.6 Compound Identification

Professional judgement was applied to qualify the result for 1,4-dichlorobenzene in sample M-21 as not-detected (U) at the reporting limit due to poor mass spectral match and unacceptable secondary ion ratios.

3.0 Summary

Based on a review of the data provided, the results are valid as reported, with the following exceptions:

- Results for styrene, cyclohexane, and xylenes, total, summarized in Section 2.1, were qualified as estimated (J, UJ) due to imprecision at the lower end of the calibration curve.
- Results for acetone were qualified as estimated (UJ) due to the elevated percent difference between the initial calibration and the second-source initial calibration verification standard.
- Results for methylene chloride and chloroform were qualified as not detected (U) as summarized in the table in Section 2.3, due to blank contamination.



- Results for acetone and 2-hexanone were qualified as estimated (J-, UJ) as summarized in the table in Section 2.4, due to MS/MSD excursions.
- Results for all compounds in QC Trip Blank were qualified as estimated (J-, UJ) due to the sample being analyzed six days beyond holding time.
- Result for 1,4-dichlorobenzene in sample M-21 was qualified as not-detected (U) at the reporting limit due poor mass spectral match and unacceptable secondary ion ratios.



ATTACHMENT A

DATA SUMMARY FORMS Laboratory Job No. 1918677 Volatiles in Water Site Name: PAS Job No. 1918677

Data Summary Form for Groundwater Samples ddms Project No. 15473131 VOCs - SW-846 8260 Sampling date range: 10/23/19 - 11/7/19 (ug/L)

Field Sample ID Lab Sample ID	Equipment B 191867		LCW-2 1 191867		LCW-4 1 191867	
Dilution Factor	1	L	5	5	20)
Parameter						
1,1,1-Trichloroethane	0.5	U	20.3		4.2	J
1,1,2,2-Tetrachloroethane	0.5	U	3.3		10	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5	U	1.75	J	3.2	J
1,1,2-Trichloroethane	0.5	U	2.5	U	10	U
1,1-Dichloroethane	0.5	U	26.9		58.8	
1,1-Dichloroethene	0.5	U	2.5	U	10	U
1,2,4-Trichlorobenzene	1	U	5	U	20	U
1,2-Dibromo-3-chloropropane	5	U	25	U	100	U
1,2-Dibromoethane	0.5	U	2.5	U	10	U
1,2-Dichlorobenzene	0.5	U	1.45	J	54.4	
1,2-Dichloroethane	0.5	U	2.5	U	6.2	J
1,2-Dichloropropane	0.5	U	2.5	U	10	U
1,3-Dichlorobenzene	0.5	U	2.5	U	10	U
1,4-Dichlorobenzene	0.5	U	2.5	U	6.6	J
2-Hexanone	5	U	25	UJ	100	UJ
1-Methyl-2-pentanone	5	U	25	U	100	U
Acetone	10	UJ	50	UJ	200	UJ
Benzene	0.5	U	125		294	
Bromodichloromethane	0.27	J	2.5	U	10	U
Bromoform	1	U	5	U	20	U
Bromomethane	1	U	5	U	20	U
Carbon Disulfide	0.5	U	2.2	J	10	U
Carbon Tetrachloride	0.5	U	2.5	U	10	U
Chlorobenzene	0.5	U	33.8		408	
Chloroethane	1	U	3.4	J	54.8	
Chloroform	1.65		5.05	U	10	U
Chloromethane	1	U	5	U	20	U
cis-1,2-Dichloroethene	0.5	U	43.4		299	
cis-1,3-Dichloropropene	0.5	U	2.5	U	10	U
Cyclohexane	0.5	UJ	2.5	UJ	20.8	
Cyclohexane, methyl-	0.5	U	0.6	J	2.4	J
Dibromochloromethane	0.5	U	2.5	U	10	U
Dichlorodifluoromethane	1	U	5	U	20	U
Ethylbenzene	0.5	U	2.15	J	560	
sopropylbenzene	0.5	U	1.35	J	4.4	J
Methyl Acetate	5	U	25	U	100	U
Methyl Ethyl Ketone	10	U	50	U	200	U
Methyl tert-butyl ether	1	U	5	U	20	U
Methylene Chloride	2.3	0	10	U	40	U
Styrene	0.5	UJ	2.5	UJ	10	UJ
Tetrachloroethene	0.5	U	143		10	U
Toluene	0.5	U	2.5	U	144	~
rrans-1,2-Dichloroethene	0.5	U	2.5	U	10	U
rans-1,3-Dichloropropene	0.5	U	2.5	U	10	U
Trichloroethene	0.5	U	55	9	10	U
Trichlorofluoromethane	1	U	5	U	20	U
/inyl Chloride	1	U	5.95	5	144	0
Xylenes, Total	1	UJ	8.65	J	1110	

Site Name: PAS Job No. 1918677

Data Summary Form for Groundwater Samples ddms Project No. 15473131 VOCs - SW-846 8260 Sampling date range: 10/23/19 - 11/7/19 (ug/L)

				OD-3 1 191867	
-	•		•		
0.5	U	0.5	U	0.5	U
	U		U		U
	U		U		U
					U
					U
					U
					U
					U
					U
					J
					U
					U
					U
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					U
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					UJ
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					J
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					U
					U
1	LU	1	UJ	1	UJ
	191867 0.5	0.5U0.5U0.5U0.5U0.5U1U5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U0.5U10UJ0.5U1U0.5U1U0.5U1U0.5U1U0.5U0.5U0.5U0.5U0.5U0.5U0.5U1U2U0.5U1U2U0.5<	1918677-004A1918671	1918677-004A110.50.500.5 </td <td>1918677-004A1918677-002A1918677IIII0.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.510UJ10UJ100.5U0.5U0.511U1U112U0.5U0.50.5U0.5U0.50.5U0.5U0.511U1U112U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U<t< td=""></t<></td>	1918677-004A1918677-002A1918677IIII0.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.510UJ10UJ100.5U0.5U0.511U1U112U0.5U0.50.5U0.5U0.50.5U0.5U0.511U1U112U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U0.50.5U0.5U <t< td=""></t<>

(ug/L)

Field Sample ID	QC Trip Blank 10/23/19		X-1 11/7/19	
Lab Sample ID	-	77-008A	191867	
Dilution Factor		1	1	L
Parameter				
1,1,1-Trichloroethane	0.5	UJ	0.5	U
1,1,2,2-Tetrachloroethane	0.5	UJ	0.5	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5	UJ	0.5	U
1,1,2-Trichloroethane	0.5	UJ	0.5	U
1,1-Dichloroethane	0.5	UJ	0.5	U
1,1-Dichloroethene	0.5	UJ	0.5	U
1,2,4-Trichlorobenzene	1	UJ	1	U
1,2-Dibromo-3-chloropropane	5	UJ	5	U
1,2-Dibromoethane	0.5	UJ	0.5	U
1,2-Dichlorobenzene	0.5	UJ	0.31	J
1,2-Dichloroethane	0.5	UJ	0.5	U
1,2-Dichloropropane	0.5	UJ	0.5	U
1,3-Dichlorobenzene	0.5	UJ	0.5	U
1,4-Dichlorobenzene	0.5	UJ	0.71	
2-Hexanone	5	UJ	5	UJ
4-Methyl-2-pentanone	5	UJ	5	U
Acetone	10	UJ	10	UJ
Benzene	0.5	UJ	0.3	J
Bromodichloromethane	0.5	UJ	0.5	U
Bromoform	1	UJ	1	U
Bromomethane	1	UJ	1	U
Carbon Disulfide	0.33	J	0.5	U
Carbon Tetrachloride	0.5	UJ	0.5	U
Chlorobenzene	0.5	UJ	11.3	
Chloroethane	1	UJ	4.85	
Chloroform	0.5	UJ	0.5	U
Chloromethane	1	UJ	1	U
cis-1,2-Dichloroethene	0.5	UJ	0.5	U
cis-1,3-Dichloropropene	0.5	UJ	0.5	U
Cyclohexane	0.5	UJ	1	
Cyclohexane, methyl-	0.5	UJ	0.5	U
Dibromochloromethane	0.5	UJ	0.5	U
Dichlorodifluoromethane	1	UJ	1	U
Ethylbenzene	0.5	UJ	0.5	U
Isopropylbenzene	0.5	UJ	0.15	J
Methyl Acetate	5	UJ	5	U
Methyl Ethyl Ketone	10	UJ	10	U
Methyl tert-butyl ether	1	UJ	1	U
Methylene Chloride	0.16	J	2	U
Styrene	0.5	UJ	0.5	UJ
Tetrachloroethene	0.5	UJ	0.5	U
Toluene	0.5	UJ	0.15	J
trans-1,2-Dichloroethene	0.5	UJ	0.5	U
trans-1,3-Dichloropropene	0.5	UJ	0.5	U
Trichloroethene	0.5	UJ	0.5	U
Trichlorofluoromethane	1	UJ	1	U
Vinyl Chloride	1	UJ	1	U

B – 5 QUARTERLY POTW DISCHARGE REPORTS



450 Montbrook Lane Knoxville, TN 37919 (865)691-5052 (865)691-9835 FAX

January 10, 2019

Mr. Tim O'Brien Department of Municipal Utilities 35 Bradley Street Auburn, New York 13021

Re: 4th Quarter PAS Oswego Monitoring Report 2019

Dear Mr. O'Brien,

This letter confirms that the PAS Oswego Site has not shipped or discharged any wastewater from the PAS Oswego collection system to the City of Auburn POTW during December 2017– December 2019. This has been due to the EPA allowance of an alternate disposal method.

- Cumulative gallons removed for discharge in Auburn 4th Qtr. 2019 0
- Cumulative gallons removed for discharge in Auburn 2019 0

Since no wastewater was shipped or discharged to Auburn during the 4th quarter of 2019, no analytical testing was required. However, we continue to perform Site maintenance and sampling activities under the Operation, Monitoring and Maintenance Program for the Site approved by EPA. The data associated with that program indicate little change in the characteristics of the Site wastewater.

Please contact me at (865) 691-5052, if you have any questions.

Sincerely, de maximis, inc.

Clay McClarnon

CMC/dsr

cc: PAS Management Committee

PAPER



450 Montbrook Lane Knoxville, TN 37919 (865)691-5052 (865)691-9835 FAX

January 8, 2019

Mr. Timothy L. O'Brien Industrial Pretreatment Coordinator 35 Bradley Street Auburn, NY 13021

Re: Industrial Pretreatment Program Zero Discharge Certification Statement:

Dear Mr. O'Brien

For the reporting quarter(s) of December 2017 to December 2019, I certify that for Pollution Abatement Services located in Oswego New York:

- There have been no changes to any of our processes resulting in the potential for the discharge from the process waste stream.
- 2. No discharge of process wastewater has occurred since December 7, 2017.

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 system, 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 violations.

Clay McClarnon

Name

Project Coordinator Title

January 8, 2019 Date

(865) 691-5052 Phone

https://demaximisinc.sharepoint.com/sites/Projects2/Shared Documents/Active/3131 - PAS/10 Permits-POTW/2019/Auburn/Auburn 4th Qtr 2019 rpt.doc Allentown, PA • Clinton, NJ • Greensboro, GA • Knoxville, TN • San Diego, CA Cortland, NY • Wheaton, IL • Sarasota, FL • Houston, TX • Windsor, CT • Waltham, MA





450 Montbrook Lane Knoxville, TN 37919 (865)691-5052 (865)691-9835 FAX

Via electronic mail

January 10, 2020

Mr. John McGrath Chief Operator Westside Wastewater Treatment Plant First Avenue & West Schuyler Streets Oswego, New York 13126 Labmanager@oswegony.org

Re: Quarterly Discharge Report – 4th Quarter 2019 Pollution Abatement Services Site – Oswego, New York City of Oswego Wastewater Discharge Permit 6-2019-20

Dear Mr. McGrath:

This quarterly report is submitted in accordance with the City of Oswego Wastewater Discharge Permit 6-2019-20 (Permit) for discharge of leachate from the Pollution Abatement Services (PAS) Site into the City of Oswego's Eastside Wastewater Treatment Facility. This report covers the reporting period from October 2019 through December 2019.

The PAS Site discharged a total of 40,000 gallons of leachate to the Oswego sewer system during the 4th quarter of 2019.

Discharge to City of Oswego October 2019 – December 2019

40,000 gallons

If you need additional information, please call me at (865) 691-5052.

Sincerely, de maximis, inc.

Clay Millamo

Clay McClarnon

Attachments:

cc: Dan Ramer – Chief Operator Eastside Wastewater Treatment Plant Robert Johnson – City Engineer PAS Oswego Site Management Committee

TABLE 1 PAS OSWEGO SITE QUARTERLY REPORT FOR CITY OF OSWEGO (2019) LEACHATE DISCHARGE TO OSWEGO EASTSIDE WASTEWATER TREATMENT FACILITY

(Oswego SIU Wastwater Discharge Permit No.6-2019-20)

Discharge Quarter		1Q 2	019	2Q 2	019	3Q 20	019	4Q 2	2019
		Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged
		1/8/19	10,500	4/2/19	10,500	7/3/19	20,000	10/8/19	20,000
		46/6.8		44/6.8		57/6.8		54/6.8	
		2/11/19	10,500	5/8/19	20,000	8/6/19	20,000	11/6/19	10,000
		42/6.8		46/6.8		55/6.8		54/6.8	
		3/5/19	10,500	6/4/19	20,000	9/11/19	20,000	12/3/19	10,000
		42/6.8		50/6.8		60/6.8		52/6.8	
Total Discharged			31,500		50,500		60,000		40,000
Date Sampled*	Permit Limits		4/2/2019					11/6/2019	
Analytes Antinomy Arsenic Beryllium Cadmium Chromium (total) Copper Cyanide Lead Mercury Nickel Selenium Silver Thallium Zinc	mg/L 0.107 0.358 0.107 0.43 0.67 0.43 0.69 0.19 0.0002 0.65 0.282 0.65 0.73 1		mg/L ND <0.0025					mg/L ND <0.010	
VOC** 1,1,1 TCA MeCL PCE Toluene TCE SVOC** BOD 5 TSS oil & grease Phenolics pH	NA NA NA NA 200 400 100 0.375 >5 & <10		14 37 ND <0.034 6.7					0.00625 ND <0.0005 0.029 0.0674 0.0125 NA 11 39 6.8	

* Semi-annual sampling of PAS leachate discharge conducted in accordance with SIU Wastewater Discharge Permit No.6-2019-20.

** Analytes included for permit pollutant analysis performed every three years

ATTACHMENT I



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 10-8-19

Time: 7:50

Field Technician MARTIN Koenneckie

Weather Conditions Sunny 47°

Beginning Leachate		Pre-Discharge Well Pumping										
Hold Tank Elevation (Inches)	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)						
14"	LCW-1	7:55	10:30 2	10"	12.8 6Pm							
	LCW-2	7:55	10:30 Jui	humithin								
	LCW-3	7:55	8:25									
	LCW-4	7:55	9:25	IN TERMITTERY &	UN							
					Total	10 200-						

18,780

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)									
	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge			
Discharge #1	charge #1 9:20 13:20 6.8 54°		1275165	1295165	20,000					
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum	10					
_	83	20min	0	16"						
Semi-Annual Leachate Discharge Sampling (Per the City of Oswego										
	Date	Sample	100 C	nple S ume	Sample Time	рН Те	mperature			
Sample #1										

Acres



PAS Site Oswego, New York

Leachate Discharge Form

Date: 1/-6-19

Time:____7.30

Field Technician MARTIN Koennecke

Weather Conditions P. Survey 40°

Well Pump.		Pre-Dis	charge Well P	umping	
	Pump Start Time	Pump Stop. Time	Tank Elevation	Flow Rate (est)	Gallons Pumped (est)
LCW-1	740	8:55	STAJT-10"	134 GPm	
LCW-2	740	8:55	<u>STANT-10"</u> STOP 43"		
LCW-3	740	8:00			
LCW-4	7:40	8:55			
			·	Total	10,065

A second second	
Addin Gradula in	
	The state of the second se
e Pumping(N	Tonthing
	<i>Carriery</i>
网络静生动的 计	- こと 浮い網道論というで登録に落める ショート
A STATE AND A STAT	
Totalizer	Totalizer Gallons
	(1) 化学校学校学校会学校、名前、大学院院校会学校教会学校研究。
Flow Total	Flow Discharge
LIVIT LULAI	1 IVII DISCHAISC

					Although St. Parla	 A set of a set of		
Discharge #	Start Time	Stop Time	pH	Temp	Totalizer Flow Total	Totalizer Flow	Gallons Discharge	
	9:0î				(Start)	Total (End)		
Discharge #1	9:30	11:30	6,80	54°	1295165	1305165	10,000	
Discharge #2					, """ '			
Total							10,000	

Leachate Discharg

Leachate Discharge Sampling (Semi-Annually)

			Gomposite			1
	Date	Sample Location	Sample Volume	Sample Time	pH	Temperature
Sample #1	11-6-19	SAmple PORT	ZYAL	10:30	6.80	540
Sample #2 (if required)						

C \A (Kevin)\All Projects\PAS Oswego\Forms\Checklist\PAS Leachate Disposal Checklist_V1_2010.docx



PAS Site Oswego, New York

Leachate Discharge Form

Date: 12-3-19

Sample #2 (if required)

C \A (Kevin)\All Projects\PAS Oswego\Forms\Checklist\PAS Leachate Disposal Checklist_V1_2010.docx

Time: <u>7.'30</u>

Field Technician MARTIN KOENNecke

Weather Conditions P-SUNN 25

Pre-Discharge Well Pumping

Well Pump.								
	Pump Start Time	Pump Støp, Time	Tank Elevation	Flow Rate (est)	Gallons Pumped (est)			
LCW-1	8:15	9:40	START - 10"	112 68M	10,065			
LCW-2	8:15	9:40	STOP - 43"					
LCW-3	8:15	8:30						
LCW-4	8:15	9:40						
		·		Total	10,065			

Leachate Discharge Pumping(Monthly)

					eranen				
Discharge#	Start. Time	Stop Time	pĦ	Летр	Totalizer Flow Total	Totalizer. Flow	Gallons Discharge		
	HIMC	LIUC			(Start)	Total (End)	Processo St		
Discharge #1	9:50	11:50	6.8	52	1305165	1315165	10,000		
Discharge #2									
Total	:						10,000		
		I oachato	Dische	irae Sa	mpling (Sem	ii-Annuall	() ()		

 Date
 Sample
 Sample
 Sample
 pH
 Temperature

 Sample #1
 Sample
 Volume
 Time
 Volume
 Volume

ATTACHMENT II



Friday, January 03, 2020

Mark Byrne O'Brien & Gere Operations, LLC. 333 W. Washington St. PO Box 4873 Liverpool, NY 13221-4873

TEL: 315-437-6100

Project: PAS OSWEGO, SEMIANNUAL PERMIT DISCHARGE

RE: Analytical Results

Order No.: 1918638 **Q**

Dear Mark Byrne:

Life Science Laboratories, Inc. received 3 sample(s) on 11/6/2019 for the analyses presented in the following report. Sample results relate only to the samples as received by the laboratory.

Very truly yours, Life Science Laboratories, Inc.

David J Prichard Project Manager

		7 (315) 445-1900		StateCcrtNo: 10	248
Project: PA	Brien & Gere Operati S Oswego, Semiannu 18638		Lab ID: Client Sample ID:	1918638-001A Tank Effluent L 11/6/19	-
	ATER		Collection Date: Date Received:	11/06/19 10:30 11/06/19 15:31	
ColumnID:	her balance XA	Sample Size: NA %Moisture:	PrepDate: BatchNo:	R33525	
Revision: 11/ Col Type:	13/19 8:50	TestCode TSS2540D	FileID:	1-SAMP-	
Analyte		Result Qual PQL	Units	DF	Date Analyzed

Qualifiers:	×.	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
	Е	Value exceeds the instrument calibration range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL		Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit		Spike Recovery outside accepted recovery limits
Print Date: 12	- /10	/19 10:52 912242 Project Supervisor:	•	

Page 1 of 13

1

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F # _ L \ #	Life Science	Laboratorie	. Analytical Results StateCertNo: 10248			
	ast Syracuse, NY 1					
CLIENT: Project: W Order:	O'Brien & Gcre Ope PAS Oswego, Semia 1918638	erations, LLC. annual Permit Discharge		Lab ID: Client Sample ID:	1918638- Tank Effli 11/6/19	
Matrix:	WATER			Collection Date: Date Received:	11/06/191 11/06/191	
Inst. ID:	MS06 40	Sample Size: NA		PrepDate:	11/08/19.0	:00
ColumnID:	DB-5MS	%Moisture:		BatchNo:	R33 5 49	
Revision: Col Typc:	11/20/19 10:42	TestCode 625W		FileID;	1-SAMP-T	°0714.D
Analyte		ResultQual	PQL	Units	DF	Date Analyzed
SEMI-VOLA	TILE ORGANICS CO	MPOUNDS BY GC/MS		EPA 625		
Phenol		ND	10	μg/L	1	11/08/19 13:39
Surr: 2,4,6-	Tribromophenol	70	46-149	%REC	1	11/08/19 13:39
Surr: 2-Flue	prophenol	36	26-130	%REC	1	11/08/19 13:39
Surr: Pheno	ol-d5	22	21-134	%REC	1	11/08/19 13:39

Gualifiers:	¥	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
* ****	Ŀ	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	s	Spike Recovery outside accepted recovery limits
Print Date: 1	2/1(V19 10:52 912793 Project Supervisor	r: Davi	d J Prichard Page 2 of 13

Page 2 of 13

1

LSL	854 Butternut Drive		-				
B	ast Syracuse, NY 1	3057 (315) 445-1900		StateCertNo: 10			
CLIENT: Project:	O'Brien & Gere Opo PAS Oswego, Semia	erations, LLC. annual Permit Discharge	Lab ID: Client Sample ID:	**			
W Order:	1918638		Coll offer Defer	<u>11/6/19</u>			
Matrix:	WATER		Collection Date: Date Received:	11/06/19 10:30 11/06/19 15:31			
Inst. ID: ColumnID:	FIMS 100	Sample Size: 40 mL %Moisture:	PrepDate: BatchNo:	11/17/19 0:00 26507/R33546			
Revision: Col Type:	11/19/19 17:13	TestCode HG245W	FileID:	1-SAMP-			
Analyte		Result Qual PQL	Units	DF	Date Analyzed		

	Itesuit Qua				
MERCURY			EPA 245.1, F (1994)	Rev. 3.0	(EPA 245.1, REV. 3.0 (1994))
Mercury	ND	0.00020	mg/L	1	11/18/19 15:03

- Oualific	* rs:	Value may exceed the Acceptable Level		Analyte detected in the associated Method Blank
÷	Е	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits
-				
Drint D.	110 12/11	3/10 10-52 012785 Project Sun/	meleon Day	id I Prichard Dogo 3 of

Page 3 of 13

1



Analytical Results

mg/L

mg/L

mg/L

mg/L

mg/L

1

1

1

1

1

LSL 5	854 Butternut Driv					ytical Results
E	ast Syracuse, NY	13057 (315) 445-19	900		StateCer	r tNo: 10248
CLIENT:	O'Brien & Gere Op	perations, LLC.		Lab ID:	19186	38-001C
Project:	PAS Oswego, Sem	iannual Permit Discharge		Client Sample ID:	Tank E	Effluent Leachate,
W Order:	1918638				11/6/19	9
Matrix:	WATER			Collection Date:	11/06/1	9 10:30
tradi i A.	WITLK			Date Received:	11/06/1	19 15:31
Inst. ID:	ICAP 61E	Sample Size: 50 mL	J.	PrepDate:	11/11/1	9 0:00
ColumnID:		%Moisture:		BatchNo:	26494/I	R33529
Revision:	01/03/20 13:47	TestCode 200.7_NI	PW	FileID:	1-SAM	P-330337
Col Type:						
Analyte		Result Qual	PQL	Units	DF	Date Analyze
TOTAL ME	TALS BY ICP			EPA 200.7,Rev.4.4	(1994)	(EPA 200.2)
Antimony		ND	0.010	mg/L	1	11/12/19 18:41
Arsenic		0.019	0.010	mg/L	1	11/12/19 18:41
Barium		0.46	0.10	mg/L	1	11/12/19 18:41
Beryllium		ND	0.010	mg/L	1	11/12/19 18:41
Cadmium		ND	0.010	mg/L	1	11/12/19 18:41
Chromium		ND	0.010	mg/L	1	11/12/19 18:41
Copper		0.015	0.010	mg/L	1	11/12/19 18:41
Iron		17	0.050	mg/L	1	11/12/19 18:41
Lead		ND	0.010	mg/L	1	11/12/19 18:41

0.010

0.010

0.010

0.020

0.020

0.33

ND

ND

ND

ND

Qualifiers:	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank		
	E	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded		
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)		
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits		

Nickel

Silver

Zinc

Selenium

Thallium

11/12/19 18:41

11/12/19 18:41

11/12/19 18:41

11/12/19 18:41

11/12/19 18:41

F	Cast Syracuse, NY	13057 (315) 445-1900	5	StateCertNo: 10	248
CLIENT: Project: W Order:	O'Brien & Gere Or PAS Oswego, Sem 1918638	perations, LLC. iannual Permit Discharge	Lab ID: Client Sample ID:	1918638-0011 Tank Effluent 1 11/6/19	
Matrix:	WATER		Collection Date:	11/06/19 10:30	
Inst. ID: ColumnID:		Sample Size: 50 mL %Moisture:	Date Received: PrepDate: BatchNo:	11/06/19 15:31 11/19/19 0:00 26491/R33564	
Revision: Col Type:	11/26/19 6:17	TestCode CN335.4W	FileID;	I-SAMP-	
Analyte		Result Qual PQL	Units	DF	Date Analyzed

Qualifiers:	Value may exceed the Acceptable Level B Analyte detected in the associated M	ethod Blank
	E Value exceeds the instrument calibration range H Holding times for preparation or ana	VSis exceeded
	J Analyte detected below the PQL ND Not Detected at the Practical Quantit	
	P Prim./Conf. column %D or RPD exceeds limit S Spike Recovery outside accepted rec	
Print Date	12/10/19 10:52 912222 Burland C	

	East Syracuse, NY	13057 (315) 445-	1900		StateCcrtNo:	10248
CLIENT: Project: W Order:	O'Brien & Gere Op PAS Oswego, Sem 1918638	perations, LLC. iannual Permit Discharge		Lab ID: Client Sample ID:	1918638-00 Tank Effluen 11/6/19	
Matrix:	WATER			Collection Date: Date Received:	11/06/19 10:3 11/06/19 15:3	-
Inst. ID: ColumnID:	HACH4000	Sample Size: 50 m %Moisture:	L	PrepDate: BatchNo:	11/26/19 0:00 26553/R3357	-
Revision: Col Type:	12/03/19 8:51	TestCode TP365.1		FileID:	1-SAMP-	
Analyte		Result Qua	I PQL	Units	DF	Date Analyze

NOTES:

This analysis was performed by Method EPA 365.3

Qualifiers:	*	Value may exceed the Acceptuble Level	В	Analyte detected in the associated Method Blank
	E	Value exceeds the instrument calibration range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit		Spike Recovery outside accepted recovery limits

East Syracuse, NY 13057 (315) 445-1900				StateCertNo: 10248			
CLIENT: O'Brien & Gere Operations, LLC Project: PAS Oswego, Semiannual Perm W Order: 1918638		•	Lab ID: Client Sample ID:	1918638-001 E Tank Effluent Leachate, 11/6/19			
Matrix:	WATER		Collection Date: Date Received:	11/06/19 10:3 11/06/19 15:3	-		
Inst. ID: ColumnID:	AA3	Sample Size: 1 mL %Moisture:	PrepDate: BatchNo:	11/19/19 0:00 26512/R33547	,		
Revision: Col Type:	11/20/19 6:09	TestCode TKN351.2	FileID:	1-SAMP-			
Analyte	an a	Result Qual PQL	Units	DF	Date Analyzed		

NOTES:

As per NELAC regulation disclosure of the following condition is required; The method blank result associated with this analysis was greater than the established limit.

Qualifiers:	*	Value may exceed the Acceptuble Lovel	B	Analyte detected in the associated Method Blank
	E	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	1	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit		Spike Recovery outside accepted recovery limits
		and a second	• •	

LSL ⁵	Life Scienc 1854 Butternut Driv Cast Syracuse, NY				Analy StateCertN	tical Results	
CLIENT: Project: W Order:	oject: PAS Oswego, Semiannual Permit Discharge			Lab ID: Client Sample ID:	1918638-001F D: Tank Effluent Leachate, 11/6/19		
Matrix:	WATER			Collection Date: Date Received:	11/06/19 10:30 11/06/19 15:31		
Inst. ID: ColumnID: Revision: Col Type:	MSN 76 Rtx-VMS 11/13/19 13:33	Sample Size: NA %Moisture: TestCode 624W		PrepDate: BatchNo: FileID:	R33532 1-SAMP-n0897.D		
Analyte		ResultQual	PQL	Units	DF	Date Analyzed	
VOLATILE (ORGANIC COMPOL	INDS BY GC/MS		EPA 624			
1,1,1-Trichlor	oethane	6.25	5.00	µg/L	5	11/12/19 4:36	
Methylene chl	oride	ND	5.00	µg/L	5	11/12/19 4:36	
Tetrachloroeth	nene	29.0	5.00	µg/L	5	11/12/19 4:36	
Toluene		67.4	5.00	µg/L	5	11/12/19 4:35	
Trichloroethen	e	12.5	5.00	µg/L	5	11/12/19 4:36	
Surr: 1,2-Di	ichloroethane-d4	109	75-130	%REC	5	11/12/19 4:36	
Surr: 4-Bror	mofluorobenzene	100	75-125	%REC	5	11/12/19 4:36	
Surr: Toluer	ne-d8	78	75-125	%REC	5	11/12/19 4:36	

Qualifiers:	rik .	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
	E	Value exceeds the instrument calibration range	н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	NC	Not Detected at the Practical Quantitation Limit (POL)
	Ч	Prim./Conf. column %D or RPD exceeds limit		Spike Recovery outside accepted recovery limits
During During				

Life Science Laboratories, Inc. 5854 Butternut Drive East Syracuse, NY 13057 (315) 445-1900				Analytical Results StateCertNo: 10248		
CLIENT: Project: W Order:	O'Brien & Gere Operations, LLC. PAS Oswego, Semiannual Permit Discharge		Lab 1D: Client Sample ID:	1918638-001G		
Matrix:	WATER		Collection Date: Date Received:	11/06/19 10:30 11/06/19 15:31		
Inst. ID: ColumnID:	Fisher balance XA	Sample Size: 1000 mL %Moisture:	PrepDate: BatchNo:	11/18/19 9:00 26511/R33543		
Revision: Col Type:	11/19/19 14:27	TestCode OG1664A	FileID:	1-SAMP-		
Analyte		ResultQual PQL	Units	DF Date Analyzed		
OIL AND GR	REASE (LLE)	ND 5.00	EPA 1664A mg/L	(EPA 1664A) 1 11/19/19		

121-24

Qualifiers:	Ŷ	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
-	£	Value exceeds the instrument calibration range		Holding times for preparation or unalysis exceeded
	1	Analyte detected below the PQL		Not Detected at the Practical Quantitation Limit (PQL)
	ų	Prim./Conf. column %D or RPD exceeds limit		Spike Recovery outside accepted recovery limits
Barland Barden	10.07			

Life Science Laboratories, Inc 5854 Butternut Drive East Syracuse, NY 13057 (315) 445-1900			StateCertNo: 10248			
		Collection Date: Date Received:	11/06/19 10:30 11/06/19 15:31			
	Sample Size: NA %Moisture: TestCode BODSM5210B	PrepDate: BatchNo: FileID:	R33538 1-SAMP-			
-	Desult Oust DOI	11-340	DE	Date Analyze		
	Bricn & Gere Operat	Brien & Gere Operations, LLC. AS Oswego, Semiannual Permit Discharge 918638 ATER O Meter Sample Size: NA %Moisture:	Brien & Gere Operations, LLC. Lab ID: AS Oswego, Semiannual Permit Discharge Client Sample ID: 218638 ATER Collection Date: Date Received: D Meter Sample Size: NA PrepDate: %Moisture: BatchNo: /15/19 14:32 TestCode BODSM5210B FileID:	Brien & Gere Operations, LLC. AS Oswego, Semiannual Permit Discharge P18638 ATER D Meter Sample Size: NA %Moisture: 15/19 14:32 BatchNo: 11/06/19 Lab ID: Lab ID: Client Sample ID: 1918638-001H Client Sample ID: 1918638-001H Client Sample ID: 1918638-001H Collection Date: 11/06/19 10:30 Date Received: 11/06/19 15:31 PrepDate: BatchNo: R33538 FileID: 1-SAMP-		

BIOCHEMICAL OXYGEN DEMAND (BOD5)			SM 5210B-01,-11	
Biochemical oxygen demand (BOD5)	11	4.0	mg/L 1	11/08/19 10:23

Qualifiers:	Ņ	Value may exceed the Acceptable Level		Analyic detected in the associated Method Blank
	Ε	Value exceeds the instrument calibration range	Ы.,	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Ρ	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits
·				

Page 11 of 13

1.

LSL	Life Science 854 Butternut Drive ast Syracuse, NY 1				Analytical Results StateCertNo: 10248				
CLIENT: Project: W Order:	O'Brien & Gere Ope PAS Oswego, Semi 1918638	erations, LLC. annual Permit Discharge		Lab ID: Client Sample ID:	1918638-001H 5: Tank Effluent Leachate, 11/6/19				
Matrix:	WATER			Collection Date: Date Received:	11/06/191 11/06/191				
Inst. ID: ColumnID:	GENESYS 20	Sample Size: NA %Moisture:		PrepDate: BatchNo:	R33528				
Revision: Col Type:	11/12/19 15:42	TestCode CRHEX	7196W	FilelD:	1-SAMP-				
Analyte		Result Qua	I PQL	Units	DF	Date Analyzed			
CHROMIUM Chromium, He	I, HEXAVALENT exavalent	ND	0.010	SW7196A mg/L	1	11/07/19 8:48			

Qualifiers:	¥	Value may exceed the Acceptable Love!	В	Analyte detected in the associated Method Blank
Quantum	Ľ	Value exceeds the instrument calibration range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected helow the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

Life Science Laboratories, Inc.

Analytical Results

	854 Butternut Drive ast Syracuse,NY 1		00	5	StateCertNo: 1024	18
CLIENT: Project:	O'Brien & Gere Op			Lab ID: Client Sample ID:	1918638-002A Trip Blank	
W Order:	1918638			Collection Date:	11/06/19 0:00	
Matrix:	WATER Q			Date Received:	11/06/19 15:31	
Inst. ID: ColumnID: Revision:	MSN 76 Rtx-VMS 11/13/19 13:33	Sample Size: NA %Moisture: TcstCode 624W		PrepDate: BatchNo: FilelD:	R33532 1-SAMP-n0898.D)
Col Type: Analyte	1999 - Andrew State -	Result Qual	PQL	Units	DF	Date Analyzed
	ORGANIC COMPOL			EPA 624		
1,1,1-Trichlor		ND	1.00	µg/L	1	11/12/19 5:10
· ·		ND	1.00	µg/L	1	11/12/19 5:10
Methylene ch		ND	1.00	µg/L	1	11/12/19 5:10
Tetrachloroet	literite	ND	1.00	µg/L	1	11/12/19 5:10
Toluene		ND	1.00	µg/L	1	11/12/19 5:10
Trichloroethe		111	75-130	%REC	1	11/12/19 5:10
	Dichloroethane-d4	106	75-125	%REC	1	11/12/19 5:10
Surr: 4-Bro Surr: Tolue	omofluorobenzene	100	75-125	%REC	1	11/12/19 5:10
oun. roide	···+					

Qualifiers:	 Value may exceed the Acceptable Level E Value exceeds the instrument calibration range J Analyte detected below the PQL Prim./Conf. column %D or RPD exceeds limit 	 B Analyte detected in the associated Metho Holding times for preparation or analysis ND Not Detected at the Practical Quantitatio S Spike Recovery outside accepted recover 	exceeded n Limit (PQL)
		sor: David I Prichard	Page 13 of 13



Summil Environmental Technologies, Inc. 3310 Win St. Cuyahoga Falls, Ohio 44223 TEL: (330) 253-8211 FAX: (330) 253-4489 Website: http://www.settek.com

November 19, 2019

Greg Smith Life Science Laboratories, Inc. 5854 Butternut Dr. E. Syracuse, NY 13057 TEL: (315) 445-1105 FAX: (315) 445-1301

RE: 1918638

Dear Greg Smith:

Order No.: 19111146

Summit Environmental Technologies, Inc. received 2 sample(s) on 11/13/2019 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

pmiles marked

Jennifer Woolf

Project Manager

3310 Win St. Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 07256CA, Colorado, Connecticut P11-0108, Delaware, Florida NELAC E87688, Georgia E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Louisiana 04061, Maryland 339, Minnesota 409711, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 9940, Oregon OH200001, Pennsylvania 010, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-11-5, Utah 01109292001-1. Virginia VELAP 9456. Washington C891



Case Narrative

WO#: 19111146 Date: 11/19/2019

CLIENT:Life Science Laboratories, Inc.Project:1918638

WorkOrder Narrative:

19111146: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Original



These commonly used Qualifiers and Aeronyms may or may not be present in this report.

Qualifiers

- U The compound was analyzed for but was not detected above the MDL.
- J The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
- II The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
- D The result is reported from a dilution.
- E The result exceeded the linear range of the calibration or is estimated due to interference.
- MC The result is below the Minimum Compound Limit.
- * The result exceeds the Regulatory Limit or Maximum Contamination Limit.
- m Manual integration was used to determine the area response.
- d Manual integration in which peak was deleted
- N The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
- P The second column confirmation exceeded 25% difference.
- **C** The result has been confirmed by GC/MS.
- X The result was not confirmed when GC/MS Analysis was performed.
- B The analyte was detected in the Method Blank at a concentration greater than the RL.
- MB+ The analyte was detected in the Method Blank at a concentration greater than the MDL.
- G The ICB or CCB contained reportable amounts of analyte.
- OC-/+ The CCV recovery failed low (-) or high (+).
- R/QDR The RPD was outside of accepted recovery limits.
- QL-/+ The LCS or LCSD recovery failed low (-) or high (+).
- QLR The LCS/LCSD RPD was outside of accepted recovery limits.
- OM-/+ The MS or MSD recovery failed low (-) or high (+).
- QMR The MS/MSD RPD was outside of accepted recovery limits.
- QV-/+ The ICV recovery failed low (-) or high (\div).
- S The spike result was outside of accepted recovery limits.
- W Samples were received outside temperature limits ($0^\circ 6^\circ$ C). Not Clean Water Act compliant.
- Z Deviation: A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

Original



Suminit Environmental Technologies, Inc. 3310 Win St. Cuyahoga Falls, Ohio 44223 TEL: (330) 253-8211 FAX: (330) 253-4489 Website: <u>http://www.settek.com</u>

Workorder Sample Summary WO#: 19111146

11/13/2019 10:10:00 AM

19-Nov-19

Non-Potable

1

Water

CLIENT:	Life Science Labora	tories, Inc.			
Project:	1918638				
Lab SampleII)	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
19111146-001	1918638-0011	U U	11/6/2019	11/13/2019 10:10:00 AM	Non-Potable Water

11/6/2019

19111146-002 1918638-003A

Page 4 of 12



TEL: (330) 253-8211 FAX: (330) 253-4489 Website: <u>http://www.settek.com</u>

DATES REPORT

WO#: 19111146

19-Nov-19

Client: Project:	Life Science Labora 1918638	atories, Inc.					and a successful to the successful of the successful to the successful to the successful to the successful to t
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
LANDON DE LA MERICE		11/6/2019	Non-Potable Wa	ter Low-Level Mercury (EPA 1631)			11/18/2019 2:05:38 PM
19111146-001A	1918638-0011	L 1, 0, 2013		Low-Level Mercury (EPA 1631)			11/18/2019 2:09:47 PM

1918638-003A 19111146-J02A

ALL REAL PROPERTY.

Original

	Esta technol Satatorias		Summit Environmental Tec Cuyahoga Fa TEL: (330) 253-8211 FAX: Websile: <u>http://</u>	3310 Win St. Ils, Ohio 44223 (330) 253-4489			Date Reported: Company:	19111146 11/19/2019 Life Science Laboratories, Inc. 5854 Buttemut Dr. E. Syracuse NY 13057				
							Received: Project#:		19			
Client ID#	Lab ID#	Collected	Analyte	Result Units	Qual	Matrix	Method DF	MDL	PQL	Run	Analyst	
1918638-0011	001	11/6/2019	Mercury	1.40 ng/L	J	Non-Potable Water	EPA 1631 E 5	1.24	2.50	11/18/2019	AJT	
Client ID#	Lab ID#	Collected	Analyte	Result Units	Qual	Matrix	Method DF	MDL	PQL	Run	Analyst	
1918638-003A	002	11/6/2019	Mercury	1.37 ng/L		Non-Potable Water	EPA 1631 E 1	0,247	0,500	11/18/2019	AJT	



19111146-002A

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Accreditation Program **Analytes Report**

WO#: 19111146 19-Nov-19

Client: Life S Project: 19186	Science Laboratorie	s, Inc.	State: NY Program Name: DW	_ww_scm_ni
Sample ID	Matrix	Test Name	Analyte	Status
19111146-001A	Non-Potable Water	Low-Level Mercury (EPA 1631)	Mercury	A
19111146-002A	Non-Potable Water	Low-Level Mercury (EPA 1631)	Mercury	А

Key

Accredited DW WW_SCM_NE A

Original #1



Summit Environmental Technologies, Inc. 3310 Win St. Cuyahoga Kalls, Ohio 44223 TEL: (330) 253-8211 FAX: (330) 253-4489 Website: <u>http://www.settek.com</u>

QC SUMMARY REPORT

WO#: 19111146

19-Nov-19

lient: 'roject:		fe Science 18638	e Laboratoric	es, Inc.						E	BatchID: I	R105965		
Sample ID 1 Client ID: 1			Samp⊺ype: Batch ID:			e: HG-LL_N o: E1631	₽₩(Units: ng/L		Prep Dat Analysis Dat		2019	RunNo: 105 SeqNo: 247		
Analyte				Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury				50.4	Q.500	50.00	O	101	77	123				
Sample ID			SampType: Batch ID:			le: HG-LL_N lo: E1631	PW(Units: ng/L		Prep Dal Analysis Da		2019	RunNo: 105 SeqNo: 247		
Analyte				Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1			ND	0.500									U
Sample ID Client ID:	· ·		SampType: Batch 1D:	RLC R105965		de: HG-LL_N No: E1631	IPW(Units: ng/L		Prep Da Analysis Da		/2019	RunNo: 10 SeqNo: 24		
Analyte	Since			Result	PQL		SPK Ref Val	%REC		HighLimit 150	t RPD Ref Val	%RPD	RPDLimit	Qual
Mercury				0.595	0.500	0.5000	• 0	119	50		, 			
Sample ID Client ID:		2	SampType Batch ID:	: MBLK R105965		de: HG-LL_1 No: E1631	VPW(Units: ng/L		Prep Da Analysis Da		/2019	RunNo: 10 SeqNo: 24		
Analyte				Result	PQL	SPK value	e SPK Ref Val	%REC	LowLimit	HighLiml	t RPD Ref Val	%RPD	RPDLimit	
Mercury				ND	0.500									U
Qualifiers:	J . ND .	Analyte dete Not Defecte	ected below qua		ilank	M Mar P Sec	ue above quantitation tual Integration used ond column confirmat forting Detection Lim	o determine ion exceeds 1		H MC PL S	Value is below Permit Limit	for preparation or Minimum Compo outside accepted	ound	Origir

Page 8 of 12



Summit Environmental Technologies. Inc. 3310 Win St. Cuyahoga Falls, Ohio 44223 TEL: (330) 253-8211 FAX: (330) 253-4489 Website: <u>http://www.settek.com</u>

QC SUMMARY REPORT

WO#: 19111146

19-Nov-19

Client: Project:		ife Science 918638	Laboratorie	s, Inc.						B	atchID:	R105965			
Sample ID Client ID:		2	SampType: Batch ID:			le: HG-LL_NF lo: E1631	vW{ Units: ng/L		Prep Dat Analysis Dat	e: 11/18/2		SeqNo: 247	RunNo: 1 05965 SeqNo: 2476652		
Analyte				Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Va	I %RPD	RPDLimit	Qual	
:															
Sample ID Client ID:			SampType: Batch ID:			de: HG-LL_NI	₽W(Units: ng/L		Prep Dat Analysis Dat		2019	RunNo: 109 SeqNo: 247			
Analyte				Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Va	al %RPD	RPDLimit	Qual	
Mercury		<u></u>		50.5	0.500	50.00	D	101	77	123					
Sample ID Client ID:			SampType: Batch ID:			de: HG-LL_N No: E1631	PW(Units: ng/L		Prep Da Analysis Da		2019	RunNo: 10 SeqNo: 24			
Analyte				Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref V	al %RPD	RPDLimit	Qual	
Mercury	ar an al- ana njer konvert Correc			49.8	0.500	50.00	0	99.6	77	123	50.4	1.35	24		
Sample ID Client ID:			SampType: Batch ID:	LCS R105965		de: HG-LL_N No: E1631	PW(Units: ng/L		Prep Da Anatysis Da	ate: 11/18		RunNo: 10 SeqNo: 24	76670		
Analyte				Result	PQL	SPK value	SPK Ref Val	%REC			RPD Ref V	'al %RPD	RPDLimit	Qual	
Mercury				45.0	0.500	50.00	0	90.0	77	123	5				
Qualifices:	B J ND R	Analyte detec Not Detected	eted below quar		ank	M Man P Seco	c above quantitation us! Integration used (nd column confirmat orting Detection Limi Page 9 0	o determine ion exceeds t	area response		Value is below Permit Limit	s for preparation or w Minimum Comp ay outside accepted	ound	Origina	

a l	自动的现在分词 计算法 化性性管理 化化化合理	NC.
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Summit Environmental Technologies, Inc. 3310 Win St. Cuyahoga Falls, Ohio 44225 TEL: (330) 253-8211 FAX: (330) 253-4489 Website: <u>http://www.settek.com</u>

QC SUMMARY REPORT

WO#: 19111146

19-Nov-19

Original

	ife Science Laboratories, Inc. 918638					E	BatchID: R	105965		
Sample ID UFBD Client ID: LCSS02	SampType: LCSD Batch ID: R105965	TestCode: HG-LL_ TestNo: E1631	NPW(Units: ng/L		Prep Da Analysis Da		2019	RunNo: 105 SeqNo: 247		
Analyte	Result	PQL SPK valu	ie SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	46.0	0,500 50.0	0 0	92.0	77	123	44.98	2.21	24	
Sample ID mblank : Client ID: PBW	3 SampType: MBLK Batch ID: R105965	TestCode: HG-LL TestNo: E1631	_NPW(Units: ng/L		Prep Da Analysis Da		2019	RunNo: 10 SeqNo: 24		
Analyte	Result	PQL SPK valu	Je SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.248	0.500								j

Qualifiers: B Analyte detected in the associated Method Blank J Analyte detected below quantitation limits

- ND Not Detected
- R RPD outside accepted recovery limits

- E Value above quantitation range
- M Manual Integration used to determine area response
- P Second column confirmation exceeds
- RL Reporting Detection Limit

- II Holding times for preparation or analy
- MC Value is below Minimum Compound
- PL Permit Limit
- S Spike Recovery outside accepted reco

Page 10 of 12

Subcontractor Purchase Order / Chain of Custody

and a stand of the	45-1105	Fax #	(315) 44		kunderstade på	sinnssi ' Besound	kund dediver serviers av sponklind føren IV Dubly accoptance to til förband og blan Mytana tofistand unless supervidy øssayre	arder and new additional or different re	Finio
Saund Exclusioning	Réport allouis Liki Scien			•	Life Scien	ce Lal	barataries Project Number;	Special Tontrooutoon:	
Later Frind appliers I ste	5054 Bailte	erence and	:				1918638	And Particles Online Washer const Application all reports and inivians	
多点10 White Stewart	East Syme	iasca MA' - 1	8687		Porchase (•Namler (SO4):	edikingere sin exer ta horisate burk averanting	
all mymbolized frame, or the second					-	SQ56		1 . A. H. 18	ſ
F (mmo: 737-143-8621)	Somala ti a						cinen Engel Digone to part		
Fan: 331-253-4434	Content Nag	entë fa	Jack Li		Results ar	e requ	fred by this date:	SAMPLES ARE FOR NET	I' FORX
life Science Labs	-						Standard	STATE COMPL	MANCE
	Sample	Type	rational .	Brokerv,	Costainer	r	Analysis Requ	ISST	Unit
sample ID # / Client ID	Date	1 7 W W W W W W W W W W W W W W W W W W	my Platin	Added	STRATER.	Į,	arana an	NG-15.1/1-1/0-1/9-1-102-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Princ
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Page 11 01 12

Envirioni Laboratories	TEL: (330) 253-8211 FA	3310 ¥ Falls, Ohio 4	^{7in St.} 44223 Samp -4489	le Log-In Check List
Client Name: LIF-NY-13057	Work Order Number;	19111148		RcptNo: 1
Logged by: Jesseca E. Westfall	11/13/2019 10:10:00 AM	4	MAPH	et.
Completed By: Jacqueline Rasile	11/15/2019 4:37:44 PM		4-10-1	_
Reviewed By: Jennifer Woolf	11/15/2019 5:22:58 PM		Jund	for mulaces
Chain of Custody		Yes 🗹	No 🗌	Not Present
1. Is Chain of Custody complete?		UPS		
How was the sample delivered?		010		
Log In 3. Coolers are present?	,	Yes 🗹	No 🗔	
 Shipping container/cooler in good condition Custody seals intact on shipping container. 		Yes 🗹 Yes 🗔	No 🗌 No 🗔	Not Present 🔽
No. Seal Date: 5. Was an attempt made to cool the samples	?	Signed B	iy: No 🗔	
 Were all samplas received at a temperature 		Yes 🗹	No 🗔	
7. Sample(s) in proper container(s)?		Yes 🗹	No 🗌	
 Sufficient sample volume for indicated test 	(s)?	Yes 🗹	No 🗔	
 Are samples (except VOA and ONG) prop 		Yes 🗹	No 🗌	
10. Was preservative added to bottles?		Yes 🗋	No 🗹	NA 🗔
11. Is the headspace in the VOA vials less that	in 1/4 inch or 6 mm?	Yes 📋	No 🗋	No VOA Vials 🗹
Were any sample containers received brol	ken?	Yas 🛄	No 🗹	
 Does paperwork match bottle labels? (Note discrepancies on chain of custody) 		Yes 🗹	No 🗌	
14. Are matrices correctly identified on Chain	of Custody?	Yes 🗹	No 🗌	
15. is it clear what analyses were requested?		Yes 🗹	No 🗔	
 Were all holding times able to be met? (If no, notify customer for authorization.) 		Yes 🗹	No 🗔	
Special Handling (if applicable)				
17. Was client notified of all discrepancies wit	h this order?	Yes 🗌	No 🗍	NA 🗹
Person Notified:	Date §		an a	
By Whom:	Via:	🗍 eMail [📑 Phone 🥅 Fax	In Person
Regarding:	an hannan a berhadaan kaan generata an ad dis dis dis dis dis dis dis dis dis di		<u> </u>	da in an internet and in the internet of the i
Client Instructions:	ginin minin managerikan kananan kanan kan	<u>CARENCE CONS</u>	<u> </u>	na filia (ka fil
18. Additional remarks:	· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·			
Cooler Information				
Cooler No Temp *C Conditio	and the second s	INO Se	al Date Signed	i By
1 3.9 Ge	ood Not Present			

Life Science Laboratories, Inc. 5854													CI	nain	of Custody
LSI Central Lab					st Syrac			ew y	'ork	: 1;	3057			•	
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Sampled by: Martin Koennecke			ŕ	·.			L.	[]	st/	1.8	\mathcal{A}	N. 7			
Client Contact: Mark Byrne	Ph	ione # 3	15-842	-7024] /	No.		3) 5/ 5		in 1	A A	m/		
Sample Des	cription					1/3	*/3				metures	An			
Sample Location	Date Collected	Time Collected	Sample Matrix	Comp. or Grab	No. of Containers		14	10/	Ĩ	$\langle V \rangle$	a la	.×	18	/	Comments
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Comments: PO #:

Turnaround Time Required: Routine <u>X</u> Rush

4ºC Cooler Temperature:_

Life Science Laboratories, Inc.

Sample Receipt Checklist

Client Name: OGINA PAS Work Order Number: 1918638		Received b		11/6/2019 3:31:00 PM
Checklist completed by: 3.5 11 Initials Date	- 6 - 19	Revieweo	hiliais	11/0/19 Date
	: Hand Delivered			
Shipping container/cooler in good condition?	Yes 🗹	No	Not Present	
Custody seals intact on shipping container/cooler?	Yes 📙	No 📃	Not Present 🗹	
Custody seals intact on sample bottles?	Yes	No	Not Applicable 🔀	
Chain of custody present?	Yes 🗸	No		
Chain of custody signed when relinquished and received?	Yes 🔽	No		
Chain of custody agrees with sample labels?	Yes 🗸	No		
Samples in proper container/bottle?	Yes ⊻	No		
Sample containers intact?	Yes 🗸	No		
Sufficient sample volume for indicated test?	Yes 🗸	No		
All samples received within holding time?	Yes ⊻	No L.		
Container/Temp Blank temperature in compliance?	Yes 🖌	No		
Water - VOA vials have zero headspace?	Yes 🔽	No	No VOA vials submitte	ed
Water - pH acceptable upon receipt?	Yes 🗹	No	Not Applicable	

pН	Preservative	<u>pH A</u>				
>12	NaOH	Yes	¥	Ν		NA
<2	HNO3					NA
<2	HSO4	Yes	V.	Ν		NA
<2	1;1 HCL	Yes	·	N	L	NA 🗹
5-9	Pest/PCBs (608/8081)	Yes	i	N	ţ.	NA 🔽

Sample ID

Volume of Preservative added in Lab.

1

Comments:

B – 6 INSTITUTIONAL CONTROL CERTIFICATION

PAS OSWEGO SUPERFUND SITE

Institutional Controls Implementation Plan Annual Certification November 5, 2019

REQUIREMENT: The Institutional Control Implementation Plan (ICIP) for the PAS Oswego Superfund Site (Site) as approved by USEPA includes requirements for the period following the execution and recording of the Easement, which were documented in the approved Remedial Action Completion Report. It states that following implementation of institutional controls on the Industrial Precision Products Property, the Site will be inspected on an annual basis to determine whether any intrusive activities have occurred. In addition, building and property records will be reviewed to ascertain whether or not any filings have been made for such activities. The ICIP provides for an annual report summarizing the findings of the inspection and record review to be prepared, along with a certification confirming that operation and maintenance activities continue, and that this annual report would be included with the OM&M progress report to be submitted to EPA in July of each year.

CERTIFICATION: The PAS Oswego annual Site and records inspection was performed by de *maximis, inc.* on November 5, 2019. During this visit an inspection was made of the PAS Oswego Site during a monthly operation leachate removal event. This Site inspection was scheduled to allow a visit with a representative of Industrial Precision Products to determine if any intrusive activities may have occurred on their property since the Remedial Action Completion Report was approved in August 2006. *de maximis* also contacted representatives of the City and County to confirm that no potential filings were made to install wells on the Industrial Precision Property. Based on results of the Site and records inspection, a determination has been made that no intrusive activities have occurred or are planned on the Industrial Precision Control Property and that the operation and maintenance activities at the PAS Oswego Site are continuing in accordance with the requirements of Consent Decree.

B – 7 EMERGING CONTAMINANT REPORT



450 Montbrook Lane Knoxville, TN 37919 (865)691-5052 (865)691-9835 FAX

March 4, 2020

Emerging Contaminant Results Pollution Abatement Services, Site No. 738001 Oswego, NY

Dear Mr. Long:

de maximis inc., project coordinator for the Parties to the 1998 Consent Decree 98CV0112-NPMGJD for the Pollution Abatement Services (PAS) Site in Oswego New York, is providing this Summary Report for the sampling and analysis of per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane performed in November 2019 at the PAS Site.

Scope of Work

This letter provides the data for the sampling and analysis program for per- and polyfluoroalkyl substance (PFAS) and 1,4-dioxane performed at the PAS Site during the November 2019 semi-annual sampling event. The groundwater samples were collected from three existing monitoring wells: LR-2, SWW-5, and M-21 in accordance with the approved sampling plan. Well LR-2 is located upgradient of the Site, SWW-5 is located within the PAS containment system and M-21 is located downgradient of the Site as shown on **Figure 1**.

Construction information for these wells is as follows:

Well ID	Well Diameter	Screened Interval (Ft Below grade)
LR-2	2 inch	45.8 - 55.8
SWW-5	3 inch	7 - 17
M-21	3 inch	11.5 - 21.5





Groundwater Sampling

The groundwater samples were collected while wearing appropriate personal protective equipment (PPE). PFAS constituents were sampled first followed by sampling for 1,4-dioxane. Additionally, special PFAS-related precautions were taken in accordance with the approved Sampling and Analysis Plan (SAP) during the sampling to minimize potential sample contamination.

Specifically, groundwater samples were collected using a low-flow sampling method at flow rates not less than 100 milliliters per minute (ml/min) and no greater than 500 ml/min. During purging, depth to water was measured every 3 to 5 minutes. Water quality parameters were measured and included temperature, conductivity, pH, oxidation-reduction potential (ORP), and, dissolved oxygen (DO). Turbidity readings were also collected. These results were recorded on the corresponding field forms presented in Attachment I. The water quality measurements were taken to achieve the following:

- pH within ±0.1 Standard Units (SU)
- Specific conductivity within ±3%
- ORP within ±10 millivolts (mV)
- DO within ±10%
- Turbidity within ±10% (ideally less than 50 nephelometric turbidity units [NTUs])

Quality Control Samples

As approved by NYSDEC, OBG performed the sampling consistent with protocols for PFAS and 1,4dioxane and analysis was completed by Eurofins TestAmerica using modified USEPA Method 537 with quantification of 21 PFAS, and analysis for 1,4-dioxane was completed using USEPA Method 8270 with selected ion monitoring (SIM) (Attachment II). Quality control (QC) samples were collected, and the analytical data package was validated by ddms in a report dated February 21, 2020.

As prescribed in the approved SAP, one set of quality control (QC) samples was collected during the sampling event for the PFAS and 1,4-dioxane analyses. The QC samples for the PFAS and 1,4-dioxane analyses included one blind duplicate sample, one matrix spike/matrix spike duplicate (MS/MSD) sample pair, and one equipment blank. In addition, one field reagent blank was collected as part of the PFAS QC samples.

Analysis	No. of Samples	Field Blank	Blind Duplicate	Equipment Blank	MS	MSD	Total
PFAS	3	1	1	1	1	1	8
1,4-dioxane	3	0	1	1	1	1	7

Validation and Results

Validation of the results was performed by ddms and provided in the report dated February 21, 2020. (Attachment III) The results indicate that PFAS are present at low levels in both on and off-Site wells. Concentrations were generally less than 20 ppt. The highest concentrations were observed at SWW-5 within the PAS containment area. 1,4-dioxane was also detected in well SWW-5 at 1000 ppb J and in M-21 at 630 ppb J. The 1-4-dioxane results in SWW-5 and M-21 were identified as estimated biased high due to a high laboratory control sample recovery and also given the J qualifier during validation due to calibration and recovery issues in the lab.



CS PAPER

Conclusion

The data indicate detections of 1-4 dioxane on Site and immediately down gradient. However, it is important to note that well SWW-5 is on the PAS Site controlled by the City of Oswego and the State of New York and well M-21 is located on the Industrial Precision Products property controlled by an environmental easement completed in February 2006. In addition, all properties in proximity and down gradient of the PAS Site are within the Oswego City Limits and no potable wells are permitted within the City limits. Therefore, at this time no further action is proposed.

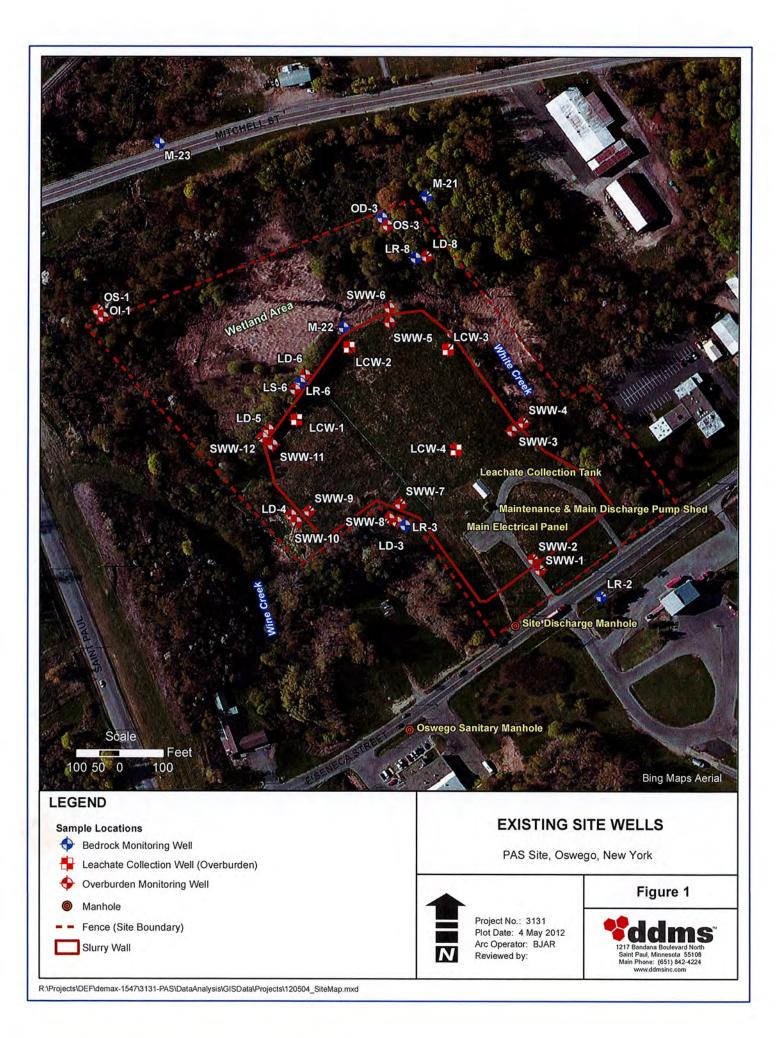
Should you have any questions, please contact me via e-mail or call me at 865-691-5052.

Sincerely,

Uny well

Clay McClarnon

CC: PAS Management Committee Patricia Pierre, USEPA



ATTACHMENT I

Eurofins TestAmerica, Buffalo

Chain of Custody Record

🐝 eurofins	
-80 - 6011011110	Environment Testing
	TestAmerica

10 Hazelwood Drive Amherst, NY 14228-2298

Phone: 716-691-2600 Fax: 716-691-7991

Client Information	Sampler: Ailic	All i bu (i Schove, John R								COC No: 480-137797-30986.1									
Client Contact: Ms. Deborah Wright	Phone: 0 315	- 254	- 5451	E-Ma john	il: .schov	ve@te	estam	nerica	inc.co	m		1						Page: Page 1 of 1	
Company: O'Brien & Gere Inc of North America	<u></u>			,	Γ				*******	alysis	Ro		tod	2				Job #:	
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NY, 13221 Phone:						tes)	-		İ					· ·				E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2O3
315-437-6100(Tel)	PO#: 181900212					analytes)													S - H2SO4 T - TSP Dodecahydrate
Email: deborah.wright@ramboll.com	WO #:				Or N	st (21											S	I - Ice J - DI Water	U - Acetone V - MCAA
Project Name: PAS Osewgo EC Sampling	Project #: 48021202				2 ⁶⁸		List										alner	K - EDTA L - EDA	W - pH 4-5 Z - other (specify)
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M-21 - 110519	111519	1000	(7	Water	T N	1 x	ĸ										1.5%		· · · · · · · · · · · · · · · · · · ·
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10	15.4	12.1	8.23	1288	130.9	3.67	5.6	300	
15	15.85	12.1	8.25	1287	127.5	3.89	2.3	300	
20	16.2	12.0	8.27	1253	41.1	4.4	1.18	300	
25	16.2	12.1	8.28	1195	-13.4	2.69	1.15	300	
30	16.2	12.0	8.27	1153	-34.9	2.81	1.12	300	
35	16.3	12.0	8.22	1148	-38.1	2.75	1.17	300	
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Stabilization	∆ ≤ 0.3'	± 3%	± 0.1	± 3%	± 10 mV	± 10%	± 10%	200 ≤ X ≤ 500	<u> </u>
-	je Time: al volume of g	1445 groundwater purg	jed: <u>5.5</u>	gal.			DO Titrataion:	mg/L	
Final Obser		olor: cle clexity	;ar	Odor:	none	S	Sheen/Free Product:	none	
Analytical S	•		2-110519			11/5/2019	Time:	1500	
Container		Container Type	# Collec	cted F	Field Filtered?	F	Preservative	Laborat	,
250 n		Polyethylene	2	<u> </u>	No	<u> </u>	none	ALS La	
1 lite	<u>,r ,</u>	Amber Glass	2	<u> </u>	No	\rightarrow	none	ALS La	ibs
<u> </u>	<u> </u>			<u> </u>				i	
	<u> </u>						+	1	
	<u> </u>					-		[
Notes: Fiel	d Duplicate o	collected here							
I									
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4									

💶 OBG			Low Flow Groundwater Sampling Log				Well II Northin Eastin	ng:	M-21	
Site Na	me: de	maximis inc	Samp	ling Method:	low flo	ow	Field Personr	inel: ARB/M	ЛК	
Site Locati		lswego, NY		pment Used:			_	-	: 11/5/2019	
Projec	.t #:	71436	Pump/Cc	ontroller ID#:	61223		Weath	ner: Rain 4	Rain 40	
Well inform	ation:				l Volume Multip	-	* Me	easurement Point		
	alled Depth o			omp.	1 in. = 0.041 g			Top of Well Ca	asing	
Meas	ured Depth o			omp	2 in. = 0.163 gal/ft 4 in. = 0.653 gal/ft		Cothern			
Longth of M	Depth to ater Column	mator :		·	4 in. = 0.653 g 6 in. = 1.469 g		Well Volum	Other:	gal.	
Lengin or w			.10 ft. .0 in.		8 in. = 2.611 g		Pump Intake Depth		gai. ft. bmp	
			<u> </u>		0 2.0			1		
-	e Time:			Orlan	nono	,	Other Product	nono		
Initial Observ	vations: Co	Color: cle		Odor:			Sheen/Free Product:	none		
Elapsed	Depth	<u>г </u>		Select Units fro Specific	rom Dropdown N	Menus Dissolved	а т	Flow		
Time	to Water	Temperature	рН	Conductivit	ity ORP	Oxygen	Turbidity	Rate	Other	
Minutes	ft bmp	Fahrenheit	SU	mS/cm	mV	mg/L	NTU	ml/min	L	
0	9.65	10.2	8.01	1349	-93.2	0.31	12.1	400	Ē	
5	9.7	10.3	7.83	1294	-124.0	0.46	3.16	300		
10	9.7	10.2	7.83	1259	-45.0	0.50	3.08	300		
15	9.7	10.2	7.82	1224	-1.0	0.55	1.77	300		
20	9.7	10.2	7.82	1190	-4.1	0.60	1.99	300		
25	9.7	10.2	7.76	1181	-9.8	0.62	2.00	300	í <u> </u>	
30	9.7	10.2	7.82	1165	-19.6	0.76	2.05	300		
35	9.7	10.2	7.82	1154	-16.0	0.64	1.95	300		
40	9.7	10.2	7.82	1160	-17.0	0.69	1.97	300	ſ <u></u>	
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Stabilization	∆ ≤ 0.3'	± 3%	± 0.1	± 3%	± 10 mV	± 10%	± 10%	200 ≤ X ≤ 500	<u> </u>	
Tota		945 groundwater purg olor: cle			none	,	DO Titrataion:	0		
		c Gravity								
Analytical S	•		1-110519			11/5/2019	Time:	1000		
Container 250 m		Container Type Polyethylene	# Collected 6		Field Filtered?		Preservative none		Laboratory ALS Labs	
250 II 1 liter		Amber Glass		—	No No		none		ALS Labs	
· ···	<u> </u>		6			+	lione			
			í <u> </u>					I		
						<u> </u>				
			<u> </u>							
Notes: MS/	/MSD collect	.ed here								

💶 OBG			Low Flow Groundwater Sampling Log				Well II Northin Eastin	ng:	SWW-5	
Site Na	me: de	maximis inc	Samp	oling Method:	low flo	ow	Field Personr	inel: ARB/M	ЛК	
Site Locati		swego, NY		pment Used:				-	: 11/5/2019	
Projec	.t #:	71436	Pump/Co	ontroller ID#:	61223		Weath	ner: Rain 4	: Rain 40	
Well inform	ation:				l Volume Multip	-	* Me	easurement Point		
	alled Depth o			· · · · · · · · · · · · · · · · · · ·	1 in. = 0.041 g			Top of Well Ca	asing	
Meas	ured Depth o			·	2 in. = 0.163 gal/ft 4 in. = 0.653 gal/ft					
Longth of W	Depth to ater Column			·	4 in. = 0.653 gai/it 6 in. = 1.469 gal/ft		Well Volum	Other: ne: 6.2	gal.	
		· · · ·	.0 in.		8 in. = 2.611 g	-	Pump Intake Depth		ft. bmp	
Of ant Durat			<u> </u>							
-	e Time:		ear	Odor:	none	:	Sheen/Free Product:	none		
	Vationo. C.				rom Dropdown M					
Elapsed	Depth			Select Onlis Inc		Dissolved		Flow	Other	
Time	to Water	Temperature	рН	Conductivit	-	Oxygen		Rate	Other	
Minutes	ft bmp	Fahrenheit	SU	mS/cm	mV	mg/L	NTU	ml/min	<u> </u>	
0	16.80	11.6	7.19	1914	57.2	1.73	40.3	300	I	
5	17.25	11.8	7.16	1875	69.1	0.83	15.0	300	I	
10	17.41	11.8	7.14	1854	80.1	0.54	6.34	300	I	
15	17.52	11.8	7.14	1870	84.9	0.38	5.42	300	 	
20	17.68	11.8	7.14	1890	83.1	0.34	3.12	300	l	
25	17.75	11.4	7.18	1916	99.3	4.41	1.25	300	I	
30	17.81	11.1	7.20	1907	109.2	5.14	1.34	300	┟────	
35	17.80	11.0	7.20	1907	113.1	4.85	1.18	300	t	
40	17.80	11.0	7.19	1914	115.6	4.76	1.22	300	t	
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	[]		í'				<u>† </u>	·]		
	[]		I			t	1			
Stabilization	∆ ≤ 0.3'	± 3%	± 0.1	± 3%	± 10 mV	± 10%	± 10%	200 ≤ X ≤ 500		
Tota		groundwater purg			_		DO Titrataion:	0		
Final Obser		olor: cle cle: Gravity		Odor:	none	°	Sheen/Free Product: _	none		
Analytical S	Sample ID:	SWW	-5-110519		Date:	11/5/2019	Time:	1330		
Container	Size C	Container Type	# Collec	cted	Field Filtered?	F	Preservative	Laborat	,	
250 m		Polyethylene	2		No		none		ALS Labs	
1 liter	<u>r </u>	Amber Glass	2		No		none	ALS La	ALS Labs	
			·	-+		\rightarrow		ſ		
			í ———	<u> </u>		-+		i		
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Notes: slow	v recovery fo	or filling sample co	ontainers							
——										

ATTACHMENT II

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🛟 eurofins

Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo 10 Hazelwood Drive Amherst, NY 14228-2298 Tel: (716)691-2600

Laboratory Job ID: 480-162320-1

Client Project/Site: PAS Osewgo EC Sampling

For:

O'Brien & Gere Inc of North America PO BOX 4873 Syracuse, New York 13221

Attn: Ms. Deborah Wright

Authorized for release by: 12/6/2019 5:49:51 PM Alexander Gilbert, Project Management Assistant I alexander.gilbert@testamericainc.com

Designee for

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Expert

John Schove, Project Manager II (716)504-9838 john.schove@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: O'Brien & Gere Inc of North America Project/Site: PAS Osewgo EC Sampling

Qualifiers

Qualifiers		3
GC/MS Semi		
Qualifier	Qualifier Description	
*	LCS or LCSD is outside acceptance limits.	
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.	5
В	Compound was found in the blank and sample.	
E	Result exceeded calibration range.	
LCMS		
Qualifier	Qualifier Description	
*	LCS or LCSD is outside acceptance limits.	0
I	Value is EMPC (estimated maximum possible concentration).	0
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	9
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	13
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEQ Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-162320-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-162320-1

Comments

No additional comments.

Receipt

The samples were received on 11/6/2019 8:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3° C.

GC/MS Semi VOA

Method 8270D SIM ID: Due to cross-contamination from high abundances of 1,4-Dioxane in samples associated with this job, the Method Blank (MB) contained 1,4-Dioxane above the reporting limit, and the Laboratory Control Sample (LCS) recovered above the upper control limit. The results have been qualified and reported. The following samples are impacted: M-21-110519 (480-162320-1), M-21-110519 (480-162320-1[MSD]), EB-110519 (480-162320-2), SWW-5-110519 (480-162320-4), LR-2-110519 (480-162320-5) and FD-110519 (480-162320-6)

Method 8270D SIM ID: The recovery of 1,4-Dioxane in the following samples were over the upper range of the initial calibration: M-21-110519 (480-162320-1), M-21-110519 (480-162320-1[MS]), M-21-110519 (480-162320-1[MSD]) and SWW-5-110519 (480-162320-4). Due to the level of dilution required, the IDA 1,4-Dioxane-d8 would be diluted to a level that could not be detected; therefore, the recovery of 1,4-Dioxane could not be calculated. The results from the lower dilution have been qualified with an "E" flag and reported.

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

LCMS

Method 537 (modified): The laboratory control sample (LCS) for preparation batch 200-149688 and analytical batch 200-149808 recovered outside control limits for the following analytes: Perfluorotetradecanoic acid (PFTeA). These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 537 (modified): The Ion Ratio associated with PFOS and PFBS in sample SWW-5-110519 (480-162320-4) fails our in-house defined limits, however the result is being reported because the peaks observed for both mass transitions are within the expected retention time windows for the branched chain isomers in our calibration mix. Since many of these isomers are at very low levels in our mixed calibration source (many are less than 5% of the solution), it's difficult to project how the different isomer's responses differ at higher levels, so we don't feel comfortable rejecting the detect based solely upon the ratio failure: SWW-5-110519 (480-162320-4)

Method 537 (modified): The continuing calibration verification (CCV) associated with batch 200-149808 recovered above the upper control limit for Perfluorotetradecanoic acid (PFTeA). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 200-149808/29).

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

Organic Prep

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

Client Sample ID: M-21-110519

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
1,4-Dioxane	630	EB*	0.19	0.095	ug/L		8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	9.0		1.6	0.80	ng/L	1	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.5		1.6	0.51	ng/L	1	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.3		1.6	0.61	ng/L	1	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.8		1.6	0.73	ng/L	1	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	19		1.6	0.65	ng/L	1	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.28	J	1.6	0.22	ng/L	1	537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.85	J	1.6	0.39	ng/L	1	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.5		1.6	0.64	ng/L	1	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		1.6	0.49	ng/L	1	537 (modified)	Total/NA
Client Sample ID: EB-110519 Lab Sample ID: 480-162320-2								

Client Sample ID: EB-110519

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D Method	Prep Type
1,4-Dioxane	0.36 B *	0.19	0.096 ug/L	1 8270D SIM ID	Total/NA

Client Sample ID: FB-110519

No Detections.

Client Sample ID: SWW-5-110519

0.19 1.9 1.9 1.9 1.9 1.9 1.9	0.59 0.72 0.86 0.76	ug/L ng/L ng/L ng/L ng/L ng/L	1 1 1 1 1 1 1	 8270D SIM ID 537 (modified) 537 (modified) 537 (modified) 537 (modified) 537 (modified) 537 (modified) 	Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA
1.9 1.9 1.9 1.9	0.59 0.72 0.86 0.76	ng/L ng/L ng/L	1 1 1 1 1 1	537 (modified) 537 (modified) 537 (modified)	Total/NA Total/NA Total/NA
1.9 1.9 1.9	0.72 0.86 0.76	ng/L ng/L	1 1 1 1	537 (modified) 537 (modified)	Total/NA Total/NA
1.9 1.9	0.86 0.76	ng/L	1 1 1	537 (modified)	Total/NA
1.9	0.76	0	1 1	()	
		ng/L	1	537 (modified)	Total/NA
10					i otal/INA
1.9	0.46	ng/L	1	537 (modified)	Total/NA
1.9	0.76	ng/L	1	537 (modified)	Total/NA
1.9	0.58	ng/L	1	537 (modified)	Total/NA
19	5.2	ng/L	1	537 (modified)	Total/NA
				19 5.2 ng/L 1	

Result Qualifier Analyte RL MDL Unit Dil Fac D Method Prep Type Perfluorobutanoic acid (PFBA) 537 (modified) 0.91 J 0.86 ng/L Total/NA 1.7 1

Client Sample ID: FD-110519

No Detections.

This Detection Summary does not include radiochemical test results.

Lab Sample ID: 480-162320-1

5

Lab Sample ID: 480-162320-4

Lab Sample ID: 480-162320-3

	537 (modified)	Total/NA
1	E27 (modified)	Totol/NIA
1	537 (modified)	Total/NA
	8270D SIM ID	Total/NA

Lab Sample ID: 480-162320-6

Lab Sample ID: 480-162320-1

Matrix: Water

5

6

Client Sample ID: M-21-110519 Date Collected: 11/05/19 10:00 Date Received: 11/06/19 08:00

		RL			D	Prepared	Analyzed	Dil Fac
630	EB*	0.19	0.095	ug/L		11/09/19 08:36	11/14/19 01:32	1
%Recoverv	Qualifier	l imits		-		Prepared	Analyzed	Dil Fac
•						•	•	1
		Ces RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
9.0		1.6	0.80	ng/L		11/14/19 11:09	11/18/19 18:33	1
3.5		1.6	0.51	ng/L		11/14/19 11:09	11/18/19 18:33	1
5.3		1.6	0.61	ng/L		11/14/19 11:09	11/18/19 18:33	1
1.8		1.6	0.73	ng/L		11/14/19 11:09	11/18/19 18:33	1
19		1.6		-		11/14/19 11:09	11/18/19 18:33	1
	J	1.6		-		11/14/19 11:09	11/18/19 18:33	1
								1
				-				1
				•				1
	*			0				1
				0				1
0.00		1.0	0.00	ng/L		11/14/10 11:00	11/10/13 10:55	
2.5		1.6	0.64	ng/L		11/14/19 11:09	11/18/19 18:33	1
ND		1.6	0.76	ng/L		11/14/19 11:09	11/18/19 18:33	1
3.5		1.6	0.49	ng/L		11/14/19 11:09	11/18/19 18:33	1
ND		1.6	0.72	ng/L		11/14/19 11:09	11/18/19 18:33	1
ND		8.0	8.0	ng/L		11/14/19 11:09	11/18/19 18:33	1
ND		16	1.4	ng/L		11/14/19 11:09	11/18/19 18:33	1
ND		16	1.2	ng/L		11/14/19 11:09	11/18/19 18:33	1
ND		16		-				1
ND		16	2.3	ng/L		11/14/19 11:09	11/18/19 18:33	1
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
84		50 - 150						1
77		50 - 150				11/14/19 11:09	11/18/19 18:33	1
84		50 - 150				11/14/19 11:09	11/18/19 18:33	1
63		50 - 150				11/14/19 11:09	11/18/19 18:33	1
89		50 - 150				11/14/19 11:09	11/18/19 18:33	1
66		25 - 150				11/14/19 11:09	11/18/19 18:33	1
85		50 - 150				11/14/19 11:09	11/18/19 18:33	1
								1
89								1
								1
								1
								1
								1
0/		50 - 150				11/14/19 11.09	11/10/19 10.33	1
	Result 630 %Recovery 32 inated Alky Result 9.0 3.5 5.3 1.8 19 0.28 ND ND R4 63 89 66 85 85	Result Qualifier 630 E B * %Recovery Qualifier 32 Inated Alky Substame Result Qualifier 9.0 3.5 5.3 1.8 19 0.28 ND ND ND ND ND ND ND 3.5 J 3.5 ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND S S S R4 63 89 S 85 <	Result Qualifier RL 630 E B * 0.19 %Recovery Qualifier Limits 32 15-110 inated Alkyl Substances Result Qualifier RL 9.0 1.6 3.5 1.6 5.3 1.6 5.3 1.6 1.8 1.6 1.9 1.6 0.28 J 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 3.5 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6 ND 1.6 1.6	Result Qualifier RL MDL 630 E B* 0.19 0.095 %Recovery Qualifier Limits 15.110 32 15.110 15.110 inated Alkyl Substances Result Qualifier RL MDL 9.0 1.6 0.80 3.5 1.6 0.51 5.3 1.6 0.73 16 0.61 1.8 1.6 0.73 19 1.6 0.62 ND 1.6 0.62 ND 1.6 0.62 ND 1.6 0.62 ND 1.6 0.62 ND 1.6 0.62 ND 1.6 0.64 ND 1.6 0.49 1.6 0.49 ND 1.6 0.72 1.6 0.64 ND 1.6 0.72 ND 1.6 0.49 ND 1.6 0.72 ND 1.6 1.2 ND 1.6 0.72	Result Qualifier RL MDL Unit 630 E B * 0.19 0.095 ug/L %Recovery Qualifier Limits 0.095 ug/L 32 15-110 0.095 ug/L inated Alkyl Substances Result Qualifier RL MDL Unit 9.0 1.6 0.80 ng/L 0.80 ng/L 5.3 1.6 0.61 ng/L 0.80 ng/L 5.3 1.6 0.61 ng/L 0.28 0.28 1.6 0.62 ng/L 0.28 J 1.6 0.62 ng/L 0.85 ng/L 0.83 ng/L ND 1.6 0.42 ng/L ND 1.6 0.48 ng/L ND 1.6 0.44 ng/L 0.85 J 1.6 0.49 ng/L ND 1.6 0.72 ng/L Ng/L 0.85 ng/L ND 1.6 1.4 <td< td=""><td>Result Qualifier RL MDL Unit D 630 E B * 0.19 0.095 ug/L D %Recovery Qualifier Limits 15.110 0.095 ug/L D inated Alkyl Substances Result Qualifier RL MDL Unit D 9.0 1.6 0.80 ng/L D D D D 5.3 1.6 0.51 ng/L D</td><td>630 E B * 0.19 0.095 ug/L - 11/09/19 08:36 %Recovery Qualifier Limits T5.110 Prepared inated Alkyl Substances Result Qualifier RL MDL Unit D Prepared 9.0 1.6 0.80 ng/L 11/14/19 11/09/19 08:36 6.35 1.6 0.51 ng/L 11/14/19 11/09/19 08:36 9.0 1.6 0.65 ng/L 11/14/19 11/09/19 08:36 6.35 1.6 0.51 ng/L 11/14/19 11/09/19 08:36 9.0 1.8 0.61 ng/L 11/14/19 11/09/19 08:36 9.0 1.8 0.61 ng/L 11/14/19 11/09/19 08:36 9.0 1.6 0.47 ng/L 11/14/19 11/09/19 08:36 9.0 1.6 0.47 ng/L 11/14/19 11/09/19 08:36 ND 1.6 0.49 ng/L 11/14/19 11/09 ND <</td><td>Result Qualifier RL MDL Unit D Prepared Analyzed 630 E 8* 0.19 0.095 ug/L 1/109/19.08:06 1/1/14/19.01:32 %/Recovery Qualifier Limits 15.110 1/1/14/19.01:32 1/1/14/19.01:32 inated Alkyl Substances Result Qualifier RL MDL Unit D Prepared Analyzed 9.0 1.6 0.80 ng/L 11/14/19.1109 1/1/18/19.18:33 5.3 1.6 0.61 ng/L 11/14/19.1109 1/1/18/19.18:33 1.8 1.6 0.27 ng/L 11/14/19.1109 1/1/18/19.18:33 0.28 J 1.6 0.22 ng/L 11/14/19.1109 1/1/18/19.18:33 ND 1.6 0.47 ng/L 11/14/19.1109 1/1/18/19.18:33 ND 1.6 0.74 ng/L 11/14/19.1109 1/1/18/19.18:33 ND 1.6 0.74 ng/L 11/14/19.1109 1/1/18/19.18:33 ND 1.6 0.74 ng/L</td></td<>	Result Qualifier RL MDL Unit D 630 E B * 0.19 0.095 ug/L D %Recovery Qualifier Limits 15.110 0.095 ug/L D inated Alkyl Substances Result Qualifier RL MDL Unit D 9.0 1.6 0.80 ng/L D D D D 5.3 1.6 0.51 ng/L D	630 E B * 0.19 0.095 ug/L - 11/09/19 08:36 %Recovery Qualifier Limits T5.110 Prepared inated Alkyl Substances Result Qualifier RL MDL Unit D Prepared 9.0 1.6 0.80 ng/L 11/14/19 11/09/19 08:36 6.35 1.6 0.51 ng/L 11/14/19 11/09/19 08:36 9.0 1.6 0.65 ng/L 11/14/19 11/09/19 08:36 6.35 1.6 0.51 ng/L 11/14/19 11/09/19 08:36 9.0 1.8 0.61 ng/L 11/14/19 11/09/19 08:36 9.0 1.8 0.61 ng/L 11/14/19 11/09/19 08:36 9.0 1.6 0.47 ng/L 11/14/19 11/09/19 08:36 9.0 1.6 0.47 ng/L 11/14/19 11/09/19 08:36 ND 1.6 0.49 ng/L 11/14/19 11/09 ND <	Result Qualifier RL MDL Unit D Prepared Analyzed 630 E 8* 0.19 0.095 ug/L 1/109/19.08:06 1/1/14/19.01:32 %/Recovery Qualifier Limits 15.110 1/1/14/19.01:32 1/1/14/19.01:32 inated Alkyl Substances Result Qualifier RL MDL Unit D Prepared Analyzed 9.0 1.6 0.80 ng/L 11/14/19.1109 1/1/18/19.18:33 5.3 1.6 0.61 ng/L 11/14/19.1109 1/1/18/19.18:33 1.8 1.6 0.27 ng/L 11/14/19.1109 1/1/18/19.18:33 0.28 J 1.6 0.22 ng/L 11/14/19.1109 1/1/18/19.18:33 ND 1.6 0.47 ng/L 11/14/19.1109 1/1/18/19.18:33 ND 1.6 0.74 ng/L 11/14/19.1109 1/1/18/19.18:33 ND 1.6 0.74 ng/L 11/14/19.1109 1/1/18/19.18:33 ND 1.6 0.74 ng/L

Eurofins TestAmerica, Buffalo

Client Sample ID: M-21-110519 Date Collected: 11/05/19 10:00 Date Received: 11/06/19 08:00

Method: 537 (modified) - Fluor	rinated Alkyl	Substand	es (Contin	ued)		
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	93		25 - 150	11/14/19 11:09	11/18/19 18:33	1
M2-8:2 FTS	98		25 - 150	11/14/19 11:09	11/18/19 18:33	1

Client Sample ID: EB-110519 Date Collected: 11/05/19 10:45 Date Received: 11/06/19 08:00

13C4 PFHpA

13C4 PFOA

13C4 PFOS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.36	B *	0.19	0.096	ug/L		11/09/19 08:36	11/14/19 03:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 110				11/09/19 08:36	11/14/19 03:53	1
Method: 537 (modified) - Fluor	rinated Alky	/I Substan	ces						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.7	0.86	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.54	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.65	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.78	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.69	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.23	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.66	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.67	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.51	ng/L			11/18/19 18:58	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.51	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.7	0.79	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7		ng/L			11/18/19 18:58	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.69	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluoroheptanesulfonic Acid	ND		1.7		ng/L			11/18/19 18:58	1
(PFHpS)					0				
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.52	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.77	ng/L		11/14/19 11:09	11/18/19 18:58	1
Perfluorooctanesulfonamide (PFOSA)	ND		8.6	8.6	ng/L		11/14/19 11:09	11/18/19 18:58	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		17	1.5	ng/L		11/14/19 11:09	11/18/19 18:58	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		17	1.3	ng/L		11/14/19 11:09	11/18/19 18:58	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	4.7	ng/L		11/14/19 11:09	11/18/19 18:58	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	2.5	ng/L		11/14/19 11:09	11/18/19 18:58	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	96		50 - 150					11/18/19 18:58	1
13C2 PFDoA	78		50 - 150				11/14/19 11:09	11/18/19 18:58	1
13C2 PFHxA	95		50 - 150				11/14/19 11:09	11/18/19 18:58	1
13C2 PFTeDA	68		50 - 150					11/18/19 18:58	
13C2 PFUnA	84		50 - 150					11/18/19 18:58	1
13C4 PFBA	89		25 - 150					11/18/19 18:58	1
			•••						

Lab Sample ID: 480-162320-2

Job ID: 480-162320-1

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11/14/19 11:09 11/18/19 18:58

11/14/19 11:09 11/18/19 18:58

11/14/19 11:09 11/18/19 18:58

50 - 150

50 - 150

50 - 150

95

91

Client Sample ID: EB-110519 Date Collected: 11/05/19 10:45 Date Received: 11/06/19 08:00

Method: 537 (modified Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	96	50 - 150	11/14/19 11:09	11/18/19 18:58	1
13C5 PFPeA	95	25 - 150	11/14/19 11:09	11/18/19 18:58	1
13C8 FOSA	71	25 - 150	11/14/19 11:09	11/18/19 18:58	1
18O2 PFHxS	90	50 - 150	11/14/19 11:09	11/18/19 18:58	1
d3-NMeFOSAA	75	50 - 150	11/14/19 11:09	11/18/19 18:58	1
d5-NEtFOSAA	66	50 - 150	11/14/19 11:09	11/18/19 18:58	1

25 - 150

25 - 150

93

104

Client Sample ID: FB-110519

Date Collected: 11/05/19 09:35 Date Received: 11/06/19 08:00

M2-6:2 FTS

M2-8:2 FTS

Method: 537 (modified) - Fluor Analyte		Qualifier	Ces RL	МПІ	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.8	0.91			•	11/18/19 19:06	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.57	-			11/18/19 19:06	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.69	0			11/18/19 19:06	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.83				11/18/19 19:06	
Perfluorooctanoic acid (PFOA)	ND		1.8	0.74	0			11/18/19 19:06	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.25	-			11/18/19 19:06	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.20	U			11/18/19 19:06	
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.70	•			11/18/19 19:06	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.71	0			11/18/19 19:06	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8		ng/L			11/18/19 19:06	
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.8	0.84	-			11/18/19 19:06	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.45	0		11/14/19 11:09		1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8		ng/L			11/18/19 19:06	
()	ND		1.8	0.73	-			11/18/19 19:06	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.0	0.07	lig/∟		11/14/19 11:09	11/10/19 19:00	I
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.56	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.82	ng/L		11/14/19 11:09	11/18/19 19:06	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.1		ng/L		11/14/19 11:09	11/18/19 19:06	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		18	1.5	ng/L		11/14/19 11:09	11/18/19 19:06	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		18	1.4	ng/L		11/14/19 11:09	11/18/19 19:06	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		18	5.0	ng/L		11/14/19 11:09	11/18/19 19:06	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		18	2.6	ng/L		11/14/19 11:09	11/18/19 19:06	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	83		50 - 150				11/14/19 11:09	11/18/19 19:06	1
13C2 PFDoA	69		50 - 150				11/14/19 11:09	11/18/19 19:06	1
13C2 PFHxA	88		50 - 150				11/14/19 11:09	11/18/19 19:06	1
13C2 PFTeDA	58		50 - 150				11/14/19 11:09	11/18/19 19:06	1
13C2 PFUnA	76		50 - 150				11/14/19 11:09	11/18/19 19:06	1
13C4 PFBA	75		25 - 150				11/14/19 11:09	11/18/19 19:06	1
13C4 PFHpA	83		50 - 150				11/14/19 11:09	11/18/19 19:06	1
13C4 PFOA	82		50 - 150				11/14/19 11:09	11/18/19 19:06	1
13C4 PFOS	84		50 - 150				11/14/19 11:09	11/18/19 19:06	1

Eurofins TestAmerica, Buffalo

Lab Sample ID: 480-162320-2

11/14/19 11:09 11/18/19 18:58

11/14/19 11:09 11/18/19 18:58

Matrix: Water

Lab Sample ID: 480-162320-3

Lab Sample ID: 480-162320-4

Matrix: Water

Matrix: Water

5

6

Client Sample ID: FB-110519 Date Collected: 11/05/19 09:35 Date Received: 11/06/19 08:00

Isotope Dilution	%Recovery Qu	ualifier Limits	Prepared	Analyzed	Dil Fac
13C5 PFNA	83	50 - 150	11/14/19 11:09	11/18/19 19:06	1
13C5 PFPeA	84	25 - 150	11/14/19 11:09	11/18/19 19:06	1
13C8 FOSA	68	25 - 150	11/14/19 11:09	11/18/19 19:06	1
18O2 PFHxS	82	50 - 150	11/14/19 11:09	11/18/19 19:06	1
d3-NMeFOSAA	68	50 - 150	11/14/19 11:09	11/18/19 19:06	1
d5-NEtFOSAA	66	50 - 150	11/14/19 11:09	11/18/19 19:06	1
M2-6:2 FTS	80	25 - 150	11/14/19 11:09	11/18/19 19:06	1
M2-8:2 FTS	97	25 - 150	11/14/19 11:09	11/18/19 19:06	1

Client Sample ID: SWW-5-110519 Date Collected: 11/05/19 13:30

Date Received: 11/06/19 08:00

Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1000	E B *	0.19	0.095	ug/L		11/09/19 08:36	11/14/19 04:16	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	30		15 - 110				11/09/19 08:36	11/14/19 04:16	1
Method: 537 (modified) - Fluor	inated Alky	/I Substan	ces						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	27		1.9	0.94	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluoropentanoic acid (PFPeA)	2.4		1.9	0.59	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorohexanoic acid (PFHxA)	4.8		1.9	0.72	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluoroheptanoic acid (PFHpA)	1.9		1.9	0.86	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorooctanoic acid (PFOA)	6.4		1.9	0.76	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.25	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.73	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.74	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	0.57	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.9	0.87	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorobutanesulfonic acid (PFBS)	2.1	I.	1.9	0.46	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorohexanesulfonic acid (PFHxS)	2.5		1.9	0.76	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.90	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorooctanesulfonic acid (PFOS)	6.9	I	1.9	0.58	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.85	ng/L		11/14/19 11:09	11/18/19 19:22	1
Perfluorooctanesulfonamide (PFOSA)	ND		9.4	9.4	ng/L		11/14/19 11:09	11/18/19 19:22	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		19	1.6	ng/L		11/14/19 11:09	11/18/19 19:22	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		19	1.4	ng/L		11/14/19 11:09	11/18/19 19:22	1
1H,1H,2H,2H-perfluorooctanesulfo nic acid (6:2)	15	J	19	5.2	ng/L		11/14/19 11:09	11/18/19 19:22	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		19	2.7	ng/L		11/14/19 11:09	11/18/19 19:22	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	92		50 - 150				11/14/19 11:09	11/18/19 19:22	1

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Client Sample ID: SWW-5-110519 Date Collected: 11/05/19 13:30 Date Received: 11/06/19 08:00

	- Fluorinated Alkyl Substar	ices (Continued)			
Isotope Dilution	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	104	50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C2 PFHxA	84	50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C2 PFTeDA	78	50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C2 PFUnA	105	50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C4 PFBA	56	25 - 150	11/14/19 11:09	11/18/19 19:22	1
13C4 PFHpA	87	50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C4 PFOA	96	50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C4 PFOS	92	50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C5 PFNA	105	50 - 150	11/14/19 11:09	11/18/19 19:22	1
13C5 PFPeA	73	25 - 150	11/14/19 11:09	11/18/19 19:22	1
13C8 FOSA	78	25 - 150	11/14/19 11:09	11/18/19 19:22	1
18O2 PFHxS	93	50 - 150	11/14/19 11:09	11/18/19 19:22	1
d3-NMeFOSAA	82	50 - 150	11/14/19 11:09	11/18/19 19:22	1
d5-NEtFOSAA	101	50 - 150	11/14/19 11:09	11/18/19 19:22	1
M2-6:2 FTS	129	25 - 150	11/14/19 11:09	11/18/19 19:22	1
M2-8:2 FTS	121	25 - 150	11/14/19 11:09	11/18/19 19:22	1

RL

RL

1.7

1.7

1.7

17

1.7

1.7

1.7

1.7

1.7

1.7

1.7

1.7

0.19

Limits

15 - 110

MDL Unit

0.095 ug/L

MDL Unit

0.54 ng/L

0.65 ng/L

0.78 ng/L

0.69 ng/L

0.23 ng/L

0.66 ng/L

0.67 ng/L

0.50 ng/L

0.51 ng/L

0.79 ng/L

0.42 ng/L

0.86 ng/L

D

D

Prepared

Prepared

Prepared

11/14/19 11:09

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Qualifier

Result Qualifier

Result Qualifier

ND *

36

0.91 J

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

ND

%Recovery

Method: 537 (modified) - Fluorinated Alkyl Substances

Client Sample ID: LR-2-110519 Date Collected: 11/05/19 15:00 Date Received: 11/06/19 08:00

Analyte

Analyte

(PFHpS)

1,4-Dioxane

Isotope Dilution

Perfluorobutanoic acid (PFBA)

Perfluoropentanoic acid (PFPeA)

Perfluorohexanoic acid (PFHxA)

Perfluoroheptanoic acid (PFHpA)

Perfluorooctanoic acid (PFOA)

Perfluorononanoic acid (PFNA)

Perfluorodecanoic acid (PFDA)

Perfluoroundecanoic acid (PFUnA)

Perfluorododecanoic acid (PFDoA)

Perfluorotridecanoic acid (PFTriA)

Perfluorotetradecanoic acid (PFTeA)

Perfluorobutanesulfonic acid (PFBS)

Perfluorooctanesulfonic acid (PFOS)

Perfluorodecanesulfonic acid (PFDS)

Perfluorooctanesulfonamide (PFOSA)

N-methylperfluorooctanesulfonamidoa

N-ethylperfluorooctanesulfonamidoac

Perfluoroheptanesulfonic Acid

cetic acid (NMeFOSAA)

etic acid (NEtFOSAA)

Perfluorohexanesulfonic acid (PFHxS)

1.4-Dioxane-d8

Lab Sample ID: 480-162320-5

11/09/19 08:36 11/14/19 04:39

11/09/19 08:36 11/14/19 04:39

11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30 11/14/19 11:09 11/18/19 19:30

11/14/19 11:09 11/18/19 19:30

Analyzed

Analyzed

Analyzed

11/18/19 19:30

Matrix: Water

Dil Fac

Dil Fac

Dil Fac

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

15

	2	
	9	

Lab Sample ID: 480-162320-4 Matrix: Water

1.7 0.68 ng/L 11/14/19 11:09 11/18/19 19:30 1.7 0.81 ng/L 11/14/19 11:09 11/18/19 19:30 1.7 0.52 ng/L 11/14/19 11:09 11/18/19 19:30 1.7 0.77 ng/L 11/14/19 11:09 11/18/19 19:30 8.6 8.6 ng/L 11/14/19 11:09 11/18/19 19:30 17 1.5 ng/L 11/14/19 11:09 11/18/19 19:30 17 1.3 ng/L 11/14/19 11:09 11/18/19 19:30

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Client Sample ID: LR-2-110519 Date Collected: 11/05/19 15:00 Date Received: 11/06/19 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1H,1H,2H,2H-perfluorooctanesulfonic	ND		17	4.7	ng/L		11/14/19 11:09	11/18/19 19:30	1
acid (6:2)									
1H,1H,2H,2H-perfluorodecanesulfonic	ND		17	2.5	ng/L		11/14/19 11:09	11/18/19 19:30	1
acid (8:2)									
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	95		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C2 PFDoA	81		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C2 PFHxA	99		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C2 PFTeDA	77		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C2 PFUnA	88		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C4 PFBA	93		25 - 150				11/14/19 11:09	11/18/19 19:30	1
13C4 PFHpA	100		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C4 PFOA	97		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C4 PFOS	98		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C5 PFNA	90		50 - 150				11/14/19 11:09	11/18/19 19:30	1
13C5 PFPeA	98		25 - 150				11/14/19 11:09	11/18/19 19:30	1
13C8 FOSA	88		25 - 150				11/14/19 11:09	11/18/19 19:30	1
18O2 PFHxS	97		50 - 150				11/14/19 11:09	11/18/19 19:30	1
d3-NMeFOSAA	71		50 - 150				11/14/19 11:09	11/18/19 19:30	1
d5-NEtFOSAA	74		50 - 150				11/14/19 11:09	11/18/19 19:30	1
M2-6:2 FTS	100		25 - 150				11/14/19 11:09	11/18/19 19:30	1
M2-8:2 FTS	91		25 - 150				11/14/19 11:09	11/18/19 19:30	1

Client Sample ID: FD-110519

Date Collected: 11/05/19 00:00

Date Received: 11/06/19 08:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac D 1,4-Dioxane ND 0.19 0.095 ug/L 11/09/19 08:36 11/14/19 05:02 Isotope Dilution Limits Prepared Analyzed Dil Fac %Recovery Qualifier 1,4-Dioxane-d8 15-110 11/09/19 08:36 11/14/19 05:02 33

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.7	0.83	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluoropentanoic acid (PFPeA)	ND		1.7	0.52	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorohexanoic acid (PFHxA)	ND		1.7	0.63	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluoroheptanoic acid (PFHpA)	ND		1.7	0.75	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorooctanoic acid (PFOA)	ND		1.7	0.67	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorononanoic acid (PFNA)	ND		1.7	0.22	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.64	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.65	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.49	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	0.50	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorotetradecanoic acid (PFTeA)	ND	*	1.7	0.76	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.7	0.41	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.7	0.66	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.7	0.79	ng/L		11/14/19 11:09	11/18/19 19:39	1

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Lab Sample ID: 480-162320-5

Matrix: Water

Job ID: 480-162320-1

Matrix: Water

1

1

Lab Sample ID: 480-162320-6

Client Sample ID: FD-110519 Date Collected: 11/05/19 00:00 Date Received: 11/06/19 08:00

Lab Sample ID: 480-162320-6

Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	ND		1.7	0.50	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.74	ng/L		11/14/19 11:09	11/18/19 19:39	1
Perfluorooctanesulfonamide (PFOSA)	ND		8.3	8.3	ng/L		11/14/19 11:09	11/18/19 19:39	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		17	1.4	ng/L		11/14/19 11:09	11/18/19 19:39	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		17	1.2	ng/L		11/14/19 11:09	11/18/19 19:39	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		17	4.5	ng/L		11/14/19 11:09	11/18/19 19:39	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		17	2.4	ng/L		11/14/19 11:09	11/18/19 19:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C2 PFDA	82		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C2 PFDoA	82		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C2 PFHxA	101		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C2 PFTeDA	68		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C2 PFUnA	78		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C4 PFBA	92		25 - 150				11/14/19 11:09	11/18/19 19:39	1
13C4 PFHpA	92		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C4 PFOA	93		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C4 PFOS	93		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C5 PFNA	88		50 - 150				11/14/19 11:09	11/18/19 19:39	1
13C5 PFPeA	93		25 - 150				11/14/19 11:09	11/18/19 19:39	1
13C8 FOSA	81		25 - 150				11/14/19 11:09	11/18/19 19:39	1
18O2 PFHxS	88		50 - 150				11/14/19 11:09	11/18/19 19:39	1
d3-NMeFOSAA	70		50 - 150				11/14/19 11:09	11/18/19 19:39	1
d5-NEtFOSAA	78		50 - 150				11/14/19 11:09	11/18/19 19:39	1
M2-6:2 FTS	95		25 - 150				11/14/19 11:09	11/18/19 19:39	1
M2-8:2 FTS	91		25 - 150				11/14/19 11:09	11/18/19 19:39	1

Isotope Dilution Summary

Prep Type: Total/NA

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) Matrix: Water Prep Type: Total/NA

_			Percent Isotope Dilution Recovery (Acceptance Limits)
		DXE	
Lab Sample ID	Client Sample ID	(15-110)	
480-162320-1	M-21-110519	32	
480-162320-1 MS	M-21-110519	26	
480-162320-1 MSD	M-21-110519	29	
480-162320-2	EB-110519	32	
480-162320-4	SWW-5-110519	30	
480-162320-5	LR-2-110519	36	
480-162320-6	FD-110519	33	
LCS 480-503365/2-A	Lab Control Sample	32	
MB 480-503365/1-A	Method Blank	37	
Surrogate Legend			

DXE = 1,4-Dioxane-d8

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

480-162320-3

FB-110519

			Perce	Percent Isotope Dilution Recovery (Acceptance Limits)									
		PFDA	PFDoA	PFHxA	PFTDA	PFUnA	PFBA	PFHpA	PFOA				
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(50-150)	(25-150)	(50-150)	(50-150)				
480-162320-1	M-21-110519		77	84	63	89	66	85	85				
480-162320-1 MS	M-21-110519	79	69	85	60	77	66	85	85				
480-162320-1 MSD	M-21-110519	87	78	88	64	86	73	91	89				
480-162320-2	EB-110519	96	78	95	68	84	89	95	91				
480-162320-3	FB-110519	83	69	88	58	76	75	83	82				
480-162320-4	SWW-5-110519	92	104	84	78	105	56	87	96				
480-162320-5	LR-2-110519	95	81	99	77	88	93	100	97				
480-162320-6	FD-110519	82	82	101	68	78	92	92	93				
LCS 200-149688/2-A	Lab Control Sample	84	77	90	65	79	80	83	83				
MB 200-149688/1-A	Method Blank	106	89	99	77	88	91	97	95				
			Perce	ent Isotope	Dilution Re	covery (Ac	ceptance L	imits)					
		PFOS	PFNA	PFPeA	PFOSA	PFHxS	-NMeFOS	-NEtFOS/	M262FTS				
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(25-150)	(25-150)	(50-150)	(50-150)	(50-150)	(25-150)				
480-162320-1	M-21-110519	89	85	80	70	82	67	73	93				
480-162320-1 MS	M-21-110519	80	82	77	67	82	58	67	93				
480-162320-1 MSD	M-21-110519	84	82	83	72	89	62	71	92				
480-162320-2	EB-110519	93	96	95	71	90	75	66	93				
480-162320-3	FB-110519	84	83	84	68	82	68	66	80				
480-162320-4	SWW-5-110519	92	105	73	78	93	82	101	129				
480-162320-5	LR-2-110519	98	90	98	88	97	71	74	100				
480-162320-6	FD-110519	93	88	93	81	88	70	78	95				
LCS 200-149688/2-A	Lab Control Sample	81	81	84	73	84	76	74	83				
MB 200-149688/1-A	Method Blank	98	98	96	82	99	87	83	99				
			Perce	ent Isotope	Dilution Re	coverv (Ac	ceptance L	imits)					
		M282FTS		•			•	,					
Lab Sample ID	Client Sample ID	(25-150)											
480-162320-1	M-21-110519	98											
480-162320-1 MS	M-21-110519	89											
480-162320-1 MSD	M-21-110519	91											
480-162320-2	EB-110519	104											

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Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America Project/Site: PAS Osewgo EC Sampling

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued) Matrix: Water

			Percent Isotope Dilution Recovery (Acceptance Limits)	
		M282FTS		
Lab Sample ID	Client Sample ID	(25-150)		
480-162320-4	SWW-5-110519	121		
480-162320-5	LR-2-110519	91		
480-162320-6	FD-110519	91		
LCS 200-149688/2-A	Lab Control Sample	95		
MB 200-149688/1-A	Method Blank	119		
Surrogate Legend				
PFDA = 13C2 PFDA				
PFDoA = 13C2 PFDoA				
PFHxA = 13C2 PFHxA				
PFTDA = 13C2 PFTeDA				
PFUnA = 13C2 PFUnA				
PFBA = 13C4 PFBA				
PFHpA = 13C4 PFHpA				
PFOA = 13C4 PFOA				
PFOS = 13C4 PFOS				
PFNA = 13C5 PFNA				
PFPeA = 13C5 PFPeA				
PFOSA = 13C8 FOSA				
PFHxS = 18O2 PFHxS				
d3-NMeFOSAA = d3-NMe	FOSAA			
d5-NEtFOSAA = d5-NEtF	OSAA			
M262FTS = M2-6:2 FTS				
M282FTS = M2-8:2 FTS				

Prep Type: Total/NA

8

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution) Lab Sample ID: MB 480-503365/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA** Analysis Batch: 504158 Prep Batch: 503365 MB MB Analyte RL MDL Unit Prepared Analyzed Dil Fac **Result Qualifier** D 1,4-Dioxane 0.20 0.10 ug/L 11/09/19 08:36 11/13/19 23:57 0.352 1 MB MB Isotope Dilution %Recovery Qualifier Limits Prepared Analyzed Dil Fac 11/09/19 08:36 11/13/19 23:57 1,4-Dioxane-d8 37 15_110 1 Lab Sample ID: LCS 480-503365/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA** Analysis Batch: 504158 Prep Batch: 503365 LCS LCS %Rec. Spike Analyte Added Limits **Result Qualifier** Unit D %Rec 1,4-Dioxane 1.00 1.81 E* ug/L 181 40 - 140 LCS LCS Isotope Dilution %Recovery Qualifier Limits 1,4-Dioxane-d8 32 15 - 110 Lab Sample ID: 480-162320-1 MS Client Sample ID: M-21-110519 Matrix: Water Prep Type: Total/NA Analysis Batch: 504158 Prep Batch: 503365 Sample Sample Spike MS MS %Rec. Analyte **Result Qualifier** Added **Result Qualifier** Unit D %Rec Limits 1,4-Dioxane 630 EB 0.952 681 E4 ug/L 4959 40 - 140 MS MS Isotope Dilution %Recovery Qualifier Limits 1,4-Dioxane-d8 26 15 - 110 Lab Sample ID: 480-162320-1 MSD Client Sample ID: M-21-110519 **Matrix: Water** Prep Type: Total/NA Analysis Batch: 504158 Prep Batch: 503365 Spike MSD MSD %Rec. RPD Sample Sample Analyte **Result Qualifier** Added Result Qualifier Unit D %Rec Limits RPD Limit 1,4-Dioxane 630 EB' 0.952 624 E4 ug/L -1092 40 - 140 9 20 MSD MSD Isotope Dilution %Recovery Qualifier Limits 1,4-Dioxane-d8 29 15 - 110 Method: 537 (modified) - Fluorinated Alkyl Substances Lab Sample ID: MB 200-149688/1-A **Client Sample ID: Method Blank** Matrix: Water Prep Type: Total/NA Analysis Batch: 149808 Prep Batch: 149688

Allalysis Dalcii. 143000								гер Басси.	143000
-	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	1.0	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.63	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.76	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.91	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.81	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.77	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.78	ng/L		11/14/19 11:09	11/18/19 17:19	1

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Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 200-149688/1-A Matrix: Water Analysis Batch: 149808

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 149688

Analysis Batch: 149808								Prep Batch:	149688
Analyte		MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
							•	-	
Perfluorododecanoic acid (PFDoA)	ND		2.0		ng/L		11/14/19 11:09		
Perfluorotridecanoic acid (PFTriA)	ND		2.0	0.60	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.92	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.49	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.80	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.95	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.61	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.90	ng/L		11/14/19 11:09	11/18/19 17:19	1
Perfluorooctanesulfonamide (PFOSA)	ND		10	10	ng/L		11/14/19 11:09	11/18/19 17:19	1
N-methylperfluorooctanesulfonamidoa cetic acid (NMeFOSAA)	ND		20	1.7	ng/L		11/14/19 11:09	11/18/19 17:19	1
N-ethylperfluorooctanesulfonamidoac etic acid (NEtFOSAA)	ND		20	1.5	ng/L		11/14/19 11:09	11/18/19 17:19	1
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	ND		20	5.5	ng/L		11/14/19 11:09	11/18/19 17:19	1
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	ND		20	2.9	ng/L		11/14/19 11:09	11/18/19 17:19	1

	МВ	МВ				
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDA	106		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C2 PFDoA	89		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C2 PFHxA	99		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C2 PFTeDA	77		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C2 PFUnA	88		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C4 PFBA	91		25 - 150	11/14/19 11:09	11/18/19 17:19	1
13C4 PFHpA	97		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C4 PFOA	95		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C4 PFOS	98		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C5 PFNA	98		50 - 150	11/14/19 11:09	11/18/19 17:19	1
13C5 PFPeA	96		25 - 150	11/14/19 11:09	11/18/19 17:19	1
13C8 FOSA	82		25 - 150	11/14/19 11:09	11/18/19 17:19	1
18O2 PFHxS	99		50 - 150	11/14/19 11:09	11/18/19 17:19	1
d3-NMeFOSAA	87		50 - 150	11/14/19 11:09	11/18/19 17:19	1
d5-NEtFOSAA	83		50 - 150	11/14/19 11:09	11/18/19 17:19	1
M2-6:2 FTS	99		25 - 150	11/14/19 11:09	11/18/19 17:19	1
M2-8:2 FTS	119		25 - 150	11/14/19 11:09	11/18/19 17:19	1

Lab Sample ID: LCS 200-149688/2-A Matrix: Water Analysis Batch: 149808

Analysis Batch: 149808	Spike	LCS	LCS				Prep Batch: 149688 %Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	42.7		ng/L		107	50 - 150
Perfluoropentanoic acid (PFPeA)	40.0	43.1		ng/L		108	50 - 150
Perfluorohexanoic acid (PFHxA)	40.0	40.6		ng/L		102	70 - 130
Perfluoroheptanoic acid (PFHpA)	40.0	44.7		ng/L		112	70 - 130
Perfluorooctanoic acid (PFOA)	40.0	41.7		ng/L		104	70 - 130
Perfluorononanoic acid (PFNA)	40.0	42.7		ng/L		107	70 - 130
Perfluorodecanoic acid (PFDA)	40.0	43.1		ng/L		108	70 - 130

Eurofins TestAmerica, Buffalo

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

d3-NMeFOSAA

d5-NEtFOSAA

M2-6:2 FTS

M2-8:2 FTS

8 9

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

76

74

83

95

Lab Sample ID: LCS 200-1 Matrix: Water	49688/2-A					Clie	ent Sar	nple ID	: Lab Control Sample Prep Type: Total/NA
Analysis Batch: 149808									Prep Batch: 149688
			Spike	LCS	LCS				%Rec.
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits
Perfluoroundecanoic acid			40.0	40.5		ng/L		101	70 - 130
(PFUnA)									
Perfluorododecanoic acid (PFDoA)			40.0	42.7		ng/L		107	70 - 130
Perfluorotridecanoic acid (PFTriA)			40.0	40.6		ng/L		101	70 - 130
Perfluorotetradecanoic acid (PFTeA)			40.0	58.9	*	ng/L		147	70 - 130
Perfluorobutanesulfonic acid (PFBS)			35.4	37.6		ng/L		106	70 - 130
Perfluorohexanesulfonic acid (PFHxS)			36.4	38.8		ng/L		106	70 - 130
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	43.8		ng/L		115	50 - 150
Perfluorooctanesulfonic acid (PFOS)			37.1	42.2		ng/L		114	70 - 130
Perfluorodecanesulfonic acid (PFDS)			38.6	47.8		ng/L		124	50 - 150
Perfluorooctanesulfonamide (PFOSA)			40.0	45.9		ng/L		115	50 - 150
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)			40.0	39.4		ng/L		99	70 - 130
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)			40.0	38.6		ng/L		97	70 - 130
1H,1H,2H,2H-perfluorooctanesulf onic acid (6:2)			37.9	32.0		ng/L		84	50 - 150
1H,1H,2H,2H-perfluorodecanesul fonic acid (8:2)			38.3	27.4		ng/L		71	50 - 150
		LCS							
Isotope Dilution	%Recovery	Qualifier	Limits						
13C2 PFDA	84		50 - 150						
13C2 PFDoA	77		50 - 150						
13C2 PFHxA	90		50 - 150						
13C2 PFTeDA	65		50 - 150						
13C2 PFUnA	79		50 - 150						
13C4 PFBA	80		25 - 150						
13C4 PFHpA	83		50 - 150						
13C4 PFOA	83		50 - 150						
13C4 PFOS	81		50 - 150						
13C5 PFNA	81		50 - 150						
13C5 PFPeA	84		25 - 150						
13C8 FOSA	73		25 - 150 25 - 150						
1802 PFHxS	84		50 - 150						
1002111180	04		50 - 150						

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50 - 150

50 - 150

25 - 150

25 - 150

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8

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lah Sample ID: 490 46030	0.1 MS							iont Sc	mpio ID: M 21 110510
Lab Sample ID: 480-16232 Matrix: Water	0-1 1412							ient 5a	mple ID: M-21-110519 Prep Type: Total/NA
Analysis Batch: 149808									Prep Batch: 149688
Analysis Daten. 140000	Sample	Sample	Spike	MS	MS				%Rec.
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	9.0		32.8	47.2		ng/L		116	40 - 160
Perfluoropentanoic acid (PFPeA)	3.5		32.8	39.1		ng/L		108	40 - 160
Perfluorohexanoic acid (PFHxA)	5.3		32.8	39.0		ng/L		103	40 - 160
Perfluoroheptanoic acid (PFHpA)	1.8		32.8	36.1		ng/L		104	40 - 160
Perfluorooctanoic acid (PFOA)	19		32.8	54.3		ng/L		107	40 - 160
Perfluorononanoic acid (PFNA)	0.28	J	32.8	35.1		ng/L		106	40 - 160
Perfluorodecanoic acid (PFDA)	ND		32.8	34.8		ng/L		106	40 - 160
Perfluoroundecanoic acid	ND		32.8	30.7		ng/L		94	40 - 160
(PFUnA)									
Perfluorododecanoic acid	ND		32.8	34.2		ng/L		104	40 - 160
(PFDoA)			20.0	25.0		na/l		107	40 400
Perfluorotridecanoic acid (PFTriA)	ND		32.8	35.2		ng/L		107	40 - 160
Perfluorotetradecanoic acid	ND	*	32.8	44.9		ng/L		137	40 - 160
(PFTeA)	0.85		29.0	29.6		ng/L		99	40 - 160
Perfluorobutanesulfonic acid (PFBS)		J				-			
Perfluorohexanesulfonic acid (PFHxS)	2.5		29.9	33.8		ng/L		105	40 - 160
Perfluoroheptanesulfonic Acid (PFHpS)	ND		31.3	36.0		ng/L		115	40 - 160
Perfluorooctanesulfonic acid (PFOS)	3.5		30.5	35.0		ng/L		103	40 - 160
Perfluorodecanesulfonic acid (PFDS)	ND		31.6	34.2		ng/L		108	40 - 160
Perfluorooctanesulfonamide (PFOSA)	ND		32.8	37.2		ng/L		113	40 - 160
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	ND		32.8	38.4		ng/L		117	40 - 160
N-ethylperfluorooctanesulfonami	ND		32.8	30.9		ng/L		94	40 - 160
doacetic acid (NEtFOSAA)	ND		31.1	28.9		ng/L		93	40 - 160
1H,1H,2H,2H-perfluorooctanesulf onic acid (6:2)	ND		51.1	20.9		ng/L		30	40 - 100
1H,1H,2H,2H-perfluorodecanesul fonic acid (8:2)	ND		31.5	22.7		ng/L		72	40 - 160
	MS	MS							
Isotope Dilution	%Recovery	Qualifier	Limits						
13C2 PFDA	79		50 - 150						
13C2 PFDoA	69		50 - 150						
13C2 PFHxA	85		50 - 150						
13C2 PFTeDA	60		50 - 150						
13C2 PFUnA	77		50 - 150						
13C4 PFBA	66		25 - 150						
13C4 PFHpA	85		50 - 150						
13C4 PFOA	85		50 - 150						
13C4 PFOS	80		50 - 150						
13C5 PFNA	82		50 - 150						
13C5 PFPeA	77		25 - 150						
13C8 FOSA	67		25 - 150						
1802 PFHxS	82		50 - 150						
d3-NMeFOSAA	58		50 - 150						
d5-NEtFOSAA	67		50 - 150						
l									

QC Sample Results

Client Sample ID: M-21-110519

Prep Type: Total/NA

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-1623 Matrix: Water Analysis Batch: 149808				Client Sample ID: M-21-110519 Prep Type: Total/NA Prep Batch: 149688
_	MS	MS		
Isotope Dilution	%Recovery	Qualifier	Limits	
M2-6:2 FTS	93		25 - 150	
M2-8:2 FTS	89		25 - 150	

Lab Sample ID: 480-162320-1 MSD Matrix: Water 4 4 0 0 0 0

Analysis Batch: 149808									Prep Ba	tch: 14	
	Sample	•	Spike	MSD	MSD				%Rec.		RPD
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorobutanoic acid (PFBA)	9.0		34.0	45.0		ng/L		106	40 - 160	5	30
Perfluoropentanoic acid (PFPeA)	3.5		34.0	41.3		ng/L		111	40 - 160	5	30
Perfluorohexanoic acid (PFHxA)	5.3		34.0	42.9		ng/L		111	40 - 160	10	20
Perfluoroheptanoic acid (PFHpA)	1.8		34.0	39.6		ng/L		111	40 - 160	9	20
Perfluorooctanoic acid (PFOA)	19		34.0	54.6		ng/L		104	40 - 160	1	20
Perfluorononanoic acid (PFNA)	0.28	J	34.0	37.1		ng/L		108	40 - 160	6	20
Perfluorodecanoic acid (PFDA)	ND		34.0	36.3		ng/L		107	40 - 160	4	20
Perfluoroundecanoic acid	ND		34.0	32.9		ng/L		97	40 - 160	7	20
(PFUnA)											
Perfluorododecanoic acid	ND		34.0	34.0		ng/L		100	40 - 160	0	20
(PFDoA)				04 -				404	40.400		
Perfluorotridecanoic acid (PFTriA)	ND		34.0	34.5		ng/L		101	40 - 160	2	20
Perfluorotetradecanoic acid	ND	*	34.0	46.0		ng/L		135	40 - 160	2	20
(PFTeA)	0.05		00.4	00.0				00	40 400	6	00
Perfluorobutanesulfonic acid	0.85	J	30.1	30.2		ng/L		98	40 - 160	2	20
(PFBS) Perfluorohexanesulfonic acid	2.5		31.0	33.9		ng/L		101	40 - 160	0	20
(PFHxS)	2.0		01.0	00.0				101		0	20
Perfluoroheptanesulfonic Acid	ND		32.4	37.6		ng/L		116	40 - 160	4	30
(PFHpS)						-					
Perfluorooctanesulfonic acid	3.5		31.6	38.4		ng/L		110	40 - 160	9	20
(PFOS)	· · · · · · · · · · · · · · · · · · ·										
Perfluorodecanesulfonic acid	ND		32.8	33.4		ng/L		102	40 - 160	2	30
(PFDS)	ND		34.0	39.5		ng/l		116	40 - 160	6	30
Perfluorooctanesulfonamide (PFOSA)	ND		34.0	39.5		ng/L		110	40 - 100	0	30
N-methylperfluorooctanesulfona	ND		34.0	36.6		ng/L		107	40 - 160	5	20
midoacetic acid (NMeFOSAA)						.3. –				5	
N-ethylperfluorooctanesulfonami	ND		34.0	37.1		ng/L		109	40 - 160	18	20
doacetic acid (NEtFOSAA)											
1H,1H,2H,2H-perfluorooctanesulf	ND		32.3	31.9		ng/L		99	40 - 160	10	30
onic acid (6:2)				aa -					10 100	-	
1H,1H,2H,2H-perfluorodecanesul	ND		32.6	23.9		ng/L		73	40 - 160	5	30
fonic acid (8:2)	Men	MSD									
lastena Dilution			Limita								
Isotope Dilution	%Recovery	Qualifier	Limits								

•		
13C2 PFDA	87	50 - 150
13C2 PFDoA	78	50 - 150
13C2 PFHxA	88	50 - 150
13C2 PFTeDA	64	50 - 150
13C2 PFUnA	86	50 - 150
13C4 PFBA	73	25 - 150
13C4 PFHpA	91	50 - 150

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Eurofins TestAmerica, Buffalo

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Client Sample ID: M-21-110519 Prep Type: Total/NA Prep Batch: 149688		MSD MSD MSD		
	Limits	Recovery Qualifier	Isotope Dilution	
	50 - 150	89	13C4 PFOA	
	50 - 150	84	13C4 PFOS	
	50 - 150	82	13C5 PFNA	
	25 - 150	83	13C5 PFPeA	
	25 - 150	72	13C8 FOSA	
	50 - 150	89	18O2 PFHxS	
	50 - 150	62	d3-NMeFOSAA	
	50 - 150 05 - 150	71	d5-NEtFOSAA	
	25 - 150	92	M2-6:2 FTS	
	25 - 150	91	M2-8:2 FTS	

GC/MS Semi VOA

Prep Batch: 503365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-162320-1	M-21-110519	Total/NA	Water	3510C	
480-162320-2	EB-110519	Total/NA	Water	3510C	
480-162320-4	SWW-5-110519	Total/NA	Water	3510C	
480-162320-5	LR-2-110519	Total/NA	Water	3510C	
480-162320-6	FD-110519	Total/NA	Water	3510C	
MB 480-503365/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-503365/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-162320-1 MS	M-21-110519	Total/NA	Water	3510C	
480-162320-1 MSD	M-21-110519	Total/NA	Water	3510C	

Analysis Batch: 504158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch	
480-162320-1	M-21-110519	Total/NA	Water	8270D SIM ID	503365	
480-162320-2	EB-110519	Total/NA	Water	8270D SIM ID	503365	
480-162320-4	SWW-5-110519	Total/NA	Water	8270D SIM ID	503365	
480-162320-5	LR-2-110519	Total/NA	Water	8270D SIM ID	503365	
480-162320-6	FD-110519	Total/NA	Water	8270D SIM ID	503365	
MB 480-503365/1-A	Method Blank	Total/NA	Water	8270D SIM ID	503365	
LCS 480-503365/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	503365	
480-162320-1 MS	M-21-110519	Total/NA	Water	8270D SIM ID	503365	
480-162320-1 MSD	M-21-110519	Total/NA	Water	8270D SIM ID	503365	

LCMS

Prep Batch: 149688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-162320-1	M-21-110519	Total/NA	Water	3535	
480-162320-2	EB-110519	Total/NA	Water	3535	
480-162320-3	FB-110519	Total/NA	Water	3535	
480-162320-4	SWW-5-110519	Total/NA	Water	3535	
480-162320-5	LR-2-110519	Total/NA	Water	3535	
480-162320-6	FD-110519	Total/NA	Water	3535	
MB 200-149688/1-A	Method Blank	Total/NA	Water	3535	
LCS 200-149688/2-A	Lab Control Sample	Total/NA	Water	3535	
480-162320-1 MS	M-21-110519	Total/NA	Water	3535	
480-162320-1 MSD	M-21-110519	Total/NA	Water	3535	

Analysis Batch: 149808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-162320-1	M-21-110519	Total/NA	Water	537 (modified)	149688
480-162320-2	EB-110519	Total/NA	Water	537 (modified)	149688
480-162320-3	FB-110519	Total/NA	Water	537 (modified)	149688
480-162320-4	SWW-5-110519	Total/NA	Water	537 (modified)	149688
480-162320-5	LR-2-110519	Total/NA	Water	537 (modified)	149688
480-162320-6	FD-110519	Total/NA	Water	537 (modified)	149688
MB 200-149688/1-A	Method Blank	Total/NA	Water	537 (modified)	149688
LCS 200-149688/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	149688
480-162320-1 MS	M-21-110519	Total/NA	Water	537 (modified)	149688
480-162320-1 MSD	M-21-110519	Total/NA	Water	537 (modified)	149688

Job ID: 480-162320-1

Batch

Туре

Prep

Prep Type

Total/NA

Batch

Method

3510C

Lab Sample ID: 480-162320-1

Lab Sample ID: 480-162320-3

Lab Sample ID: 480-162320-4

Lab Sample ID: 480-162320-5

Matrix: Water

Matrix: Water

Matrix: Water

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analvst	Lab	
Date Receive	d: 11/06/19 0	8:00							
Date Collecte	d: 11/05/19 1	0:45							Matrix: Water
Client Sam	ple ID: EB-	110519					Lab Sa	ample ID:	480-162320-2
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 18:33	BWC	TAL BUR	
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR	
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 01:32	JMM	TAL BUF	

Dilution

Factor

Run

Batch

Number

503365

Prepared

or Analyzed

11/09/19 08:36

Analyst

JMP

Lab

TAL BUF

Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			503365	11/09/19 08:36	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 03:53	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 18:58	BWC	TAL BUR

Client Sample ID: FB-110519 Date Collected: 11/05/19 09:35 Date Received: 11/06/19 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 19:06	BWC	TAL BUR

Client Sample ID: SWW-5-110519 Date Collected: 11/05/19 13:30 Date Received: 11/06/19 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			503365	11/09/19 08:36	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 04:16	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 19:22	BWC	TAL BUR

Client Sample ID: LR-2-110519 Date Collected: 11/05/19 15:00 Date Received: 11/06/19 08:00

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			503365	11/09/19 08:36	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 04:39	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 19:30	BWC	TAL BUR

Matrix: Water

Lab Sample ID: 480-162320-6

Client Sample ID: FD-110519 Date Collected: 11/05/19 00:00 Date Received: 11/06/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analvst	Lab
Total/NA	Prep	- 3510C				11/09/19 08:36		TAL BUF
Total/NA	Analysis	8270D SIM ID		1	504158	11/14/19 05:02	JMM	TAL BUF
Total/NA	Prep	3535			149688	11/14/19 11:09	MBM	TAL BUR
Total/NA	Analysis	537 (modified)		1	149808	11/18/19 19:39	BWC	TAL BUR

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600 TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: O'Brien & Gere Inc of North America Project/Site: PAS Osewgo EC Sampling Job ID: 480-162320-1

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Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	03-31-20

Laboratory: Eurofins TestAmerica, Burlington

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10391	04-01-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	1H,1H,2H,2H-perfluorodecanesulfonic acid
			(8:2)
537 (modified)	3535	Water	1H,1H,2H,2H-perfluorooctanesulfonic acid
			(6:2)
537 (modified)	3535	Water	N-ethylperfluorooctanesulfonamidoacetic
	0505		acid (NEtFOSAA)
537 (modified)	3535	Water	N-methylperfluorooctanesulfonamidoacetic
E27 (modified)	3535	Water	acid (NMeFOSAA) Perfluorobutanesulfonic acid (PFBS)
537 (modified)			
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonamide (PFOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Method Summary

Client: O'Brien & Gere Inc of North America Project/Site: PAS Osewgo EC Sampling

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Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL BUR
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL BUR

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600 TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: O'Brien & Gere Inc of North America Project/Site: PAS Osewgo EC Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
)-162320-1	M-21-110519	Water	11/05/19 10:00	11/06/19 08:00
30-162320-2	EB-110519	Water	11/05/19 10:45	11/06/19 08:00
80-162320-3	FB-110519	Water	11/05/19 09:35	11/06/19 08:00
480-162320-4	SWW-5-110519	Water	11/05/19 13:30	11/06/19 08:00
480-162320-5	LR-2-110519	Water	11/05/19 15:00	11/06/19 08:00
480-162320-6	FD-110519	Water	11/05/19 00:00	11/06/19 08:00

mherst, NY 14228-2298 hone: 716-691-2600 Fax: 716-691-7991 F-C	Sampler: Allic	BIG	J	Lab P Scho	M. ove, Joh	in R				Syrac	use	COC No: 480-137797-30986.1
lient Contact: Is, Deborah Wright	Phone: \$ 315	C-Ma	E-Mail john.schove@testamericainc.com					Syracuse #225		Page: Page 1 of 1		
mpany 'Brien & Gere Inc of North America		000	0.101	p=		0			is Req		-0-	Job #
ddress:	Due Date Requeste	d:					T					Preservation Codes:
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ione: 15-437-6100(Tel)	PO#. 181900212					analytes						G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydra
nail: eborah.wright@ramboll.com	WO#				s or No No)	1 (21						I - Ice U - Acetone J - DI Water V - MCAA
roject Name:	Project #. 48021202				Or Or	IndLie	List					K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other: Other:
AS Osewgo EC Sampling ite:	48021202 SSOW#:				ample D (Ye:	Standard List (21	D - SIM					
Sample Identification	Sample Date	Sample Time		Matrix (W=water, S=solid, O=wasteloll, BT=Tissue, A=Air	NAV	PFC_IDA - PFAS,	8270D_SIM_MS_ID - SIM List					Special Instructions/Note:
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FB-110519	115119	0935	9	Water	++-	X	7			1,1,1	<u>ا, ا</u>	
SLUW-5-110519	11/5/10			Water	++-	x	X					
16-2-110519	11/5/19	1500	0	Water	++-	-	7					
FD- 110519	11/5/19		61	Water	₩	×	X				162320 Cha	in of Custody
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Non-Hazard Flammable Skin Irri	tant Poison B Unk	nown	Radiologica	d.		-		n To Client	·	Disposal By Lab		Archive For Months
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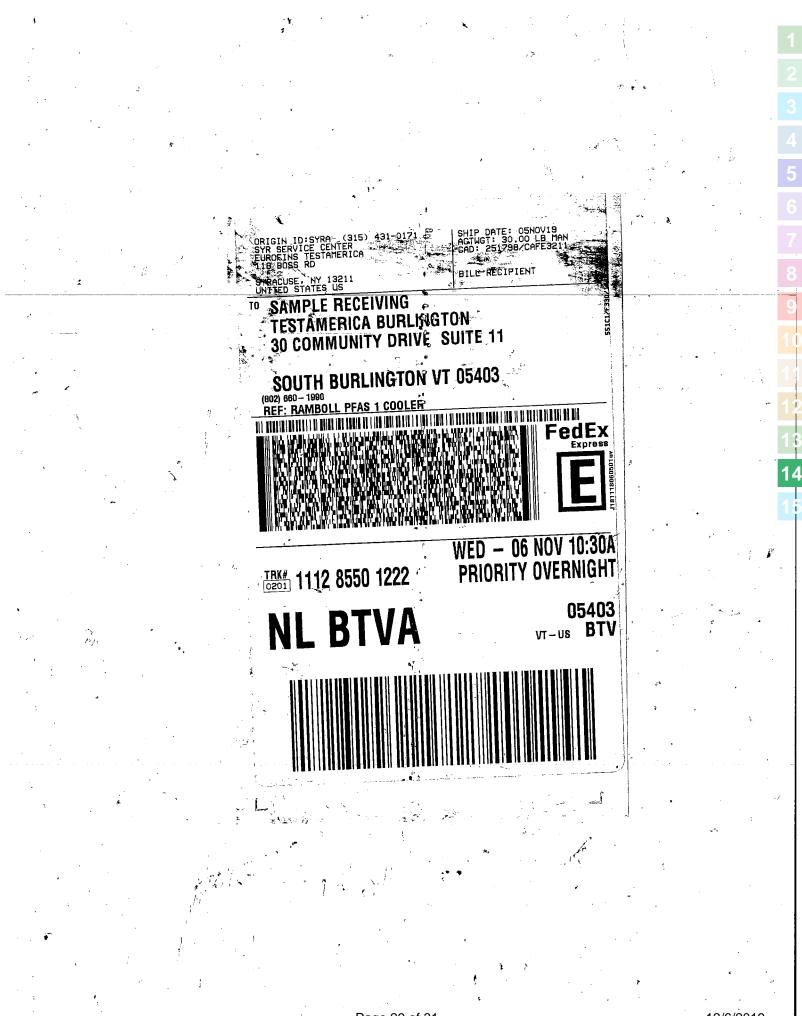
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iy:	TAT Requested (days);												A - HCL B - NaOH	M - Hexane N - None
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^{ail:} borah.wright@ramboll.com	WO #:		orN										I - Ice J - DI Water	U - Acetone V - MCAA
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12/6/2019



Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Login Number: 162320 List Number: 1 Creator: Kolb, Chris M

Radioactivity either was not measured or, if measured, is at or below True Background True The cooler's custody seal, if present, is intact. True The cooler or samples do not appear to have been compromised or tampered with. True Samples were received on ice. True Cooler Temperature is acceptable. True Cooler Temperature is recorded. True COC is present. True COC is filled out in ink and legible. True COC is filled out with all pertinent information. True Is the Field Sampler's name present on COC? True Samples are received within Holding Time (Excluding tests with immediate thr COC. True Sample containers have legible labels. True Containers are not broken or leaking. True Sample collection date/times are provided. True Sample bottles are completely filled. True Sample bottles are completely filled. True Sample bottles are completely filled. True Sample bottles are completely filled. True Sample bottles are completely filled. True Sample bottles are completely filled. True	Question	Answer	Comment
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	<i>Iultiphasic samples are not present.</i>	True	
Sampling Company provided. True ramboll	Samples do not require splitting or compositing.	True	
	Sampling Company provided.	True	ramboll
Samples received within 48 hours of sampling. True	Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field. True	Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked. N/A	Chlorine Residual checked.	N/A	

List Source: Eurofins TestAmerica, Buffalo

Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-162320-1

List Source: Eurofins TestAmerica, Burlington Login Number: 162320 5 7 8 9 10 11 12 13 14 15 List Number: 2 List Creation: 11/08/19 05:11 PM Creator: McNabb, Robert W

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	1080022
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	AB
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT III

<u>.</u>



DATA VALIDATION

FOR

EMERGING CONTAMINANTS PAS Oswego OSWEGO, NEW YORK

ORGANIC ANALYSIS DATA 1,4-Dioxane and Per- and Polyfluorinated Alkyl Substances (PFAS) in Water

Laboratory Job No. 480-162320-1

Analyses Performed By:

Eurofins TestAmerica Buffalo Amherst, New York

For:

de maximis, Inc. Knoxville, Tennessee 37919

Data Validation By:

ddms, inc. St. Paul, Minnesota 55108

February 21, 2020

1547-3131/ekd/psn PAS\480-162320-1 PFAS.docx



EXECUTIVE SUMMARY

Validation of the 1,4-dioxane and PFAS analysis data prepared by Eurofins TestAmerica Buffalo for four water samples, one equipment blank, and one field blank supporting the PAS Oswego (Site) Emerging Contaminants sampling event has been completed by de maximis Data Management Solutions, Inc. (ddms). The data were reported by the laboratory under Job No. 480-162320-1, which includes the following samples:

M-21-110519	EB-110519	FB-110519
SWW-5-110519	LR-2-110519	FD-110519

Based on the validation effort, the following data qualifiers were applied:

- The result for 1,4-dioxane in EB-110519 was qualified as estimated biased high (J+) due to the high recovery of this compound in the associated laboratory control sample (LCS) analysis.
- Results for 1,4-dioxane in M-21-110519 and SWW-5-110519 were qualified as estimated (J) because concentrations of this analyte exceeded the upper limit of the established instrument calibration range. These results were also qualified as estimated biased high due to a high LCS recovery; the "J" qualifier takes precedence.
- Results for 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2 FTS) in SWW-5-110519, LR-2-110519, and FD-110519 were qualified as estimated (UJ) due to the high percent difference (%D) for this analyte in an associated continuing calibration (CC) standard.
- Results for perfluorobutanoic acid (PFBA) in LR-2-110519 and FD-110519 were qualified as estimated (J, UJ) due to lack of confirmation at a low concentration in the field duplicate analysis.
- Results for perfluorobutanesulfonic acid (PFBS) in M-21-110519 and for PFBS and perfluorooctanesulfonic acid (PFOS) in SWW-5-1105 were qualified as tentatively identified and estimated (NJ) because ion ratios for these analytes were outside the laboratory limits.

All other results were determined to be valid as reported by the laboratory.

This report should be considered <u>part of the data package</u> for all future distributions of the data.



1.0 Introduction

This report presents the findings of the data validation assessment performed on the analyses of water samples collected on November 5, 2019, for the PAS Oswego emerging contaminants sampling event. Samples submitted to the laboratory in sample delivery group 480-162320-1 were reviewed in this report to identify quality issues which could affect the use of the sample data for decision-making purposes.

The 1,4-dioxane analyses were performed by Eurofins TestAmerica Buffalo in accordance with USEPA SW-846 Method 8270D with selective ion monitoring (SIM). The PFAS analyses were performed by Eurofins TestAmerica Burlington, under subcontract to Eurofins TestAmerica Buffalo, in accordance with USEPA Method 537 Modified. The laboratory provided a "CLP-type" data package for review.

The data validation was performed in accordance with the USEPA Region 2 Standard Operating Procedure (SOP) HW-22, "Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D" (Revision 5, December 2010), the specifications of the analytical methods followed, and ddms' SOPs ECS-SOP-002, "Validation and Review of Semivolatile Organic Data," ESC-SOP-004, "Validation and Review of Organic Analyses Using Selective Ion Monitoring (SIM), and draft ECS-SOP-007, "Standard Operating Procedures (SOPs) Validation and Review of Per- and Polyfluorinated Alkyl Substances (PFAS)". Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytical methodology, professional judgement was applied.

The data validation process is intended to evaluate data on a technical basis rather than a contract compliance basis for chemical analyses conducted under the referenced method. An initial assumption is that the data package is presented in accordance with the CLP requirements (or "CLP-like," as in this case). It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate quality review prior to submission for validation.

During the validation process, laboratory data are verified against all available supporting documentation. Based on the findings of the validation, qualifier codes may have been added by the data validator. Validated results are, therefore, either qualified or unqualified. Unqualified results mean that the reported values may be used without reservation. Final validated results are annotated with the following codes as defined by the Region 2 Guidelines:

- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.



- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
- JN The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

These codes are recorded on the Data Summary Forms contained in Attachment A of this validation report to indicate qualifications placed on the results based on the data review.

The data user is also cautioned that the validation effort is based on the raw data printouts as provided by the laboratory. Software manipulation cannot be routinely detected during validation; unless otherwise stated in the report, these kinds of issues are outside the scope of this review.

2.0 Holding Times, Preservation and Sample Integrity

A copy of the applicable chain of custody (COC) record was included in the data package documenting a sample collection date of November 5, 2019. The samples were received at Eurofins TestAmerica Buffalo on November 6, 2019 and at Eurofins TestAmerica Burlington on November 7, 2019.

The temperatures of the cooler upon receipt at Eurofins TestAmerica Buffalo $(3.3^{\circ}C)$ and at Eurofins TestAmerica Burlington $(0.7^{\circ}C)$ were acceptable (QC <10^{\circ}C).

The water samples were extracted on November 9, 2019, for 1,4-dioxane analyses, which is within the specified holding time of 14 days from collection. The 1,4-dioxane analyses were performed on November 14, 2019, which is within the specified holding time of 40 days from extraction.

The water samples were extracted on November 14, 2019, for PFAS analyses, which is within the specified holding time of 14 days from collection. PFAS analyses were performed on November 18, 2019, which is within the specified holding time of 28 days from extraction.



3.0 Documentation

No documentation issues were observed during the validation effort.

The remainder of this report discusses the review effort for each of the parameters. The tables below document the Quality Control (QC) parameters reviewed. Only those quality control excursions resulting in qualified data are discussed. Quality control excursions having no impact on sample results are not discussed. Where a result was qualified J+ or J- and J, the J qualifier takes precedence. Where a result was qualified biased high and low for differing data quality excursions, the final qualifier is J with an indeterminate bias.

4.0 1,4-Dioxane by SIM

Acceptable?
Y
Y
Y
Y
Y
N
N/A
Y
N
Y

Y=yes N=no

N/A = Not applicable

4.1 Laboratory Control Sample (LCS)

One LCS was prepared and analyzed with the field samples. The recovery of 1,4dioxane in the LCS (181%) exceeded the validation limits (QC 70-130%). Results for 1,4dioxane in M-21-110519, EB-110519, and SVWV-5-110519 were qualified as estimated biased high (J+) due to the high recovery of this compound in the associated LCS analysis. Since 1,4-dioxane was not detected in the remaining site samples, no additional qualifiers were necessary on this basis.

4.2 Compound Quantitation

1,4-Dioxane results and reporting limits were correctly calculated and accurately reported, including necessary adjustments for the sample preparation procedure.



Concentrations of 1,4-dioxane in M-21-110519 and SWW-5-110519 exceeded the upper limit of the established instrument calibration range and were qualified as estimated (J) on this basis. No diluted analyses of these samples were performed. Given the very high dilution factors that would have been required, the spiked concentration of the labeled analog would have been diluted out of both samples.

5.0 PFAS

Review Element	Acceptable?
Calibration - IC, ICV, CC	N
Laboratory and Field Blanks	Y
Labeled Analogs	Y
LCS/LCSD	Y
Field Duplicates	N
MS/MSD	Y
Internal Standard Responses	Y
Compound Identification	N
Compound Quantitation	Y

5.1 Calibration

An initial calibration (IC) run on October 28, 2019, was associated with the site sample analyses, and results for the IC were acceptable for all target analytes. A second-source initial calibration verification (ICV) standard was analyzed after the IC. Recoveries of the target analytes in the ICV standard were within the acceptance limits of 70-130%.

CC standards at 0.05 ng/mL, 1.0 ng/mL, and 2.5 ng/mL were analyzed at appropriate frequencies in the analysis series that included the site samples. The %Ds for the target compounds were less than 30% except for 8:2 FTS in the CC standard run on November 18, 2019, at 21:01 (31.8%D). The high %D represents a decrease in sensitivity. Results for 8:2 FTS in SWW-5-110519, LR-2-110519, and FD-110519 were qualified as estimated (UJ) due to the high %D for this compound in an associated CC standard. All other samples were bracketed by acceptable CC standards; therefore, no additional qualifiers were necessary on this basis.

5.2 Field Duplicate

Sample FD-110519 was submitted as a field duplicate of LR-2-110519. PFBA was reported at a low concentration in LR-2-110519 (0.91 J ng/L), but this analyte was not detected in FD-110519 (1.7 U ng/L). Results for PFBA in LR-2-110519 and FD-110519 were qualified as estimated (J, UJ) due to lack of confirmation at a low concentration in the field duplicate analysis.



5.3 Target Analyte Identification

Target compounds were detected in the field samples based on the presence of characteristic ions within the established retention time windows. Based on review of the data provided, sample results reflect accurate compound identification.

Ion ratios for some compounds, where secondary ions were used for identification and confirmation, were outside of the laboratory's established windows, as shown below

Sample	Analyte	Ion Ratio	Ion Ratio Window	Qualifier Applied
M-21-110519	PFBS	5.25	1.49-4.47	NJ
SWW-5-110519	PFBS	7.11	0.97-2.90	NJ
5000-5-110519	PFOS	21.65	2.51-7.52	NJ

Results for PFBS in M-21-110519 and for PFBS and PFOS in SWW-5-1105 were qualified as tentatively identified and estimated (NJ) because ion ratios for these analytes were outside the laboratory limits.



ATTACHMENT A

DATA SUMMARY FORMS Job No. 480-162320-1 1,4-Dioxane and PFAS in Water

Job No. 480-162320-1 Site Name: PAS

Data Summary Form for Emerging Contaminants Samples PFAS and 1,4-Dioxane

ddms Project No. 1S473131 Sampling Date 11/5/2019

			EB-110519 480-162320-2			FB-110519 480-162320-3			
			1			1			
Parameter	Unit								
2-[N-Methylperfluorooctanesulfonamido] acetic acid (NMeFOSAA)	ng/L	17	U		18	U			
Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]- (NEtFOSAA)	ng/L	17	U		18	U			
Perfluorobutanesulfonic Acid (PFBS)	ng/L	1.7	U		1.8	U			
Perfluorobutyric Acid (PFBA)	ng/L	1.7	U		1.8	U			
Perfluorodecanesulfonic acid (PFDS)	ng/L	1.7	U		1.8	U			
Perfluorodecanoic Acid (PFDA)	ng/L	1.7	U		1.8	U			
Perfluorododecanoic Acid (PFDoA)	ng/L	1.7	U		1.8	U			
Perfluoroheptanesulfonic Acid (PFHpS)	ng/L	1.7	U		1.8	U			
Perfluoroheptanoic Acid (PFHpA)	ng/L	1.7	U		1.8	U			
Perfluorohexanesulfonic Acid (PFHxS)	ng/L	1.7	U		1.8	U			
Perfluorohexanoic Acid (PFHxA)	ng/L	1.7	U		1.8	U			
Perfluorononanoic Acid (PFNA)	ng/L	1.7	U		1.8	U			
Perfluorooctanesulfonamide (PFOSA)	ng/L	8.6	. U		9.1	U			
Perfluorooctanesulfonic Acid (PFOS)	ng/L	1.7	U		1.8	U			
Perfluorooctanoic Acid (PFOA)	ng/L	1.7	U		1.8	U			
Perfluoropentanoic Acid (PFPeA)	ng/L	1.7	U		1.8	U			
Perfluorotetradecanoic Acid (PFTreA)	ng/L	1.7	U		1.8	U			
Perfluorotridecanoic Acid (PFTriA)	ng/L	1.7	U		1.8	U			
Perfluoroundecanoic Acid (PFUnA)	ng/L	1.7	U		1.8	U			
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	ng/L	17	U		18	U			
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	17	U		18	U			
1,4-Dioxane	ug/L	0.36	J+	high LCS %R					

Job No. 480-162320-1 Site Name: PAS

Data Summary Form for Emerging Contaminants Samples PFAS and 1,4-Dioxane

ddms Project No. 1S473131 Sampling Date 11/5/2019

			FD-110519 480-162320-6		LR-2-110519 480-162320-5			
			1			1		
Parameter	Unit							
2-[N-Methylperfluorooctanesulfonamido] acetic acid (NMeFOSAA)	ng/L	17	U		17	U		
Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]- (NEtFOSAA)	ng/L	17	U		17	U		
Perfluorobutanesulfonic Acid (PFBS)	ng/L	1.7	U		1.7	U	1	
Perfluorobutyric Acid (PFBA)	ng/L	1.7	IJ	lack of field dup confirmation	0.91	J	lack of field dup confirmation	
Perfluorodecanesulfonic acid (PFDS)	ng/L	1.7	U		1.7	U		
Perfluorodecanoic Acid (PFDA)	ng/L	1.7	U		1.7	U		
Perfluorododecanoic Acid (PFDoA)	ng/L	1.7	U		1.7	U		
Perfluoroheptanesulfonic Acid (PFHpS)	ng/L	1.7	U		1.7	U		
Perfluoroheptanoic Acid (PFHpA)	ng/L	1.7	U		1.7	U		
Perfluorohexanesulfonic Acid (PFHxS)	ng/L	1.7	U		1.7	U		
Perfluorohexanoic Acid (PFHxA)	ng/L	1.7	U		1.7	U		
Perfluorononanoic Acid (PFNA)	ng/L	1.7	U		1.7	U		
Perfluorooctanesulfonamide (PFOSA)	ng/L	8.3	U		8.6	U		
Perfluorooctanesulfonic Acid (PFOS)	ng/L	1.7	U		1.7	U		
Perfluorooctanoic Acid (PFOA)	ng/L	1.7	U		1.7	U		
Perfluoropentanoic Acid (PFPeA)	ng/L	1.7	U		1.7	U		
Perfluorotetradecanoic Acid (PFTreA)	ng/L	1.7	U		1.7	U		
Perfluorotridecanoic Acid (PFTriA)	ng/L	1.7	U		1.7	U		
Perfluoroundecanoic Acid (PFUnA)	ng/L	1.7	U		1.7	U		
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	ng/L	17	ιU	low CC standard response	17	UJ	low CC standard response	
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	17	U		17	U		
1,4-Dioxane	ug/L	0.19	U		0.19	U		

Job No. 480-162320-1 Site Name: PAS

Data Summary Form for Emerging Contaminants Samples PFAS and 1,4-Dioxane

ddms Project No. 15473131 Sampling Date 11/5/2019

			M-21-110519 480-162320-1		SWW-5-110519 480-162320-4			
			1			1		
Parameter	Unit							
2-[N-Methylperfluorooctanesulfonamido] acetic acid (NMeFOSAA)	ng/L	16	U		19	U		
Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-(NEtFOSAA)	ng/L	16	U		19	U		
Perfluorobutanesulfonic Acid (PFBS)	ng/L	0.85	NJ	ion ratio outside	2.1	NJ	ion ratio outside	
Perfluorobutyric Acid (PFBA)	ng/L	9.0		_	27		_	
Perfluorodecanesulfonic acid (PFDS)	ng/L	1.6	U		1.9	U		
Perfluorodecanoic Acid (PFDA)	ng/L	1.6	U		1.9	U		
Perfluorododecanoic Acid (PFDoA)	ng/L	1.6	U		1.9	U		
Perfluoroheptanesulfonic Acid (PFHpS)	ng/L	1.6	U		1.9	U		
Perfluoroheptanoic Acid (PFHpA)	ng/L	1.8			1.9			
Perfluorohexanesulfonic Acid (PFHxS)	ng/L	2.5			2.5			
Perfluorohexanoic Acid (PFHxA)	ng/L	5.3			4.8			
Perfluorononanoic Acid (PFNA)	ng/L	0.28	1		1.9	U		
Perfluorooctanesulfonamide (PFOSA)	ng/L	8.0	U		9.4	U		
Perfluorooctanesulfonic Acid (PFOS)	ng/L	3.5			6.9	LN	ion ratio outside limits	
Perfluorooctanoic Acid (PFOA)	ng/L	19			6.4			
Perfluoropentanoic Acid (PFPeA)	ng/L	3.5			2.4			
Perfluorotetradecanoic Acid (PFTreA)	ng/L	1.6	U		1.9	U		
Perfluorotridecanoic Acid (PFTriA)	ng/L	1.6	U		1.9	U		
Perfluoroundecanoic Acid (PFUnA)	ng/L	1.6	U		1.9	U		
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	ng/L	16	U		19	IJ	low CC standard response	
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	16	U		15	J		
1,4-Dioxane	ug/L	630	L	exceeds calibration range, high LCS %R	1000	J	exceeds calibration range, high LCS %R	

II - C 1ST QUARTER REPORT 2019



<u>QUARTERLY PROGRESS REPORT – 1st QUARTER 2020</u> Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: Pollution Abatement Services Site Oswego, New York

PERIOD COVERED: January – March (1st Quarter) 2020

ACTIONS TAKEN DURING QUARTER:

- Leachate removal and site maintenance and monitoring activities were conducted at the Pollution Abatement Services (PAS) site (Site), in Oswego, NY by OBG Operations LLC (OBG) consistent with the PAS Site Operation, Maintenance and Long-term Monitoring Plan (Work Plan).
- A total of 30,000 gallons of leachate were removed from the Site during the period of January, February, and March 2020. Specific quantities of leachate removed included 10,000 gallons in January, 10,000 gallons in February and 10,000 gallons in March. Details of the leachate removal for each month, along with historical leachate removal documentation are described in this progress report.
- During the months of January March 2020, leachate was pumped monthly from the PAS Site. The leachate was pumped into the City of Oswego East Side Wastewater Treatment Plant in accordance with City of Oswego Industrial User Permit no. 6-2019-20.
- Quarterly groundwater elevation monitoring was performed on February 11, 2020. Quarterly groundwater elevation monitoring results for the SWW- series monitoring wells (SWW-1 through SWW-12), leachate collection wells (LCW-1 through LCW-4), M-series wells (M-21 through M-23), LR-series wells (LR-2, 3, 6 and 8), LD-series wells (LD-3, 4, 5, 6, and 8), along with wells OS-1, OS-3, OI-1, OD-3 and LS-6 were recorded on the Pre-Pumping Well Monitoring Level Form. (Attachment C-1)
- Site maintenance activities were conducted monthly in combination with the monthly leachate removal event. The Site Inspection Checklist was used to document the land cap, leachate discharge system, leachate collection system and general Site conditions. (Attachment C-2) Monthly Site maintenance activities included the following:
 - Inspected the perimeter security fence of the Site. Northern Wetland fence area inaccessible for repairs. No other discrepancies were reported at the time of the inspection.
 - Site entrance and roadways were plowed prior to the pumping events in February and March.
 - The Site single French drainage system and two (2) concrete troughs were visually inspected. No discrepancies were reported at the time of the inspection.
 - Visually inspected the Site slurry-wall containment vegetated cap for signs of burrowing vermin or surface anomalies. No discrepancies were reported at the time of the inspections.



- Visually inspected the leachate collection system pumping equipment to verify proper operation. The field technician inspected each pump control panel to ensure control systems were generally free of rodents and insects, and were properly operating. The leachate holding tank was visually inspected for integrity, as were the leachate tanks steel protective roof, and wood structure. No other discrepancies were reported at the time of the inspection.
- The Site wooden utility shed and leachate pumping equipment, including centrifuge discharge pump, flow meter, suction hose, pump oils levels, heat trace power panel, interior lighting, exterior and interior shed structure, and main power distribution panel were inspected. Main discharge pump would not prime. The backup pump was used. No other discrepancies were reported at the time of the inspection..
- On January 7, February 11, and March 3, 2020, OBG performed the monthly pre-pumping collection system inspection for leachate collection wells LCW-1, 2, 3 & 4, along with inspection of the leachate discharge pumping system. Observations were recorded on the Site Inspection Checklist. In advance of each leachate removal event, OBG informed the City of Oswego POTW of the anticipated discharge. (Attachment C-2)
- Upon completing the monthly leachate collection system inspections, OBG manually energized the four leachate collection pumps, identified as LCW-1, LCW-2, LCW-3, and LCW-4, in order to pump the planned volume of leachate into the leachate collection tank. The run time from each leachate collection pump, along with the leachate tank level taken upon completion of well pumping, was recorded on the Leachate Disposal Checklist. (Attachment C-3)
- During the months of January, February, and March 2020, OBG pumped a combined total of 30,000 gallons of leachate from LCW 1, 2, 3 & 4 into the leachate collection tank and then into the City of Oswego POTW. The volume and flow rate of each leachate discharge was recorded onto the Leachate Disposal Checklist, as was leachate water pH, and temperature. The amount discharged was recorded onto the Leachate Disposal Checklist. No leachate was shipped to Auburn New York during the period. Therefore, no bill of lading was generated. (Attachment C-3)
- Upon completing each monthly leachate discharge the tank suction hoses were placed back into the leachate hold tank and the leachate pump system was shut down and prepared for storage. The concrete leachate hold tank was secured, as was the wooden maintenance shed. Upon the completion of monthly Site activities, the Site metal access gates were closed and padlocked.
- The PAS Oswego Site quarterly discharge report for the 1st quarter of 2020 for the City of Oswego was submitted on April 13, 2020 in accordance with Permit 6-2019-20. The quarterly report to the City of Auburn was submitted on April 10, 2020. (Attachment C-4)

DOCUMENTATION OF REMOVAL ACTIVITIES FOR PREVIOUS QUARTER

• The Groundwater Pre-Pumping Well Monitoring Level Form for February 11, 2020 is attached to this report. (Attachment C-1)



- The Site Inspection Checklist for January 7, February 11 and March 3, 2020 are attached to this report. (Attachment C-2)
- The Leachate Disposal Checklist for the January 7, February 11 and March 3, 2020 are attached to this report. (Attachment C-3)
- The PAS Quarterly Discharge reports submitted on April 13, 2020 to the City of Oswego and the report submitted to the City of Auburn on April 10, 2020 are attached to this report. (Attachment C-4)

C – 1 GROUNDWATER ELEVATION DATA

O'Brien & Gere Operation (O'Brien & Gere) PAS Oswego Site Oswego, New York Pre-Pumping Well Monitoring Levels

vate - 🕜 Well	<u>X-11- 7</u> Riser		Range Verific	Technician - ation	MA	Monthly C		<u>CCCC</u> d Measure	ments	Month -	February	202
Number	Elevation	Average Well Level	Low Well Level	High Well Level	Well Level (1st) Check	Well Level (2nd) Check	Well With (based on h range	hin Range	Well Level Check (3rd) (if "NO" & well is not within targeted range)		NOTES	
SWW1	289.33	9.05	7.92	9.74	9.00	9.00	V					-
SWW2	289.37	15.51	14.48	16.08	14.32	14.32		1	14.32			
SWW3	286.50	16.99	16.20	19.94	15,94	15.94		v	15.94			
SWW4	283.60	14.36	11.36	15.70	14,44	14.44	1					
SWW5	277.02	13.16	12.48	14.04	12.72	12.72	V					
SWW6	273.06	8.42	7.18	8.90	8,08	8.08	V					
SWW7	277.93	7.99	7.44	8.30	7,12	7.12		V	7.12			_
SWW8	278.24	3.98	3.48	4.30	3,60	3.60	V					
SWW9	285.55	17.27	16.06	18.72	16,22	16.22	V					
SWW10	280.43	10.92	8.50	12.53	9.86	9.86	V					
SWW11	273.50	9.26	8.40	10.16	8,70	8:70	V					
SWW12	272.82	8.66	7.60	9.20	8,20	8.20	V					
LCW-1	272.21	8.86	7.70	9.90	8.72	8,72	V					
LCW-2	274.44	11.10	9.95	12.14	10,46	10.46	V					
LCW-3	284.36	17.73	17.18	18.34	17.90	17,90	V					
LCW-4	285.70	18.19	17.30	19.42	16,58	16.58		~	16,58			
OS-1	272.10	9.31	8.16	10.94	9,20	9.20	V					
01-1	272.00	11.09	10.05	11.80	10,92	10,92	V					
OS-3	277.89	13.56	11.10	15.38	13.30	13.30	V	1				-
OD-3	277.85	13.50	10.95	15.16	13.18	13.18	V					
LD-3	278.62	4.26	3.86	4.62	4.10	4.10	1					
LD-4	279.25	10.40	9.32	11.90	10.14	10.14	V					
LD-5	272.94	8.84	8.08	9.48	8,50		V					
LS-6	274.14	9.67	7.86	11.28	9,50		V					
LD-6	274.03	10.01	9.40	10.82	9.74		V					
LD-8	272.83	7.43	4.92	9.52		7.20	v					
LR-2	289.85	12.77	12.34	13.30	12.65		V					
LR-3	278.06	7.79	7.28	8.12	7.70	4.40	V					
LR-6	274.39	10.25	9.54	10.98	9.84		V					
LR-8	273.42	9.65	8.50	10.20		9,40	V					
M-21	272.32	9.43	8.20	10.44	9.02		V					
M-22	273.88	10.13	9.52	10.94		9.88	V					
M-23	270.49	12.17	10.78	12.65		10.96	V					

C - 2 SITE INSPECTION CHECKLIST

Site Inspection Checklist (V2)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date /-7-2020

Leachate holding tank visually inspected for structural integrity

Time 7:45

Field Technician MARTIN Koennake

Weather Conditions 32 OVERCONST

Check \mathbf{V} (tasks completed in each event) **Inspection Features Remarks** (indicate accomplishment of each maintenance task) Monthly Quarterly Land Cap Signs of burrowing vermin V NONE VISABLE Land cap irregularities (note anomaly) OK. ν French drainage system clear and function able Yes V Concrete trough clear and function able Yes V Leachate Discharge System City of Oswego sanitary discharge Yes valve positioned "Open" V Discharge Pump inspected & Yes operational V Discharge pump oil level verified Yes prior to use. V Discharge pump drained of residual water (drained upon Yes V completion of monthly discharge) Heat trace system operational & verified in the "ON" position (Applicable Oct - May) V ON Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form" Yes V Leachate Collection System

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1-7-2020

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Leachate holding tank metal roof		
inspected for structural integrity	V	 OK
Leachate tank access doors		
locked (post pump out)	V	Yes
Pump power panel(s) secured		Yes
Monitoring Wells (MW)		
Locks installed	1	Yes
MW's marked & identifiable	1	OK
General Site Condition		
Trees & brush cleared off security		
fence	v	WORK IN PROGRASS
Perimeter security fence intact &		
free of damage	V	oK
Site access driveway inspected &		
free on snow & damage	V	Ves
Security access gates / Padlock &		
chain serviceable	V	Yes
Site gate signage intact	1	Yes
Interior & exterior of utility		
storage shed inspected for		
damage & secure with locks	V	SHINGLES ON CORNER BLOWN Off
Fire extinguisher serviceable,		
inspected, and inspection		
recorded	V	Yes
Spill control material inspected &		
adequate	\mathbf{v}	Yes
PPE available and utilized as		
required	V	Yes
Emergency contact information		
posted within shed	V	Yes

Additional remarks (use separate sheet is required) <u>PUMPED 10,000 Gul LEALHACK TO CITY OF OSWEGO POTW</u>



Site Inspection Checklist (V3)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 2-11-2020

Time______8:00

Field Technician MARTIN Koenwalke

Weather Conditions 34° Light Freezen RAIN

Check \mathbf{V} (tasks completed in each event)					
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)		
Land Cap					
Signs of burrowing vermin	V		SNOW COVERED		
Land cap irregularities (note anomaly)	v		OK		
French drainage system clear and function able	V		SNOW COVERED		
Concrete trough clear and function able	v		SNOW COVERED		
Leachate Discharge System					
City of Oswego sanitary discharge valve positioned "Open"	V		Yes		
Discharge Pump inspected & operational	v		Yes		
Discharge pump oil level verified prior to use.	v		yes		
Discharge pump drained of residual water (drained upon completion of monthly discharge)	V		Yes		
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	V		ON		
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	V		Yes		
Leachate Collection System					
Leachate holding tank visually inspected for structural integrity	V		OK		

2-11-2020

.

Leachate holding tank metal roof			
inspected for structural integrity	V		oK
Leachate tank access doors			
locked (post pump out)	~		Yes
Pump power panel(s) secured	V		Yes
Monitoring Wells (MW)	19		
Locks installed	V		Yes
MW's marked & identifiable	V		OK
General Site Condition			
Trees & brush cleared off security			
fence	V		WORK IN DROGRESS
Perimeter security fence intact &			
free of damage	V		0K
Site access driveway inspected &			
free on snow & damage	V		PLOWED SNOW
Security access gates / Padlock &			
chain serviceable	V		Yes
Site gate signage intact	V		Yes
Interior & exterior of utility			
storage shed inspected for			
damage & secure with locks	V		Ye s
Fire extinguisher serviceable,			
inspected, and inspection			
recorded	V		Yes
Spill control material inspected &			
adequate	V.		Yes
PPE available and utilized as			
required	V		Yes
Emergency contact information			
posted within shed	V		Yes
Additional romarks (uso sonarato s	haat	ic ro	nu tina al V

Additional remarks (use separate sheet is required)
PUMPED 10,000 GAL, LEACHATE TO CITY of OSWEYD POTU
Qualiteely well Levels Taken
DISCHARGE PUMP WOULD NOT PRIME USED BACKUP
TRASH PUMP TO MOVE WATER



Site Inspection Checklist (V3)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 3-3-2020

Time____7:45

Field Technician MARTIN Koenwecke

Weather Conditions P-Sunny 39°

Check V (tasks completed in each event)					
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)		
Land Cap					
Signs of burrowing vermin	×		NONE VISABLE		
Land cap irregularities (note anomaly)	V		OK		
French drainage system clear and function able	L		SNOW COVERED		
Concrete trough clear and function able	V		SNOW COVERED		
Leachate Discharge System					
City of Oswego sanitary discharge valve positioned "Open"	V		Yes		
Discharge Pump inspected & operational	v		Yes		
Discharge pump oil level verified prior to use.	v		Yes		
Discharge pump drained of residual water (drained upon completion of monthly discharge)	V		Yes		
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	V		ÓN		
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	v		Yes		
Leachate Collection System					
Leachate holding tank visually inspected for structural integrity	V		OK		

3-3-2020

Leachate holding tank metal roof	-	
inspected for structural integrity		OK
Leachate tank access doors		
locked (post pump out)		Yes
Pump power panel(s) secured	V	Yes
Monitoring Wells (MW)		
Locks installed	V	Yes
MW's marked & identifiable	V	OK
General Site Condition	-	
Trees & brush cleared off security		
fence	V	WORK IN PROGRESS
Perimeter security fence intact &		
free of damage	\vee	OK
Site access driveway inspected &		
free on snow & damage	V	OK
Security access gates / Padlock &		
chain serviceable	V	Yes
Site gate signage intact	V	Yes
Interior & exterior of utility		
storage shed inspected for		
damage & secure with locks	V	Yes
Fire extinguisher serviceable,		
inspected, and inspection		
recorded	V	Yes
Spill control material inspected &		
adeguate	v	Yes
PPE available and utilized as	-	
required	V	Yes
Emergency contact information		
posted within shed		Yos

Additional remarks (use separate sheet is required) <u>PUMPER 10,000 gal. Lenchate To CITX OF OSWEGO POTW</u>

C – 3 LEACHATE DISPOSAL CHECKLIST

O'BRIEN & GERE

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 1-7-2020

Time: 7:45

Field Technician MARTIN KOENNECKE

Weather Conditions 32 Over CAST

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping									
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)				
10 "	LCW-1	7:50	9:10	43"	125 GPM	10,065				
	LCW-2	7:50	9:10		142	/				
	LCW-3	7:50	8:15							
	LCW-4	7:50	9:10							
					Total	10 016				

10,065

	Mo	onthly Le	eachate D	ischarge	Pumping (π	o the City of Os	wego)
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:45	11:45	6.8	46°	1315165	1325165	10,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	83	25 MM	0	16"			
	Semi-Ar Date	Sample	e Sam	nple S	Sampling (Pa Sample Time		wego Permit) emperature
Sample #1							



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 2-11-2020

Time: 8:00

Field Technician MARTIN KOENNECKE

Weather Conditions 34 FREezing RAM

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping									
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)				
10,5"	LCW-1	9:50	11:05	44"	136 6Pm					
	LCW-2	9:50	11:05							
	LCW-3	9:50	10:10							
	LCW-4	9:50	11:05							
					Total	10211				

	Monthly Leachate Discharge Pumping (To the City of Oswego)										
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge				
Discharge #1	14:10	16:00	6.8	420	1325165	1335165	10,000				
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
	90	DIDNET	0	16"							
	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)										
	Date	Sample Locatio		ume S	Sample Time	pH Te	mperature				
Sample #1											

PUMP WOULD NOT PRIME



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 3-3-2020

Time: <u>7:45</u>

Field Technician MARTIN KOENNECKE

Weather Conditions P-Surny 39"

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping									
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)				
11.5 "	LCW-1	8:00	9:10	43,5"	139 GPM	9760				
	LCW-2	8:00	9:10							
	LCW-3	8:00	8:20							
	LCW-4	8:00	9:10							
	1			1	Total	9760				

	Monthly Leachate Discharge Pumping (To the City of Oswego)										
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge				
Discharge #1	9:40	11:40	6.75	420	1335165	1345165	10,000				
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum							
	83	20 MIN	0	16'							
	Semi-Ai	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)									
	Date	Sampl		nple ume	Sample Time	pH Te	mperature				
Sample #1											

C – 4 QUARTERLY POTW DISCHARGE REPORTS



450 Montbrook Lane Knoxville, TN 37919 865-691-5052 phone 865-691-6485 fax

April 10, 2020

Mr. Tim O'Brien Department of Municipal Utilities 35 Bradley Street Auburn, New York 13021

Re: 1st Quarter PAS Oswego Monitoring Report 2020

Dear Mr. O'Brien,

This letter confirms that the PAS Oswego Site has not shipped or discharged any wastewater from the PAS Oswego collection system to the City of Auburn POTW during January 2020–March 2020. This has been due to the EPA allowance of an alternate disposal method.

- Cumulative gallons removed for discharge in Auburn 1st Qtr. 2020 0
- Cumulative gallons removed for discharge in Auburn 2019 0

Since no wastewater was shipped or discharged to Auburn during the 1st quarter of 2020, no analytical testing was required. However, we continue to perform Site maintenance and sampling activities under the Operation, Monitoring and Maintenance Program for the Site approved by EPA. The data associated with that program indicate little change in the characteristics of the Site wastewater.

Please contact me at (865) 691-5052, if you have any questions.

Sincerely, de maximis, inc.

Clay Metla

Clay McClarnon

CMC/dsr

cc: PAS Management Committee



450 Montbrook Lane Knoxville, TN 37919 865-691-5052 phone 865-691-6485 fax

April 10, 2020

Mr. Timothy L. O'Brien Industrial Pretreatment Coordinator 35 Bradley Street Auburn, NY 13021

Re: Industrial Pretreatment Program Zero Discharge Certification Statement:

Dear Mr. O'Brien

For the reporting quarter(s) of December 2017 to March 2020, I certify that for Pollution Abatement Services located in Oswego New York:

1. There have been no changes to any of our processes resulting in the potential for the discharge from the process waste stream.

Project Coordinator

Title

2. No discharge of process wastewater has occurred since December 7, 2017.

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 system, 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 violations.

Clay McClarnon

Name

Clay Mullano Signature

April 10, 2020 Date

Phone

Allentown, PA • Clinton, NJ • Greensboro, GA • Knoxville, TN • San Diego, CA • Irvine, CA • Sarasota, FL • Houston, TX • Windsor, CT • Waltham, MA • Guilderland, NY



450 Montbrook Lane Knoxville, TN 37919 (865)691-5052 (865)691-9835 FAX

Via electronic mail

April 13, 2020

Mr. John McGrath Chief Operator Westside Wastewater Treatment Plant First Avenue & West Schuyler Streets Oswego, New York 13126 Labmanager@oswegony.org

Re: Quarterly Discharge Report – 1st Quarter 2020 Pollution Abatement Services Site – Oswego, New York City of Oswego Wastewater Discharge Permit 6-2019-20

Dear Mr. McGrath:

This quarterly report is submitted in accordance with the City of Oswego Wastewater Discharge Permit 6-2019-20 (Permit) for discharge of leachate from the Pollution Abatement Services (PAS) Site into the City of Oswego's Eastside Wastewater Treatment Facility. This report covers the reporting period from January 2020 through March 2020.

The PAS Site discharged a total of 30,000 gallons of leachate to the Oswego sewer system during the 1st quarter of 2020.

Discharge to City of Oswego January 2020 – March 2020 30,000 gallons

If you need additional information, please call me at (865) 691-5052.

Sincerely, de maximis, inc.

Clay McClarnon

Attachments:

cc: Dan Ramer – Chief Operator Eastside Wastewater Treatment Plant Robert Johnson – City Engineer PAS Oswego Site Management Committee

TABLE 1- PAS OSWEGO SITE QUARTERLY REPORT FOR CITY OF OSWEGO (2020)LEACHATE DISCHARGE TO OSWEGO EASTSIDE WASTEWATER TREATMENT FACILITY

(Oswego SIU Wastwater Discharge Permit No.6-2019-20)
--

Discharge Quarter		2Q 2	019	3Q 2	019	4Q 20	019	1Q 2	2020
		Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged
		4/2/19	10,500	7/3/19	20,000	10/8/19	20,000	1/7/20	10,000
		44/6.8		57/6.8		54/6.8		46/6.8	
		5/8/19	20,000	8/6/19	20,000	11/6/19	10,000	2/11/20	10,000
		46/6.8	i	55/6.8		54/6.8		42/6.8	
		6/4/19	20,000	9/11/19	20,000	12/3/19	10,000	3/3/20	10,000
		50/6.8		60/6.8		52/6.8		42/6.8	
Total Discharged			50,500		60,000		40,000		30,000
Date Sampled*	Permit Limits		4/2/2019			11/6/2019			
Analytes Antinomy Arsenic Beryllium Cadmium Chromium (total) Copper Cyanide Lead Mercury Nickel Selenium Silver Thallium Zinc	<i>mg/L 0.107 0.358 0.107 0.43 0.67 0.43 0.69 0.19 0.0002 0.65 0.282 0.65 0.073 1</i>		mg/L ND <0.0025 0.018 ND <0.0010 ND <0.0004 ND 0.0072 0.0214 .0057J 0.0015 ND <0.000025 0.318 ND <0.0025 ND <0.0025 ND <0.0025 ND <0.0025 ND <0.0025 ND <0.0025 ND <0.0025			mg/L ND <0.010 0.019 ND <0.010 ND <0.010 ND 0.015 0.23 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.020 ND <0.020			
VOC** 1,1,1 TCA MeCL PCE Toluene TCE SVOC** BOD 5 TSS oil & grease Phenolics pH	NA NA NA NA 200 400 100 0.375 >5 & <10		14 37 ND <0.034 6.7			0.00625 ND <0.0005 0.029 0.0674 0.0125 NA 11 39 6.8			

* Semi-annual sampling of PAS leachate discharge conducted in accordance with SIU Wastewater Discharge Permit No.6-2019-20.

** Analytes included for permit pollutant analysis performed every three years

ATTACHMENT I



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 3-3-2020

Time: <u>7:45</u>

Field Technician MARTIN KOENNECKE

Weather Conditions P-Surny 39"

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping									
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)				
11.5 "	LCW-1	8:00	9:10	43,5"	139 GPM	9760				
	LCW-2	8:00	9:10							
	LCW-3	8:00	8:20							
	LCW-4	8:00	9:10							
	1			1	Total	9760				

	Monthly Leachate Discharge Pumping (To the City of Oswego)										
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge				
Discharge #1	9:40	11:40	6.75	420	1335165	1345165	10,000				
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum							
	83	20 MIN	0	16'							
	Semi-Ai	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)									
	Date	Sampl		nple ume	Sample Time	pH Te	mperature				
Sample #1											



Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 2-11-2020

Time: 8:00

Field Technician MARTIN KOENNECKE

Weather Conditions 34 FREezing RAM

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping									
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)				
10,5"	LCW-1	9:50	11:05	44"	136 6Pm					
	LCW-2	9:50	11:05							
	LCW-3	9:50	10:10							
	LCW-4	9:50	11:05							
					Total	10211				

	Monthly Leachate Discharge Pumping (To the City of Oswego)										
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge				
Discharge #1	14:10	16:00	6.8	420	1325165	1335165	10,000				
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
	90	DIDNET	0	16"							
	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)										
	Date	Sample Locatio		ume S	Sample Time	pH Te	mperature				
Sample #1											

PUMP WOULD NOT PRIME

O'BRIEN & GERE

Leachate Disposal Checklist

Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 1-7-2020

Time: 7:45

Field Technician MARTIN KOENNECKE

Weather Conditions 32 Over CAST

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping								
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)			
10"	LCW-1	7:50	9:10	43"	125 GPM	10,065			
	LCW-2	7:50	9:10		142	/			
	LCW-3	7:50	8:15						
	LCW-4	7:50	9:10						
		10 016							

10,065

	Monthly Leachate Discharge Pumping (To the City of Oswego)									
Discharge #	Start Time Stop Time		рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge			
Discharge #1	9:45	11:45	6.8	46°	1315165	1325165	10,000			
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum						
	83	25 MM	0	16"						
	Semi-Annual Leachate Discharge Sampling (Per the City of Oswego Permit)DateSampleSamplePHTemperatureLocationVolumeTimeTime									
Sample #1										

II - D 2ND QUARTER REPORT 2019



<u>QUARTERLY PROGRESS REPORT – 2nd QUARTER 2020</u> Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: Pollution Abatement Services Site Oswego, New York

PERIOD COVERED: April – June (2nd Quarter) 2020

ACTIONS TAKEN DURING QUARTER:

- Leachate removal and site maintenance and monitoring activities were conducted at the Pollution Abatement Services (PAS) site (Site), in Oswego, NY by OBG Operations LLC (OBG) consistent with the PAS Site Operation, Maintenance and Long-term Monitoring Plan (Work Plan).
- A total of 50,000 gallons of leachate were removed from the Site during the period of April, May and June 2020. Specific quantities of leachate removed included 10,000 gallons in April, 20,000 gallons in May and 20,000 gallons in June. Details of the leachate removal for each month, along with historical leachate removal documentation are described in this progress report.
- During the months of April June 2019, leachate was pumped monthly from the PAS Site. The leachate was pumped into the City of Oswego East Side Wastewater Treatment Plant in accordance with City of Oswego Industrial User Permit no. 6-2019-20.
- Quarterly groundwater elevation monitoring was performed on May 4, 2020. Quarterly groundwater elevation monitoring results for the SWW- series monitoring wells (SWW-1 through SWW-12), leachate collection wells (LCW-1 through LCW-4), M-series wells (M-21 through M-23), LR-series wells (LR-2, 3, 6 and 8), LD-series wells (LD-3, 4, 5, 6, and 8), along with wells OS-1, OS-3, OI-1, OD-3 and LS-6 were recorded on the Pre-Pumping Well Monitoring Level Form. (Attachment D-1)
- Site maintenance activities were conducted monthly in combination with the monthly leachate removal event. The Site Inspection Checklist was used to document the land cap, leachate discharge system, leachate collection system and general Site conditions. (Attachment D-2) Monthly Site maintenance activities included the following:
 - Inspected the perimeter security fence of the Site. Tree had fallen on eastern wetland fence. The tree was removed, and fence repaired as needed. No other discrepancies were reported at the time of the inspection.
 - The Site single French drainage system and two (2) concrete troughs were visually inspected. No discrepancies were reported at the time of the inspection.
 - Visually inspected the Site slurry-wall containment vegetated cap for signs of burrowing vermin or surface anomalies. A hole reported under the shed during the May inspection. Vermin was discovered under the shed during the June inspection.



- Visually inspected the leachate collection system pumping equipment to verify proper operation. The field technician inspected each pump control panel to ensure control systems were generally free of rodents, insects and were properly operating. The leachate holding tank was visually inspected for integrity, as were the leachate tanks steel protective roof, and wood structure. The door to the tank was weathered and noted. No other discrepancies were reported at the time of the inspection.
- The Site wooden utility shed and leachate pumping equipment, including centrifuge discharge pump, flow meter, suction hose, pump oils levels, heat trace power panel, interior lighting, exterior and interior shed structure, and main power distribution panel were inspected. No discrepancies were reported at the time of the inspection.
- On April 7, May 6, and June 2, 2020, OBG performed the monthly pre-pumping collection system inspection for leachate collection wells LCW-1, 2, 3 & 4, along with inspection of the leachate discharge pumping system. Observations were recorded on the Site Inspection Checklist. In advance of each leachate removal event, OBG informed the City of Oswego POTW of the anticipated discharge. (Attachment D-2)
- Upon completing the monthly leachate collection system inspections, OBG manually energized the four leachate collection pumps, identified as LCW-1, LCW-2, LCW-3, and LCW-4, in order to pump the planned volume of leachate into the leachate collection tank. The run time from each leachate collection pump, along with the leachate tank level taken upon completion of well pumping, was recorded on the Leachate Disposal Checklist. (Attachment D-3)
- During the months of April, May and June 2020, OBG pumped a combined total of 50,000 gallons of leachate from LCW 1, 2, 3 & 4 into the leachate collection tank and then into the City of Oswego POTW. The volume and flow rate of each leachate discharge was recorded onto the Leachate Disposal Checklist, as was leachate water pH, and temperature. The amount discharged was recorded onto the Leachate Disposal Checklist. No leachate was shipped to Auburn New York during the period. Therefore, no bill of lading was generated. (Attachment D-3)
- Upon completing each monthly leachate discharge the tank suction hoses were placed back into the leachate hold tank and the leachate pump system was shut down and prepared for storage. The concrete leachate hold tank was secured, as was the wooden maintenance shed. Upon the completion of monthly Site activities, the Site metal access gates were closed and padlocked.
- On May 7, 2020, OBG performed the semi-annual groundwater sampling for monitoring wells LR-8, M-21, and leachate collection wells LCW2 and LCW4. Based on the 2019 Annual Report, well OD-3, M-22 and LR-6 were not sampled during this event. Sampling activities for long term monitoring wells were conducted using low-flow sampling protocols described in the Work Plan. Samples were preserved using industry standard methods, and delivered to Life Science Laboratories in East Syracuse, NY for analysis. (Attachment D-4)
- On May 6, 2020, the semiannual discharge sample required under the City of Oswego POTW
 permit was taken and hand delivered to Life Science Laboratories in East Syracuse, NY for
 analysis the data was included in the Oswego 2nd POTW Discharge Quarter Report.

de maxímis, inc.

• The PAS Oswego Site Quarterly POTW Discharge Report for the 2nd quarter of 2020 for the City of Oswego was submitted on July 28, 2020 in accordance with Permit 6-2019-20. The quarterly report to the City of Auburn was submitted on July 14, 2020. (Attachment D-5)

DOCUMENTATION OF REMOVAL ACTIVITIES FOR PREVIOUS QUARTER

- The Groundwater Pre-Pumping Well Monitoring Level Form for May 4, 2019 is attached to this report. (Attachment D-1)
- The Site Inspection Checklist for April 2, May 8 and June 4, 2019 are attached to this report. (Attachment D-2)
- The Leachate Disposal Checklist for the April 2, May 8 and June 4, 2019 are attached to this report. (Attachment D-3)
- The validated lab report for the Semi-annual Groundwater sampling of LR-8, M-21, , LCW2 and LCW4, performed on May 7, 2019 is attached to this report. (Attachment D-4)
- The PAS Quarterly Discharge Reports submitted on July 21, 2019 to the City of Auburn and the report submitted to the City of Oswego on June 10, 2019 are attached to this report. (Attachment D-5)

D - 1 GROUNDWATER ELEVATION DATA

O'Brien & Gere Operation (O'Brien & Gere) PAS Oswego Site Oswego, New York Pre-Pumping Well Monitoring Levels

1.

Date - 👌 Well	-4-20 Riser		Range Verific	Technician ation	MAR	Monthly C	nsite Field	ments	Month -	Month - May	202	
Number	Elevation	Average Well Level	Low Well Level	High Well Level	Well Level (1st) Check	Well Level (2nd) Check	(based on h range	hin Range listorical well a data) NO	Well Level Check (3rd) (if "NO" & well is not within targeted range)		NOTES	
SWW1	289.33	9.21	8.22	10.00	8,98	8,98	V					
SWW2	289.37	14.94	14.14	15.42	14,40	14,40	V	1				
SWW3	286.50	16.53	15.84	17.00	15.84	15.84	V					
SWW4	283.60	14.62	12.62	15.94	13,15	13,15	V	1.000				
SWW5	277.02	12.73	11.74	13.46	12.36	12.36	V					
SWW6	273.06	8.53	7.58	9.21	8,00	8,00	V					
SWW7	277.93	7.48	7.02	7.90	6,78	6.78		1	6.78			
SWW8	278.24	3.96	3.40	4.54	3.68	3.68	V					
SWW9	285.55	16.38	15.68	17.16	15,96	15.96	V			14		
SWW10	280.43	11.06	8.50	12.62	9,40	9,40	V			1		
SWW11	273.50	8.65	7.50	9.50	8,22	8,72	v			1.		
SWW12	272.82	8.56	7.58	9.23	8.08	8.08	V					
LCW-1	272.21	8.14	7.04	9.12	7.70	7.70	V	1				
LCW-2	274.44	10.40	9.27	11.36	9.92	9.92	V					
LCW-3	284.36	17.68	17.24	18.05	17,95	17,95	V					
LCW-4	285.70	17.51	16.82	18.56	16.26	100 00 0 00 00 00 00 00 00 00 00 00 00 0	h = 1	V	16,26			
OS-1	272.10	8.63	6.40	11.40	6,60	6.60	V		1000			
01-1	272.00	11.13	10.14	12.28	10,40	10,40	V					
OS-3	277.89	14.11	11.70	15.30	13:16	13,16	V			16		
OD-3	277.85	13.95	11.58	15.12	12.98	12.98	V					
LD-3	278.62	4.18	3.78	4.64	4.06	4.06	V			1.00		
LD-4	279.25	10.61	8.68	11.79	9.58	9.58	V					
LD-5	272.94	8.66	7.84	9.42	8,40	8,40	V		- Y			
LS-6	274.14	9.54	7.95	10.74	8,96	8,96	1					
LD-6	274.03	9.90	9.32	10.65	9,36	9,36	1.			1		
LD-8	272,83	7.22	6.08	8.30 *	6,32	6,32	V			1.0		
LR-2	289.85	13.11	12.32	13.42	13,40	13.40	V					
LR-3	278.06	7.66	7.10	8.36	7.10	7.10	V			11		
LR-6	274.39	10.10	9.44	10.66	9.54		V			6		
LR-8	273.42	9.76	9.04	10.35	9,22	9.22	V					
M-21	272.32	9.42	8.75	10.02	8,66	8,66		V	8,106			
M-22	273.88	10.11	9.38	10.64	9,60	9,60	V	1				
M-23	270.49	12.08	11.02	12.88	11,58	11.58	V	1				

D – 2 SITE INSPECTION CHECKLIST



Site Inspection Checklist (V3)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 4-7-20

Time 7:40

Field Technician MARTIN Koennecke

Weather Conditions SUNNY 45"

Check ✔ (tasks completed in each event)							
Inspection Features		Quarterly	Remarks (indicate accomplishment of each maintenance task)				
Land Cap							
Signs of burrowing vermin	V	E	NONE VISHBLE				
Land cap irregularities (note anomaly)	V		OK				
French drainage system clear and function able	1		Yes				
Concrete trough clear and function able	V		Yes				
Leachate Discharge System							
City of Oswego sanitary discharge valve positioned "Open"	V		Yes				
Discharge Pump inspected & operational	v		Yes				
Discharge pump oil level verified prior to use.	V		Yes				
Discharge pump drained of residual water (drained upon completion of monthly discharge)	V		Yes				
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	v		Yes on				
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	V		Yes				
Leachate Collection System							
Leachate holding tank visually inspected for structural integrity	V		OK				

4-7-20

· · · · · · · · · · · · · · · · · · ·		
Leachate holding tank metal roof		
inspected for structural integrity	\checkmark	oK
Leachate tank access doors		
locked (post pump out)	V	Yes
Pump power panel(s) secured	V	Yes
Monitoring Wells (MW)		
Locks installed	V	Yes
MW's marked & identifiable	V	oK
General Site Condition		
Trees & brush cleared off security		
fence		work in Progress
Perimeter security fence intact &		
free of damage	V	OK
Site access driveway inspected &		
free on snow & damage	V	0 K
Security access gates / Padlock &		
chain serviceable	V	Yes Yes
Site gate signage intact	V	Yes
Interior & exterior of utility		
storage shed inspected for		
damage & secure with locks	V	OK
Fire extinguisher serviceable,		
inspected, and inspection		
recorded	V	Yes
Spill control material inspected &		
adequate	V	Yes
PPE available and utilized as		
required	V	Yes
Emergency contact information		
posted within shed	V	Yes
Additional remarks (use separate s	heet	is required)

Pumper 10,000 gAL Leadtate To City of Oswego Pote CHANGED OUT FIRE EXSINGUER with CURRENT INSPECTED Exsinghisher



Site Inspection Checklist (V3)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 5-6-20

Time 7:00

Field Technician MARTIN Koennecke

Weather Conditions P-Sunny 350

	Che	ck√	(tasks completed in each event)
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
Land Cap			
Signs of burrowing vermin	V	_	hole under Stted
Land cap irregularities (note anomaly)	V		OK
French drainage system clear and function able	~		Yes
Concrete trough clear and function able	v		Xes
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	V		Yes
Discharge Pump inspected & operational	V	÷	Yes
Discharge pump oil level verified prior to use.	1		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	V		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	V		ON
Flow totalizer operational. Flow readings recorded onto "Leachate Discharge Form"	V		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	V		OK

1

5	le	 З	\mathcal{O}
~	-	v١	<u> </u>

			,
Leachate holding tank metal roof			
inspected for structural integrity	V		ok
Leachate tank access doors			
locked (post pump out)	ν		Yes
Pump power panel(s) secured	V		Yes
Monitoring Wells (MW)			
Locks installed	V		Yes
MW's marked & identifiable	V	ĺ	<i>ÖK</i>
General Site Condition			
Trees & brush cleared off security			
fence	\vee		WORK IN PROGRESS SEE REMARKS
Perimeter security fence intact &			7
free of damage	V		OK
Site access driveway inspected &			
free on snow & damage	V		OK
Security access gates / Padlock &			
chain serviceable	V		Yes Yes
Site gate signage intact	V		Yes
Interior & exterior of utility			
storage shed inspected for			
damage & secure with locks	\mathbf{V}		SHugles BLOWN of BACK CORNER
Fire extinguisher serviceable,			
inspected, and inspection			
recorded	V		Yes
Spill control material inspected &			
adequate	~		Yes
PPE available and utilized as			
required	V		Yes
Emergency contact information			
posted within shed	V		Yes

Additional remarks (use separate sheet is required)

Semi Annul well samples; Semi Annul Learthate samples TAKEN, SPLIT SAMPLES W/OSWEYD John Magneth, PUMPED 20,000 GAL LEARTHATE TO OSWEYD POTW. TREE DOWN ACROSS FEACE ON WAYON HALL PORCEWITY WAS CUT UP AND REMOVED



Site Inspection Checklist (V3)

Former Pollution Abatement Services (PAS Oswego) Oswego, New York

Date 6-2-2020

Time_ 7:30

Field Technician MARTIN Koennecke

Weather Conditions OVERCAST 60°

1.5

	Che	eck V	(tasks completed in each event)
Inspection Features	Monthly	Quarterly	Remarks (indicate accomplishment of each maintenance task)
Land Cap			
Signs of burrowing vermin	V		UNDER SHED
Land cap irregularities (note anomaly)	i		ok
French drainage system clear and function able	V		Yes
Concrete trough clear and function able	~		Yes
Leachate Discharge System			
City of Oswego sanitary discharge valve positioned "Open"	v		Yes
Discharge Pump inspected & operational	V	4	Yes
Discharge pump oil level verified prior to use.	V		Yes
Discharge pump drained of residual water (drained upon completion of monthly discharge)	v		Yes
Heat trace system operational & verified in the "ON" position (Applicable Oct - May)	v		TURNED Off
Flow totalizer operational. Flow		-	
readings recorded onto			
"Leachate Discharge Form"	V		Yes
Leachate Collection System			
Leachate holding tank visually inspected for structural integrity	V		Yes

1

6-2-2020

Leachate holding tank metal roof	-		
inspected for structural integrity	V		Yes
Leachate tank access doors			
locked (post pump out)	v		Yes, NEEDS To BE REPLACED ROTING
Pump power panel(s) secured	V		Yes
Monitoring Wells (MW)			
Locks installed	V		Yes
MW's marked & identifiable	V		OK
General Site Condition			
Trees & brush cleared off security			
fence	V		WORK IN PROGRESS
Perimeter security fence intact &			
free of damage	V		ŐK
Site access driveway inspected &			
free on snow & damage	V		OK
Security access gates / Padlock &			
chain serviceable	V		Yes
Site gate signage intact	V		Yes
Interior & exterior of utility			
storage shed inspected for			
damage & secure with locks	V		0K
Fire extinguisher serviceable,			
inspected, and inspection			
recorded	V		Yes
Spill control material inspected &			
adequate			YES
PPE available and utilized as			
required	V		Yes
Emergency contact information			
posted within shed	ert		Yes
		•	· · · · · · · · · · · · · · · · · · ·

Additional remarks (use separate sheet is required)

-	PUMPED	20,000	GALLONS	Lens Hate	To	Osweyo	POTW	
_	Weed	Whackir	AROUND	SHED ANT	TANK	-FRONT		

D – 3 LEACHATE DISPOSAL CHECKLIST



Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 4-7-2020

Time: 7:40

Field Technician MARTIN KOENNECKE

Weather Conditions Surny 45

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping											
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)						
10.5"	LCW-1	7:45	9:00	43,5*	1346Pm	10,065						
	LCW-2	7:45	9:00			,						
	LCW-3	7:45	8:10									
	LCW-4	7:45	9:00									
					Total	10065						

	Monthly Leachate Discharge Pumping (To the City of Oswego)											
Discharge #	Start Time	Stop pH Time		Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge					
Discharge #1	9:15	11:15	6.8	460	1345165	1355165	10,000					
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			-					
	83	20 mm	0	16"								
	Semi-Ar	nnual Le	achate D	ischarge S	Sampling (Pe	er the City of Osw	vego Permit)					
	Date	Sampl		nple S ume	Sample Time	рН Те	mperature					
Sample #1												



Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 5-6-20

Time: 7:00

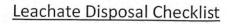
Field Technician MARTIN KOENNecke

Weather Conditions P. Sump 35°

Beginning Leachate Hold Tank Elevation (Inches)	Pre-Discharge Well Pumping											
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)						
11"	LCW-1	7:10	10:30									
	LCW-2	7:10	10:30									
	LCW-3	7:10	7:50									
	LCW-4	7:10	8:45									
			65	5 × 305 = 20 ER PumperT	(a) Total	20,610						

Discharge #					Pumping (1999 C C C C	
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalize Flow To (End)	tal Discharge
Discharge #1	8:40	12:35	6.8	440	1355165	1375/	65 20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	85	20mm	0	16"			
	Semi-Ar	nnual Le	achate D	ischarge S	Sampling (I	Per the City oj	f Oswego Permit)
	Date	Sampl Locatio		nple S ume	Sample Time	рН	Temperature
Sample #1	5-6-20	SAmale	Peart CO	maes To 1	130	6.8	44° vego Potu

John M.



Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 6-2-2020

Т

RAMBOLL

Time: 7:30

Field Technician MARTIN Koennecke

Weather Conditions OverCAST 60

Beginning Leachate Hold Tank Elevation (Inches)		Pre-Discharge Well Pumping									
	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)					
13"	LCW-1	7:45	10:50	63.5 x305	. r	19,390					
	LCW-2	7:45	10:50								
	LCW-3	7:45	8:15								
	LCW-4	7:45	9:30	11"Afren pu	no alt						
				- inc po	Total	19 297					

Discharge #	Monthly Leachate Discharge Pumping (To the City of Oswego)								
	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge		
Discharge #1	8:55	12:50	6,8	500	1375165	1395165	20,000		
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum					
	85	20 min	0	16"					
	Semi-Aı	nnual Le	achate Di	ischarge S	Sampling (Pe	r the City of Osw	ego Permit)		
	Date	Sample		2010/01/01	ample Time	pH Ter	mperature		
Sample #1									

D – 4 SEMIANNUAL LEACHATE AND GROUNDWATER MONITORING DATA



DATA VALIDATION

FOR

WATER MONITORING PAS Oswego OSWEGO, NEW YORK

ORGANIC ANALYSIS DATA Volatiles in Water Laboratory Job No. 1906563

Analyses Performed

By:

Life Sciences Laboratory East Syracuse, NY

For:

de maximis, Inc. Knoxville, TN 37919

Data Validation By:

ddms, Inc. St. Paul, Minnesota 55108

July 2, 2019

1547-3131/psn/das PAS\1906563_voa



EXECUTIVE SUMMARY

Validation of the volatile organics analysis data prepared by Life Sciences Laboratories, Inc. for five water samples, one equipment blank, and one trip blank supporting the PAS Oswego (Site) Semi Annual Well Sampling event has been completed by de maximis Data Management Solutions, Inc. (ddms). The data were reported by the laboratory under Laboratory Job No. 1906563. The following samples were reported:

Equipment Blank	M-21	LR-8	X-1
LCW-2	LCW-4	QC Trip Blanks	

Based on the validation effort, the following qualifiers were applied:

- Results for methylene chloride were qualified as estimated (J-, UJ).
- Results for 1,2,4-trichlorobenzene, acetone, methylene chloride, and chloroform were qualified not detected (U).
- Results for 2-butanone, acetone, and bromomethane were qualified as estimated (J-, UJ).

All other results were determined to be valid as reported. Details of the validation findings and conclusions based on review of the results for each quality control requirement are provided in the remaining sections of this report.



1.0 Introduction

This report presents the findings of the data validation assessment performed on the analyses of water samples collected on May 7, 2019, for the PAS Oswego semiannual well sampling event. Samples submitted to the laboratory in the sample delivery group 1906563 were reviewed in this report to identify quality issues which could affect the use of the sample data for decision-making purposes.

Analyses were performed in accordance with USEPA SW-846 Method 8260C. The laboratory provided a "CLP-type" data package for review.

The data validation assessment was performed in accordance with USEPA Region II <u>Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B & 8260C</u>, SOP HW-24, Revision 4 (September 2014) as well as ddms' <u>Standard Operating Procedure</u>: <u>Validation and Review of Volatile Organic Data;</u> <u>ECS-SOP-003</u>. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytical methodology, professional judgement was applied.

The data validation process is intended to evaluate data on a technical basis rather than a contract compliance basis for chemical analyses conducted under the referenced method. An initial assumption is that the data package is presented in accordance with the CLP requirements (or "CLP-like," as in this case). It is also assumed that the data package represents the best efforts of the laboratory and has already been subjected to adequate and sufficient quality review prior to submission for validation.

During the validation process, laboratory data are verified against all available supporting documentation. Based on the findings of the validation, qualifier codes may have been added by the data validator. Validated results are, therefore, either qualified or unqualified. Unqualified results mean that the reported values may be used without reservation. Final validated results are annotated with the following codes as defined by the Region II Guidelines:

- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.



These codes are recorded on the Data Summary Forms contained in Attachment A of this validation report to indicate qualifications placed on the results based on the data review.

The data user is also cautioned that the validation effort is based on the raw data printouts as provided by the laboratory. Software manipulation cannot be routinely detected during validation; unless otherwise stated in the report, these kinds of issues are outside the scope of this review.

2.0 Volatile Organic Compounds

The tables below document the elements reviewed for each parameter. Only those quality excursions resulting in qualified data are presented below. Quality control excursions having no impact to sample results are not discussed.

Review Element	Acceptable?
Preservation and Technical Holding Times	Y
Calibration (Initial Calibration [IC], IC Verification, Continuing Calibration)	N
Blanks	N
GC/MS Instrument Tunes	Y
Surrogates	Y
Laboratory Control Samples (LCS)	Y
Field Duplicates*	Y
Matrix Spike (MS) and Matrix Spike Duplicate (MSD)	N
Quantitation	Y
Compound Identification	Y
Documentation (Completeness and Compliance)	Y

* Field duplicates M-21/X-1 Y=yes

N=no

2.1 Initial Calibration

Initial calibration target analyte percent relative standard deviations (% RSDs) were within Quality Control (QC) limits (20 % RSD) except for bromomethane and methylene chloride. In each case, a quadratic equation was used to describe the curve. Correlation coefficients were acceptable for both compounds (>0.990). No data were qualified on this basis.



2.2 Continuing Calibration

Continuing calibration (CC) target analyte recoveries were acceptable for all compounds except methylene chloride (-22.2%D). Results for methylene chloride in all samples were qualified as estimated (J-, UJ) due to the loss in sensitivity from the IC.

2.3 Blanks

Contamination was reported in the equipment blank, trip blank, and method blank as shown in the table below. When the concentration in the sample is less than ten times for acetone and methylene chloride and five times for 1,2,4-trichlorobenzene and chloroform the maximum amount detected in the associated blanks, the sample concentration is qualified as not detected (U) at the RL or the reported concentration, whichever is greater. The table below summarizes the amount detected in the each blank and the samples affected.

Compound	MB (ug/L)	EB (ug/L)	TB (ug/L)	Samples Affected
				MW-21 5/7/19
1,2,4-Trichlorobenzene	0.20	0.14	0.10	X-1 5/7/19
				LR-8 5/7/19
Acetone	1.43	1.46	1.92	LCW-2 5/7/19
Chloroform	0.14	0.18	0.47	LCW-2 5/7/19
Methylene chloride	0.45	2 U	2 U	LCW-2 5/7/19

2.4 MS/MSD

MS / MSD analyses were performed on LR-8. Percent recoveries were outside of allowable criteria (70-130%R; 30% RPD) as shown in the table below. When the recovery was below criteria, associated samples were qualified as estimated (J-, UJ), with the potential for low bias.



Analyte	MS/MSD Recovery (%)	RPD (%)	Samples Affected	Qualifiers Applied
Acetone	40/40	а	All field samples	J-, UJ
2-Butanone	63/64	а	All field samples	UJ
Bromomethane	a/ 69	а	All field samples	J-, UJ

a = acceptable

3.0 Summary

Based on a review of the data provided, the results are valid as reported with the following exceptions:

- Results for methylene chloride in all samples were qualified as estimated (J-, UJ) due to the loss in sensitivity from the IC.
- Results for 1,2,4-trichlorobenzene, acetone, methylene chloride, and chloroform were qualified not detected (U) as summarized in the table in Section 2.3 due to blank contamination.
- Results for 2-butanone, acetone, and bromomethane were qualified as estimated (J-, UJ) as summarized in the table in Section 2.4 due to MS/MSD excursions.



ATTACHMENT A

DATA SUMMARY FORMS Laboratory Job No. 1906563 Volatiles in Water

Data Summary Form for Groundwater Samples SW-846 8260 (ug/L) S

Site Name: PAS Job No. 1906563

Field Sample ID	Equipment Blank 5/7/19 1906563-001A		LCW-2 5/7/19 1906563-004A		LCW-4 5/	
Lab Sample ID					1906563-005A	
Dilution Factor	1		5		20	
Parameter						
1,1,1-Trichloroethane	0.10	U	6.10		4.00	J
1,1,2,2-Tetrachloroethane	0.10	U	3.15		2.00	U
1,1,2-Trichloro-1,2,2- Trifluoroethane	0.10	U	0.75	J	2.00	U
1,1,2-Trichloroethane	0.16	U	0.80	U	3.20	U
1,1-Dichloroethane	0.10	U	13.4		68.2	
1,1-Dichloroethene	0.16	U	0.80	U	3.20	U
1,2,4-Trichlorobenzene	0.14	J	0.50	U	2.00	U
1,2-Dibromo-3-chloropropane	1.00	U	5.00	U	20.0	U
1,2-Dibromoethane	0.16	U	0.80	U	3.20	U
1,2-Dichlorobenzene	0.10	U	2.10	J	59.4	
1,2-Dichloroethane	0.16	U	0.80	U	3.20	U
1,2-Dichloropropane	0.16	U	0.80	U	3.20	U
1,3-Dichlorobenzene	0.10	U	0.50	U	2.00	U
1,4-Dichlorobenzene	0.16	U	0.80	U	7.00	J
2-Hexanone	1.00	U	5.00	U	20.0	U
4-Methyl-2-pentanone	1.00	U	5.00	U	20.0	U
Acetone	1.46	J	5.00	UJ	20.0	UJ
Benzene	0.10	U	166		298	
Bromodichloromethane	0.10	U	0.50	U	2.00	U
Bromoform	0.33	U	1.65	U	6.60	U
Bromomethane	0.33	U	1.65	UJ	6.60	UJ
Carbon Disulfide	0.11	U	0.55	U	2.20	U
Carbon Tetrachloride	0.10	U	0.50	U	2.00	U
Chlorobenzene	0.10	U	38.1		440	
Chloroethane	0.33	U	4.05	J	32.0	
Chloroform	0.18	J	0.50	U	3.20	J
Chloromethane	0.33	U	1.65	U	6.60	U
cis-1,2-Dichloroethene	0.10	U	35.6		287	
cis-1,3-Dichloropropene	0.16	U	0.80	U	3.20	U
Cyclohexane	0.10	U	0.55	J	6.60	J
Cyclohexane, methyl-	0.10	U	0.50	U	2.80	J
Dibromochloromethane	0.10	U	0.50	U	2.00	U
Dichlorodifluoromethane	0.10	U	0.50	U	2.00	U
Ethylbenzene	0.10	U	7.85		824	
lsopropylbenzene	0.10	U	2.25	J	4.80	J
Methyl Acetate	1.00	U	5.00	U	20.0	U
Methyl Ethyl Ketone	1.00	U	5.00	UJ	20.0	LU
Methyl tert-butyl ether	0.16	U	0.80	U	3.20	U
Methylene Chloride	0.16	UJ	0.80	UJ	3.20	LU
Styrene	0.10	U	0.50	U	2.00	U
Tetrachloroethene	0.10	U	59.0		2.00	U
Toluene	0.10	U	2.05	J	266	
trans-1,2-Dichloroethene	0.10	U	0.50	U	2.20	J
trans-1,3-Dichloropropene	0.16	U	0.80	U	3.20	U
Trichloroethene	0.10	U	16.0		2.00	U
Trichlorofluoromethane	0.10	U	0.50	U	2.00	U
Vinyl Chloride	0.33	U	7.20		107	
Xylenes, Total	0.30	U	13.6		1900	

Data Summary Form for Groundwater Samples SW-846 8260 (ug/L) S

Site Name: PAS Job No. 1906563

Field Sample ID	LR-8 5/7	//19	MW-21 5/	7/19	QC Trip Blan	k 5/7/19
Lab Sample ID	1906563-003A 1		1906563-002A		1906563-007A 1	
Dilution Factor						
Parameter	-		-		-	
1,1,1-Trichloroethane	0.10	U	0.10	U	0.10	U
1,1,2,2-Tetrachloroethane	0.10	U	0.10	U	0.10	U
1,1,2-Trichloro-1,2,2-		0	0.10	0		0
Trifluoroethane	0.10	U	0.10	U	0.10	U
1,1,2-Trichloroethane	0.16	U	0.16	U	0.16	U
1,1-Dichloroethane	0.10	U	0.10	U	0.10	U
1,1-Dichloroethene	0.16	U	0.16	U	0.16	U
1,2,4-Trichlorobenzene	0.10	U	0.10	U	0.10	J
1,2-Dibromo-3-chloropropane	1.00	U	1.00	U	1.00	U
1,2-Dibromoethane	0.16	U	0.16	U	0.16	U
1,2-Dichlorobenzene	0.42	J	0.42	J	0.10	U
1,2-Dichloroethane	0.16	U	0.16	U	0.16	U
1,2-Dichloropropane	0.16	U	0.16	U	0.16	U
1,3-Dichlorobenzene	0.15	J	0.10	U	0.10	U
1,4-Dichlorobenzene	0.69		0.27	J	0.16	U
2-Hexanone	1.00	U	1.00	U	1.00	U
4-Methyl-2-pentanone	1.00	U	1.00	U	1.00	U
Acetone	1.00	UJ	1.00	UJ	1.92	J
Benzene	0.35	J	0.16	J	0.10	U
Bromodichloromethane	0.10	U	0.10	U	0.10	U
Bromoform	0.33	U	0.33	U	0.33	U
Bromomethane	0.33	UJ	0.33	UJ	0.33	U
Carbon Disulfide	0.11	U	0.11	U	0.11	U
Carbon Tetrachloride	0.10	U	0.10	U	0.10	U
Chlorobenzene	11.1		4.19		0.10	U
Chloroethane	4.55		1.99		0.33	U
Chloroform	0.10	U	0.10	U	0.47	J
Chloromethane	0.33	U	0.33	U	0.33	U
cis-1,2-Dichloroethene	0.10	U	0.10	U	0.10	U
cis-1,3-Dichloropropene	0.16	U	0.16	U	0.16	U
Cyclohexane	2.30		1.32		0.10	U
Cyclohexane, methyl-	0.23	J	0.16	J	0.10	U
Dibromochloromethane	0.10	U	0.10	U	0.10	U
Dichlorodifluoromethane	0.10	U	0.10	U	0.10	U
Ethylbenzene	0.10	U	0.10	U	0.10	U
Isopropylbenzene	0.47	J	0.36	J	0.10	U
Methyl Acetate	1.00	U	1.00	U	1.00	U
Methyl Ethyl Ketone	1.00	UJ	1.00	UJ	1.00	U
Methyl tert-butyl ether	0.16	U	0.16	U	0.16	U
Methylene Chloride	0.16	UJ	0.16	UJ	0.16	UJ
Styrene	0.10	U	0.10	U	0.10	U
Tetrachloroethene	0.10	U	0.10	U	0.10	U
Toluene	0.26	J	0.19	J	0.10	U
trans-1,2-Dichloroethene	0.10	U	0.10	U	0.10	U
trans-1,3-Dichloropropene	0.16	U	0.16	U	0.16	U
Trichloroethene	0.10	U	0.10	U	0.10	U
Trichlorofluoromethane	0.10	U	0.10	U	0.10	U
Vinyl Chloride	0.33	U	0.33	U	0.33	U
Xylenes, Total	0.38	J	0.30	U	0.30	U

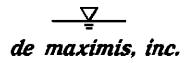
Site Name: PAS

Job No. 1906563

ddms Project Project No: 15473131 Sample Date Range: 4/30/2019 - 5/7/2019

Lab Sample ID Dilution Factor 1 Parameter	Field Sample ID					
Parameter 1,1,1-Trichloroethane 0.10 U 1,1,2Trichloro-1,2,2- 0.10 U 1,1,2-Trichloro-1,2,2- 0.10 U 1,1,2-Trichloroethane 0.16 U 1,1-Dichloroethane 0.10 U 1,1-Dichloroethane 0.10 U 1,2-Trichloroethane 0.16 U 1,2-Trichlorobenzene 0.16 U 1,2-Dichlorobenzene 0.16 U 1,2-Dichlorobenzene 0.16 U 1,2-Dichlorobenzene 0.16 U 1,2-Dichlorobenzene 0.10 U 1,4-Dichlorobenzene 0.33 J 2-Hexanone 1.00 U 1,4-Dichlorobenzene 0.33 J 2-Hexanone 1.00 U 4-Methyl-2-pentanone 1.00 U Acetone 1.00 U Bromodichloromethane 0.33 U Carbon Disulfide 0.11 U Carbon Tetrachloride 0.10 <t< th=""><th>Lab Sample ID</th><th>1906563-</th><th>006A</th></t<>	Lab Sample ID	1906563-	006A			
1,1,1-Trichloroethane 0.10 U 1,1,2,2-Tetrachloroethane 0.10 U 1,1,2,7:Tichloro-1,2,2- 0.10 U Trifluoroethane 0.16 U 1,1,2-Trichloroethane 0.16 U 1,1-Dichloroethane 0.16 U 1,1-Trichloroethane 0.16 U 1,2-Trichloroethane 0.16 U 1,2-Trichloroethane 0.16 U 1,2-Dibromo-3-chloropropane 1.00 U 1,2-Dichloroethane 0.16 U 1,2-Dichloroethane 0.16 U 1,2-Dichloropenzene 0.33 J 2-Hexanone 1.00 U 1,4-Dichloroethane 0.10 U Acetone 1.00 U Resene 0.18 J Bromodichloromethane 0.33 U Carbon Disulfide 0.11 U Carbon Disulfide 0.10 U Chloroform 0.33 U Cis-1,2-Dichloroethe	Dilution Factor	1				
1,1,2,2-Tetrachloroethane 0.10 U 1,1,2-Trichloro-1,2,2- 0.10 U 1,1,2-Trichloroethane 0.16 U 1,1,2-Trichloroethane 0.16 U 1,1-Dichloroethane 0.16 U 1,1-Dichloroethane 0.16 U 1,2-Trichloroethane 0.16 U 1,2-Dibromo-3-chloropropane 1.00 U 1,2-Dibromoethane 0.16 U 1,2-Dibropropane 0.16 U 1,2-Dichoropopane 0.16 U 1,2-Dichoropopane 0.16 U 1,2-Dichoropopane 0.16 U 1,2-Dichoropopane 0.16 U 1,2-Dichoropopane 0.16 U 1,2-Dichoropopane 0.16 U 1,2-Dichoropopane 0.16 U 1,2-Dichoropenzene 0.33 J 2-Hexanone 1.00 U Acetone 1.00 U Bromodichloromethane 0.10 U Chlorob	Parameter					
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Trichlorofluoromethane0.10UVinyl Chloride0.33U	trans-1,3-Dichloropropene	0.16	U			
Vinyl Chloride 0.33 U	Trichloroethene	0.10	U			
	Trichlorofluoromethane	0.10	U			
Xylenes, Total 0.30 U	Vinyl Chloride	0.33	U			
	Xylenes, Total	0.30	U			

D – 5 QUARTERLY POTW DISCHARGE REPORTS



450 Montbrook Lane Knoxville, TN 37919 865-691-5052 phone 865-691-6485 fax

July 14, 2020

Mr. Tim O'Brien Department of Municipal Utilities 35 Bradley Street Auburn, New York 13021

Re: 2nd Quarter PAS Oswego Monitoring Report 2020

Dear Mr. O'Brien,

This letter confirms that the PAS Oswego Site has not shipped or discharged any wastewater from the PAS Oswego collection system to the City of Auburn POTW during April 2020– June 2020. This has been due to the EPA allowance of an alternate disposal method.

- Cumulative gallons removed for discharge in Auburn 2nd Qtr. 2020 0
- Cumulative gallons removed for discharge in Auburn 2020 0

Since no wastewater was shipped or discharged to Auburn during the 1st quarter of 2020, no analytical testing was required. However, we continue to perform Site maintenance and sampling activities under the Operation, Monitoring and Maintenance Program for the Site approved by EPA. The data associated with that program indicate little change in the characteristics of the Site wastewater.

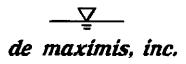
Please contact me at (865) 691-5052, if you have any questions.

Sincerely, de maximis, inc.

Clay McClarnon

CMC/dsr

cc: PAS Management Committee



450 Montbrook Lane Knoxville, TN 37919 865-691-5052 phone 865-691-6485 fax

July 14, 2020

Mr. Timothy L. O'Brien Industrial Pretreatment Coordinator 35 Bradley Street Auburn, NY 13021

Re: Industrial Pretreatment Program Zero Discharge Certification Statement:

Dear Mr. O'Brien

For the reporting quarter(s) of December 2017 to June 2020, 1 certify that for Pollution Abatement Services located in Oswego New York:

- 1. There have been no changes to any of our processes resulting in the potential for the discharge from the process waste stream.
- 2. No discharge of process wastewater has occurred since December 7, 2017.

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 system, 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 violations.

Clay McClarnon	Proje	Project Coordinator				
Name	Title					
Clay Mc Clamo Signature	<u>July 14, 2020</u> Date	<u>. 865-691-5052</u> Phone				

Allentown, PA • Clinton, NJ • Greensboro, GA • Knoxville, TN • San Diego, CA • Irvine, CA • Sarasota, FL • Houston, TX • Windsor, CT • Waltham, MA • Guilderland, NY



450 Montbrook Lane Knoxville, TN 37919 (865) 691-5052 (865) 691-9835 FAX

Via electronic mail

July 20, 2020

Mr. John McGrath Chief Operator Westside Wastewater Treatment Plant First Avenue & West Schuyler Streets Oswego, New York 13126 Labmanager@oswegony.org

Re: Quarterly Discharge Report – 2nd Quarter 2020 Pollution Abatement Services Site – Oswego, New York City of Oswego Wastewater Discharge Permit 6-2019-20

Dear Mr. McGrath:

This quarterly report is submitted in accordance with the City of Oswego Wastewater Discharge Permit 6-2019-20 (Permit) for discharge of leachate from the Pollution Abatement Services (PAS) Site into the City of Oswego's Eastside Wastewater Treatment Facility. This report covers the reporting period from April 2020 through June 2020.

The PAS Site discharged a total of 50,000 gallons of leachate to the Oswego sewer system during the 2nd quarter of 2020.

Discharge to City of Oswego April 2020 – June 2020 50,000 gallons

If you need additional information, please call me at (865) 691-5052.

Sincerely, *de maximis, inc.*

JLR For

Clay McClarnon

Attachments:

cc: Dan Ramer – Chief Operator Eastside Wastewater Treatment Plant Robert Johnson – City Engineer PAS Oswego Site Management Committee

PAPER

	TABLE 1 - PAS OSWEGO SITE QUARTERLY REPORT FOR CITY OF OSWEGO (2020)									
	LEACHATE DISCHARGE TO OSWEGO EASTSIDE WASTEWATER TREATMENT FACILITY									
	(Oswego SIU Wastwater Discharge Permit No.6-2019-20)									
Discharge Quarter		3Q 2	019	4Q 2	019	1Q 2	020	2Q 2	2020	
		Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	Date Discharged (temp/pH)	Gallons Discharged	
		7/3/19	20,000	10/8/19	20,000	1/7/20	10,000	4/7/20	10,000	
		57/6.8		54/6.8		46/6.8		46/6.8		
		8/6/19	20,000	11/6/19	10,000	2/11/20	10,000	5/6/20	20,000	
		55/6.8		54/6.8		42/6.8		44/6.8		
		9/11/19	20,000	12/3/19	10,000	3/3/20	10,000	6/2/20	20,000	
		60/6.8		52/6.8		42/6.8		50/6.8		
Total Discharged			60,000		40,000		30,000		50,000	
Date Sampled*	Permit Limits			11/6/2019				5/6/2020		
Analytes	mg/L			mg/L				mg/L		
Antinomy Arsenic Beryllium Cadmium Chromium (total) Copper Cyanide Lead Mercury Nickel Selenium Silver Thallium Zinc	0.107 0.358 0.107 0.43 0.67 0.43 0.69 0.19 0.0002 0.65 0.282 0.65 0.282 0.65 0.073 1			ND <0.010 0.019 ND <0.010 ND <0.010 0.015 0.23 ND <0.010 ND <0.0002 0.33 ND <0.010 ND <0.010 ND <0.020 ND <0.020				ND <0.001 0.016 ND <0.010 ND <0.010 0.027 ND <0.010 ND <0.010 ND <0.0002 0.28 ND <0.010 ND <0.010 ND <0.010 ND <0.010 ND <0.020 ND <0.020 ND <0.020		
VOC** 1,1,1 TCA MeCL PCE Toluene TCE SVOC** BOD 5 TSS oil & grease Phenolics pH	NA NA NA NA 200 400 100 0.375 >5 & <10			0.00625 ND <0.0005 0.029 0.0674 0.0125 NA 11 39 6.8				0.00454 ND <0.0005 0.0314 0.0613 0.0117 NA 12 39 5.5 0.001 6.8		

* Semi-annual sampling of PAS leachate discharge conducted in accordance with SIU Wastewater Discharge Permit No.6-2019-20.

** Analytes included for permit pollutant analysis performed every three years

Analyte values in bold exceed limit

ATTACHMENT I



Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 4-7-2020

Time: 7:40

Field Technician MARTIN KOENNECKE

Weather Conditions <u>Sciency 45</u>

Beginning Leachate		Pi	re-Discharge	Well Pumpi		
Hold Tank Elevation (Inches)	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
10.5"	LCW-1	7:45	9:00	43,5"	134611	10.065
	LCW-2	7:45	9:00	-		
	LCW-3	7:45	8:10			
	LCW-4	7:45	9:00			
			1		Total	10 015

	Ма	onthly Le	eachate D	ischarge	Pumping (To	o the City of Osw	rego)
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	9:15	11:15	6.8	460	1345165	1355165	18,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			
	83	20 pm	Õ	16"			
	Semi-Ar	nnual Le	achate Di	ischarge S	Sampling (Pe	er the City of Osw	vego Permit)
	Date	Sampl Locatio		nple S ume	Sample Time	pH Te	mperature
Sample #1							



Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 5-6-20

Time: 7:00

Field Technician MARTIN Koenwecke

Weather Conditions PSussaly 35°

Beginning Leachate		Pi	re-Discharge	Well Pumpi	ng	
Hold Tank Elevation (Inches)	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)
11"	LCW-1	7:10	10:30			
	LCW-2	7:10	10:30			
	LCW-3	7:10	7:50			
	LCW-4	7:10	8:45			
	!		(5	5 X 305 = 20 ER PLEMPELT	Total	20,610

Discharge #	Start Time	Stop Time		рН	Tem	p	Totaliz Flow To (Start	tal	Totaliz Flow To (End)	tal	Gallons Discharge
Discharge #1	8:40	12:35	6	.8	44	0	13551	65	13751	65	20,000
Pump Info	Flow Rate (GPM)	Prime Time		ump ssure	Pum Vacuu						,
	85	20mm		0	16	11					
	Semi-Ar	nnual Le	ach	ate Di	ischarg	je S	amplin	g (Pe	r the City o	f Osw	ego Permit)
	Date	Sampl Locatio		San Volu			ample Time	2	рН	Te	mperature
Sample #1	5-6-20 eactate E Joh	Can i	Part	(1.5.	WILLER"T	1	120		8	4	14



Former Pollution Abatement Services (PAS Oswego) Oswego, NY

Date: 6-2-2020

Time: <u>'7:'30</u>

Field Technician MARTIN Koennecke

Weather Conditions <u>Cuartast 60</u>

Beginning Leachate	Pre-Discharge Well Pumping								
Hold Tank Elevation (Inches)	Pumping Well #	Pump Start Time	Pump Stop Time	Ending Tank Elevation	Flow Rate (est.)	Est. Leachate Pumped into Holding Tank (Gallons)			
13''	LCW-1	7:45	10:50	63.5 x309	τ	19.390			
	LCW-2	7:45	10:50)			
	LCW-3	7:45	8:15						
	LCW-4	7:45	9:30	11"Atter pi	NO GIT				
	_			, por	Total	19 2917			

	Ма	onthly Le	eachate D	ischarge	Pumping (To	o the City of Osw	ego)
Discharge #	Start Time	Stop Time	рН	Temp	Totalizer Flow Total (Start)	Totalizer Flow Total (End)	Gallons Discharge
Discharge #1	8:55	12:50	6,5	500	1375165	1395165	20,000
Pump Info	Flow Rate (GPM)	Prime Time	Pump Pressure	Pump Vacuum			0 11 9 11 11
	85	20 min	0	16"			
	Semi-Aı	nnual Le	achate Di	ischarge S	ampling (Pe	er the City of Osw	rego Permit)
	Date	Sample Locatio		nple S ume	ample Time	рН Те	mperature
Sample #1							

ATTACHMENT II

Life Science Laboratories, Inc.

5854 Butternut Drive East Syracuse, NY 13057

(315) 445-1900

Tuesday, June 02, 2020

Mark Byrne O'Brien & Gere Operations, LLC. 333 W. Washington St. PO Box 4873 Liverpool, NY 13221-4873

TEL: 315-437-6100

Project:PAS OSWEGO, SEMIANNUAL PERMIT DISCHARGERE:Analytical ResultsOrder No.:2006303

Dear Mark Byrne:

Life Science Laboratories, Inc. received 3 sample(s) on 5/6/2020 for the analyses presented in the following report. Sample results relate only to the samples as received by the laboratory. The low level mercury analysis by EPA 1631 was sent out to ELAP #11777 for analysis.

Very truly yours, Life Science Laboratories, Inc.

2

David J Prichard Project Manager

Life Science Laboratories, Inc.

Analytical Results

East Syracuse, N	Y 13057 (315) 445-1	900	5	StateCertNo	: 10248
	Operations, LLC. miannual Permit Discharge		Lab ID: Client Sample ID:	2006303-(Tank Efflu)01A ent Leachate, 5/6/20
Location:					
W Order: 2006303			Collection Date:	05/06/20 11	1:30
Matrix: WATER			Date Received:	05/06/20 14	4:15
Inst. ID: MSN 76	Sample Size: NA		PrepDate:		
ColumnID: Rtx-VMS	%Moisture:		BatchNo:	R33966	
Revision: 05/28/20 13:49	TestCode 624W		FileID:	1-SAMP-	
Col Type:					
Analyte	ResultQua	I PQL	Units	DF	Date Analyzed
	an anna a suite anna anna an anna an anna anna anna a	I PQL	Units EPA 624	DF	Date Analyzed
Analyte	an anna a suite anna anna an anna an anna anna anna a	1 PQL		DF	Date Analyzed
Analyte VOLATILE ORGANIC COMP	OUNDS BY GC/MS		EPA 624		anna ann an Aonaichte ann an Aonaichte ann an Aonaichte ann an Aonaichte ann an Aonaichte ann an Aonaichte ann a
Analyte VOLATILE ORGANIC COMP 1,1,1-Trichloroethane	OUNDS BY GC/MS 4.54	1.00	ΕΡΑ 624 μg/L	1	05/20/20
Analyte VOLATILE ORGANIC COMP 1,1,1-Trichloroethane Methylene chloride	OUNDS BY GC/MS 4.54 ND	1.00 1.00	ΕΡΑ 624 μg/L μg/L	1	05/20/20 05/20/20
Analyte VOLATILE ORGANIC COMP 1,1,1-Trichloroethane Methylene chloride Tetrachloroethene	OUNDS BY GC/MS 4.54 ND 31.4	1.00 1.00 1.00	ΕΡΑ 624 μg/L μg/L μg/L	1	05/20/20 05/20/20 05/20/20
Analyte VOLATILE ORGANIC COMP 1,1,1-Trichloroethane Methylene chloride Tetrachloroethene Toluene	OUNDS BY GC/MS 4.54 ND 31.4 61.3	1.00 1.00 1.00 1.00	ΕΡΑ 624 μg/L μg/L μg/L μg/L	1	05/20/20 05/20/20 05/20/20 05/20/20
Analyte VOLATILE ORGANIC COMP 1,1,1-Trichloroethane Methylene chloride Tetrachloroethene Toluene Trichloroethene	OUNDS BY GC/MS 4.54 ND 31.4 61.3 11.7	1.00 1.00 1.00 1.00 1.00	ΕΡΑ 624 μg/L μg/L μg/L μg/L μg/L	1 1 1 1	05/20/20 05/20/20 05/20/20 05/20/20

 Qualifiers:
 * Value may exceed the Acceptable Level
 B
 Analyte detected in the associated Method Blank

 E
 Value exceeds the instrument calibration range
 H
 Holding times for preparation or analysis exceeded

 J
 Analyte detected below the PQL
 ND
 Not Detected at the Practical Quantitation Limit (PQL)

 P
 Prim./Conf. column %D or RPD exceeds limit
 S
 Spike Recovery outside accepted recovery limits

Analytical Results

E	ast Syracuse, N	se, NY 13057 (315) 445-1900				StateCertNo: 10248			
CLIENT: Project:		Operations, LLC. emiannual Permit D	ischarge		Lab ID: Client Sample ID:	2006303-001 Tank Effluent			
Location: W Order: Matrix: Inst. ID: ColumnID: Revision: Col Type:	2006303 WATER MS06_40 DB-5MS 05/28/20 13:14	Sample Siz %Moistur TestCode	e:		Collection Date: Date Received: PrepDate: BatchNo: FileID:	05/06/20 11:30 05/06/20 14:15 05/11/20 0:00 R33977 1-SAMP-			
Analyte		Re	sultQua	I PQL	Units	DF	Date Analyzed		
SEMI-VOLA	TILE ORGANIC	S COMPOUNDS BY	GC/MS		EPA 625				
Phenol			ND	10	µg/L	1	05/21/20		
Surr: 2,4,6-	Tribromophenol		104	46-149	%REC	1	05/21/20		
Surr: 2-Fluc	prophenol		49	26-130	%REC	1	05/21/20		
Surr: Pheno	ol-d5		29	21-134	%REC	1	05/21/20		

Oualifiers :	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
2	E	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

	Life Science 854 Butternut Drive	Laboratories	s, Inc.		Analy	tical Results
E	ast Syracuse, NY 13	057 (315) 445-19	00	5	StateCert	No: 10248
CLIENT: Project:	O'Brien & Gere Oper PAS Oswego, Semian	ations, LLC. nual Permit Discharge		Lab ID: Client Sample ID:	2006303 Tank Eff	3-001C fluent Leachate, 5/6/20
Location: W Order: Matrix: Inst. ID: ColumnID: Revision: Col Type:	2006303 WATER FIMS 100 06/01/20 12:59	Sample Size: 40 mL %Moisture: TestCode HG245W		Collection Date: Date Received: PrepDate: BatchNo: FileID:	05/06/20 05/06/20 05/12/20 27014/R3 1-SAMP-	14:15 11:15 33952
Analyte		Result Qual	PQL	Units	DF	Date Analyzed
MERCURY				EPA 245.1, R (1994)	ev. 3.0	(EPA 245.1, REV. 3.0 (1994))
Mercury		ND	0.00020	mg/L	1	05/13/20 14:44

Oualifiers:	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
	Е	Value exceeds the instrument calibration range	Н	Helding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

	Life Science	Laboratori	es, Inc	•	Analytic	al Results
	East Syracuse, NY 13057 (315) 445-1900				StateCertNo:	10248
CLIENT:	O'Brien & Gere Oper	,		Lab ID:	2006303-00	1C
Project:	PAS Oswego, Semiar	nual Permit Discharg	e	Client Sample ID:	Tank Effluen	t Leachate, 5/6/20
Location:						
W Order:	2006303			Collection Date:	05/06/20 11:3	30
Matrix:	WATER			Date Received:	05/06/20 14:1	5
Inst. ID:	ICAP 61E	Sample Size: 50 r	nL	PrepDate:	05/07/20 0:00)
ColumnID:	:	%Moisture:		BatchNo:	27000/R3394	1
Revision:	05/15/20 17:06	TestCode 200.7	NPW	FileID:	1-SAMP-246	5
Col Type:				and a second second second second second second second second second second second second second second second		an an an an an an an an an an an an an a
Analyte		ResultQu	al PQL	Units	DF	Date Analyzed
TOTAL METALS BY ICP				EPA		PA 200.2)
A			0.040	200.7,Rev.4.4		05/11/00 10 00
Antimony		ND	0.010	mg/L	1	05/11/20 12:38
Arsenic Barium		0.016	0.010	mg/L	1	05/11/20 12:38
		0.40	0.10	mg/L	1	05/11/20 12:38
Beryllium Cadmium		ND ND	0.010 0.010	mg/L	1	05/11/20 12:38
Chromium		ND	0.010	mg/L	1 1	05/11/20 12:38 05/11/20 12:38
Copper		0.027	0.010	mg/L mg/L	1	05/11/20 12:38
				mg/L	1	05/11/20 12:38
Iron		17	0 050			
		17 ND	0.050 0.010	· ·		
Lead		ND	0.010	mg/L	1	05/11/20 12:38
Lead Nickel			0.010 0.010	mg/L mg/L	1 1	05/11/20 12:38 05/11/20 12:38
Iron Lead Nickel Selenium Silver		ND 0.28	0.010	mg/L mg/L mg/L	1	05/11/20 12:38 05/11/20 12:38 05/11/20 12:38
Lead Nickel Selenium		ND 0.28 ND	0.010 0.010 0.010	mg/L mg/L	1 1 1	05/11/20 12:38 05/11/20 12:38

	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
-	Е	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
Oualifiers :	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank

LSL ⁵	L ife Science] 854 Butternut Drive Cast Syracuse, NY 130	4 Butternut Drive				Analytical Results StateCertNo: 10248			
CLIENT: Project:	O'Brien & Gere Opera PAS Oswego, Semianr		2	Lab ID: Client Sample ID:	2006303- Tank Effl	-001D uent Leachate, 5/6/20			
Location: W Order: Matrix: Inst. ID: ColumnID: Revision: Col Type:	2006303 WATER DENVER APX-200 05/20/20 14:28	Sample Size: 970 %Moisture: TestCode OG166		Collection Date: Date Received: PrepDate: BatchNo: FileID:	05/06/20 1 05/06/20 1 05/19/20 6 27045/R33 1-SAMP-	14:15 5:22			
Analyte		ResultQu	al PQL	Units	DF	Date Analyzed			
OIL AND G Oil and Greas	REASE(LLE) se	ND	5.15	EPA 1664A mg/L	1	(EPA 1664A) 05/20/20			

	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits
	Ĵ	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL
	Е	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
Dualifiers :	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank

LSL ⁵	Life Science Laboratories, Inc. 5854 Butternut Drive East Syracuse, NY 13057 (315) 445-1900					Analytical Results StateCertNo: 10248			
CLIENT: Project:	O'Brien & Gere Ope PAS Oswego, Semia	erations, LLC. Innual Permit Discharge	e	Lab ID: Client Sample ID:		3-001E ffluent Leachate, 5/6/20			
Location: W Order: Matrix: Inst. ID: ColumnID: Revision: Col Type:	2006303 WATER AA3 05/13/20 14:04	Sample Size: 50 n %Moisture: TestCode CN335		Collection Date: Date Received: PrepDate: BatchNo: FileID:	05/06/2 05/06/2 05/13/20 27023/R 0-SAMH	0 14:15 0 0:00 .33945			
Analyte		Result Qu	al PQL	Units	DF	Date Analyzed			
CYANIDE, Cyanide, Tot		ND	0.010	EPA 335.4 mg/L	1	(EPA 335.4) 05/13/20			

Oualifiers:	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
2	Ε	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	1	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

LSL ⁵	LSL States Syracuse, NY 13057 (315) 445-1900				Analytical Results StateCertNo: 10248			
CLIENT:	O'Brien & Gere Opera	-		Lab ID:	2006303-001F			
Project:	PAS Oswego, Semian	nual Permit Discharge		Client Sample ID:	Tank Effluent I	Leachate, 5/6/20		
Location:								
W Order:	2006303			Collection Date:	05/06/20 11:30			
Matrix:	WATER			Date Received:	05/06/20 14:15			
Inst. ID:	GENESYS 20	Sample Size: NA		PrepDate:	05/07/20 8:35			
ColumnID:		%Moisture:		BatchNo:	R33942			
Revision:	05/18/20 15:19	TestCode CRHEX719	96W	FileID:	0-SAMP-			
Col Type:								
Analyte		ResultQual	PQL	Units	DF	Date Analyzed		
CHROMIUN	M, HEXAVALENT			SW7196A				
Chromium, H	lexavalent	ND	0.010	mg/L	1	05/07/20		

	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
-	Ε	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
Qualifiers:	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank

LSL	Life Science L 854 Butternut Drive ast Syracuse, NY 1305				Analyt StateCertNo	ical Results
CLIENT: Project:	O'Brien & Gere Operati PAS Oswego, Semiannu	ons, LLC.		Lab ID:	2006303-0	
Location: W Order: Matrix: Inst. ID: ColumnID: Revision: Col Type:	2006303 WATER Fisher balance XA 05/19/20 8:40	Sample Size: NA %Moisture: TestCode TSS254	40D	Collection Date: Date Received: PrepDate: BatchNo: FileID:	05/06/20 1 05/06/20 1 R33937 0-SAMP-	
Analyte		ResultQu	al PQL	Units	DF	Date Analyzed
	ION-FILTERABLE (TSS) filterable (TSS)	39	5.0	SM 2540 D-20 mg/L)11 1	05/07/20

Oualifiers:	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
	Е	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

	Life Science	e Laboratories, Inc		Analytic	al Results
F	East Syracuse, NY 1	3057 (315) 445-1900	2	StateCertNo:	10248
CLIENT: Project:	O'Brien & Gere Op PAS Oswego, Semi	erations, LLC. annual Permit Discharge	Lab ID: 2006303-001G Client Sample ID: Tank Effluent Leachate, 5/0		
Location: W Order:	2006303		Collection Date:	05/06/20 11:3	-
Matrix: Inst. ID:	WATER DO Meter	Sample Size: NA	Date Received: PrepDate:	05/06/20 14:1 05/07/20 11:2	-
ColumnID: Revision:	05/19/20 8:38	%Moisture: TestCode BODSM5210B	BatchNo: FileID:	R33957 0-SAMP-	
Col Type: Analyte		ResultQual PQL	Units	DF	Date Analyzed
	CAL OXYGEN DEMA oxygen demand (BOD5	, ,	SM 5210B-01 mg/L	,-11	05/07/20

Oualifiers:	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
C	Е	Value exceeds the instrument calibration range	H	Holding times for preparation or analysis exceeded
	Ĵ.	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

Lif	e Science Laboratories, Inc. Butternut Drive	
LSL 5854	Butternut Drive	

Analytical Results

E	Cast Syracuse, NY 1	3057	(315) 445-19	900	5	StateCer	tNo: 10248
CLIENT: Project:	O'Brien & Gere Operations, LLC. PAS Oswego, Semiannual Permit Discharge			Lab ID: Client Sample ID:)3-001H ffluent Leachate, 5/6/20	
Location: W Order: Matrix: <u>Inst. ID:</u> ColumnID: Revision: Col Type:	2006303 WATER Traacs 06/02/20 8:35	%N	ple Size: 1 mL loisture: Code TKN351.	2	Collection Date: Date Received: PrepDate: BatchNo: FileID:	05/06/2 05/06/2 05/15/20 27082/F 1-SAMH	0 14:15 0 0:00 &33987
Analyte			Result Qual	PQL	Units	DF	Date Analyzed
	. NITROGEN - TOTA ogen - Total (as N)	L (AS N)	18	0.10	EPA 351.2 mg/L	1	(EPA 351.2) 05/15/20

Oualifiers:	Oualifiers :	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
		Е	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
		J	Analyte detected below the PQL	ND	Not-Detected at the Practical Quantitation Limit (PQL)
		Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

[LSL] [€]	Life Science 5854 Butternut Drive East Syracuse, NY 13				Analytic StateCertNo:	cal Results	
CLIENT: Project:	O'Brien & Gere Operations, LLC. PAS Oswego, Semiannual Permit Discharge			Lab ID: Client Sample ID:	b ID: 2006303-001H ient Sample ID: Tank Effluent Leachate, 5/6		
Location: W Order: Matrix: Inst. ID: ColumnID: Revision: Col Type:	2006303 WATER <u>HACH4000</u> 05/20/20 11:48	Sample Size: 50 m %Moisture: TestCode TP365.		Collection Date: Date Received: PrepDate: BatchNo: FileID:	05/06/20 11:: 05/06/20 14:: 05/14/20 0:00 27047/R3395 0-SAMP-	5	
Analyte		ResultQu	al PQL	Units	DF	Date Analyzed	
	RUS, TOTAL (AS P) Total (As P)	0.17	0.010	EPA 365.3 mg/L	(E	PA 365.3) 05/15/20	

Oualifiers:	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
2	E	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits

Analytical Results

Ea	ast Syracuse, NY 1	13057 (3	15) 445-1	1900		StateCertNo:	10248
CLIENT:	O'Brien & Gere Operations, LLC.			Lab ID: Client Sample ID	2006303-002	2A	
Project:	PAS Oswego, Semi	AS Oswego, Semiannual Permit Discharge				: Trip Bl a nk	
Location:							
W Order:	2006303				Collection Date:	04/29/20 0:00	
Matrix:	WATER Q				Date Received:	05/06/20 14:1	5
Inst. ID:	MSN 76	Sample S	ize: NA		PrepDate:		
ColumnID:	Rtx-VMS	%Moistu	re:		BatchNo:	R33966	
Revision:	05/28/20 13:49	TestCode	e 624W		FileID:	1-SAMP-	
Col Type:	and an end of the state of the	1. 21.0 (m. 1.0)			1. March 19		
Analyte		R	lesultQua	al PQL	Units	DF	Date Analyzed
Analyte VOLATILE (DRGANIC COMPOL			al PQL	Units EPA 624	DF	Date Analyzed
				al PQL 1.00	Alfricht im Oden van Wichter monormen in Kranser Mittel Charlen ander	DF	Date Analyzed
VOLATILE	oethane		IS		EPA 624		
VOLATILE (1,1,1-Trichloro	oethane loride		IS ND	1.00	ΕΡΑ 624 μg/L	1	05/20/20
VOLATILE (1,1,1-Trichlord Methylene chl	oethane loride		IS ND ND	1.00 1.00	EPA 624 µց/L µց/L	1	05/20/20 05/20/20
VOLATILE (1,1,1-Trichloro Methylene chl Tetrachloroeth	bethane loride nene		IS ND ND ND	1.00 1.00 1.00	ΕΡΑ 624 μg/L μg/L μg/L	1 1 1	05/20/20 05/20/20 05/20/20
VOLATILE (1,1,1-Trichlord Methylene chl Tetrachloroeth Toluene Trichloroether	bethane loride nene		IS ND ND ND ND	1.00 1.00 1.00 1.00	ΕΡΑ 624 μg/L μg/L μg/L μg/L	1 1 1 1	05/20/20 05/20/20 05/20/20 05/20/20
VOLATILE (1,1,1-Trichlord Methylene chl Tetrachloroeth Toluene Trichloroether Surr: 1,2-Di	bethane loride hene		IS ND ND ND ND ND	1.00 1.00 1.00 1.00 1.00	ΕΡΑ 624 μg/L μg/L μg/L μg/L μg/L	1 1 1 1 1	05/20/20 05/20/20 05/20/20 05/20/20 05/20/20

Oualifiers:	*	Value may exceed the Acceptable Level	В	Analyte detected in the associated Method Blank
2	Е	Value exceeds the instrument calibration range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below the PQL	ND	Not Detected at the Practical Quantitation Limit (PQL)
	Р	Prim./Conf. column %D or RPD exceeds limit	S	Spike Recovery outside accepted recovery limits



May 14, 2020

Greg Smith Life Science Laboratories, Inc. 5854 Butternut Dr. E. Syracuse, NY 13057 TEL: (315) 445-1105 FAX: (315) 445-1301

RE: 2006303

Dear Greg Smith:

Order No.: 20050561

Summit Environmental Technologies, Inc. received 2 sample(s) on 5/12/2020 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

jamites maluel

Jennifer Woolf

Project Manager

3310 Win St. Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 011, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C

Page 1 of 14



Case Narrative

WO#:	20050561
Date:	5/14/2020

CLIENT:Life Science Laboratories, Inc.Project:2006303

WorkOrder Narrative:

20050561: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Analytical Sequence Sample Notes:

20050561-001A HG-LL_NPW(1631): Z: Method Deviation: Sample was received without an associated Field or Trip Blank for Low Level Mercury Analysis. 20050561-002A HG-LL_NPW(1631): Z: Method Deviation: Sample was received without an associated Field or Trip Blank for Low Level Mercury Analysis.

Original



Qualifiers and Acronyms

WO#:	20050561
Date:	5/14/2020

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

CCV

CCB

RLC

Continuing Calibration Verification

Continuing Calibration Blank

Reporting Limit Check

U	The compound was analyzed for but	was not dete	ected above the MDL.
J			etection Limit but less than the Reporting Limit.
Н	1 0		ysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution		
E			ation or is estimated due to interference.
MC	The result is below the Minimum Co		
*			
	The result exceeds the Regulatory Li		
m	Manual integration was used to deter		ea response.
d	Manual integration in which peak wa		
Ν			ral library search assuming a 1.1 response.
Р	The second column confirmation exc		difference.
С	The result has been confirmed by GO	C/MS.	
Х	The result was not confirmed when (GC/MS Ana	lysis was performed.
В	The analyte was detected in the Meth	od Blank at	a concentration greater than the RL.
MB+	The analyte was detected in the Meth	nod Blank at	a concentration greater than the MDL.
G	The ICB or CCB contained reportable	le amounts o	f analyte.
QC-/+	The CCV recovery failed low (-) or I	nigh (+).	
R/QDF	R The RPD was outside of accepted re-	covery limit	S.
QL-/+	The LCS or LCSD recovery failed lo	w (-) or hig	h (+).
QLR	The LCS/LCSD RPD was outside of		
QM-/+			
OMR	The MS/MSD RPD was outside of a	ccepted reco	overy limits.
QV-/+	The ICV recovery failed low (-) or h	•	
S	The spike result was outside of accept		v limits.
W			s ($0^{\circ} - 6^{\circ}$ C). Not Clean Water Act compliant.
z			formed; Please refer to the Case Narrative for
2	additional information	nou nus per	
Acronyn	19		
ND	Not Detected	RL	Reporting Limit
QC	Quality Control	MDL	Method Detection Limit
MB	Method Blank	LOD	Level of Detection
LCS	Laboratory Control Sample Laboratory Control Sample Duplicate	LOQ	Level of Quantitation Practical Quantitation Limit
LCSD QCS	Quality Control Sample	PQL	Contract Required Quantitation Limit
DUP	Duplicate	CRQL PL	Permit Limit
MS	Matrix Spike	RegLvi	Regulatory Limit
MSD	Matrix Spike Duplicate	MCL	Maximum Contamination Limit
RPD	Relative Percent Different	MinCL	Minimum Compound Limit
ICV	Initial Calibration Verification	RA	Reanalysis
ICB	Initial Calibration Blank	RE	Reextraction
~ ~ • •			

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

Tentatively Identified Compound

Retention Time

Calibration Factor

TIC

RT

CF



Workorder Sample Summary WO#: 20050561

CLIENT: Project:	Life Science Labora 2006303			w	
Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
20050561-001	2006303-0011,J		5/6/2020	5/12/2020 10:15:00 AM	Non-Potable Water
20050561-002	2006303-003A,B		5/6/2020	5/12/2020 10:15:00 AM	Non-Potable Water



DATES REPORT

WO#: 20050561

14-May-20

Clien t:	Life Science Labo	ratories, Inc.					
Project:	2006303						
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
20050561-001A	2006303-001 LJ	5/6/2020	Non-Potable Wa	ater Low-Level Mercury (EPA 1631)	yn 1927 - El Martin Martin, son a san ar an ar an ar an ar an ar an ar an ar an ar an ar an ar an ar an ar an a An an an an an an an an an an an an an an		5/14/2020 1:59:26 PM
20050561-002A	2006303-003A,B			Low-Level Mercury (EPA 1631)			5/14/2020 2:03:05 PM

3310 Win St.

Original

ENVIADAMS	Summit Environmental Technologies, Inc. 3310 Win St. Cuyahoga Falls, Ohio 44223 TEL: (330) 253-8211 FAX: (330) 253-4489 Website: http://www.settek.com				WO#: 20050561 Date Reported: 5/14/2020 Company: Life Science Laborator Address: 5854 Butternut Dr. E. Syracuse NY 13057 Received: 5/12/2020 Project#: 2006303					-	
Client ID#	Lab ID#	Collected	Analyte	Result Units	Qual	Matrix	Method DF	MDL	PQL	Run	Analyst
2006303-001i,J	001	5/6/2020	Mercury	3.01 ng/L	Z	Non-Potable Water	EPA 1631 E 5	1.24	2.50	5/14/2020	AJT
Client ID#	Lab ID#	Collected	Analyte	Result Units	Qual	Matrix	Method DF	MDL	PQL	Run	Analyst
2006303-003A,B	002	5/6/2020	Mercury	8.24 ng/L	Z	Non-Potable Water	EPA 1631 E 1	0.247	0.500	5/14/2020	AJT



Accreditation Program Analytes Report

WO#: 20050561 14-May-20

Client: Life S	Science Laboratories, Inc.		State: NY	
Project: 2006	303		Program Name: DW_W	W_SCM_NI
Sample ID	Matrix	Test Name	Analyte	Status
20050561-001A	Non-Potable Water Low-Le	evel Mercury (EPA 1631)	Mercury	А
20050561-002A	Non-Potable Water Low-Le	evel Mercury (EPA 1631)	Mercury	А

Key

DW_WW_SCM_NE A Accredited



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QC SUMMARY REPORT

WO#: 20050561

Clien t: Project:	Life Scie 2006303	ence Laboratories, Inc.						I	BatchID: I	R112941		
Sample ID: Client ID:		Samp⊺ype: LCS Batch ID: R112941		le: HG-LL_NI lo: E1631	PW(Units: ng/L		Prep Da Analysis Da		020	RunNo: 112 SeqNo: 27		<u></u>
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		49.4	0.500	50.00	0	98.8	77	123	0 11 <u></u>			
Sample ID:	: mblank 1	SampType: MBLK	TestCoo	le: HG-LL_NI	PW(Units: ng/L		Prep Da	te:		RunNo: 112	2941	
Client ID:	₽B₩	Batch ID: R112941	TestN	lo: E1631			Analysis Da	te: 5/14/2	020	SeqNo: 27	76311	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	η ματική του ματικής 	ND	0.500									U
Sample (D:	: rlc	SampType: RLC	TestCoo	le: HG-LL_NI	PW(Units: ng/L		Prep Da	te:		RunNo: 112	2941	
Clien: ID:	BatchQC	Batch ID: R112941	TestN	o: E1631			Analysis Da	te: 5/14/20	020	SeqNo: 27	76313	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.599	0.500	0.50()0	0	120	50	150				
Sample ID:	molank 2	SampType: MBLK	TestCod	e: HG-LL_N	PW(Units:ng/L		Prep Da	te:		RunNo: 112	2941	
Clien: ID:	PBW	Batch ID: R112941	TestN	o: E1631			Analysis Dat	te: 5/14/20	020	SeqNo: 277	6325	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	anna an ann an ann an ann an ann ann an	ND	0.500									U
Qual fiers:	J Analyte de ND Not Detec	etected in the associated Method Bl etected below quantitation limits ted de accepted recovery limits	ank	M Manua P Secon	above quantitation ra al Integration used to d column confirmatic ting Detection Limit	determine ar n exceeds	ea response	MC PL	Holding times for Value is below M Permit Limit Spike Recovery of	inimum Compou	Ind	Original



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QC SUMMARY REPORT

WO#: 20050561

Clien t: Project:		Life Science 2006303	e Laboratories, Inc.]	BatchID: F	R112941		
Sample ID: r Client ID:	mblank PBW	2	SampType: MBLK Batch ID: R112941		de: HG-LL_N	PW(Units: ng/L		Prep Da Analysis Da		020	RunNo: 112 SeqNo: 277		
Analyte	ogur agu cumar e de mengol distan		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	NATION OF COMPANY	1997 Apge appears to be a second second second second second second second second second second second second	a na shekara ya kata kata kata kata kata kata kata										
Sample ID: 1. Client ID: 1			SampType: LCS Batch ID: R112941		de: HG-LL_NI 10: E1631	P W (Units: n g/L		Prep Da Analysis Da	-	020	RunNo: 112 SeqNo: 277		
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury			45.0	0.500	50.00	0	90.0	77	123				
Sample ID: L	LFBD		SampType: LCSD	TestCoo	de: HG-LL_N	PW(Units: ng/L		Prep Da	te:		RunNo: 112	2941	
Client ID:	LCSS02	<u>]</u>	Batch ID: R112941	Test	lo: E1631			Analysis Da	te: 5/14/2	020	SeqNo: 27	76333	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		1960 ggg, 2000 0 Tggg, tagga	44.7	0.500	50.00	0	89.5	77	123	49.40	9.88	24	<u> </u>
Sample ID: n	nblank	3	SampType: MBLK	TestCoo	le: HG-LL_NI	PW(Units:ng/L		Prep Da	te:		RunNo: 112	2941	
Client ID: F	∘в₩		Batch ID: R112941	Test	lo: E1631			Analysis Da	te: 5/14/2	020	SeqNo: 277	76339	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		:	ND	0.500									U
Qualifiers:	B J ND R	Analyte detect Not Detected	ed in the associated Method ed below quantitation limits accepted recovery limits		M Manua P Secon	above quantitation 1 al Integration used to d column confirmati ting Detection Limit	o determine ar on exceeds	ea response	MC PL	Holding times for Value is below Mi Permit Limit Spike Recovery of	inimum Compou	ind	●rigina



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QC SUMMARY REPORT

WO#: 20050561

Clien t: Project:		Life Science Laboratories, Inc. 2006303							BatchID: H	R112941		
Sample ID: I		SampType: LCS Batch ID: R112941		de: HG-LL_N No: E1631	PW(Units: ng/L	t tangang ang kalong pang kang pang kang pang pang pang pang pang pang pang p	Prep Dat Analysis Dat		020	RunNo: 112 SeqNo: 27		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLirnit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		42.4	0.500	50.00	C	84.7	77	123	mo™			
Sample ID: I	LFED	SampType: LCSD	TestCo	de: HG-LL_N	PW(Units: ng/L		Prep Dat	e:		RunNo: 112	2941	
Client ID:	LCSS02	Batch ID: R112941	Test	No: E1631			Analysis Dat	ie: 5/14/2	020	SeqNo: 277	76347	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLirnit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		41.6	0.500	50.00	C	83.3	77	123	49.40	17.1	24	
Sample ID: (mblank	4 SampType: MBLK	TestCo	de: HG-LL_N	PW(Units:ng/L		Prep Dat	e:		RunNo: 112	2941	
Client ID:	PBW	Batch ID: R112941	Test	lo: E1631			Analysis Dat	e: 5/14/2	020	SeqNo: 277	76349	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLirnit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	0.500									U
Sample ID: I	ics 2	SampType: LCS	TestCo	de: HG-LL_NI	PW(Units: ng/L		Prep Dat	e:		RunNo: 112		
Client ID: I	LCSW	Batch ID: R112941	Test	lo: E1631			Analysis Dat	e: 5/14/2	020	SeqNo: 277	76350	
Analyse		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ena	43.5	0.500	50.00	0	86.9	77	123				
Qualifiers:	B J ND R	Analyte detected in the associated Method I Analyte detected below quantitation limits Not Detected RPD cutside accepted recovery limits	Blank	M Manu P Secon	above quantitation ra al Integration used to d column confirmatio ting Detection Limit	determine ar n exceeds	ea response	MC PL	Holding times for Value is below Mi Permit Limit Spike Recovery or	inimum Compou	und	Origina



QC SUMMARY REPORT

WO#: 20050561

								BatchID: R	R112941		
: ics 2	SampType: LCS	TestCo	de: HG-LL_N	PW(Units: ng/L		Prep Dat	te:		RunNo: 112	2941	
LCSW	Batch ID: R112941	Test	No: E1631			Analysis Dat	te: 5/14/2	020	SeqNo: 277	6350	
12) / 12 / 12 / 12 / 12 / 12 / 12 / 12 /	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
410-180018-180-1801-1811-1811-1811-1811-						· · · · · · · · · · · · · · · · · · ·					
: mblank !	5 SampType: MBLK	TestCo	de: HG-LL_N	PW(Units: ng/L	1	Prep Dat	te:		RunNo: 112	2941	_
P₿₩	Batch ID: R112941	Testl	No: E1631			Analysis Dat	te: 5/14/2	020	SeqNo: 277	6358	
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
944 - Caller Anger Marin (1999) 17 (no. 1997) 1999 - Anger Anno 2009	ND	0.500									U
EFE	SampType: LCS	TestCo	de: HG-LL_N	PW(Units: ng/L		Prep Dat	te:		RunNo: 112	2941	
LCSW	Batch ID: R112941	Test	No: E1631			Analysis Dat	te: 5/14/2	020	SeqNo: 277	6360	
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	43.7	0.500	50.00	0	87.4	77	123				
LFBD	SampType: LCSD	TestCo	de: HG-LL_N	PW(Units: ng/L		Prep Dat	te:		RunNo: 112	2941	
LCS S02	Batch ID: R112941	Test	No: E1631			Analysis Dat	te: 5/14/2	020	SeqNo: 277	6361	
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	42.4	0.500	50.00	0	84.8	77	123	49.40	15.2	24	
В	Analyte detected in the associated Method E	Blank	E Value	above quantitation ra	inge		Н	Holding times for	preparation or a		
J	Analyte detected below quantitation limits			-	-	ea response	MC			-	●riginal
					on exceeds		PL	Permit Limit			€ngma
R	KPD outside accepted recovery limits		KL Repor	-			S	Spike Recovery ou	tside accepted r	eco	
	LFB LCSW	LCSW Batch ID: R112941 Result mblank 5 SampType: MBLK PEW Batch ID: R112941 Result ND LFE SampType: LCS LCSW Batch ID: R112941 Result 43.7 LFBD SampType: LCSD LCS502 Batch ID: R112941 Result 43.7 LFBD SampType: LCSD LCS502 Batch ID: R112941 Result 42.4	2006303 Ics 2 SampType: LCS TestCo LCSW Batch ID: R112941 TestI Result PQL mblank 5 SampType: MBLK TestCo PEW Batch ID: R112941 TestI Result PQL ND 0.500 LFE SampType: LCS TestCo LCSW Batch ID: R112941 TestI Result PQL ND 0.500 LFE SampType: LCS TestCo LCSW Batch ID: R112941 TestI Result PQL 43.7 0.500 LFED SampType: LCSD TestCo LCSS02 Batch ID: R112941 TestI Result PQL 43.7 0.500 LFED SampType: LCSD TestCo LCSS02 Batch ID: R112941 TestI TestI Result PQL 42.4 0.500 B Analyte detected in the associated Method Blank J ND Not Detected ND ND	2006303 Ics 2 SampType: LCS TestCode: HG-LL_N LCSW Batch ID: R112941 TestNo: E1631 Result PQL SPK value mblank 5 SampType: MBLK TestCode: HG-LL_N PBW Batch ID: R112941 TestNo: E1631 Result PQL SPK value ND 0.500 ND LFB SampType: LCS TestCode: HG-LL_N LCSW Batch ID: R112941 TestNo: E1631 LFB SampType: LCS TestCode: HG-LL_N LCSW Batch ID: R112941 TestNo: E1631 LFEID SampType: LCSD TestCode: HG-LL_N LCSS02 Batch ID: R112941 TestNo: E1631 LCSS02 Batch ID: R112941 TestNo: E1631 Result PQL SPK value 42.4 0.500 50.00 Batch ID: R112941 TestNo: E1631 E Value 42.4 0.500 50.00 Batch ID: R112941 TestNo: E1631 E Value 42.4 0.500 50.00 Batch ID: R112941 TestNo: E1631 E Value </td <td>2006303 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L LCSW Batch ID: R112941 TestNo: E1631 mblank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L mblank 5 SampType: MBLK TestNo: E1631 PBW Batch ID: R112941 TestNo: E1631 LFB SampType: LCS TestCode: HG-LL_NPW(Units: ng/L ND 0.500 LFB SampType: LCS TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSS02 Batch ID: R112941 TestNo: E1631 LCSS02 Batch ID: R112941 TestNo: E1631 Result PQL SPK value SPK Ref Val 42.4 0.500 50.00 0 B Analyte detected in the associated Method Blank E Value above quantitation re</td> <td>2006303 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L LCSW Batch ID: R112941 TestNo: E1631 Result PQL SPK value SPK Ref Val %REC mblank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L PEW Batch ID: R112941 TestNo: E1631 %REC ND 0.500 %REC ND 0.500 %REC LFE SampType: LCS TestCode: HG-LL_NPW(Units: ng/L LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LFED SampType: LCSD TestCode: HG-LL_NPW(Units: ng/L LCSS02 Batch ID: R112941 TestNo: E1631 LFED SampType: LCSD TestNo: E1631 LFED SampType: LCSD TestNo: E1631 LCSS02 Batch ID: R112941 TestNo: E1631 Result PQL SPK value SPK Ref Val %REC 42.4 0.500 50.00 0 84.8 B Analyle detected below</td> <td>2006303 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Dal LCS:W Batch ID: R112941 TestNo: E1631 Analysis Dal Result PQL SPK value SPK Ref Val %REC LowLimit mblank 5 SampType: MBLK TestNo: E1631 Analysis Dal PBW Batch ID: R112941 TestNo: E1631 Analysis Dal PEW Batch ID: R112941 TestNo: E1631 Analysis Dal LFE SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Dal LCS:W Batch ID: R112941 TestNo: E1631 Analysis Dal Result PQL SPK value SPK Ref Val %REC LowLimit ND 0.500 0 87.4 77 LCS:W Batch ID: R112941 TestNo: E1631 Analysis Dal Result PQL SPK value SPK Ref Val %REC LowLimit 43.7 0.500 50.00 0 87.4 77 LFBD SampType: LCSD TestNo: E1631 Analysis Dal Analysis Dal LCSSiz2 Batch ID: R112941</td> <td>2006303 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Date: LCS/W Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit mblank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prep Date: 5/14/2 PEW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 ND 0.500 ND 0.500 %REC LowLimit HighLimit LCS Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 LCS Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit VD 0.500 0 87.4 77 123 LCSW Batch ID: R112941 TestCode: HG-LL_NPW(Units: ng/L Prep Date: 123.7 LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 LCSSG2 Batch ID: R112941 TestNo: E1631<!--</td--><td>2006303 BatchID: FestCode: HGLL_NPW(Units: Ing/L Prep Date: Strange LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 Result PQL SPK value SPK Ref Vel %REC LowLimit HighLimit RPD Ref Val mblank 6 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prep Date: Strange mblank 6 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prep Date: Strange Strang</td><td>2006303 BatchID: R112941 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Date: RunNo: 112 LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 277 rmiDlank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prep Date: RunNo: 112 PEW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 277 PEW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 277 ND 0.500 </td><td>2005/33 Batch ID: R112941 lcs 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prop Date: RunNo: 112941 LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 2776350 Result PQL SPK xelue SPK Kel Vel %REC LowLimit HighLimit RPD Ref Vel %RPD RPDLimit mtblank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prop Date: RunNo: 112941 RunNo: 112941 PEW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 2776350 Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit LCF SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Date: RunNo: 112941 SeqNo: 2776360 LCFE SampType: LCS TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 2776360 Result PQL SPK xelue SPK Ref Val %REC LowLimit HighLimit RPD Ref Val</td></td>	2006303 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L LCSW Batch ID: R112941 TestNo: E1631 mblank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L mblank 5 SampType: MBLK TestNo: E1631 PBW Batch ID: R112941 TestNo: E1631 LFB SampType: LCS TestCode: HG-LL_NPW(Units: ng/L ND 0.500 LFB SampType: LCS TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSS02 Batch ID: R112941 TestNo: E1631 LCSS02 Batch ID: R112941 TestNo: E1631 Result PQL SPK value SPK Ref Val 42.4 0.500 50.00 0 B Analyte detected in the associated Method Blank E Value above quantitation re	2006303 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L LCSW Batch ID: R112941 TestNo: E1631 Result PQL SPK value SPK Ref Val %REC mblank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L PEW Batch ID: R112941 TestNo: E1631 %REC ND 0.500 %REC ND 0.500 %REC LFE SampType: LCS TestCode: HG-LL_NPW(Units: ng/L LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LCSW Batch ID: R112941 TestNo: E1631 LFED SampType: LCSD TestCode: HG-LL_NPW(Units: ng/L LCSS02 Batch ID: R112941 TestNo: E1631 LFED SampType: LCSD TestNo: E1631 LFED SampType: LCSD TestNo: E1631 LCSS02 Batch ID: R112941 TestNo: E1631 Result PQL SPK value SPK Ref Val %REC 42.4 0.500 50.00 0 84.8 B Analyle detected below	2006303 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Dal LCS:W Batch ID: R112941 TestNo: E1631 Analysis Dal Result PQL SPK value SPK Ref Val %REC LowLimit mblank 5 SampType: MBLK TestNo: E1631 Analysis Dal PBW Batch ID: R112941 TestNo: E1631 Analysis Dal PEW Batch ID: R112941 TestNo: E1631 Analysis Dal LFE SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Dal LCS:W Batch ID: R112941 TestNo: E1631 Analysis Dal Result PQL SPK value SPK Ref Val %REC LowLimit ND 0.500 0 87.4 77 LCS:W Batch ID: R112941 TestNo: E1631 Analysis Dal Result PQL SPK value SPK Ref Val %REC LowLimit 43.7 0.500 50.00 0 87.4 77 LFBD SampType: LCSD TestNo: E1631 Analysis Dal Analysis Dal LCSSiz2 Batch ID: R112941	2006303 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Date: LCS/W Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit mblank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prep Date: 5/14/2 PEW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 ND 0.500 ND 0.500 %REC LowLimit HighLimit LCS Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 LCS Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit VD 0.500 0 87.4 77 123 LCSW Batch ID: R112941 TestCode: HG-LL_NPW(Units: ng/L Prep Date: 123.7 LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2 LCSSG2 Batch ID: R112941 TestNo: E1631 </td <td>2006303 BatchID: FestCode: HGLL_NPW(Units: Ing/L Prep Date: Strange LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 Result PQL SPK value SPK Ref Vel %REC LowLimit HighLimit RPD Ref Val mblank 6 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prep Date: Strange mblank 6 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prep Date: Strange Strang</td> <td>2006303 BatchID: R112941 Ics 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prep Date: RunNo: 112 LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 277 rmiDlank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prep Date: RunNo: 112 PEW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 277 PEW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 277 ND 0.500 </td> <td>2005/33 Batch ID: R112941 lcs 2 SampType: LCS TestCode: HG-LL_NPW(Units: ng/L Prop Date: RunNo: 112941 LCSW Batch ID: R112941 TestNo: E1631 Analysis Date: 5/14/2020 SeqNo: 2776350 Result PQL SPK xelue SPK Kel Vel %REC LowLimit HighLimit RPD Ref Vel %RPD RPDLimit mtblank 5 SampType: MBLK TestCode: HG-LL_NPW(Units: ng/L Prop Date: RunNo: 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QC SUMMARY REPORT

WO#: 20050561

14-May-20

Client: Project:	Life Scienc 2006303	e Laboratories, Inc.						B	BatchID: R	R112941		
Sample ID: mbla Clien: ID: PBW		SampType: MBLK Batch ID: R112941		: HG-LL_NF : E1631	PW(Units: ng/L		Prep Da Anal y sis Da		20	RunNo: 112 SeqNo: 277		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	a ang philoson akang mangangan ang pangangan ang pangangan ang pangangan ang pangangan ang pangangan ang pangan	ND	0.500									U

Qual fiers:

ND

R

Not Detected

- В Analyte detected in the associated Method Blank J Analyte detected below quantitation limits
- Е Value above quantitation range
- Manual Integration used to determine area response
- Second column confirmation exceeds
- RL Reporting Detection Limit
 - Page 12 of 14

- Н Holding times for preparation or analy
- MC Value is below Minimum Compound
- PL Permit Limit

S

- Spike Recovery outside accepted reco

●riginal

- RPD outside accepted recovery limits
- М
 - Р

DBPix Evaluation

Subcontractor Purchase Order / Chain of Custody

							Contraction of the local division of the loc		······································			
Ter	Life Science				n Blowne	Varia dat			sell and deliver services as specified h			
LSL					e, new	TOPK 130	1		essly limits acceptance to the terms of			
	Phone # (315	5) 445-1105	Fax	: #	(315) 44	5-1301	proposed by	the	seller are rejected unless expressly as	sented to in w	vriting by Life Science	Laboratories, I
Samples sent to:		Report shou	ıld be	sent	to:		Life Scien	ce I	aberateries Project Number:	Special Ins	tructions:	
Summ	ut Environmental	Life Scie	nce La	aborato	ries, Inc.					The Purchas	• Order Number must	
Techr	ologies Inc	5854 But	ternut	Drive					2006303	ap p ear on ai	I reports and invoices.	
33103	Winn Street	Dauf Cherry		NIV 12	057		Purchase	Ore	ler Number (S O #):	1		
	oga Fells, OH 44223	East Syra	icuac,	INT 13	0.51			so	57210	-	~~~M	, I
	330-253-8211	Sample C	States	v Dane	rtmani		1		Accounting Department	PV	いいろ	
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Fax: 3	30-253-4489	Contact Nan	ne: G	reg Sn	nith		Results ar	ere	equired by this date:		ES ARE FOR NI	
									Standard		<u>STATE COMPL</u>	JANCE.
Life Science	Labs	Sample	Т	ype		Preserv.	Container	'Ş	Analysis Req	uested		Unit
Sample ID #	/ Client ID	Date	gral	com	Matrix	Added	size/type	#				Price
006303-0011,J	Leachate Eff.	05/06/20		X.	NPW	HCL	40ml	2	Hg 1631			
D06303-003A,B	Field Blank	05/06/20	x	-	NPW	HCL	40m)	2	Hg 1631			ANNA.
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								Rec	eived Intact: Y N		Samples Becould't Temp	4.4.
		Copies:		Origi	inal		Purchasin	9	Administration		Account	ting 61,140

collice www.dmmara.com

lient Name:	LIF-NY-13057	V	Vork Order N	umber: 2	00505	61				RcptNo:
ogged by:	John A.Semenik	5/1	2/2020 10:1	5:00 AM			July	2	an ai C	an an an an an an an an an an an an an a
Completed By:	Jacqueline Rasil	e 5/1	13/2020 9:50	:12 AM			4 1 +82	c Pazzis		
Reviewed By:	Jennifer Woolf	5/1	3/2020 1:29	:24 PM			C	Jam	per m	Nuce
hain of Cu	stody			<u> </u>						
1. Is Chain o	f Custody complete?	2			Yes	\checkmark	N	o 🗌	Not Pr	esent
 How was t 	he sample delivered	?			<u>UPS</u>					
og In										
Coolers ar	e present?				Yes		N	0		NA 🗌
⊿ Shippina a	container/cooler in go	ood condition?			Yes		N	•		
	eals intact on shippi		ler?					• 🗆	Not Pr	esent 🗹
No.		eal Date:		S		ed By:				
5. Was an at	tempt made to cool				Yes		N	0		NA 🗌
6. Were all s	amples received at a	a temperature of	>0° C to 6.0	0°C	Yes		N	•		NA
7. Sample(s)	in proper container	(s)?			Yes	\checkmark	N	•		
8. Sufficient	sample volume for ir	ndicated test(s)?			Yes		N	o 🗌		
•••	es (except VOA and					\checkmark	N	•		
	ervative added to bo		•		Yes			•		NA 🗌
11 Is the hear	dspace in the VOA v	vials less than 1/4	4 inch or 6 m	m?	Yes		N	o 🗌	No VOA	Vials 🗹
	sample containers r				Yes			o 🔽		
13. Does pape	erwork match bottle	labels?			Yes			o 🗌		
	repancies on chain on chain on chain on chain on the correctly identifies the correct ly identifies the correctly identifies the correct ly identifies the correctly identifies the correct ly identifies the correct ly identifies the correct ly identifies the correct ly identifies the correct ly identifies the correct ly		ustody?		Yes		N	•		
	what analyses were				Yes		N			
	olding times able to				Yes		N			
	fy customer for auth					_				
<u>pecial Ha</u> n	dling (if applica	<u>able)</u>								
	t notified of all discre	-	s order?		Yes		N	o 🗌		NA 🗹
Pers	on Notified:			Date:				annanensienen.		
By W	/hom:			Via:] eMa	il 🗌 F	Phone [Fax	🗌 In Per	son
Rega	arding:		Kini califi i gupu ya manu ina suna		*****					ana ang ang ang ang ang ang ang ang ang
Clien	t Instructions:			an an an an an an an an an an an an an a						
18 Additional	remarks:								and a second and the second and the second and	ala (Alama) alaya a gaya pina ana a mam
oler Informa										
Coolei		Condition	Seal Intact	Seal N	vo 1	Seal D	Date	Signed	Bv	
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LSL 5854 Butternut Drive

Chain of Custody Record

	East Syracu	ise, NY 13057												
	Phone # (315) 445-1900		Telefax # (3	elefax # (315) 445-1104			Contact Person: I			LSL Project #:				
Client:	OBRIENT	GERE	Phone #	315-95	6-610	0	MARK BYRNE		2006303					
Address:	Address: 333 W Was HAND Jon ST		Fax #					842-702	L	Client's Site I	.D.:			
		NY 13202	_				515~	840-700	5	PAS	OSWEYO SEMI ANNUEL LEA	Hote SA-	noles	
			Authorizati	ion:		an an an an an an an an an an an an an a				Client's Proje		ar •• / / [r	P'	
(Lab U LSL Samp	lse Only)	Client's Sample	Sample	Sample	Тур			Preserv.		ontainers		Free Cl	Pres.	
			Date	Time	grab c	-	Matrix	Added	#	size/type	Analyses	(mg/L)	Check	
	NELAN	LEACHATE EFF	5-6-20			5	NPW	HCi	2	40 ml	EPA 624			
	1 4 1		5-6-20					None HNO3	1	Liter-g 250 ml	EPA 625 Metals (see permitt)			
	66		5-6-20			<u> </u>		H2SO4	1	Liter-g	Oil & Grease		• <u> </u>	
			5-6-20			<u>v</u> er		Asc/NaOH	1	250 ml	Cn		22	
	F 6		5-6-20			be l		None	1	250 ml	Cr+6		· ·	
	C Will		5-6-20			V		None	1	Liter-p	BOD, TSS			
			5-6-20			6		H2SO4	1	250 ml	TKN, Phos		67	
	VITE		5-6-20			$\overline{\checkmark}$	1	HCI	2	40 ml	LL Hg (1631)		Goom J	
						Ŀ	T							
	ada And	TRIP BLANK	4.29.20				· w/	нсі	2	40 ml	EPA 624			
	ers An	BLANK	5-6-20	1130	v	¥	W6	нсі	2	40 ml	LL Hg (1631)			
	SAMPLES MUST	BE RECEIVED ON ICE		Please	Fill Out	Com	l	I	.	SAMPLES MUS	ST BE RECEIVED ON ICE	·····		
Notes and	Hazard identific	ations:		1					C	ustody Trans	sfers	Date	Time	
		ations: RH-6-8 Tempt	14	Sampled Print Nan		-	-	êcke		Signature: /	North Hoemonde	5-6-2•	14:15	
				{ 						Received By:				
				Relinquis	hed By:					Received By:				
			·	Relinquis	hed By:			Recei	ived	for Lab By: (975	56.20	14:15	
	:			Shipment	Method:					Samples Rece	eived Intact: Y N 7.0			

Client Name: OGINA PAS		Date and Time Received:	5/6/2020 2:15:00 PM
Work Order Number: 2006303		Received by: gis	
Checklist completed by:	5-6-20 Date	Reviewed by:	5/4/20 Date
Delivery Me	thod: <u>Courier</u>		
Shipping container/cooler in good condition?	Yes 🗹	No Not Present	
Custody seals intact on shipping container/cooler?	Yes	No 🗌 Not Present 🗹	
Custody seals intact on sample bottles?	Yes	No 🗌 Not Applicable 🗹	
Chain of custody present?	Yes 🗹	No	
Chain of custody signed when relinquished and received?	Yes 🗹	No	
Chain of custody agrees with sample labels?	Yes 🗸	No	
Samples in proper container/bottle?	Yes 🗹	No	
Sample containers intact?	Yes 🗹	No	
Sufficient sample volume for indicated test?	Yes 🗸	No	
All samples received within holding time?	Yes 🖌	No	
Container/Temp Blank temperature in compliance?	Yes 🖌	No	
Water - VOA vials have zero headspace?	Yes 🖌	No VOA vials submit	ted
Water - pH acceptable upon receipt?	Yes 🖌	No Not Applicable	

Sample ID

Sample Receipt Checklist

<u>рН</u>	Preservative	<u>p</u> H A	ccep	<u>tab</u>	le	
>12	NaOH	Yes	\checkmark	Ν		NA
<2	HNO3					NA
<2	HSO4	Yes	✓	Ν		NA
<2	1:1 HCL	Yes		Ν		NA 🗸
5 -9	Pest/PCBs (608/8081)	Yes		Ν		NA 🗸

Volume of Preservative added in Lab.

Comments:

Corrective Action:

ATTACHMENT III

ACTIONS PLANNED



ANNUAL PROGRESS REPORT – Future

Operation, Maintenance and Long-term Monitoring Activities

PROJECT NAME: Pollution Abatement Services Site Oswego, New York

PERIOD COVERED: JULY 2020 – JUNE 2021

ACTIONS PLANNED FOR THE YEAR

- Leachate removal activities will be performed during the period July 2020 through June 2021 at the
 PAS Oswego Site in accordance with the Operation, Maintenance and Long-term Monitoring
 (OM&M) Activities Plan (BBL, 1998 revised July 2012) (Work Plan). The OM&M activities will
 include pumping approximately 20,000 gallons per month from May through October, and 10,000
 gallons per month for the winter and spring months November through April.
- The leachate will be discharged to the Eastside Wastewater Treatment Plant in Oswego, New York (Oswego WWTP) under an approved permit consistent with the schedule presented below. However, the Wastewater Treatment Plant in the City of Auburn, New York will continue to be retained as an alternate leachate treatment and disposal facility.
- Additional leachate sampling will be conducted as needed for treatment and disposal at the Oswego Wastewater Treatment Plant under the approved permit.
- Quarterly ground-water elevation monitoring is scheduled to be conducted on August 5, 2020, November 5, 2020, February 4, 2021 and May 9, 2021.
- Site maintenance activities will be conducted along with other monitoring and removal activities. Maintenance activities include cap vegetation control and inspection and maintenance of the storage shed, spill control materials and the perimeter fence. Snow removal will be performed on an as needed basis throughout the winter months. These activities will be performed in accordance with the approved Work Plan.
- Semi-annual groundwater and leachate quality sampling is scheduled to be conducted on November 5, 2020 and May 9, 2021. Wells LR-8, M-21, LCW-2 and LCW-4 will be monitored over the 2020-2021 period. OD-3, MW- 22 and LR-6 will be sampled in the fall of 2022 to provide data for the next 5 year review.
- The Institutional Control Implementation Plan (ICIP) includes the inspection requirements for the
 period following the execution and recording of the Easement, which were documented in the
 approved Remedial Action Completion Report. It states that following implementation of institutional
 controls on the Industrial Precision Products Property, the Site will be inspected on an annual basis
 to determine whether any intrusive activities have occurred. In addition, building and property
 records will be reviewed to ascertain whether or not any filings have been made for



such activities. The ICIP provides for an annual report summarizing the findings of the inspection and record review to be prepared, along with a certification confirming that operation and maintenance activities will continue, and that the annual report would be included in the annual OM&M progress report to be submitted to EPA in July of each year.

• The schedule for leachate removal events and tasks is provided below.

GROUND-WATER REMOVAL EVENT SCHEDULE 2019/2020									
	July 2020 Removal Events		August 2020 Eve		September 2020 Removal Events				
	First Event		First Event		First Event				
Removal	July 8		Aug 5		Sep 9				

GROUND-WATER REMOVAL EVENT SCHEDULE 2019/2020									
	October 2020 Removal Events		November 20 Eve		December 2020 Removal Events				
	First Event		First Event		First Event				
Removal	Oct 7		Nov 4		Dec 9				

GROUND-WATER REMOVAL EVENT SCHEDULE 2019/2020									
	January 2021 Removal Events		February 202 Eve			21 Removal ents			
	First Event		First Event		First Event				
Removal	Jan 6		Feb 3		Mar 3				

GROUND-WATER REMOVAL EVENT SCHEDULE 2019/2020									
	April 2021 Removal Events		May 2021 Re Eve		June 2021 Removal Events				
	First Event		First Event		First Event				
Removal	Apr 8		May 6		June 10				