Hillsborough County Florida

PUBLIC UTILITIES
PO Box 1110
Tampa, FL 33601-1110

May 1, 2019

Mr. Steve Tafuni
Florida Department of Environmental Protection
Waste Permitting Section
13051 Telecom Parkway
Temple Terrace, FL 33637

SUBJECT: **Southeast County Class I Landfill**
WACS Facility ID No. 41193
Supplemental Groundwater Sampling Report – February 2019
Consent Agreement, OGC File No. 17-0058

Dear Mr. Tafuni:

On behalf of the Hillsborough County Transportation and Utility Services, Solid Waste Management Division (SWMD), the Hillsborough County Public Utilities Department (County) has prepared this supplemental groundwater data report in accordance with part 9(g) of the referenced Consent Agreement and Rule 62-701.510(8)(a), F.A.C. The February 2019 water quality sampling event was conducted at the Southeast County Landfill (SCLF) to address groundwater impacts of the surficial aquifer on the east side of the Phase II waste filled area.

Representative groundwater samples were collected by on February 6-7, 2019 from each of the nine (9) surficial aquifer monitoring wells identified as TH-20B, TH-38B, TH-66A, TH-67, TH-79, TH-80, TH-81, TH-82, and TH-83 for TDS, chloride, sodium, and ammonia. Laboratory analyses was performed by our contracted laboratory, Advanced Environmental Laboratories, Inc. (AEL). A site map depicting the well locations within the landfill property is attached as **Figure 1** and the following paragraphs detail the specific findings from the groundwater laboratory results.

Surficial Aquifer Groundwater Monitoring Wells

pH

Each surficial aquifer monitoring well east of the Phase II waste filled area continued to exhibit pH below the Secondary Drinking Water Standard (SDWS) acceptable criteria of 6.5 to 8.5 pH units. The pH during this monitoring period ranged from 4.73 to 6.14 pH units. Background water quality records prior to construction and operation of the landfill established naturally occurring pH within the surficial aquifer below the SDWS.

Total Dissolved Solids (TDS)

Each of the detection and compliance surficial aquifer monitoring wells well exhibited TDS below the SDWS of 500 mg/l during this monitoring event ranging from 28 to 410 mg/l. A pattern of elevated groundwater parameters throughout seasonal low periods and a decrease in parameter concentrations as the site reaches the seasonal high has been consistent over the period of record as the corrective actions continue to be implemented. Monitoring wells TH-67 and TH-79 are identified as the closest source locations during the initial water quality changes in February 2016 and continue to exhibit a significant reduction in TDS over the period of record. Detection well TH-83 continues to exhibit an overall downward trend for TDS as the corrective actions contribute to the attenuation of groundwater.

Chloride

Concentrations of chloride were detected from below detectable limits (<2.6) to 97 mg/l during this water quality monitoring event and continues well below the SDWS of 150 mg/l. Water quality changes since corrective actions continue to correspond with seasonal high and seasonal low water level elevations. Data collected to date has scientifically exemplified improved water quality since corrective actions were initiated and exhibits the continued downward trend in the concentrations of chloride.

Sodium

Sodium was detected at each monitoring location below the Primary Drinking Water Standard (PDWS) of 160 mg/l during this water quality monitoring event. Monitoring locations TH-67, TH-79, and TH-81 continue to exhibit substantial water quality improvements since implementation of the corrective actions and are seasonality driven as previously demonstrated by the data. However, the overall downward trend for sodium since May and August of 2017 continues to effectively demonstrate natural attenuation by the effectiveness of the corrective actions. The data for the February 2019 water quality monitoring event is depicted in **Table 1**.

Seasonal fluctuations within the surficial aquifer prior to any water quality changes exhibited in the February 2016 monitoring event have been well documented by the County. Data and graphical representation dating back to 2010 for TH-67 is provided within **Table 2** and **Appendix A** of the submittal, demonstrating the seasonality exhibited prior to impacts of groundwater in the area east of Phase II. Even with the corrective actions functioning as designed, the County believes these seasonal fluctuations shall continue as water quality slowly attenuates to pre-2016 levels. Laboratory data from the February 2019 sampling event is included in **Appendix B.**

Groundwater Elevations and Flow Direction

Groundwater elevations were recorded prior to sampling the surficial aquifer groundwater monitoring wells on February 6, 2019. **Figure 2** depicts a surficial aquifer groundwater contour diagram was prepared to evaluate the general direction of flow at and around the affected area. Direction of groundwater flow in the surficial aquifer continues toward the Mine Cut to the east and southeast directions and is consistent with the historical evaluations in this general area. Surface water elevation in Mine Cut 1 is the primary influence on the direction of flow in the area and is clearly demonstrated by the elevation data recorded to date.

Geophysical Surveys

Geophysical surveys conducted between the southeast corner of the Phase II waste filled landfill area and the landfill access road to compare current bulk soil conductivity were conducted in October 2016, November 2017, and November 2018. Changes exhibited in the conductivity of the surficial aquifer from each survey indicates lower response values over the period of record indicating an improvement in water quality over the last 2 years. Each survey continues to support the findings of quarterly laboratory data analyzed from the groundwater samples collected and the effectiveness of the County's corrective actions.

Conclusions

Water quality in surficial aquifer monitoring wells along the east side of Phase II continues to demonstrate improvements since corrective actions were implemented in early 2017. Detection wells TH-67, TH-79, and TH-83, the closest monitoring points to the source area, exhibited TDS and chloride within their SDWS and sodium within the PDWS over the period of record. Over the last 9 months of monitoring, the only SDWS exceedance at the site continues to be pH; however, it has been well documented to be naturally occurring within the aquifer prior to landfill operation activities in the mid 1980's.

Improved water quality generated from the combination of remedial processes and ongoing natural attenuation within the surficial aquifer are supported by representative water quality data and subsurface conductivity surveys submitted to the Department. As depicted in the

attached seasonality trends of the groundwater, slight fluctuations of constituents observed over the period of record may continue for a short time as attenuation occurs. Based upon the facts presented, this report shall serve as a formal request to terminate the supplemental monitoring of the groundwater. Groundwater samples collected from existing compliance monitoring wells TH-66A and TH-67 along the east side of Phase II sufficiently detected water quality changes in the past and shall continue to be monitored as part of the current water quality plan in the operations permit. The County suggests leaving the remaining monitoring wells in place should any future water quality changes occur that require expanded monitoring. Any remaining corrective actions regarding the leachate collection system and management shall continue to be addressed under the language and rules outlined in the Consent Agreement.

Should you have any questions, require any additional information, or would like to discuss the information provided within this submittal, please feel free to contact us at (813) 663-3222 or (813) 612-7757.

Respectfully submitted,

5/1/2019

Michael D. Townsel
Senior Hydrologist
Environmental Services
Public Utilities Department

Jeffry Greenwell, P.E.
Section Manager – GM III
Environmental Services
Public Utilities Department

JEFFRY S. GREENWELL LICENSE NO. 46157 STATE OF FLORIDA PROFESSIONAL ENGINEER

Enclosures

xc: Larry Ruiz, Landfill Manager, Solid Waste Management Division
Kimberly Byer, Director, Solid Waste Management Division
Joe O'Neill, Professional Engineer II, Solid Waste Management Division
Kelly Boatwright, Florida Department of Environmental Protection
Justin Chamberlain, P.G., Florida Department of Environmental Protection
Melissa Madden, Florida Department of Environmental Protection
Ken Guilbeault, P.G., Project Director, SCS Engineers, Inc.
Clark Moore, Florida Department of Environmental Protection
Andy Schipfer, HC Environmental Protection Commission
Bob Curtis, P.E., SCS Engineers, Inc.

Southeast County Landfill Surficial Aquifer Monitoring Well Location Map

Figure 1

Legend

Existing Monitoring Wells

Hillsborough County Florida

Table 1 - Southeast County Landfill
Supplemental Site Assessment Data
February 6-7, 2019

General Parameters Detected	Surficial Aquifer Wells									MCL Standard
	TH-20B	TH-38B	TH-66A	TH-67	TH-79	TH-80	TH-81	TH-82	TH-83	
well type	Background	Background	Detection	Detection	Detection	Detection	Detection	Background	Detection	
conductivity (umhos/cm) (field)	255.1	46.1	274.4	209.6	284.8	477.6	137.8	96.9	580	NS
dissolved oxygen (mg/l) (field)	0.13	1.37	0.4	2.11	0.95	0.28	1.48	0.91	0.41	NS
ORP (mV)	-13.9	244.3	-115.4	151.8	22.4	2.2	136	140.1	121.6	NS
temperature (°C) (field)	23.0	23.2	22.8	21.7	21.5	24.6	21.9	23.3	22.6	NS
turbidity (NTU) (field)	1.89	19.2	0.7	3.79	16.7	15.7	15.1	5.35	1.21	NS
pH (SU) (field)	**5.67**	**4.73**	**5.85**	**5.98**	**5.65**	**5.95**	**5.66**	**4.94**	**6.14**	(6.5 - 8.5)**
Field Parameters Detected										**MCL Standard**
total dissolved solids (mg/l)	190	28	210	120	160	250	94	64	410	500**
chloride (mg/l)	27	2.6	16 j4	9.4	13	41	9.4	13	97 j4	250**
ammonia nitrogen (mg/l as N)	2.1	0.025 u	0.99	0.08 i	1.2	0.6	0.16	1.1	9.3	NS
Metals Detected (mg/l)										**MCL Standard**
sodium	12	2.1	7.3	4.4	9.8	28	4.7	4.6	63	160*

Notes: Reference Groundwater Guidance Concentrations, FDEP 2012

NS=No Standard

MCL=Maximum Contaminant Level (Groundwater Standards)

*= Primary Drinking Water Standards as per Cahpter 62-550.310, F.A.C.

**=Secondary Drinking Water Standards as per Chapter 62-550.320, F.A.C.

5.67 Exceeds Standard

NTU=Nephelometric Turbidity Units

i = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

u = parameter was analyzed but not detected.

j4 = estimated results

ug/l=micrograms per liter

mg/l=milligrams per liter

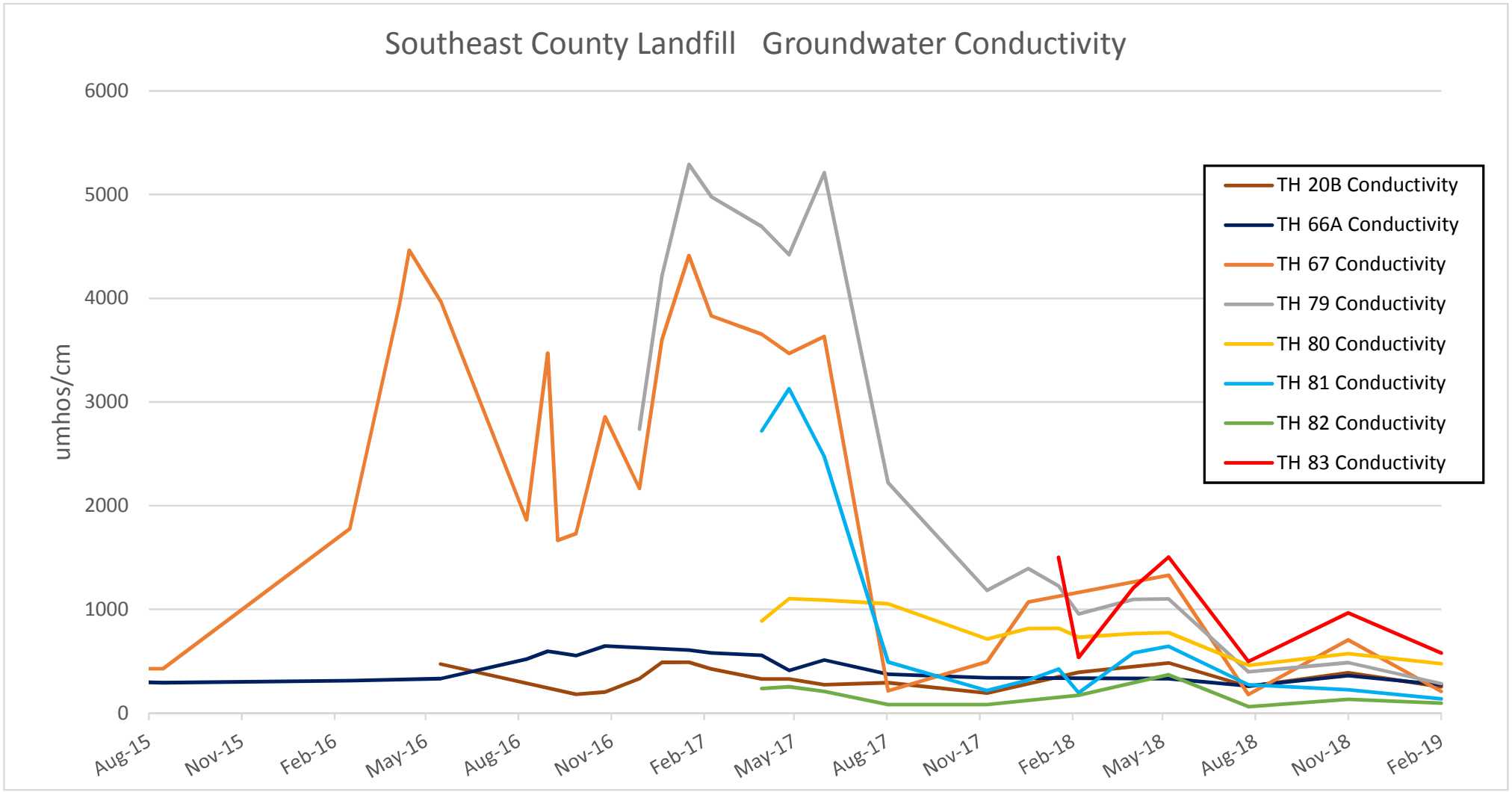
mV = millivolts

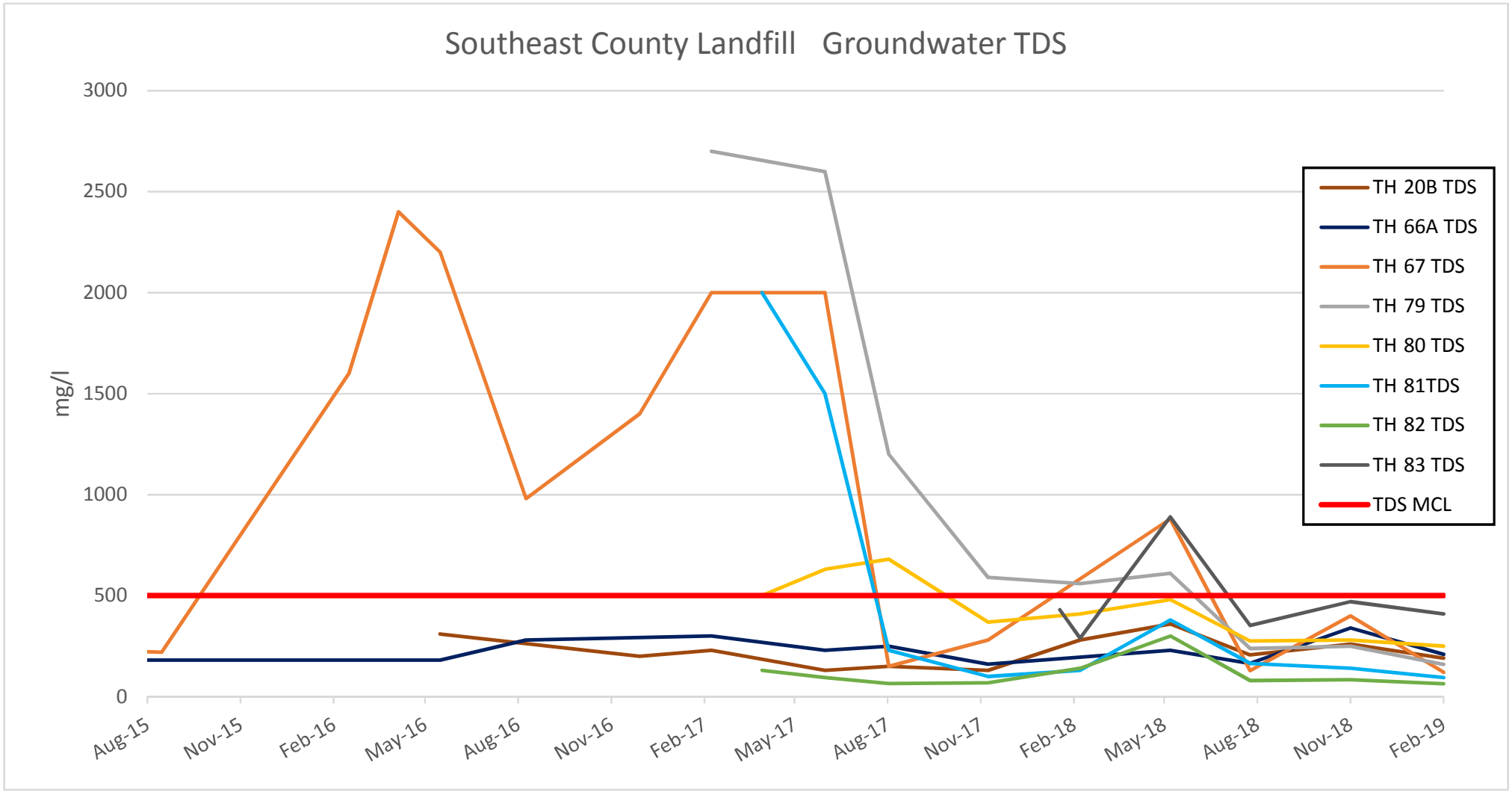
Table 2 - Southeast County Landfill
Surficial Aquifer Groundwater Elevations
February 6, 2019

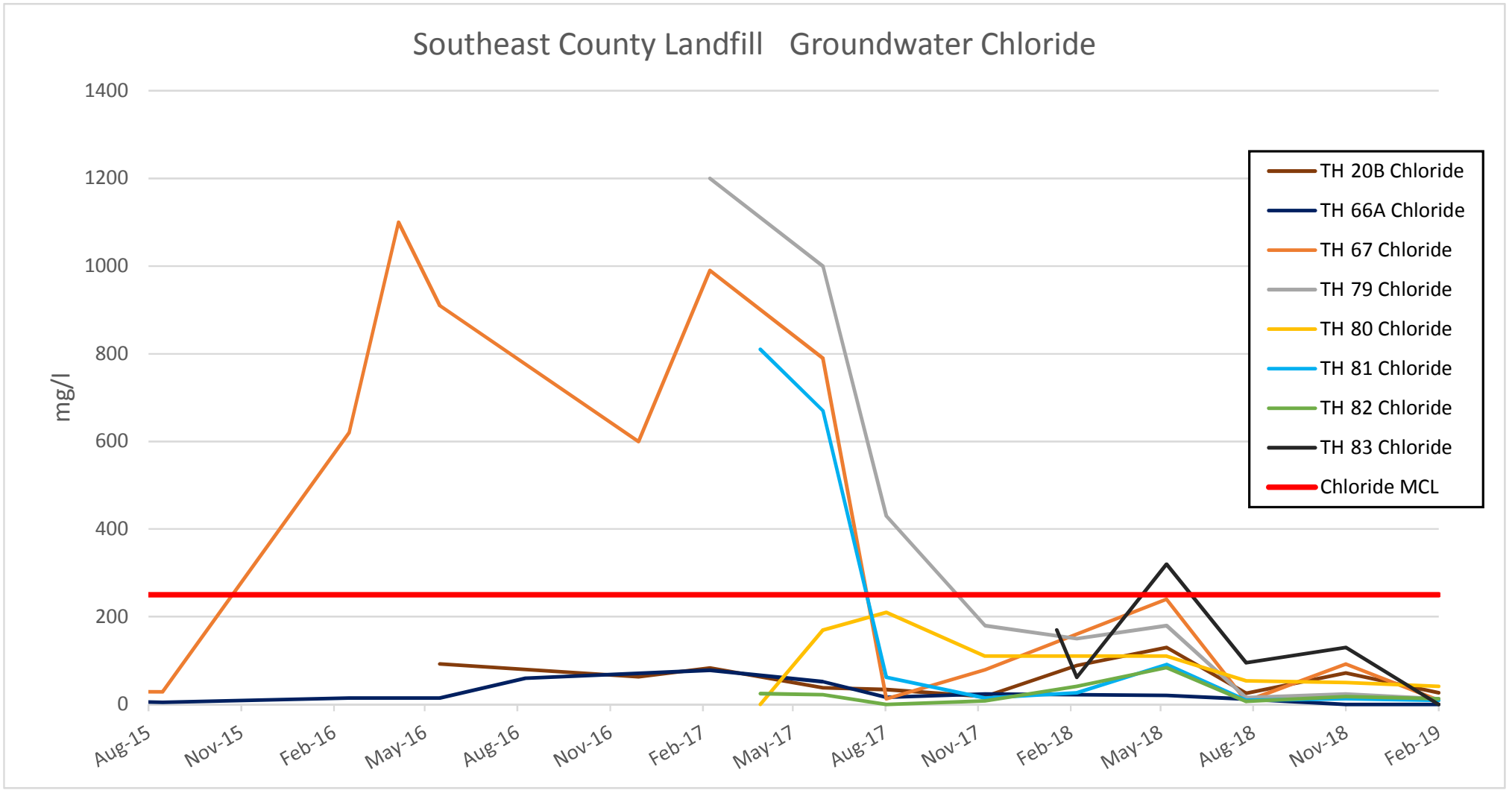
Measuring Point I.D.	T.O.C. Elevations (NGVD)	W.L. B.T.O.C.	W.L. (NGVD)
TH-20B	132.57	9.59	122.98
TH-38B	131.81	9.77	122.04
TH-66A	130.66	8.40	122.26
TH-67	129.51	5.22	124.29
TH-79	129.60	7.04	122.56
TH-80	129.52	7.60	121.92
TH-81	130.26	7.19	123.07
TH-82	131.24	9.50	121.74
TH-83	130.23	7.97	122.26
NGVD	**= National Geodetic Vertical Datum**		
T.O.C.	**= Top of Casing**		
B.T.O.C.	**= Below Top of Casing**		
W.L.	**= Water Level**		

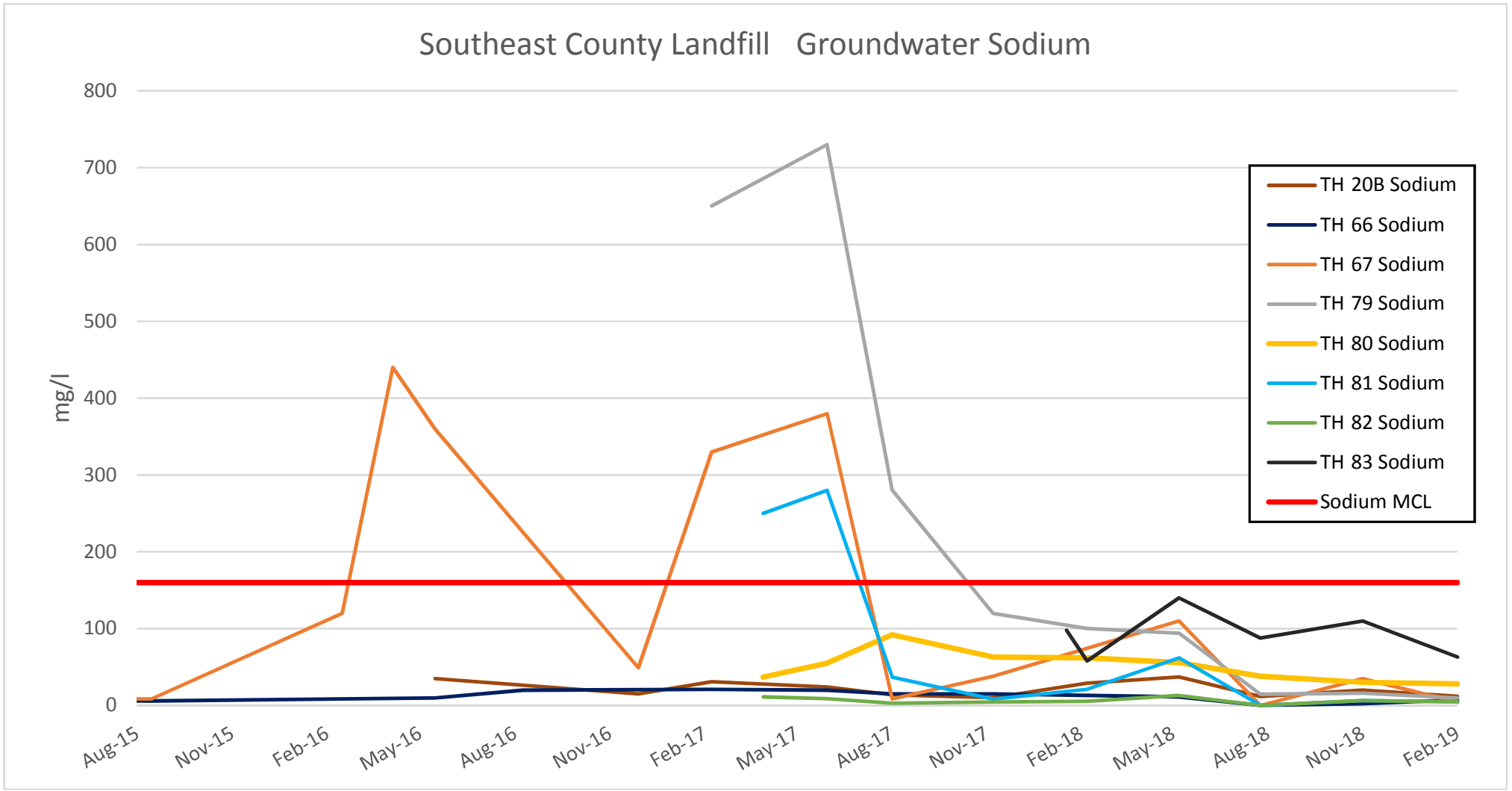
Appendix A

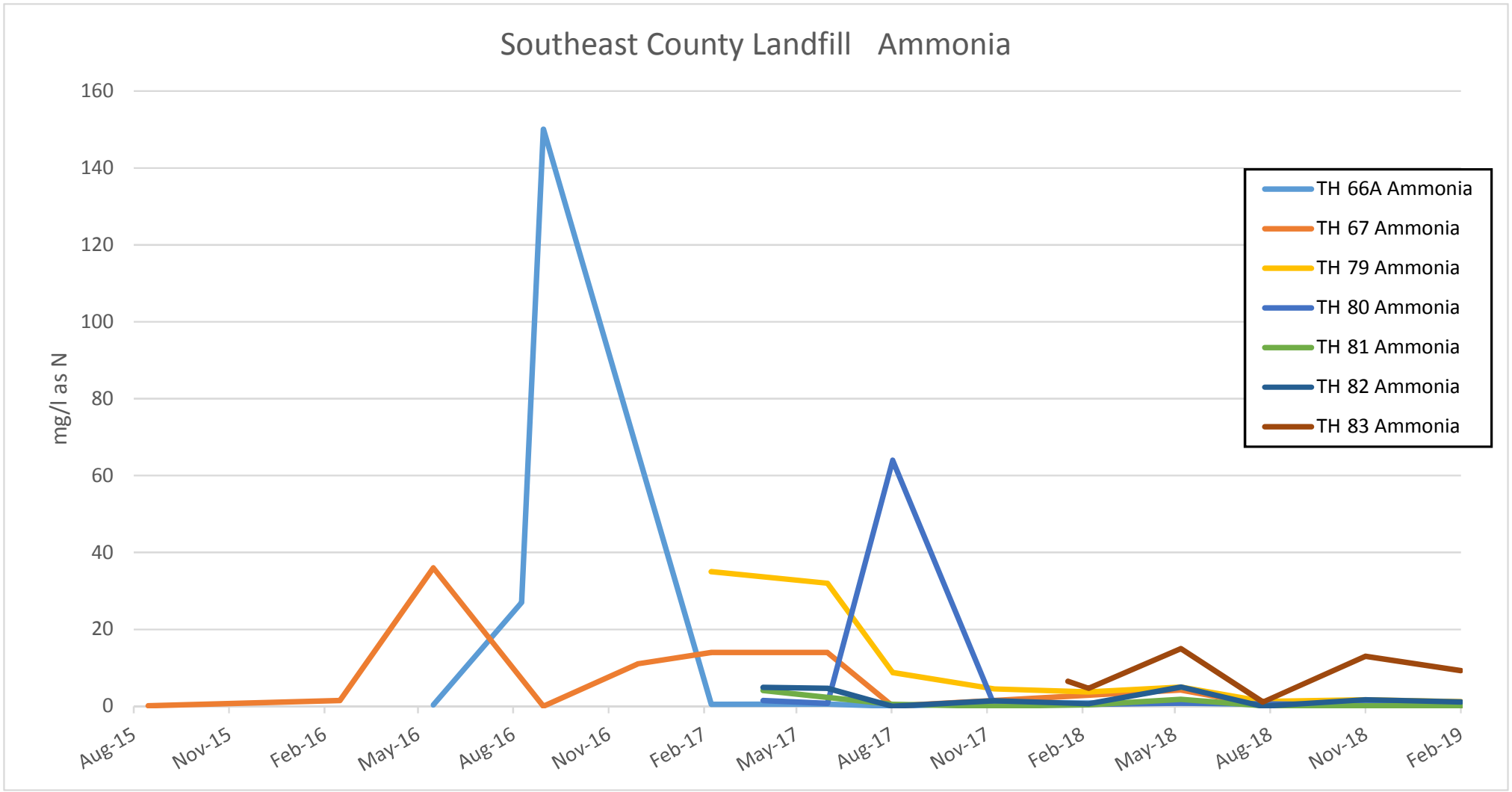
Historical Groundwater Quality


Southeast County Landfill Groundwater Conductivity
umhos/cm
6000
5000
4000
3000
2000
1000
0
Aug-15
Nov-15
Feb-16
May-16
Aug-16
Nov-16
Feb-17
May-17
Aug-17
Nov-17
Feb-18
May-18
Aug-18
Nov-18
Feb-19
TH 20B Conductivity
TH 66A Conductivity
TH 67 Conductivity
TH 79 Conductivity
TH 80 Conductivity
TH 81 Conductivity
TH 82 Conductivity
TH 83 Conductivity


Southeast County Landfill Groundwater TDS
mg/l
3000
2500
2000
1500
1000
500
0
Aug-15
Nov-15
Feb-16
May-16
Aug-16
Nov-16
Feb-17
May-17
Aug-17
Nov-17
Feb-18
May-18
Aug-18
Nov-18
Feb-19
TH 20B TDS
TH 66A TDS
TH 67 TDS
TH 79 TDS
TH 80 TDS
TH 81TDS
TH 82 TDS
TH 83 TDS
TDS MCL


Southeast County Landfill Groundwater Chloride
1400
1200
1000
800
600
400
200
0
mg/l
Aug-15
Nov-15
Feb-16
May-16
Aug-16
Nov-16
Feb-17
May-17
Aug-17
Nov-17
Feb-18
May-18
Aug-18
Nov-18
Feb-19
TH 20B Chloride
TH 66A Chloride
TH 67 Chloride
TH 79 Chloride
TH 80 Chloride
TH 81 Chloride
TH 82 Chloride
TH 83 Chloride
Chloride MCL


Southeast County Landfill Groundwater Sodium
mg/l
800
700
600
500
400
300
200
100
0
Aug-15
Nov-15
Feb-16
May-16
Aug-16
Nov-16
Feb-17
May-17
Aug-17
Nov-17
Feb-18
May-18
Aug-18
Nov-18
Feb-19
TH 20B Sodium
TH 66 Sodium
TH 67 Sodium
TH 79 Sodium
TH 80 Sodium
TH 81 Sodium
TH 82 Sodium
TH 83 Sodium
Sodium MCL


Southeast County Landfill Ammonia
mg/l as N
160
140
120
100
80
60
40
20
0
Aug-15
Nov-15
Feb-16
May-16
Aug-16
Nov-16
Feb-17
May-17
Aug-17
Nov-17
Feb-18
May-18
Aug-18
Nov-18
Feb-19
TH 66A Ammonia
TH 67 Ammonia
TH 79 Ammonia
TH 80 Ammonia
TH 81 Ammonia
TH 82 Ammonia
TH 83 Ammonia

Southeast County Landfill
Historical Supplemental Assessment Groundwater Data
TH-20B

Field Parameters	May-16	Nov-16	Feb-17	Jun-17	Aug-17	Nov-17	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	473	332	427	275	294	192.9	394.8	484.6	257	390.5	255.1	NS
dissolved oxygen (mg/l) (field)	0.23	0.27	0.18	0.19	0.1	2	0.37	1.81	0.11	0.11	0.13	NS
ORP (mV)	-9.6	-31.2	-41.7	36.9	-34	-26.7	-2.4	11.4	32	30.7	-13.9	NS
temperature (°C) (field)	23.47	25.47	23.77	23.92	25.51	25.90	22.90	23.10	25.90	26.00	23.00	NS
turbidity (NTU) (field)	2.39	4.14	3.77	1.37	2.82	4.3	2.99	1.35	19	2.65	1.89	NS
pH (field)	**5.67**	**5.43**	**5.82**	**5.52**	**5.72**	**5.95**	**5.68**	**5.54**	**5.92**	**5.41**	**5.67**	(6.5 - 8.5)**
General Parameters												**MCL Standard**
total dissolved solids (mg/l)	310	200	230	130	150	130	280	360	206	260	190	500**
chloride (mg/l)	92	63	83	38	34	18	89	130	25.7	72	27	250**
ammonia nitrogen (mg/l as N)	2.2	1.5	1.2	1.2	1.7	1.3	1.2	1.3	1.8	1.9	2.1	NS
Metals Detected (mg/l)												**MCL Standard**
sodium	35	15	31	24	14	10	29	37	11.5	20	12	160*

Note: Reference FDEP Groundwater Guidance Concentrations
NS = No Standard
MCL = Maximum Contaminant Level
* = Primary Drinking Water Standard
** = Secondary Drinking Water Standard
5.67 = Exceeds Standard
mV = millivolts
NTU = Nephelometric Turbidity Units
mg/l = milligrams per liter
NGVD = National Geodedic Vertical Datum

Southeast County Landfill
Historical Supplemental Assessment Groundwater Data
TH-38B

Field Parameters	May-16	Nov-16	Feb-17	May-17	Aug-17	Nov-17	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	70	61	103	ND	46	49.6	79.2	ND	51	55.7	46.1	NS
dissolved oxygen (mg/l) (field)	1.5	0.76	2.02	ND	0.96	1.27	0.86	ND	0.57	0.22	1.37	NS
ORP (mV)	175.5	-22.9	6.2	ND	158	28.1	70.7	ND	22.7	88.1	244.3	NS
temperature (°C) (field)	24.78	25.37	23.93	ND	26.66	26.10	23.50	ND	27.53	26.50	23.20	NS
turbidity (NTU) (field)	8.75	16	16.5	ND	46.6	11.2	3.6	ND	21.9	3.84	19.2	NS
pH (field)	**4.95**	**4.73**	**5.45**	ND	**4.69**	**5.16**	**5.22**	ND	**5.70**	**4.71**	**4.73**	(6.5 - 8.5)**
General Parameters												**MCL Standard**
total dissolved solids (mg/l)	65	45	57	ND	73	30	83	ND	50 i	340	28	500**
chloride (mg/l)	4.2 i	4.2 i	8.2	ND	3.4 i	3.9 i	6.4	ND	12	3.6 i	2.6	250**
ammonia nitrogen (mg/l as N)	0.79	0.66	1.4	ND	0.14	0.23	2.2	ND	0.59	0.3	0.025 u	NS
Metals Detected (mg/l)												**MCL Standard**
sodium	2.8	3	3.6	ND	2.7	2.8	3.4	ND	7.15 i	2.5	2.1	160*

Note: Reference FDEP Groundwater Guidance Concentrations

NS = No Standard

MCL = Maximum Contaminant Level

ND = No Data, well was dry

* = Primary Drinking Water Standard

** = Secondary Drinking Water Standard

4.95 = Exceeds Standard

mV = millivolts

NTU = Nephelometric Turbidity Units

u = parameter was analyzed but not detected.

mg/l = milligrams per liter

NGVD = National Geodedic Vertical Datum

Southeast County Landfill
Historical Supplemental Assessment Groundwater Data
TH-66A

Field Parameters	Aug-15	Feb-16	May-16	Nov-16	Feb-17	May-17	Aug-17	Nov-17	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	295	313	334	512	580	513	376	342.1	315.6	333	263	361.7	274.4	**NS**
dissolved oxygen (mg/l) (field)	0.38	0.5	0.65	0.33	0.64	1.13	0.09	1.93	0.46	0.69	0.2	0.56	0.4	**NS**
ORP (mV)	ND	ND	69.7	-3	-69.2	30.3	-102.9	-158.7	-43.6	-124.8	125.4	-61.8	-115.4	**NS**
temperature (°C) (field)	27.01	21.5	24.55	25.44	23.68	27.67	26.63	25.90	22.50	25.10	27.30	26.80	22.80	**NS**
turbidity (NTU) (field)	3.17	1.35	0.86	0.49	1.06	2.17	1.81	1.89	0.89	0.78	3.65	1.81	0.7	**NS**
pH (field)	**6.00**	**6.12**	**6.03**	**5.82**	**6.18**	**6.09**	**5.88**	**6.09**	**5.87**	**5.99**	6.89	**5.94**	**5.85**	**(6.5 - 8.5)****
General Parameters														**MCL Standard**
total dissolved solids (mg/l)	180	180	180	320	300	230	250	160	210	230	164	240	210	**500****
chloride (mg/l)	4.9 i	15	15	92	78	52	16	24	24	21	12	20	16 j4	**250****
ammonia nitrogen (mg/l as N)	0.22	0.12	0.34	0.44	0.5	0.57	0.02 u	0.88	0.09 i	0.8	0.54	2	0.99	**NS**
Metals Detected (mg/l)														**MCL Standard**
sodium	5.7	8.7	9.5	21	21	20	15	15	12	11	7.15 i	9.9	7.3	**160***

Note: Reference FDEP Groundwater Guidance Concentrations
NS = No Standard
MCL = Maximum Contaminant Level
* = Primary Drinking Water Standard
** = Secondary Drinking Water Standard
6.00 = Exceeds Standard
mV = millivolts
NTU = Nephelometric Turbidity Units
j4 = estimated results
mg/l = milligrams per liter
NGVD = National Geodedic Vertical Datum

Southeast County Landfill
Historical Supplemental Assessment Groundwater Data
TH-67

Field Parameters	Aug-15	Feb-16	May-16	Nov-16	Feb-17	May-17	Aug-17	Nov-17	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	429	1780	3973	2166	3830	3630	215	497.4	207.7	1329	180	706	209.6	NS
dissolved oxygen (mg/l) (field)	0.55	1.05	0.42	3.04	2.13	0.26	0.31	2.06	5.97	0.39	0.08	0.14	2.11	NS
ORP (mV)	ND	ND	-7.9	-100	-41.7	-12.1	43.2	-9.5	103.7	-46.1	2.4	-50.1	151.8	NS
temperature (°C) (field)	28.32	20.81	24.63	25.23	24.52	25.25	26.79	25.40	22.20	24.80	27.94	26.70	21.70	NS
turbidity (NTU) (field)	1.13	10.11	7.64	5.29	8.72	7.64	16.5	5.05	7.76	2.71	10.4	8.41	3.79	NS
pH (field)	**6.41**	**5.98**	**6.18**	**6.21**	**6.44**	**6.32**	**6.29**	**6.43**	6.54	**6.39**	**6.44**	**6.09**	**5.98**	**(6.5 - 8.5)****
General Parameters														**MCL Standard**
total dissolved solids (mg/l)	220	**1600**	**2200**	**1400**	**2000**	**2000**	150	280	140	**880**	128	400	120	**500****
chloride (mg/l)	29	**620**	**910**	**600**	**990**	**790**	13	79	12	240	76	92	9.4	**250****
ammonia nitrogen (mg/l as N)	0.12	1.5	36	11	14	14	0.02 u	1.5	0.025 u	4.2	0.28	1.5	0.08 i	NS
Metals Detected (mg/l)														**MCL Standard**
sodium	8.7	120	**360**	49	**330**	**380**	8.4	38	6.3	110	1.94 i	35	4.4	**160***

Note: Reference FDEP Groundwater Guidance Concentrations
NS = No Standard
MCL = Maximum Contaminant Level
* = Primary Drinking Water Standard
** = Secondary Drinking Water Standard
6.41 = Exceeds Standard
mV = millivolts
NTU = Nephelometric Turbidity Units
i = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
mg/l = milligrams per liter
NGVD = National Geodedic Vertical Datum

Southeast County Landfill
Historical Supplemental Assessment Groundwater Data
TH-79

General Parameters	Nov-16	Feb-17	May-17	Aug-17	Nov-17	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	2740	4980	5212	2221	1183	956	1102	397	488.9	284.8	NS
dissolved oxygen (mg/l) (field)	0.25	1.73	1.23	1.67	4.39	3.33	1.63	0.15	1.60	0.95	NS
ORP (mV)	1.4	-20.3	-40.6	-30.8	-27.7	-15.0	-95.4	54.0	27.1	22.4	NS
temperature (°C) (field)	24.03	21.77	25.49	28.04	24.90	20.70	24.60	29.40	26.20	21.5	NS
turbidity (NTU) (field)	27.6	60.2	12	2.66	2.81	7.97	3.28	3.2	15.6	16.7	NS
pH (field)	**6.09**	**6.40**	**6.29**	**6.19**	**6.28**	**6.11**	**5.85**	**6.04**	**5.56**	**5.65**	(6.5 - 8.5)**
Field Parameters											**MCL Standard**
total dissolved solids (mg/l)	**1500**	**2700**	**2600**	**1200**	**590**	**560**	**610**	238	250	160	500**
chloride (mg/l)	500	**1200**	**1000**	**430**	180 j4	150	180	15.4	24	13	250**
ammonia nitrogen (mg/l as N)	30	35	32	8.8	4.5	3.8	5	1.3	1.7	1.2	NS
Metals Detected (mg/l)											**MCL Standard**
sodium	140	**650**	**730**	**280**	120	100	94	14.4	16	9.8	160*

Note: Reference FDEP Groundwater Guidance Concentrations
NS = No Standard
MCL = Maximum Contaminant Level
* = Primary Drinking Water Standard
** = Secondary Drinking Water Standard
6.09 = Exceeds Standard
mV = millivolts
NTU = Nephelometric Turbidity Units
mg/l = milligrams per liter
NGVD = National Geodedic Vertical Datum

Southeast County Landfill
Historical Groundwater Assessment Groundwater Data
TH-80

Field Parameters	Mar-17	May-17	Aug-17	Nov-17	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	889	1090	1055	714	733	777	462	575	447.6	NS
dissolved oxygen (mg/l) (field)	0.38	0.16	0.05	3.24	0.79	0.22	0.50	0.1	0.28	NS
ORP (mV)	-10.7	34.2	-120.4	-100.7	13.8	11.8	2.3	28.5	2.2	NS
temperature (°C) (field)	24.49	25.26	25.17	25.70	24.90	25.50	26.68	26.40	24.60	NS
turbidity (NTU) (field)	16	10.6	37	17.3	2.49	0.98	0.52	1.74	15.7	NS
pH (field)	**5.67**	**5.63**	**5.69**	**5.95**	**5.69**	**5.70**	**6.63**	**5.55**	**5.95**	(6.5 - 8.5)**
General Parameters										**MCL Standard**
total dissolved solids (mg/l)	500	**630**	**680**	370	410	480	276	280	250	500**
chloride (mg/l)	130 j4	170	210	110	110	110	53.9	50	41	250**
ammonia nitrogen (mg/l as N)	1.5	0.74	0.64	0.36	0.52	0.79 j4	0.65	0.38	0.6	NS
Metals Detected (mg/l)										**MCL Standard**
sodium	37	55	92	63	62	56	38	30	28	160*

Note: Reference FDEP Groundwater Guidance Concentrations
NS = No Standard
MCL = Maximum Contaminant Level
* = Primary Drinking Water Standard
** = Secondary Drinking Water Standard
5.67 = Exceeds Standard
mV = millivolts
NTU = Nephelometric Turbidity Units
mg/l = milligrams per liter
NGVD = National Geodedic Vertical Datum

Southeast County Landfill
Historical Supplemental Assessment Groundwater Data
TH-81

Field Parameters	Mar-17	May-17	Aug-17	Nov-17	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	2723	2476	493	216.8	194.9	644	275	226.6	137.8	NS
dissolved oxygen (mg/l) (field)	0.53	0.72	1.77	1.73	2.12	0.24	1.33	0.45	1.48	NS
ORP (mV)	24.9	17.7	68.5	76	71.7	-28.3	150	81.1	136	NS
temperature (°C) (field)	23.7	25.81	28.68	26.50	22.10	25.90	28.89	27.30	21.90	NS
turbidity (NTU) (field)	16.1	27.5	22.7	13	14.5	3.07	6.09	5.54	15.1	NS
pH (field)	**6.00**	**6.05**	**6.12**	**5.95**	**6.15**	**6.32**	**5.88**	**5.62**	**5.66**	(6.5 - 8.5)**
General Parameters										**MCL Standard**
total dissolved solids (mg/l)	**2000**	**1500**	230	100	130	380	164	140	94	500**
chloride (mg/l)	**810**	**670**	62	15	27	91	9.4	13	9.4	250**
ammonia nitrogen (mg/l as N)	4.1	2.3	0.52	0.025 u	0.33	1.8	0.15	0.13	0.16	NS
Metals Detected (mg/l)										**MCL Standard**
sodium	**250**	**280**	37	8.2	21	62	6.89 i	6.3	4.7	160*

Note: Reference FDEP Groundwater Guidance Concentrations
NS = No Standard
MCL = Maximum Contaminant Level
* = Primary Drinking Water Standard
** = Secondary Drinking Water Standard
6.00 = Exceeds Standard
mV = millivolts
NTU = Nephelometric Turbidity Units
mg/l = milligrams per liter
NGVD = National Geodedic Vertical Datum

Southeast County Landfill
Historical Supplemental Assessment Groundwater Data
TH-82

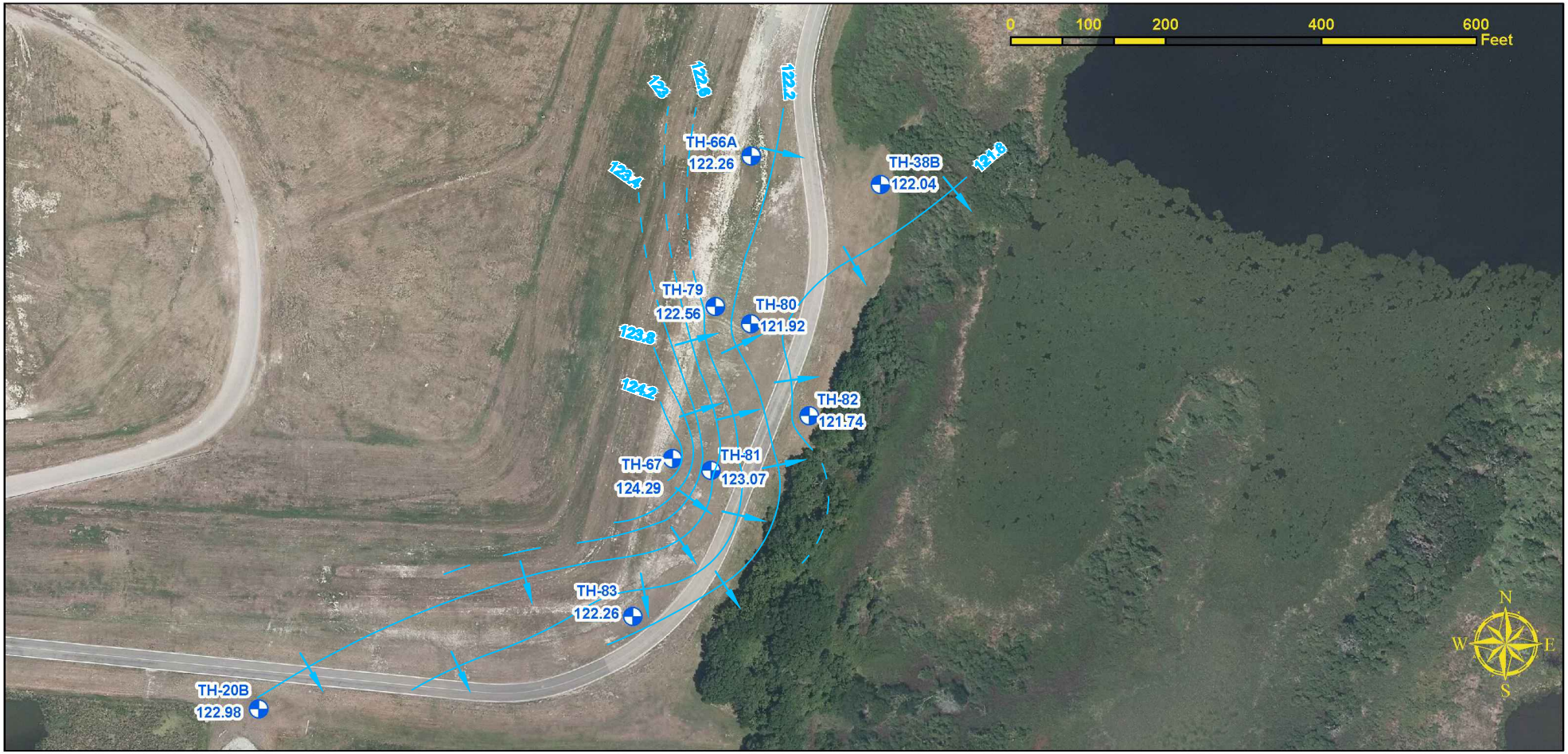
Field Parameters	Mar-17	Jun-17	Aug-17	Nov-17	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	239	210	82	83	174.3	370.9	63	134.6	96.9	NS
dissolved oxygen (mg/l) (field)	0.23	0.70	4.11	1.28	1.17	0.49	2.84	0.34	0.91	NS
ORP (mV)	-147.1	41.9	177.2	-17.5	107.3	2.5	30.3	32	140.1	NS
temperature (°C) (field)	26.16	25.5	27.84	27.40	24.10	26.50	27.95	26.90	23.30	NS
turbidity (NTU) (field)	ND	33.4	34.3	27.4	4.56	2.85	0.99	4.18	5.35	NS
pH (field)	**5.69**	**5.48**	**4.73**	**5.30**	**5.07**	**5.51**	**5.58**	**4.97**	**4.94**	(6.5 - 8.5)**
General Parameters										**MCL Standard**
total dissolved solids (mg/l)	130	94	65	68	140	300	80	84	64	500**
chloride (mg/l)	25	22	4.3 i	8.4	41	84	6.5	18	13	250**
ammonia nitrogen (mg/l as N)	4.9	4.7	0.02 u	1.4	0.69	5	0.039 i	1.7	1.1	NS
Metals Detected (mg/l)										**MCL Standard**
sodium	11	9	2.8	4.5	5.4	13	2.08 i	6.2	4.6	160*

Note: Reference FDEP Groundwater Guidance Concentrations
NS = No Standard
MCL = Maximum Contaminant Level
* = Primary Drinking Water Standard
** = Secondary Drinking Water Standard
5.69 = Exceeds Standard
mV = millivolts
NTU = Nephelometric Turbidity Units
mg/l = milligrams per liter
NGVD = National Geodedic Vertical Datum

Southeast County Landfill
Historical Supplemental Assessment Groundwater Data
TH-83

Field Parameters	Jan-18	Feb-18	May-18	Jul-18	Nov-18	Feb-19	MCL Standard
conductivity (umhos/cm) (field)	1504	537	1505	498	968	580	NS
dissolved oxygen (mg/l) (field)	1.12	1.02	0.70	2.14	0.63	0.41	NS
ORP (mV)	6.7	10.6	-16.1	140.7	61.3	121.6	NS
temperature (°C) (field)	22.7	23.10	23.90	26.48	27.20	22.60	NS
turbidity (NTU) (field)	5.05	4.78	1.63	3.56	1.1	1.21	NS
pH (field)	6.90	6.55	**6.46**	**6.44**	**6.28**	**6.14**	(6.5 - 8.5)**
General Parameters							**MCL Standard**
total dissolved solids (mg/l)	430	290	**890**	352	470	410	500**
chloride (mg/l)	170	62	**320**	94.9	130	97 j4	250**
ammonia nitrogen (mg/l as N)	6.5	4.7	15	1.1	13	9.3	NS
Metals Detected (mg/l)							**MCL Standard**
sodium	98	58	140	87.7	110	63	160*

Note: Reference FDEP Groundwater Guidance Concentrations
NS = No Standard
MCL = Maximum Contaminant Level
* = Primary Drinking Water Standard
** = Secondary Drinking Water Standard
6.46 = Exceeds Standard
mV = millivolts
NTU = Nephelometric Turbidity Units
j4 = estimated results
mg/l = milligrams per liter
NGVD = National Geodedic Vertical Datum



SOUTHEAST COUNTY LANDFILL
SURFICIAL AQUIFER GROUNDWATER
CONTOUR MAP
FEBRUARY 6, 2019

2018 AERIAL PHOTO

FIGURE 2

Legend

Existing Monitoring Wells

Direction Of Flow

Hillsborough County Florida

Appendix B

February 2019 Laboratory Data Report

Advanced Environmental Laboratories, Inc.

Advanced Environmental Laboratories, Inc
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

March 4, 2019

Michael Townsel
Hillsborough Co Public Utilites
332 North Falkenburg Rd
Tampa, FL 33619

RE: Workorder: T1902209 SELF Supplemental Site

Dear Michael Townsel:

Enclosed are the analytical results for sample(s) received by the laboratory between Wednesday, February 06, 2019 and Thursday, February 07, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody and results pertain only to these samples.

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

Sincerely,

Heidi Parker - Project Manager
HParker@AELLab.com

Enclosures

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.

Advanced Environmental Laboratories, Inc
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

SAMPLE SUMMARY

Workorder: T1902209 SELF Supplemental Site

Lab ID	Sample ID	Matrix	Date Collected	Date Received
T1902209001	Field Blank	Water	2/6/2019 09:43	2/6/2019 14:30
T1902209002	TH-66A	Water	2/6/2019 10:02	2/6/2019 14:30
T1902209003	TH-80	Water	2/6/2019 10:37	2/6/2019 14:30
T1902209004	TH-79	Water	2/6/2019 11:20	2/6/2019 14:30
T1902209005	TH-81	Water	2/6/2019 12:38	2/6/2019 14:30
T1902209006	TH-67	Water	2/6/2019 13:15	2/6/2019 14:30
T1902209007	TH-82	Water	2/7/2019 09:54	2/7/2019 13:45
T1902209008	TH-38B	Water	2/7/2019 10:31	2/7/2019 13:45
T1902209009	TH-83	Water	2/7/2019 11:24	2/7/2019 13:45
T1902209010	TH-20B	Water	2/7/2019 11:53	2/7/2019 13:45
T1902209011	Duplicate	Water	2/7/2019 00:00	2/7/2019 13:45

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209001** Date Received: 02/06/19 14:30 Matrix: Water

Sample ID: **Field Blank** Date Collected: 02/06/19 09:43

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**0.17**	**U**	**mg/L**	**1**	0.20	0.17	2/12/2019 18:58	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.025**	**U**	**mg/L**	**1**	0.10	0.025	2/20/2019 11:55	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**10**	**U**	**mg/L**	**1**	10	10	2/11/2019 15:50	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**2.6**	**U**	**mg/L**	**1**	5.0	2.6	2/7/2019 11:59	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209002** Date Received: 02/06/19 14:30 Matrix: Water

Sample ID: **TH-66A** Date Collected: 02/06/19 10:02

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**274.4**		**umhos/cm**	**1**			2/6/2019 10:02	....
Dissolved Oxygen	**0.4**		**mg/L**	**1**			2/6/2019 10:02	....
ORP-2580BW	**-115.4**		**mV**	**1**			2/6/2019 10:02	....
Temperature	**22.8**		**°C**	**1**			2/6/2019 10:02	....
Turbidity	**0.7**		**NTU**	**1**			2/6/2019 10:02	....
pH	**5.85**		**SU**	**1**			2/6/2019 10:02	....
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**7.3**		**mg/L**	**1**	0.20	0.17	2/12/2019 20:27	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.99**		**mg/L**	**1**	0.10	0.025	2/20/2019 11:56	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**210**		**mg/L**	**1**	10	10	2/11/2019 15:50	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**16**	**J4**	**mg/L**	**1**	5.0	2.6	2/7/2019 11:57	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209003** Date Received: 02/06/19 14:30 Matrix: Water

Sample ID: **TH-80** Date Collected: 02/06/19 10:37

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**477.6**		**umhos/cm**	**1**			2/6/2019 10:37	....
Dissolved Oxygen	**0.28**		**mg/L**	**1**			2/6/2019 10:37	....
ORP-2580BW	**2.2**		**mV**	**1**			2/6/2019 10:37	....
Temperature	**24.6**		**°C**	**1**			2/6/2019 10:37	....
Turbidity	**15.7**		**NTU**	**1**			2/6/2019 10:37	....
pH	**5.95**		**SU**	**1**			2/6/2019 10:37	....
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**28**		**mg/L**	**1**	0.20	0.17	2/12/2019 20:31	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.60**		**mg/L**	**1**	0.10	0.025	2/20/2019 11:57	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**250**		**mg/L**	**1**	10	10	2/11/2019 15:50	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**41**		**mg/L**	**1**	5.0	2.6	2/7/2019 11:59	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209004** Date Received: 02/06/19 14:30 Matrix: Water

Sample ID: **TH-79** Date Collected: 02/06/19 11:20

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**284.8**		**umhos/cm**	**1**			2/6/2019 11:20	....
Dissolved Oxygen	**0.95**		**mg/L**	**1**			2/6/2019 11:20	....
ORP-2580BW	**22.4**		**mV**	**1**			2/6/2019 11:20	....
Temperature	**21.5**		**°C**	**1**			2/6/2019 11:20	....
Turbidity	**16.7**		**NTU**	**1**			2/6/2019 11:20	....
pH	**5.65**		**SU**	**1**			2/6/2019 11:20	....
METALS								
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**13**		**mg/L**	**1**	5.0	2.6	2/7/2019 12:06	T
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**9.8**		**mg/L**	**1**	0.20	0.17	2/12/2019 20:35	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**1.2**		**mg/L**	**1**	0.10	0.025	2/20/2019 11:57	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**160**		**mg/L**	**1**	10	10	2/11/2019 15:50	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209005** Date Received: 02/06/19 14:30 Matrix: Water

Sample ID: **TH-81** Date Collected: 02/06/19 12:38

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**137.8**		**umhos/cm**	**1**			2/6/2019 12:38	....
Dissolved Oxygen	**1.48**		**mg/L**	**1**			2/6/2019 12:38	....
ORP-2580BW	**136**		**mV**	**1**			2/6/2019 12:38	....
Temperature	**21.9**		**°C**	**1**			2/6/2019 12:38	....
Turbidity	**15.1**		**NTU**	**1**			2/6/2019 12:38	....
pH	**5.66**		**SU**	**1**			2/6/2019 12:38	....
METALS								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.16**		**mg/L**	**1**	0.10	0.025	2/20/2019 11:58	T
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**4.7**		**mg/L**	**1**	0.20	0.17	2/12/2019 20:39	T
METALS								
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**94**		**mg/L**	**1**	10	10	2/11/2019 15:50	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**9.4**		**mg/L**	**1**	5.0	2.6	2/7/2019 12:09	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209006** Date Received: 02/06/19 14:30 Matrix: Water

Sample ID: **TH-67** Date Collected: 02/06/19 13:15

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**209.6**		**umhos/cm**	**1**			2/6/2019 13:15	....
Dissolved Oxygen	**2.11**		**mg/L**	**1**			2/6/2019 13:15	....
ORP-2580BW	**151.8**		**mV**	**1**			2/6/2019 13:15	....
Temperature	**21.7**		**°C**	**1**			2/6/2019 13:15	....
Turbidity	**3.79**		**NTU**	**1**			2/6/2019 13:15	....
pH	**5.98**		**SU**	**1**			2/6/2019 13:15	....
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**4.4**		**mg/L**	**1**	0.20	0.17	2/12/2019 20:42	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.08**	**I**	**mg/L**	**1**	0.10	0.025	2/20/2019 12:00	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**120**		**mg/L**	**1**	10	10	2/11/2019 15:50	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**9.4**		**mg/L**	**1**	5.0	2.6	2/7/2019 12:09	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209007** Date Received: 02/07/19 13:45 Matrix: Water

Sample ID: **TH-82** Date Collected: 02/07/19 09:54

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**96.9**		**umhos/cm**	**1**			2/7/2019 09:54	....
Dissolved Oxygen	**0.91**		**mg/L**	**1**			2/7/2019 09:54	....
ORP-2580BW	**140.1**		**mV**	**1**			2/7/2019 09:54	....
Temperature	**23.3**		**°C**	**1**			2/7/2019 09:54	....
Turbidity	**5.35**		**NTU**	**1**			2/7/2019 09:54	....
pH	**4.94**		**SU**	**1**			2/7/2019 09:54	....
METALS								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**1.1**		**mg/L**	**1**	0.10	0.025	2/20/2019 12:27	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**64**		**mg/L**	**1**	10	10	2/12/2019 12:45	T
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**4.6**		**mg/L**	**1**	0.20	0.17	2/13/2019 19:46	T
METALS								
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**13**		**mg/L**	**1**	5.0	2.6	2/15/2019 14:29	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209008** Date Received: 02/07/19 13:45 Matrix: Water

Sample ID: **TH-38B** Date Collected: 02/07/19 10:31

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**46.1**		**umhos/cm**	**1**			2/7/2019 10:31	....
Dissolved Oxygen	**1.37**		**mg/L**	**1**			2/7/2019 10:31	....
ORP-2580BW	**244.3**		**mV**	**1**			2/7/2019 10:31	....
Temperature	**23.2**		**°C**	**1**			2/7/2019 10:31	....
Turbidity	**19.2**		**NTU**	**1**			2/7/2019 10:31	....
pH	**4.73**		**SU**	**1**			2/7/2019 10:31	....
METALS								
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**2.6**	**U**	**mg/L**	**1**	5.0	2.6	2/15/2019 14:26	T
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**2.1**		**mg/L**	**1**	0.20	0.17	2/13/2019 19:50	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.025**	**U**	**mg/L**	**1**	0.10	0.025	2/20/2019 12:29	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**28**		**mg/L**	**1**	10	10	2/12/2019 12:45	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209009** Date Received: 02/07/19 13:45 Matrix: Water

Sample ID: **TH-83** Date Collected: 02/07/19 11:24

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**580**		**umhos/cm**	**1**			2/7/2019 11:24	....
Dissolved Oxygen	**0.41**		**mg/L**	**1**			2/7/2019 11:24	....
ORP-2580BW	**121.6**		**mV**	**1**			2/7/2019 11:24	....
Temperature	**22.6**		**°C**	**1**			2/7/2019 11:24	....
Turbidity	**1.21**		**NTU**	**1**			2/7/2019 11:24	....
pH	**6.14**		**SU**	**1**			2/7/2019 11:24	....
METALS								
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**97**	**J4**	**mg/L**	**1**	5.0	2.6	2/15/2019 14:35	T
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**63**		**mg/L**	**1**	0.20	0.17	2/13/2019 19:54	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**9.3**		**mg/L**	**1**	0.10	0.025	2/20/2019 12:30	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**410**		**mg/L**	**1**	10	10	2/12/2019 12:45	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209010** Date Received: 02/07/19 13:45 Matrix: Water

Sample ID: **TH-20B** Date Collected: 02/07/19 11:53

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Analytical Method: Field Measurements							
Conductivity	**255.1**		**umhos/cm**	**1**			2/7/2019 11:53	....
Dissolved Oxygen	**0.13**		**mg/L**	**1**			2/7/2019 11:53	....
ORP-2580BW	**-13.9**		**mV**	**1**			2/7/2019 11:53	....
Temperature	**23**		**°C**	**1**			2/7/2019 11:53	....
Turbidity	**1.89**		**NTU**	**1**			2/7/2019 11:53	....
pH	**5.67**		**SU**	**1**			2/7/2019 11:53	....
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**12**		**mg/L**	**1**	0.20	0.17	2/13/2019 19:57	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**2.1**		**mg/L**	**1**	0.10	0.025	2/20/2019 12:30	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**190**		**mg/L**	**1**	10	10	2/12/2019 12:45	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**27**		**mg/L**	**1**	5.0	2.6	2/15/2019 14:28	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1902209 SELF Supplemental Site

Lab ID: **T1902209011** Date Received: 02/07/19 13:45 Matrix: Water

Sample ID: **Duplicate** Date Collected: 02/07/19 00:00

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**64**		**mg/L**	**1**	0.20	0.17	2/13/2019 20:01	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**9.8**		**mg/L**	**1**	0.10	0.025	2/20/2019 12:36	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**340**		**mg/L**	**1**	10	10	2/12/2019 12:45	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**93**		**mg/L**	**1**	5.0	2.6	2/15/2019 14:29	T

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.

Advanced Environmental Laboratories, Inc
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS QUALIFIERS

Workorder: T1902209 SELF Supplemental Site

PARAMETER QUALIFIERS

U	The compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J4	Estimated Result

LAB QUALIFIERS

T	DOH Certification #E84589(AEL-T)(FL NELAC Certification)
T^	Not Certified

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

QUALITY CONTROL DATA

Workorder: T1902209 SELF Supplemental Site

QC Batch: WCAt/9028 Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E Prepared:
Associated Lab Samples: T1902209001, T1902209002, T1902209003, T1902209004, T1902209005, T1902209006

METHOD BLANK: 2991833

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Chloride	mg/L	2.6	2.6	U

LABORATORY CONTROL SAMPLE: 2991834

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Chloride	mg/L	50	48	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2991835 2991836 Original: T1902209002

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Chloride	mg/L	16	50	69	72	105	111	90-110	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2991837 2991838 Original: T1902209004

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Chloride	mg/L	13	50	68	67	109	108	90-110	1	10	

QC Batch: WCAt/9096 Analysis Method: SM 2540 C
QC Batch Method: SM 2540 C Prepared:
Associated Lab Samples: T1902209001, T1902209002, T1902209003, T1902209004, T1902209005, T1902209006

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

QUALITY CONTROL DATA

Workorder: T1902209 SELF Supplemental Site

METHOD BLANK: 2994664

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Total Dissolved Solids	mg/L	10	10	U

LABORATORY CONTROL SAMPLE: 2994665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L	660	720	110	85-115	

SAMPLE DUPLICATE: 2994666 Original: T1902104001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L	420	430	2	10	

QC Batch: DGMt/2903 Analysis Method: SW-846 6010

QC Batch Method: SW-846 3010A Prepared: 02/11/2019 10:00

Associated Lab Samples: T1902209001, T1902209002, T1902209003, T1902209004, T1902209005, T1902209006

METHOD BLANK: 2994755

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
METALS				
Sodium	mg/L	0.17	0.17	U

LABORATORY CONTROL SAMPLE: 2994756

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
METALS						
Sodium	mg/L	50	50	99	80-120	

Advanced Environmental Laboratories, Inc
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

QUALITY CONTROL DATA

Workorder: T1902209 SELF Supplemental Site

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2994757 2994758 Original: T1902423001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
METALS											
Sodium	mg/L	29	50	71	71	84	83	75-125	1	20	

QC Batch: WCAt/9125 Analysis Method: SM 2540 C
QC Batch Method: SM 2540 C Prepared:
Associated Lab Samples: T1902209007, T1902209008, T1902209009, T1902209010, T1902209011

METHOD BLANK: 2995674

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Total Dissolved Solids	mg/L	10	10	U

LABORATORY CONTROL SAMPLE: 2995675

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L	660	730	110	85-115	

SAMPLE DUPLICATE: 2995676 Original: T1902209007

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L	64	70	9	10	

QC Batch: DGMt/2911 Analysis Method: SW-846 6010
QC Batch Method: SW-846 3010A Prepared: 02/13/2019 10:00
Associated Lab Samples: T1902209007, T1902209008, T1902209009, T1902209010, T1902209011

METHOD BLANK: 2997221

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
METALS				

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

QUALITY CONTROL DATA

Workorder: T1902209 SELF Supplemental Site

METHOD BLANK: 2997221

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Sodium	mg/L	0.17	0.17	U

LABORATORY CONTROL SAMPLE: 2997222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
METALS						
Sodium	mg/L	50	52	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2997223 2997224 Original: T1902160001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
METALS											
Sodium	mg/L	66	50	120	120	98	98	75-125	0	20	

QC Batch: WCAt/9246 Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E Prepared:
Associated Lab Samples: T1902209007, T1902209008, T1902209009, T1902209010, T1902209011

METHOD BLANK: 3001073

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Chloride	mg/L	2.6	2.6	U

LABORATORY CONTROL SAMPLE: 3001074

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Chloride	mg/L	50	50	101	90-110	

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

QUALITY CONTROL DATA

Workorder: T1902209 SELF Supplemental Site

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3001075 3001076 Original: T1902209008

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Chloride	mg/L	2.4	50	53	53	106	106	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3001077 3001078 Original: T1902209009

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Chloride	mg/L	97	50	140	140	87	92	90-110	2	10	

QC Batch: WCAt/9325 Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1 Prepared:

Associated Lab Samples: T1902209001, T1902209002, T1902209003, T1902209004, T1902209005, T1902209006

METHOD BLANK: 3004295

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Ammonia (N)	mg/L	0.025	0.025	U

LABORATORY CONTROL SAMPLE: 3004296

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Ammonia (N)	mg/L	0.5	0.50	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3004299 3004300 Original: T1902209005

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Ammonia (N)	mg/L	0.16	1	1.2	1.2	108	106	90-110	2	10	

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

QUALITY CONTROL DATA

Workorder: T1902209 SELF Supplemental Site

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3004301 3004302 Original: T1902241004

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Ammonia (N)	mg/L	0.06	1	1.1	1.1	107	104	90-110	3	10	

QC Batch: WCAt/9326 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Prepared:
Associated Lab Samples: T1902209007, T1902209008, T1902209009, T1902209010, T1902209011

METHOD BLANK: 3004306

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Ammonia (N)	mg/L	0.025	0.025	U

LABORATORY CONTROL SAMPLE: 3004307

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Ammonia (N)	mg/L	0.5	0.50	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3004308 3004309 Original: T1902209007

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Ammonia (N)	mg/L	1.1	1	2.1	2.2	105	109	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3004310 3004311 Original: T1902274002

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY											
Ammonia (N)	mg/L	0	1	1.0	1.1	105	108	90-110	3	10	

CERTIFICATE OF ANALYSIS

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: T1902209 SELF Supplemental Site

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
T1902209001	Field Blank			SM 4500-Cl-E	WCAt/9028
T1902209002	TH-66A			SM 4500-Cl-E	WCAt/9028
T1902209003	TH-80			SM 4500-Cl-E	WCAt/9028
T1902209004	TH-79			SM 4500-Cl-E	WCAt/9028
T1902209005	TH-81			SM 4500-Cl-E	WCAt/9028
T1902209006	TH-67			SM 4500-Cl-E	WCAt/9028
T1902209001	Field Blank			SM 2540 C	WCAt/9096
T1902209002	TH-66A			SM 2540 C	WCAt/9096
T1902209003	TH-80			SM 2540 C	WCAt/9096
T1902209004	TH-79			SM 2540 C	WCAt/9096
T1902209005	TH-81			SM 2540 C	WCAt/9096
T1902209006	TH-67			SM 2540 C	WCAt/9096
T1902209001	Field Blank	SW-846 3010A	DGMt/2903	SW-846 6010	ICPt/2089
T1902209002	TH-66A	SW-846 3010A	DGMt/2903	SW-846 6010	ICPt/2089
T1902209003	TH-80	SW-846 3010A	DGMt/2903	SW-846 6010	ICPt/2089
T1902209004	TH-79	SW-846 3010A	DGMt/2903	SW-846 6010	ICPt/2089
T1902209005	TH-81	SW-846 3010A	DGMt/2903	SW-846 6010	ICPt/2089
T1902209006	TH-67	SW-846 3010A	DGMt/2903	SW-846 6010	ICPt/2089
T1902209007	TH-82			SM 2540 C	WCAt/9125
T1902209008	TH-38B			SM 2540 C	WCAt/9125
T1902209009	TH-83			SM 2540 C	WCAt/9125
T1902209010	TH-20B			SM 2540 C	WCAt/9125
T1902209011	Duplicate			SM 2540 C	WCAt/9125
T1902209007	TH-82	SW-846 3010A	DGMt/2911	SW-846 6010	ICPt/2093
T1902209008	TH-38B	SW-846 3010A	DGMt/2911	SW-846 6010	ICPt/2093
T1902209009	TH-83	SW-846 3010A	DGMt/2911	SW-846 6010	ICPt/2093
T1902209010	TH-20B	SW-846 3010A	DGMt/2911	SW-846 6010	ICPt/2093
T1902209011	Duplicate	SW-846 3010A	DGMt/2911	SW-846 6010	ICPt/2093

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: T1902209 SELF Supplemental Site

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
T1902209007	TH-82			SM 4500-Cl-E	WCAt/9246
T1902209008	TH-38B			SM 4500-Cl-E	WCAt/9246
T1902209009	TH-83			SM 4500-Cl-E	WCAt/9246
T1902209010	TH-20B			SM 4500-Cl-E	WCAt/9246
T1902209011	Duplicate			SM 4500-Cl-E	WCAt/9246
T1902209001	Field Blank			EPA 350.1	WCAt/9325
T1902209002	TH-66A			EPA 350.1	WCAt/9325
T1902209003	TH-80			EPA 350.1	WCAt/9325
T1902209004	TH-79			EPA 350.1	WCAt/9325
T1902209005	TH-81			EPA 350.1	WCAt/9325
T1902209006	TH-67			EPA 350.1	WCAt/9325
T1902209007	TH-82			EPA 350.1	WCAt/9326
T1902209008	TH-38B			EPA 350.1	WCAt/9326
T1902209009	TH-83			EPA 350.1	WCAt/9326
T1902209010	TH-20B			EPA 350.1	WCAt/9326
T1902209011	Duplicate			EPA 350.1	WCAt/9326
T1902209002	TH-66A	Field Measurements	FLDt/	Field Measurements	FLDt/
T1902209003	TH-80	Field Measurements	FLDt/	Field Measurements	FLDt/
T1902209004	TH-79	Field Measurements	FLDt/	Field Measurements	FLDt/
T1902209005	TH-81	Field Measurements	FLDt/	Field Measurements	FLDt/
T1902209006	TH-67	Field Measurements	FLDt/	Field Measurements	FLDt/
T1902209007	TH-82	Field Measurements	FLDt/	Field Measurements	FLDt/
T1902209008	TH-38B	Field Measurements	FLDt/	Field Measurements	FLDt/
T1902209009	TH-83	Field Measurements	FLDt/	Field Measurements	FLDt/
T1902209010	TH-20B	Field Measurements	FLDt/	Field Measurements	FLDt/

T1922209

Advanced Environmental Laboratories, Inc.

☐ **Altamonte Springs:** 528 S. Northlake Blvd., Ste. 1016 • Altamonte Springs, FL 32701 • 407.937.1594 • Fax 407.937.1597
☐ **Gainesville:** 4965 SW 41st Blvd. • Gainesville, FL 32608 • 352.377.2349 • Fax 352.395.6639
☐ **Jacksonville:** 6681 Southpoint Pkwy. • Jacksonville, FL 32216 • 904.363.9350 • Fax 904.363.9354
☐ **Miramar:** 10200 USA Today Way, Miramar, FL 33025 • 954.889.2288 • Fax 954.889.2281
☐ **Tallahassee:** 1288 Cedar Center Drive, Tallahassee, FL 32301 • 850.219.6274 • Fax 850.219.6275
☐ **Tampa:** 9610 Princess Palm Ave. • Tampa, FL 33619 • 813.630.9616 • Fax 813.630.4327

Client Name: Hills. Co. Public Utilities	Project Name: SELF Supplemental Site Assessment
Address: 332 North Falkenburg Rd.	P.O. Number/Project Number: N/A
Tampa, Florida 33619	Project Location: Southeast County Landfill
Phone: (813) 663-3222	REMARKS/SPECIAL INSTRUCTIONS:
FAX: (813) 274-6801	
Contact: Michael Townsel	
Sampled By: T.Aguilar J.Fuller	
Turn Around Time: ☒ STANDARD ☐ RUSH	
Page: 1 of: 1	

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. COUNT	PRESERVATION	ANALYSIS REQUIRED: Total Ammonia-N	Sodium	Chloride	TDS							LABORATORY I.D. NUMBER
	Field Blank	-	2/6/19	9:43	OI	3		X	X	X	X							001
	TH-66A	G	2/6/19	10:02	GW	3		X	X	X	X							002
	TH-80	G	2/6/19	10:37	GW	3		X	X	X	X							003
	TH-79	G	2/6/19	11:20	GW	3		X	X	X	X							004
	TH-81	G	2/6/19	12:38	GW	3		X	X	X	X							005
	TH-67	G	2/6/19	13:15	GW	3		X	X	X	X							006

Matrix Code: **WW** = wastewater **SW** = surface water **GW** = ground water **DW** = drinking water **O** = oil **A** = air **SO** = soil **SL** = sludge

Preservation Code: I = ice H=(HCl) S = (H_2SO_4) N = (HNO_3) T = (Sodium Thiosulfate)

Received on Ice ☒ Yes ☐ No ☐ Temp taken from sample ☐ Temp from blank ☒ Where required, pH checked Temperature when received 6.3 (in degrees celcius)

Form revised 09/19/2012

Device used for measuring Temp by unique identifier (circle IR temp gun used) J: 9A G: LT-1 LT-2 T: ~~10A~~ A: 3A M: 1A S: 1V

	Relinquished by:	Date	Time	Received by:	Date	Time
1	Tom Fuller	2/6/19	14:21		2/6/19	14:21
2						
3						
4						

FOR DRINKING WATER USE (When PWS Information not otherwise supplied)

PWS ID:
Contact Person: Phone:
Supplier of Water:
Site-Address:

T]9022509

Advanced Environmental Laboratories, Inc.

☐ **Altamonte Springs:** 528 S. Northlake Blvd., Ste. 1016 • Altamonte Springs, FL 32701 • 407.937.1594 • Fax 407.937.1597
☐ **Gainesville:** 4965 SW 41st Blvd. • Gainesville, FL 32608 • 352.377.2349 • Fax 352.395.6639
☐ **Jacksonville:** 6681 Southpoint Pkwy. • Jacksonville, FL 32216 • 904.363.9350 • Fax 904.363.9354
☐ **Miramar:** 10200 USA Today Way, Miramar, FL 33025 • 954.889.2288 • Fax 954.889.2281
☐ **Tallahassee:** 1288 Cedar Center Drive, Tallahassee, FL 32301 • 850.219.6274 • Fax 850.219.6275
☐ **Tampa:** 9610 Princess Palm Ave. • Tampa, FL 33619 • 813.630.9616 • Fax 813.630.4327

Client Name: Hills. Co. Public Utilities
Address: 332 North Falkenburg Rd.
Tampa, Florida 33619
Phone: (813) 663-3222
FAX: (813) 274-6801
Contact: Michael Townsel
Sampled By: T. Aguilar J. Fuller
Turn Around Time: ☑ STANDARD ☐ RUSH
Page: 1 of: 1

Project Name: SELF Supplemental Site Assessment
P.O. Number/Project Number: N/A
Project Location: Southeast County Landfill
REMARKS/SPECIAL INSTRUCTIONS

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. COUNT	PRESERVATION	Total Ammonia-N	Sodium	Chloride	TDS	LABORATORY I.D. NUMBER
	TH-82	G	2/7/19	9:54	GW	3		X	X	X	X	007
	TH-38B	G	2/7/19	10:31	GW	3		X	X	X	X	008
	TH-83	G	2/7/19	11:24	GW	3		X	X	X	X	009
	TH-20B	G	2/7/19	11:53	GW	3		X	X	X	X	010
	Duplicate	G	2/7/19	—	GW	3		X	X	X	X	011

Matrix Code: WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SL = sludge
Preservation Code: I = ice H=(HCl) S = (H_2SO_4) N = (HNO_3) T = (Sodium Thiosulfate)

Received on Ice ☑ Yes ☐ No ☐ Temp taken from sample ☐ Temp from blank ☑ Where required, pH checked Temperature when received 5.2 (in degrees celcius)

Form revised 09/19/2012

Device used for measuring Temp by unique identifier (circle IR temp gun used) J: 9A G: LT-1 LT-2 T: 10A A: 3A M: 1A S: 1V

	Relinquished by:	Date	Time	Received by:	Date	Time
1		2/7/19	13:41		2-7-19	1345
2						
3						
4						

FOR DRINKING WATER USE (When PWS Information not otherwise supplied)
PWS ID:
Contact Person: Phone:
Supplier of Water:
Site-Address:

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: Field Blank	SAMPLE ID: Field Blank	DATE: 2/6/19

PURGING DATA

WELL DIAMETER (inches): N/A	TUBING DIAMETER (inches): N/A	WELL SCREEN INTERVAL DEPTH: N/A ft to N/A	STATIC DEPTH TO WATER (feet): N/A	PURGE PUMP TYPE OR BAILER: N/A

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (N/A feet – N/A feet) X 0.16 gallons/foot = N/A gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= N/A gallons + (N/A gallons/foot X N/A feet) + N/A gallons = N/A gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): N/A	FINAL PUMP OR TUBING DEPTH IN WELL (feet): N/A	PURGING INITIATED AT: N/A	PURGING ENDED AT: N/A	TOTAL VOLUME PURGED (gallons): N/A

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)

2/6/19

Field Blank

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 9:43	SAMPLING ENDED AT: 9:44
PUMP OR TUBING DEPTH IN WELL (feet): N/A	TUBING MATERIAL CODE: N/A	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS**

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-66A	SAMPLE ID: TH-66A	DATE: 2-6-19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 5.37 ft to 15.37 ft	STATIC DEPTH TO WATER (feet): 8.40	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15.37 feet − 8.40 feet) X 0.16 gallons/foot = 1.12 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14.37	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.37	PURGING INITIATED AT: 9:39	PURGING ENDED AT: 10:02	TOTAL VOLUME PURGED (gallons): 1.38

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
9:58	1.14	1.14	0.06	9.90	5.86	22.7	275.6	0.42	3.76	Clear	None
10:00	0.12	1.26	0.06	9.90	5.85	22.8	274.9	0.46	0.66	Clear	None
10:02	0.12	1.38	0.06	9.90	5.85	22.8	274.4	0.40	0.70	Clear	None

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:02	SAMPLING ENDED AT: 10:06
PUMP OR TUBING DEPTH IN WELL (feet): 14.37	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 9:58 (-113.3), 10:00 (-115.9), 10:02 (-115.4)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-80	SAMPLE ID: TH-80	DATE: 2/6/19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 8.65 ft to 18.65 Ft	STATIC DEPTH TO WATER (feet): 7.6	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (18.65 feet − 7.6 feet) X 0.16 gallons/foot = 1.787 gallons (2/4/19)

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17.65	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17.65	PURGING INITIATED AT: 10:13	PURGING ENDED AT: 10:37	TOTAL VOLUME PURGED (gallons): 2.4

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
10:31	1.8	1.8	0.1	7.79	5.97	24.6	486.9	0.11	21.5 277	Clear	None
10:33	0.2	2.0	0.1	7.79	5.96	24.7	485.0	0.11	15.7	Clear	None
10:35	0.2	2.2	0.1	7.79	5.97	24.6	480.3	0.50	17.6	Clear	None
10:37	0.2	2.4	0.1	7.79	5.95	24.6	477.6	0.28	15.7	Clear	None

2/6/19

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar S. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:37	SAMPLING ENDED AT: 10:41
PUMP OR TUBING DEPTH IN WELL (feet): 17.65	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 10:31 (0.6), 10:33 (1.4), 10:35 (1.9), 10:37 (2.2)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-79	SAMPLE ID: TH-79	DATE 2/6/19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 7.80 ft to 17.80 Ft	STATIC DEPTH TO WATER (feet): 7.04	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (17.80 feet − 7.04 feet) X 0.16 gallons/foot = 1.72 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 16.80	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 16.80	PURGING INITIATED AT: 10:47	PURGING ENDED AT: 11:20	TOTAL VOLUME PURGED (gallons): 1.98

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:16	1.74	1.74	0.06	7.85	5.66	21.4	281.9	1.06	16.7	Clear	None
11:18	0.12	1.86	0.06	7.85	5.65	21.4	282.8	0.98	16.6	Clear	None
11:20	0.12	1.98	0.06	7.85	5.65	21.5	284.8	0.95	16.7	Clear	None

2/6/19

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.) 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:20	SAMPLING ENDED AT: 11:24
PUMP OR TUBING DEPTH IN WELL (feet): 16.80	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 11:16 (23.1), 11:18 (22.3), 11:20 (22.4)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-81	SAMPLE ID: TH-81	DATE: 2/6/19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 6.94 ft to 16.94 Ft	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (16.94 feet − 7.19 feet) X 0.16 gallons/foot = 1.56 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15.94	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.94	PURGING INITIATED AT: 11:46	PURGING ENDED AT: 12:38	TOTAL VOLUME PURGED (gallons): 5.2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:02	1.6	1.6	0.1	7.22	5.49	22.1	133.6	1.20	40.4	Cloudy	None
12:18	1.6	3.2	0.1	7.22	5.60	21.9	135.8	1.14	25.2	Slightly Cloudy	None
12:34	1.6	4.8	0.1	7.22	5.63	21.8	137.4	1.48	17.8	Clear	None
12:36	0.2	5.0	0.1	7.22	5.64	21.9	137.6	1.54	15.5	Clear	None
12:38	0.2	5.2	0.1	7.22	5.66	21.9	137.8	1.48	15.1	Clear	None

2/6/19

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:38	SAMPLING ENDED AT: 12:42
PUMP OR TUBING DEPTH IN WELL (feet): 15.94	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
							ORP: 12:36 (135.0)		
							12:38 (136.0)		

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 12:02 (130.4), 12:18 (134.5), 12:34 (134.5)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-67	SAMPLE ID: TH-67	DATE: 2/6/19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 0.5	WELL SCREEN INTERVAL DEPTH: 5.25 ft to 15.25 ft	STATIC DEPTH TO WATER (feet): 5.22	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15.25 feet − 5.22 feet) X 0.16 gallons/foot = 1.605 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14.25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.25	PURGING INITIATED AT: 12:48	PURGING ENDED AT: 13:15	TOTAL VOLUME PURGED (gallons): 2.7

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
13:05	1.7	1.7	0.1	5.83	5.97	22.1	241.3	1.90	6.44	Clear	None
13:07	0.2	1.9	0.1	5.83	5.98	22.0	230.3	1.94	5.69	Clear	None
13:09	0.2	2.1	0.1	5.83	5.98	21.9	227.3	2.05	4.59	Clear	None
13:11	0.2	2.3	0.1	5.83	5.97	21.8	218.2	2.15	4.20	Clear	None
13:13	0.2	2.5	0.1	5.83	5.85	21.7	213.5	2.12	4.05	Clear	None
13:15	0.2	2.7	0.1	5.83	5.98	21.7	209.6	2.11	3.79	Clear	None

2/6/19

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 13:15	SAMPLING ENDED AT: 13:19
PUMP OR TUBING DEPTH IN WELL (feet): 14.25	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
							ORP: 13:11 (148.7)		
							13:13 (150.8)		
							13:15 (151.8)		

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 13:05 (142.9) 13:07 (144.7) 13:09 (146.7)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-82	SAMPLE ID: TH-82	DATE: 2/7/19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 8.94 ft to 18.94 Ft	STATIC DEPTH TO WATER (feet): 9.53	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (18.94 feet – 9.53 feet) X 0.16 gallons/foot = 1.51 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 17.94	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 17.94	PURGING INITIATED AT: 9:20	PURGING ENDED AT: 9:54	TOTAL VOLUME PURGED (gallons): 5.44

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
9:30	1.6	1.6	0.16	9.53	5.39	23.4	171.3	1.11	7.22	Clear	None
9:32	0.32	1.92	0.16	9.53	5.30	23.4	156.3	0.77	7.99	Clear	None
9:34	0.32	2.24	0.16	9.53	5.25	23.3	146.1	0.59	6.60	Clear	None
9:40	0.96	3.20	0.16	9.53	5.15	23.3	122.4	0.77	6.77	Clear	None
9:50	1.6	4.8	0.16	9.53	4.98	23.2	100.9	1.00	6.02	Clear	None
9:52	0.32	5.12	0.16	9.53	4.93	23.2	98.8	0.95	6.00	Clear	None
9:54	0.32	5.44	0.16	9.53	4.94	23.3	96.9	0.91	5.35	Clear	None

2/7/19

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 9:54	SAMPLING ENDED AT: 9:58
PUMP OR TUBING DEPTH IN WELL (feet): 17.94	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
							ORP: 9:40 (119.4)		
							9:50 (135.2)		
							9:52 (135.2)		
							9:54 (140.1)		

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 9:30 (93.8), 9:32 (97.4), 9:34 (102.3)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-38B	SAMPLE ID: TH-38B	DATE: 2/7/19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 5.42 ft to 15.42 Ft	STATIC DEPTH TO WATER (feet): 9.87	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15.42 feet − 9.87 feet) X 0.16 gallons/foot = 0.89 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14.42	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.42	PURGING INITIATED AT: 10:05	PURGING ENDED AT: 10:31	TOTAL VOLUME PURGED (gallons): 1.3

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
10:23	0.9	0.9	0.05	10.16	4.69	23.3	46.2	1.86	18.1	Clear	None
10:25	0.1	1.0	0.05	10.16	4.76	23.3	46.1	1.74	18.3		
10:27	0.1	1.1	0.05	10.16	4.71	23.2	46.1	1.48	18.3		
10:29	0.1	1.2	0.05	10.16	4.62	23.2	46.1	1.40	18.0		
10:31	0.1	1.3	0.05	10.16	4.73	23.2	46.1	1.37	19.2		
	2/7/19										

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar / Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 10:31	SAMPLING ENDED AT: 10:35
PUMP OR TUBING DEPTH IN WELL (feet): 14.42	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
							ORP 10:29	(244.6)	
							10:31	(244.3)	

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 10:23 (241.3), 10:25 (241.5), 10:27 (235.7)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-83	SAMPLE ID: TH-83	DATE: 2/7/19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 5.47 ft to 15.47 Ft	STATIC DEPTH TO WATER (feet): 8.02	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (15.47 feet − 8.02 feet) X 0.16 gallons/foot = 1.19 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 14.47	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.47	PURGING INITIATED AT: 11:04	PURGING ENDED AT: 11:24	TOTAL VOLUME PURGED (gallons): 3.2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:12	1.28	1.28	0.16	8.02	5.99	22.7	459.0	0.55	2.06	Clear	None
11:14	0.32	1.6	0.16	8.02	5.98	22.6	493.3	0.37	1.30	Clear	None
11:16	0.32	1.92	0.16	8.02	5.99	22.6	556.	0.35	1.27	Clear	None
11:20	0.64	2.56	0.16	8.02	6.09	22.7	583	0.37	1.35	Clear	None
11:22	0.32	2.88	0.16	8.02	6.12	22.6	576	0.34	1.07	Clear	None
11:24	0.32	3.2	0.16	8.02	6.14	22.6	580	0.41	1.21	Clear	None

2/7/19

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:24	SAMPLING ENDED AT: 11:28
PUMP OR TUBING DEPTH IN WELL (feet): 14.47	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y N (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
							ORP 11:22 (128.8)		
							11:24 (121.6)		

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 11:12 (166.6), 11:14 (161.4), 11:16 (154.0) 11:20 (35.7)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: TH-20B	SAMPLE ID: TH-20B	DATE: 2/7/19

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 1/2	WELL SCREEN INTERVAL DEPTH: 12.80 ft to 22.80 ft	STATIC DEPTH TO WATER (feet): 9.66	PURGE PUMP TYPE OR BAILER: BP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

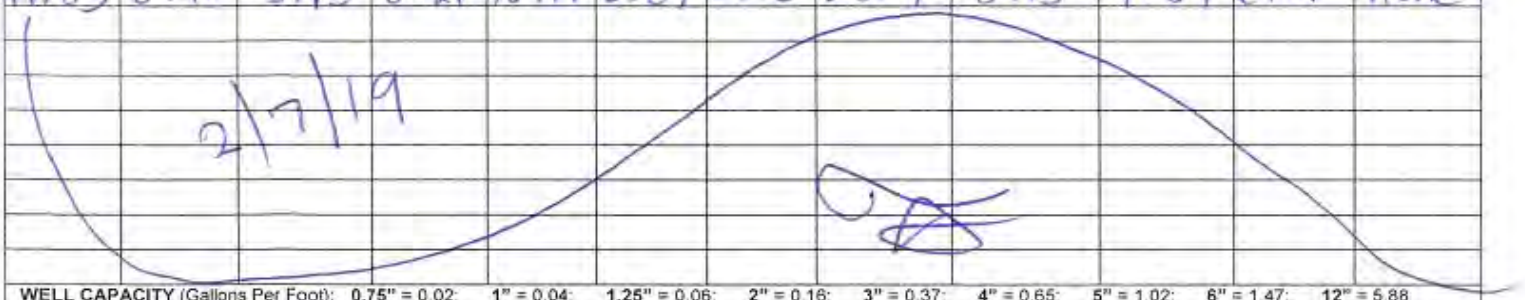
= (22.8 feet − 9.66 feet) X 0.16 gallons/foot = 2.102 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 21.8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 21.8	PURGING INITIATED AT: 11:34	PURGING ENDED AT: 11:53	TOTAL VOLUME PURGED (gallons): 3.15

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:49	2.31	2.31	0.21	10.98	5.64	22.9	248.8	0.14	3.50	Clear	None
11:51	0.42	2.73	0.21	10.98	5.66	22.9	252.2	0.14	2.74	Clear	None
11:53	0.42	3.15	0.21	10.98	5.67	23.0	255.1	0.13	1.89	Clear	None



WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 11:53	SAMPLING ENDED AT: 11:57

PUMP OR TUBING DEPTH IN WELL (feet): 21.8	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm

FIELD DECONTAMINATION: PUMP Y (N) TUBING Y (N) (replaced) DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS** **ORP:** 11:49 (-10.9), 11:51 (-12.6), 11:53 (-13.9)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Southeast County Landfill	SITE LOCATION: Lithia, Florida	
WELL NO: DUPLICATE	SAMPLE ID: DUPLICATE	DATE: 2/7/19

PURGING DATA

WELL DIAMETER (inches): N/A	TUBING DIAMETER (inches): N/A	WELL SCREEN INTERVAL DEPTH: N/A ft to N/A	STATIC DEPTH TO WATER (feet): N/A	PURGE PUMP TYPE OR BAILER: N/A

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (N/A feet – N/A feet) X 0.16 gallons/foot = N/A gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= N/A gallons + (N/A gallons/foot X N/A feet) + N/A gallons = N/A gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): N/A	FINAL PUMP OR TUBING DEPTH IN WELL (feet): N/A	PURGING INITIATED AT: N/A	PURGING ENDED AT: N/A	TOTAL VOLUME PURGED (gallons): N/A

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)

2/7/19

Duplicate

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: T. Aguilar J. Fuller	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: N/A	SAMPLING ENDED AT: N/A
PUMP OR TUBING DEPTH IN WELL (feet): N/A	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			

REMARKS: **SEE C.O.C. FOR SAMPLE ANALYSIS**

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Advanced Environmental Laboratories, Inc.

6681 Southpoint Parkway
Jacksonville, Florida 32216
Office (904) 363-9350
Fax (904) 363-9354

Project No.: T1902209

Client Name: Hillsborough County Public Utilities

ProjectID: SELF Supplemental Site

I. Receipt

No Exceptions were encountered.

II. Holding Times

Preparation: All holding times were met.

Analysis: All holding times were met.

III. Method

Analysis: SM 4500-Cl-E

Preparation: None

IV. Preparation

Sample preparation proceeded normally.

V. Analysis

A. Calibration: All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Duplicates: All acceptance criteria were met.

D. Spikes: The matrix spike duplicate (MSD) recovery of Chloride for T1902209002 was outside control criteria. Recoveries in the Laboratory Control Sample (LCS), Matrix Spike (MS) and %RPD were acceptable, which indicates the analytical batch was in control. The matrix spike outlier suggests a potential high bias in this matrix. No further corrective action was required.

E. Serial Diluion: All acceptance criteria were met.

F. Samples: Sample analyses proceeded normally.

G. Other:

Advanced Environmental Laboratories, Inc.

6681 Southpoint Parkway
Jacksonville, Florida 32216
Office (904) 363-9350
Fax (904) 363-9354

Project No.: T1902209

Client Name: Hillsborough County Public Utilities

ProjectID: SELF Supplemental Site

I. Receipt

No Exceptions were encountered.

II. Holding Times

Preparation: All holding times were met.

Analysis: All holding times were met.

III. Method

Analysis: SM 4500-Cl-E

Preparation: None

IV. Preparation

Sample preparation proceeded normally.

V. Analysis

A. Calibration: All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Duplicates: All acceptance criteria were met.

D. Spikes: The matrix spike recovery of Chloride for T1902209009 was outside control criteria. Recoveries in the Laboratory Control Sample (LCS), Matrix Spike Duplicate (MSD) and %RPD were acceptable, which indicates the analytical batch was in control. The matrix spike outlier suggests a potential low bias in this matrix. No further corrective action was required.

E. Serial Diluion: All acceptance criteria were met.

F. Samples: Sample analyses proceeded normally.

G. Other: