Hsu, Benjamin

From: Tafuni, Steven
Sent: Thursday, October 05, 2017 8:46 AM
To: Hsu, Benjamin
Subject: FW: Southeast County Landfill - OGC File No. 17-0058 - Analytical Data Report - Supplemental Sampling Event - November 2016
Attachments: SCLF Spplemental Eval Report Nov 16.pdf; 41193_201611_SWZdd.zip

Ben,

Can you check and make sure this has made it to Oculus. If not please add.

Thanks,
Steve

Steven Tafuni
FDEP-SWD, Government Operations Consultant,
Compliance Assurance Program
13051 N. Telecom Pkwy
Temple Terrace, FL 33637-0926
tel: 813-470-5792
E-mail: Steven.Tafuni@dep.state.fl.us

From: Adams, David [mailto:AdamsDS@HillsboroughCounty.ORG]
Sent: Tuesday, July 25, 2017 11:34 AM
To: Tafuni, Steven <Steven.Tafuni@dep.state.fl.us>
Cc: Byer, Kimberly <ByerK@hillsboroughcounty.org>; Ruiz, Larry <RuizLE@HillsboroughCounty.ORG>; Greenwell, Jeffry <GreenwellJ@hillsboroughcounty.org>; Moore, Clark B. <Clark.B.Moore@dep.state.fl.us>; ADaPT EDD <ADaPT.EDDs.and.Reports@dep.state.fl.us>; Townsel, Michael <TownselM@HillsboroughCounty.ORG>; Pelley, Cindy <PelleyCA@HillsboroughCounty.ORG>; Morgan, Steve <Steve.Morgan@dep.state.fl.us>; Madden, Melissa <Melissa.Madden@dep.state.fl.us>; Moore, Clark B. <Clark.B.Moore@dep.state.fl.us>; Curtis, Bob <BCurtis@scsengineers.com>; Guilbeault, Ken <KGuilbeault@SCSEngineers.com>; Helvenston, Edward <HelvenstonE@HillsboroughCounty.ORG>
Subject: Southeast County Landfill - OGC File No. 17-0058 - Analytical Data Report - Supplemental Sampling Event - November 2016

Dear Mr. Tafuni,

On behalf of the Public Works Department Solid Waste Management Division, we are pleased to submit the Analytical Data Report for the Supplemental Sampling Event conducted at the Southeast County Landfill in November 2016. Representative samples were collected from the select group of monitoring wells to evaluate the impacts to groundwater in the area of TH-67. In accordance with the Consent Agreement OGC File No. 17-0058 and the associated Corrective Action Plan, these sampling events will be conducted on a quarterly basis, and the reports will be submitted to you electronically. Additionally, this submittal includes the AdaPT files from this sampling event, and Clark Moore and the AdaPT mail box are copied on this e-mail. Should you have any questions or require any additional information, please feel free to contact me directly at (813) 663-3221.

Respectfully,

David S. Adams, P.G.

Environmental Manager
Public Utilities Department – Environmental Services

P: (813) 663-3221
E: adamsds@HCFLGov.net
W: HCFLGov.net

Hillsborough County
601 E. Kennedy Blvd., Tampa, FL 33602

Hillsborough County Florida

PUBLIC UTILITIES
PO Box 1110
Tampa, FL 33601-1110

July 25, 2017

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 - November 2016
Consent Agreement, OGC File No. 17-0058

Dear Mr. Tafuni:

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. This water quality sampling event was conducted at the Southeast County Landfill (SCLF) on November 29-30, 2016 to address impacts to the surficial aquifer on the east side of the Phase II area.

Before discussing the results from this specific sampling event, a brief history of the supplemental sampling and evaluation of the impacts to groundwater east of Phase II at the SCLF is as follows:

During the February 2016 sampling event, the County observed a number of specific water quality changes in surficial aquifer groundwater well TH-67. The specific conductivity observed in TH-67 has historically been relatively low, in the 300 to 600 umhos/cm range over the period of record with seasonal fluctuations corresponding to the wet and dry seasons. However, during the February 2016 sampling event, the specific conductivity exhibited a value of 1,780 umhos/cm, which represents a significant increase from the August 2015 results. Additionally, TDS and chloride both exhibited elevated levels well above their respective drinking water

standards of 500 mg/l and 250 mg/l, with values of 1,600 mg/l and 620 mg/l, respectively. Sodium exhibited a significant increase from historical values, but remained below the Primary Drinking Water Standard of 160 mg/l, at a concentration of 120 mg/l.

Based on our review of these results, it was determined that a re-sampling of TH-67 was warranted to confirm the changes in water quality and initiate our investigation into the potential source of the impacts.

On April 5, 2016, the County re-sampled monitoring well TH-67 to verify the water quality changes observed in the February sampling data set. The water quality results from the re-sampling exhibited an additional increase in specific conductivity with a recorded stabilized value of 3932 uhmos/cm. The TDS, chloride, and sodium concentrations also continued to be observed above their respective standards with TDS at 2,400 mg/l, chloride at 1,100 mg/l, and sodium at 440 mg/l, respectively. Based on the rapid rate of these water quality changes observed in TH-67 and the signature of the water quality observed, it was concluded that the source of the impacts was leachate within the landfill. The most likely overtopped the berm in the Phase II in the vicinity of the affected monitoring well.

After thorough discussions with FDEP in April 2016, it was mutually agreed upon that a number of monitoring wells would be sampled as part of a supplemental investigation into the source and horizontal extent of the water quality impacts in TH-67. Additionally, monitoring well TH-71A, located near the northwest corner of Section 9 would also be evaluated at the same time as the groundwater evaluation monitoring east of Phase II. Although the data set from TH-71A was included in this evaluation, it is not included as part of the Consent Agreement. Therefore, the County shall sample and report the data from TH-71A as part of the semi-annual sampling conducted in accordance with the groundwater monitoring plan within the operations permit.

On May 16, 2016, surficial aquifer groundwater monitoring wells TH-20B, TH-38B, TH-66A, and TH-67 were sampled for parameters listed in Chapter 62-701.510 (5)(b), F.A.C. Monitoring well TH-67 continued to exhibit elevated conductivity at 3,973 umhos/cm which indicated a continued presence of the observed groundwater impacts. Additionally, TDS was observed at 2,200 mg/l, chloride at 910 mg/l, and sodium at 360 mg/l, respectively. The remaining three (3) surficial aquifer monitoring wells exhibited no unusual changes in conductivity, TDS, chloride, and sodium with each of the wells exhibiting water quality within the applicable water quality standards.

The permit required semi-annual sampling of the Southeast County Landfill was conducted from August 8-11, 2016, and representative samples were collected from TH-66A and TH-67. TH-67 exhibited a conductivity value of 1864 uhmos/cm, a TDS at 980 mg/l, chloride at 400 mg/l, and sodium at 190 mg/l. The observed reductions in concentrations were concluded to likely be the result of dilution of the groundwater from infiltration of storm water that

accumulates right around TH-67, which is topographically the lowest area in the southeast corner of the landfill.

The November 2016 supplemental sampling event included the collection of representative samples from TH-20B, TH-38B, TH-66A, TH-67, and the newly installed surficial aquifer monitoring well TH-79. The samples collected were analyzed for TDS, chloride, sodium and ammonia. Each of the groundwater samples collected were analyzed by our contract laboratory, Advanced Environmental Laboratories, Inc. (AEL). The following paragraphs provide a brief discussion of the parameter-specific water quality observations in the monitoring wells sampled.

Water Quality - Surficial Aquifer Monitoring Wells

pH

Each of the five (5) surficial aquifer monitoring wells continue to exhibit pH values below the Secondary Drinking Water Standard (SDWS) acceptable range of 6.5 to 8.5 pH units. The pH values in the surficial aquifer across the SCLF have historically been observed below the acceptable range. Background water quality recorded prior to construction and operation of the landfill established these pH values within the surficial aquifer at and around the landfill. The pH values during this monitoring event range from 4.73 to 6.21 pH units, and the data remains consistent with the historical data set and background water quality.

Conductivity

The conductivity observed within the surficial aquifer at these sampling locations ranged from 61 to 2,740 umhos/cm, with elevated values of 2166 and 2740 umhos/cm recorded at TH-67 and TH-79, respectively.

Total Dissolved Solids (TDS)

TDS values from these five monitoring wells ranged from 45 to 1,500 mg/l. Surficial aquifer monitoring wells, TH-67 and TH-79, exhibited elevated TDS with values of 1,400 and 1,500 mg/l, respectively. Both continue to exceed the SDWS of 500 mg/l.

Chloride

Chloride values observed in the five wells ranged from 4.2i to 600 mg/l. TH-67 and TH-79 exhibited concentrations of 600 and 500 mg/l, respectively, which continues to exceed the SDWS.

Sodium

Sodium values range from 3 to 140 mg/l, and surficial aquifer monitoring wells TH-67 and TH-79 exhibited concentrations of sodium at 49 and 140 mg/l, which were both below the Primary Drinking Water Standard (PDWS) of 160 mg/l.

Groundwater Elevation and Flow

Groundwater elevations were not recorded prior to sampling the five (5) surficial aquifer groundwater monitoring wells. Elevation data was collected from wells TH-66A, TH-67, and TH-38B on November 29, 2016. The County utilized this data and prepared a representative surficial aquifer groundwater elevation and contour diagram from the area. The County did not utilize elevation data from monitoring well TH-20B and TH-79 as these wells were sampled on the following day. Future sampling events conducted as part of this evaluation will include collection of water levels from all the monitoring wells sampled prior to beginning the collection of groundwater samples.

A groundwater flow diagram for this sampling event was prepared to evaluate the general direction of flow at and around the affected area. The direction of flow in the surficial aquifer appears to be generally to the east-northeast, which is relatively consistent with the historical evaluations of flow within this area at the Southeast County Landfill. It should be noted that the groundwater elevations and the direction of flow in this area are affected by the infiltration of storm water in the topographically low area surrounding TH-67, the close proximity of Mine Cut 1, and the fluctuations in surface water elevations in Mine Cut 1.

Conclusions

The water quality observed in surficial aquifer monitoring well TH-67 and TH-79 along the east side of Phase II indicates impacts from what appears to be leachate originating from the landfill. Concentrations of pH, chloride and TDS exceeding their respective drinking water standards continued to be observed during this sampling event. The County continues the ongoing evaluation of these impacts, and implementation of corrective actions to address the levels of leachate within the landfill footprint. The area of impacted groundwater appears to have been delineated by the installation of additional monitoring wells and geophysical investigations.

Enclosed for your review please find a detailed site location map, the data summary tables of the detections observed in the groundwater monitoring wells, groundwater elevation data summary table, a surficial aquifer groundwater elevation and contour diagram, historical data tables of the detections, and the complete laboratory analytical data report from AEL.

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) 663-3221.

Respectfully submitted,

7/25/17

Michael D. Townsel
Senior Hydrologist
Environmental Services
Public Utilities Department

7/25/2017

DAVID S. ADAMS LICENSE NO 1827 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

David S. Adams, P.G.
Environmental Manager
Environmental Services
Public Utilities Department

DSA/mdt
j:\operations\environmental\solid waste\enviro\Southeast\TH-67 Evaluation\Reports\SELF Eval Report 11-16.pdf

Enclosures

xc: Kim Byer, Director, Solid Waste Management Division
Larry Ruiz, Landfill Manager, Solid Waste Management Division
Jeffry Greenwell, GMIII, Public Utilities, Environmental Services Section
Joe O'Neill, Professional Engineer II, Solid Waste Management Division
Ernest Ely, Manager, WMI, Southeast County Landfill
Clark Moore, Florida Department of Environmental Protection
Andy Schipfer, HC Environmental Protection Commission
Bruce Clark, SCS Engineers
Bob Curtis, SCS Engineers, Inc.

SOUTHEAST COUNTY LANDFILL
SURFICIAL AQUIFER GROUNDWATER CONTOUR MAP
NOVEMBER 2016

2016 AERIAL PHOTO

Legend

Exisiting Monitoring Wells

Hillsborough County Florida
EST. 1834
SM

Southeast County Landfill
Supplemental Site Assessment Data
November 29-30, 2016

General Parameters Detected	Surficial Aquifer Wells					MCL Standard
	TH-20B	TH-38B	TH-66A	TH-67	TH-79	
well type	Background	Background	Detection	Detection	Detection	
conductivity (umhos/cm) (field)	332	61	512	2166	2740	NS
dissolved oxygen (mg/l) (field)	0.27	0.76	0.33	3.04	0.25	NS
ORP (mV)	-31.2	-22.9	-3	-99.5	1.4	NS
temperature (°C) (field)	25.47	25.37	25.44	25.23	24.03	NS
turbidity (NTU) (field)	4.14	16	0.49	5.29	27.6	NS
pH (SU) (field)	**5.43**	**4.73**	**5.82**	**6.21**	**6.09**	(6.5 - 8.5)**
ammonia nitrogen (mg/l as N)	1.5	0.66	0.44	11	30	NS
chloride (mg/l)	63	4.2i	92	**600**	**500**	250**
total dissolved solids (mg/l)	200	45	320	**1400**	**1500**	500**
Metals Detected (mg/l)						**MCL Standard**
sodium	15	3	21	49	140	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.

***=Groundwater Cleanup Target Levels as per Chapter 62-777, FAC

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.

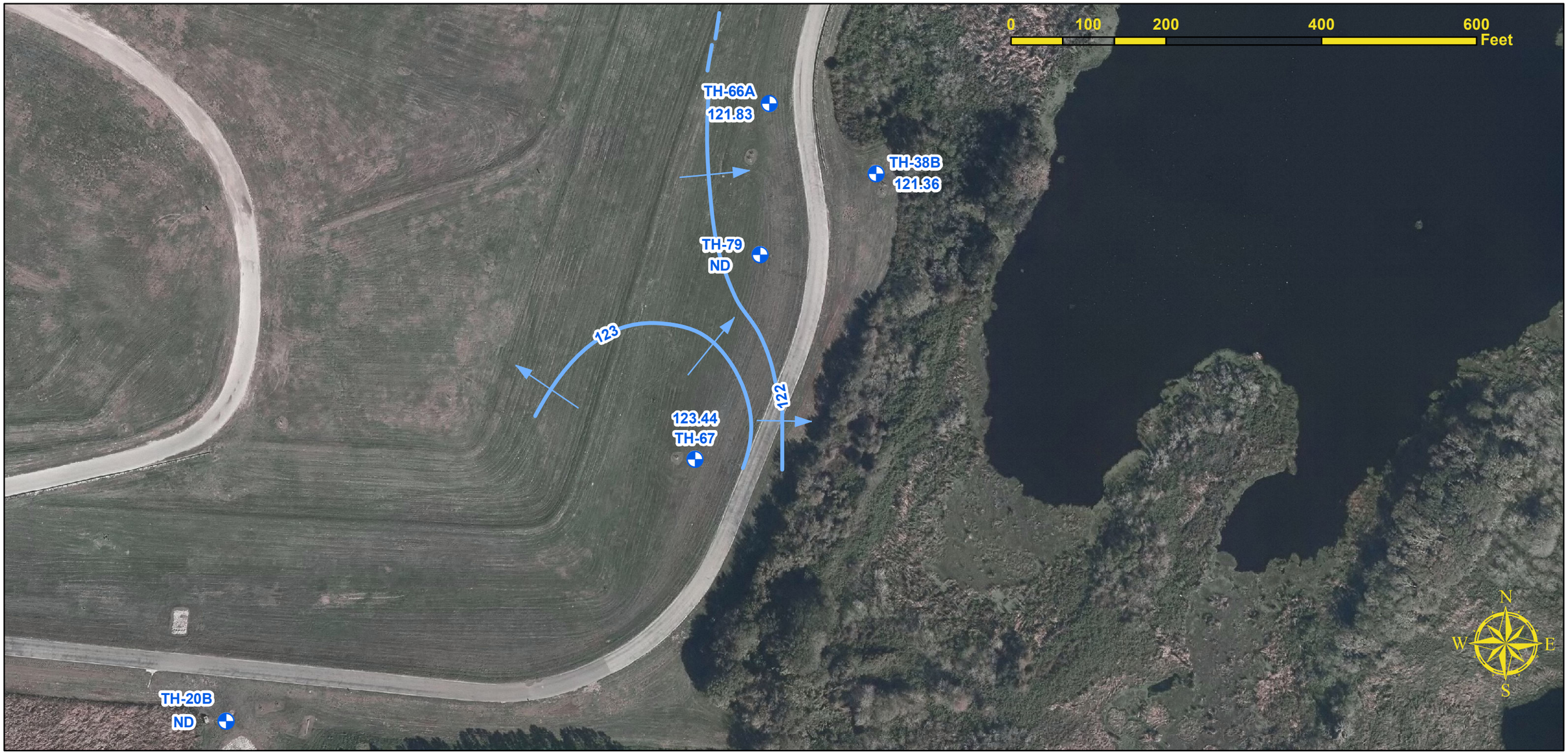
ug/l=micrograms per liter

mg/l=milligrams per liter

mV = millivolts

Southeast County Landfill
Surficial Aquifer Groundwater Elevations
November 29, 2016

Measuring Point I.D.	T.O.C. Elevations (NGVD)	W.L. B.T.O.C.	W.L. (NGVD)
TH-20B	132.57	DNU	DNU
TH-38B	131.81	10.45	121.36
TH-66A	130.66	8.83	121.83
TH-67	129.51	6.07	123.44
TH-79	129.60	DNU	DNU
NGVD	**= National Geodetic Vertical Datum**		
T.O.C.	**= Top of Casing**		
B.T.O.C.	**= Below Top of Casing**		
DNU	**= Did Not Utilize (Water level collected the following day)**		
W.L.	**= Water Level**		



SOUTHEAST COUNTY LANDFILL
SURFICIAL AQUIFER GROUNDWATER CONTOUR MAP
NOVEMBER 2016

2016 AERIAL PHOTO

Legend

Exisiting Monitoring Wells

Hillsborough County Florida
EST. 1834
SM

Advanced Environmental Laboratories, Inc.

Advanced Environmental Laboratories, Inc
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

December 21, 2016

David Adams
Hillsborough Co Public Utilites
332 North Falkenburg Rd
Tampa, FL 33619

RE: Workorder: T1618995 SELF Supplemental Site Assm

Dear David Adams:

Enclosed are the analytical results for sample(s) received by the laboratory between Tuesday, November 29, 2016 and Wednesday, November 30, 2016. 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 Brooks - Project Manager
HBrooks@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, FL32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

SAMPLE SUMMARY

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID	Sample ID	Matrix	Date Collected	Date Received
T1618995001	Field Blank	Water	11/29/2016 09:55	11/29/2016 12:55
T1618995002	TH-66A	Water	11/29/2016 10:15	11/29/2016 12:55
T1618995003	TH-67	Water	11/29/2016 11:21	11/29/2016 12:55
T1618995004	TH-38B	Water	11/29/2016 12:04	11/29/2016 12:55
T1618995005	TH-79	Water	11/30/2016 13:08	11/30/2016 14:17
T1618995006	TH-20B	Water	11/30/2016 12:14	11/30/2016 14:17

Advanced Environmental Laboratories, Inc.
9610 Princess Palm Ave Tampa, FL 33619
Payments: P.O. Box 551580 Jacksonville, FL32255-1580
Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID: **T1618995001** Date Received: 11/29/16 12:55 Matrix: Water

Sample ID: **Field Blank** Date Collected: 11/29/16 09:55

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	**0.042**	**U**	**mg/L**	**1**	0.20	0.042	12/2/2016 14:40	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.02**	**U**	**mg/L**	**1**	0.10	0.02	12/2/2016 11:20	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**12**	**U**	**mg/L**	**1.25**	12	12	12/1/2016 15:30	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	12/8/2016 15:57	T

CERTIFICATE OF ANALYSIS

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Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID: **T1618995002** Date Received: 11/29/16 12:55 Matrix: Water

Sample ID: **TH-66A** Date Collected: 11/29/16 10:15

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	**512**		**umhos/cm**	**1**			11/29/2016 10:15	
Dissolved Oxygen	**0.33**		**mg/L**	**1**			11/29/2016 10:15	
ORP-2580BW	**-3**		**mV**	**1**			11/29/2016 10:15	
Temperature	**25.44**		**°C**	**1**			11/29/2016 10:15	
Turbidity	**0.49**		**NTU**	**1**			11/29/2016 10:15	
pH	**5.82**		**SU**	**1**			11/29/2016 10:15	
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**21**		**mg/L**	**1**	0.20	0.042	12/2/2016 14:44	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.44**		**mg/L**	**1**	0.10	0.02	12/2/2016 11:20	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**320**		**mg/L**	**1.25**	12	12	12/1/2016 15:30	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**92**		**mg/L**	**1**	5.0	2.6	12/8/2016 15:57	T

CERTIFICATE OF ANALYSIS

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ANALYTICAL RESULTS

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID: **T1618995003** Date Received: 11/29/16 12:55 Matrix: Water

Sample ID: **TH-67** Date Collected: 11/29/16 11:21

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	**2166**		**umhos/cm**	**1**			11/29/2016 11:21	
Dissolved Oxygen	**3.04**		**mg/L**	**1**			11/29/2016 11:21	
ORP-2580BW	**-99.5**		**mV**	**1**			11/29/2016 11:21	
Temperature	**25.23**		**°C**	**1**			11/29/2016 11:21	
Turbidity	**5.29**		**NTU**	**1**			11/29/2016 11:21	
pH	**6.21**		**SU**	**1**			11/29/2016 11:21	
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**49**		**mg/L**	**1**	0.20	0.042	12/5/2016 14:43	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**11**		**mg/L**	**15**	1.50	0.37	12/2/2016 11:20	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**1400**		**mg/L**	**1.25**	12	12	12/1/2016 15:30	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**600**		**mg/L**	**25**	120	64	12/8/2016 16:39	T

CERTIFICATE OF ANALYSIS

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ANALYTICAL RESULTS

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID: **T1618995004** Date Received: 11/29/16 12:55 Matrix: Water

Sample ID: **TH-38B** Date Collected: 11/29/16 12:04

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	**61**		**umhos/cm**	**1**			11/29/2016 12:04	
Dissolved Oxygen	**0.76**		**mg/L**	**1**			11/29/2016 12:04	
ORP-2580BW	**-22.9**		**mV**	**1**			11/29/2016 12:04	
Temperature	**25.37**		**°C**	**1**			11/29/2016 12:04	
Turbidity	**16**		**NTU**	**1**			11/29/2016 12:04	
pH	**4.73**		**SU**	**1**			11/29/2016 12:04	
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**3.0**		**mg/L**	**1**	0.20	0.042	12/2/2016 14:51	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**0.66**		**mg/L**	**1**	0.10	0.02	12/2/2016 11:20	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**45**		**mg/L**	**1.25**	12	12	12/1/2016 15:30	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**4.2**	**I**	**mg/L**	**1**	5.0	2.6	12/8/2016 15:59	T

CERTIFICATE OF ANALYSIS

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ANALYTICAL RESULTS

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID: **T1618995005** Date Received: 11/30/16 14:17 Matrix: Water

Sample ID: **TH-79** Date Collected: 11/30/16 13:08

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	**2740**		**umhos/cm**	**1**			11/30/2016 13:08	
Dissolved Oxygen	**0.25**		**mg/L**	**1**			11/30/2016 13:08	
ORP-2580BW	**1.4**		**mV**	**1**			11/30/2016 13:08	
Temperature	**24.03**		**°C**	**1**			11/30/2016 13:08	
Turbidity	**27.6**		**NTU**	**1**			11/30/2016 13:08	
pH	**6.09**		**SU**	**1**			11/30/2016 13:08	
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**140**		**mg/L**	**2**	0.40	0.084	12/7/2016 12:47	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**30**		**mg/L**	**10**	1.00	0.25	12/2/2016 11:20	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**1500**		**mg/L**	**1.25**	12	12	12/2/2016 17:00	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**500**		**mg/L**	**5**	25	13	12/8/2016 16:40	T

CERTIFICATE OF ANALYSIS

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Phone: (813)630-9616
Fax: (813)630-4327

ANALYTICAL RESULTS

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID: **T1618995006** Date Received: 11/30/16 14:17 Matrix: Water

Sample ID: **TH-20B** Date Collected: 11/30/16 12:14

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	**332**		**umhos/cm**	**1**			11/30/2016 12:14	
Dissolved Oxygen	**0.27**		**mg/L**	**1**			11/30/2016 12:14	
ORP-2580BW	**-31.2**		**mV**	**1**			11/30/2016 12:14	
Temperature	**25.47**		**°C**	**1**			11/30/2016 12:14	
Turbidity	**4.14**		**NTU**	**1**			11/30/2016 12:14	
pH	**5.43**		**SU**	**1**			11/30/2016 12:14	
METALS								
Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A Analytical Method: SW-846 6010							
Sodium	**15**		**mg/L**	**1**	0.20	0.042	12/7/2016 02:09	T
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	**1.5**		**mg/L**	**1**	0.10	0.02	12/2/2016 11:20	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540 C							
Total Dissolved Solids	**200**		**mg/L**	**1.25**	12	12	12/2/2016 17:00	T
Analysis Desc: Chlorides,SM4500-Cl-E,Water	Analytical Method: SM 4500-Cl-E							
Chloride	**63**		**mg/L**	**1**	5.0	2.6	12/8/2016 16:00	T

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ANALYTICAL RESULTS QUALIFIERS

Workorder: T1618995 SELF Supplemental Site Assm

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.

LAB QUALIFIERS

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

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QUALITY CONTROL DATA

Workorder: T1618995 SELF Supplemental Site Assm

QC Batch: DGMt/2178 Analysis Method: SW-846 6010
QC Batch Method: SW-846 3010A Prepared: 12/01/2016 10:00
Associated Lab Samples: T1618995001, T1618995002, T1618995003, T1618995004

METHOD BLANK: 2210341

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
METALS				
Sodium	mg/L	0.042	0.042	U

LABORATORY CONTROL SAMPLE: 2210342

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
METALS						
Sodium	mg/L	50	51	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2210343 2210344 Original: T1619032001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
METALS											
Sodium	mg/L	76	51	120	130	96	98	75-125	1	20	

QC Batch: WCAt/5983 Analysis Method: SM 2540 C
QC Batch Method: SM 2540 C Prepared:
Associated Lab Samples: T1618995001, T1618995002, T1618995003, T1618995004

METHOD BLANK: 2210810

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

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QUALITY CONTROL DATA

Workorder: T1618995 SELF Supplemental Site Assm

LABORATORY CONTROL SAMPLE: 2210811

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L	660	640	97	75-125	

SAMPLE DUPLICATE: 2210812 Original: T1618945001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L	26180	26000	1	10	

SAMPLE DUPLICATE: 2210813 Original: T1619039002

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L		190	7	10	

QC Batch: WCAt/5992 Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1 Prepared:

Associated Lab Samples: T1618995001, T1618995002, T1618995003, T1618995004, T1618995005, T1618995006

METHOD BLANK: 2211533

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
WET CHEMISTRY				
Ammonia (N)	mg/L	0.02	0.02	U

LABORATORY CONTROL SAMPLE: 2211534

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Ammonia (N)	mg/L	0.5	0.52	104	90-110	

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QUALITY CONTROL DATA

Workorder: T1618995 SELF Supplemental Site Assm

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2211537 2211538 Original: T1618910002

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	1.0	105	105	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2211539 2211540 Original: T1619085002

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	1.1	1.0	106	103	90-110	2	10	

QC Batch: WCAt/6009 Analysis Method: SM 2540 C

QC Batch Method: SM 2540 C Prepared:

Associated Lab Samples: T1618995005, T1618995006

METHOD BLANK: 2212203

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

LABORATORY CONTROL SAMPLE: 2212204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L	660	620	94	75-125	

SAMPLE DUPLICATE: 2212205 Original: T1619115001

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Qualifiers
WET CHEMISTRY						
Total Dissolved Solids	mg/L	70	65	7	10	

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QUALITY CONTROL DATA

Workorder: T1618995 SELF Supplemental Site Assm

QC Batch: DGMt/2202 Analysis Method: SW-846 6010
QC Batch Method: SW-846 3010A Prepared: 12/06/2016 10:00
Associated Lab Samples: T1618995005, T1618995006

METHOD BLANK: 2214718

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
METALS				
Sodium	mg/L	0.042	0.042	U

LABORATORY CONTROL SAMPLE: 2214719

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
METALS						
Sodium	mg/L	50	48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2214720 2214721 Original: S1601754001

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
METALS											
Sodium	mg/L	4.6	50	54	53	98	96	75-125	1	20	

QC Batch: WCAt/6102 Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E Prepared:
Associated Lab Samples: T1618995001, T1618995002, T1618995003, T1618995004, T1618995005, T1618995006

METHOD BLANK: 2217242

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

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QUALITY CONTROL DATA

Workorder: T1618995 SELF Supplemental Site Assm

LABORATORY CONTROL SAMPLE: 2217243

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
WET CHEMISTRY						
Chloride	mg/L	50	50	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2217244 2217245 Original: T1619114002

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	1.7	50	52	55	103	110	90-110	6	10	

QUALITY CONTROL DATA QUALIFIERS

Workorder: T1618995 SELF Supplemental Site Assm

QUALITY CONTROL 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.

[]

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
T1618995001	Field Blank	SW-846 3010A	DGMt/2178	SW-846 6010	ICPt/1720
T1618995002	TH-66A	SW-846 3010A	DGMt/2178	SW-846 6010	ICPt/1720
T1618995003	TH-67	SW-846 3010A	DGMt/2178	SW-846 6010	ICPt/1720
T1618995004	TH-38B	SW-846 3010A	DGMt/2178	SW-846 6010	ICPt/1720
T1618995001	Field Blank			SM 2540 C	WCAt/5983
T1618995002	TH-66A			SM 2540 C	WCAt/5983
T1618995003	TH-67			SM 2540 C	WCAt/5983
T1618995004	TH-38B			SM 2540 C	WCAt/5983
T1618995001	Field Blank			EPA 350.1	WCAt/5992
T1618995002	TH-66A			EPA 350.1	WCAt/5992
T1618995003	TH-67			EPA 350.1	WCAt/5992
T1618995004	TH-38B			EPA 350.1	WCAt/5992
T1618995005	TH-79			EPA 350.1	WCAt/5992
T1618995006	TH-20B			EPA 350.1	WCAt/5992
T1618995005	TH-79			SM 2540 C	WCAt/6009
T1618995006	TH-20B			SM 2540 C	WCAt/6009
T1618995005	TH-79	SW-846 3010A	DGMt/2202	SW-846 6010	ICPt/1733
T1618995006	TH-20B	SW-846 3010A	DGMt/2202	SW-846 6010	ICPt/1733
T1618995001	Field Blank			SM 4500-Cl-E	WCAt/6102
T1618995002	TH-66A			SM 4500-Cl-E	WCAt/6102
T1618995003	TH-67			SM 4500-Cl-E	WCAt/6102
T1618995004	TH-38B			SM 4500-Cl-E	WCAt/6102
T1618995005	TH-79			SM 4500-Cl-E	WCAt/6102
T1618995006	TH-20B			SM 4500-Cl-E	WCAt/6102
T1618995002	TH-66A	Field Measurements	FLDt/	Field Measurements	FLDt/
T1618995003	TH-67	Field Measurements	FLDt/	Field Measurements	FLDt/
T1618995004	TH-38B	Field Measurements	FLDt/	Field Measurements	FLDt/

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: T1618995 SELF Supplemental Site Assm

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
T1618995005	TH-79	Field Measurements	FLDt/	Field Measurements	FLDt/
T1618995006	TH-20B	Field Measurements	FLDt/	Field Measurements	FLDt/

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T/61 899
T/H 8980

Client Name: Hills. Co. Public Utilities	Project Name: SELF Supplemental Site Assessment	BOTTLE SIZE & TYPE	
Address: 332 North Falkenburg Rd.	P.O. Number/Project Number: N/A	ANALYSIS REQUIRED	40 CFR Part 258 Appendix I (2P)
Tampa, Florida 33619	Project Location: Southeast County Landfill		Fe, Hg, Na
Phone: (813) 663-3222	REMARKS/SPECIAL INSTRUCTIONS:		Total Ammonia-N
FAX: (813) 274-6801			Nitrate (2P)
Contact: Michael Townsel			Chloride
Sampled By: Z. PATTERSON			TDS
Turn Around Time: ☒ STANDARD ☐ RUSH			Na
Page: 1 of: 1			

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. COUNT	PRESERVATION	LABORATORY I.D. NUMBER
	FIELD BLANK	G	11/29/16	9:55	DI			GW1
	TH-66A	↓	↓	10:15	GW			GW2
	TH-67	↓	↓	11:21	↓			GW3
	TH-3813	↓	↓	12:04	↓			GW4

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 4.1 (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		11/29/16	1258		11/29/16	1258
2						
3						
4						

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

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

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T/618995

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: Z. PATTERSON	
Turn Around Time: ☒ STANDARD ☐ RUSH	
Page: 1 of: 1	

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. COUNT	PRESERVATION	BOTTLE SIZE & TYPE	ANALYSIS REQUIRED: 40 CFR Part 258 Appendix I (2p)	Fe, Hg, Na (2p)	Total Ammonia-N	Nitrate (2p)	Chloride	TDS	NG				LABORATORY I.D. NUMBER
	TH-79	G	11/30/16	13:08	GW	3					X		X	X	X				005
	TH-20B	↓	↓	12:14	↓	↓					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 _____ (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	[signature]	11/30/16	1417	[signature]	11/30/16	1417
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: SELF SUP	SITE LOCATION:	
WELL NO: FIELD BLANK	SAMPLE ID: FIELD BLANK	DATE: 11/29/16

PURGING DATA

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

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

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: Z. PATTERSON	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 9:35	SAMPLING ENDED AT: 9:59
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 ~~Dedicated~~ ~~TUBING~~ Y N ~~Dedicated~~		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)

SEE COC FOR 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)

Revision Date: February 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME:	SELF SUP.	SITE LOCATION:	
WELL NO:	TH-C6A	SAMPLE ID: TH-C6A	DATE: 11/29/16

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	1/2	5.37 feet to 15.37 feet	8.83	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 – 8.83 feet) X .16 gallons/foot = 1.05 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):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
14.37	14.37	9:58	10:15	1.70

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)
10:09	1.10	1.10	.10	10.95	5.83	25.34	512	.42	1.10	NONE	NONE
10:12	.30	1.40	.10	11.00	5.82	25.39	512	.33	.68	↓	↓
10:15	.30	1.70	.10	11.01	5.82	25.44	512	.33	.49	↓	↓

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:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
Z. PATTERSON		10:15	10:19

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

FIELD DECONTAMINATION: PUMP Y N (Dedicated) TUBING Y N (Dedicated) 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)

SEE COC FOR ANALYSIS 10:09 (8.4) 10:12 (1.6) 10:15 (-3.0)

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)

Revision Date: February 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME:	SELF SUP	SITE LOCATION:	
WELL NO:	TH-67	SAMPLE ID: TH-67	DATE: 11/29/16

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	1/2	5.25 feet to 15.25 feet	6.07	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 – 6.07 feet) X .16 gallons/foot = 1.50 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):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
14.25	14.25	10:28	11:21	5.30

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)
10:43	1.50	1.50	.10	10.89	6.19	24.72	2712	2.28	7.17	NONE	NONE
10:47	.40	1.90	.10	10.90	6.18	24.70	2679	2.31	6.86		
10:51	.40	2.30	.10	10.90	6.19	24.70	2550	2.38	6.04		
10:58	.70	3.00	.10	10.93	6.21	24.97	2233	2.80	6.04		
11:13	1.50	4.50	.10	10.95	6.21	25.15	2126	3.03	5.21		
11:17	.40	4.90	.10	11.11	6.21	25.20	2136	3.09	5.49		
11:21	.40	5.30	.10	11:20	6.21	25.23	2166	3.04	5.29		

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:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
Z. PATTERSON		11:21	11:25

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

FIELD DECONTAMINATION: PUMP Y N (Dedicated) TUBING Y N (Dedicated) 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)
							11:17 (-98.4)	11:21	(-99.5)
							10:58 (-86.9)	~~10~~ 11:13	(-96.3)
SEE COC FOR ANALYSIS							10:43 (-62.5)	10:47 (-65.7)	10:51 (-72.7)

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)

Revision Date: February 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME:	SELF SUP	SITE LOCATION:	
WELL NO:	TH-3813	SAMPLE ID:	TH-3813
DATE:	11/29/16		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	1/2	5.42 feet to 15.42 feet	10.45	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 − 10.45 feet) X .16 gallons/foot = .80 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):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
14.42	14.42	11:52	12:04	1.20

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)
12:00	.80	.80	.10	11.70	4.80	25.43	62	.90	19.9	NONE	NONE
12:02	.20	1.00	.10	11.70	4.75	25.40	61	1.00	19.7	↓	↓
12:04	.20	1.20	.10	11.70	4.73	25.37	61	.76	16.0	↓	↓

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:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
Z. PATTERSON		12:04	12:08

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

FIELD DECONTAMINATION: PUMP Y N (Dedicated) TUBING Y N (Dedicated) 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)

SEE COC FOR ANALYSIS 12:00 (-22.4) 12:02 (-21.8) 12:04 (-22.9)

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)

Revision Date: February 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME:	SELF SUP.	SITE LOCATION:	
WELL NO:	TH-79	SAMPLE ID: TH-79	DATE: 11/30/16

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	1/2	7.80 feet to 17.80 feet	7.84	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 – 7.84 feet) X .16 gallons/foot = 1.60 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):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
16.8	16.8	12:28	13:08	5.00

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 (mS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:36	1.60	1.60	.20	9.06	6.12	23.81	2780	.61	73.3	cloudy	NONE
12:38	.40	2.00	.20	9.06	6.12	23.85	2789	.54	83.5		
12:40	.40	2.40	.20	9.06	6.12	2387	2792	.53	68.1		
12:44	.80	3.20	.20	9.07	6.11	23.88	2786	.36	62.6		
12:52	1.60 .80 (2)	4.80	.20	9.09	6.09	23.89	2761	.26	50.6		
13:00	1.60	6.40	.20	9.09	6.09	23.97	2746	.18	30.6		
13:08	1.60	8.00	.20	9.09	6.09	24.03	2740	.25	27.6		

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:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
Z. PATTERSON		13:08	13:12

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

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

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
							13:08	1.40	
					12:44 (-2.1)	12:52 (-0.2)		13:00	.08
SEE COC FOR ANALYSIS					12:36 (-4.1)	12:38 (-3.7)	12:40 (-3.2)		

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)

Revision Date: February 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME:	SELF SUP	SITE LOCATION:	
WELL NO:	TH-203	SAMPLE ID:	TH-203
DATE:	11/30/16		

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH:	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER:
2	1/2	12.8 feet to 22.8 feet	10.06	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 – 10.06 feet) X .16 gallons/foot = 2.041 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):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
21.8	21.8	11:17	12:14	5.70

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)
11:38	2.10	2.10	.10	10.60	5.39	26.65	266	.68	10.20	NONE	NONE
11:44	.60	2.70	.10	10.60	5.42	26.01	281	.56	9.58		
11:50	.60	3.30	.10	10.60	5.42	25.85	300	.46	8.93		
11:56	.60	3.90	.10	10.60	5.42	25.73	313	.46	6.59		
12:02	.60	4.50	.10	10.60	5.43	25.62	324	.36	5.64		
12:08	.60	5.10	.10	10.60	5.43	25.47	330	.30	4.62		
12:14	.60	5.70	.10	10.60	5.43	25.47	332	.27	4.14		

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:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
Z. PATTERSON		12:14	12:18

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

FIELD DECONTAMINATION: PUMP Y N (Dedicated) TUBING Y N (Dedicated) 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			
							12:14 (– 31.2)		
					11:56 (13.2)		12:02 (-5.6)		
SEE COC FOR ANALYSIS							11:38 (77.1) 11:44 (60.9) 11:50 (33.6)		

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)

Revision Date: February 2009