



October 20, 2017

John E. Manning
District One

Cecil L. Pendergrass
District Two

Larry Kiker
District Three

Brian Hamman
District Four

Frank Mann
District Five

Roger Desjarlais
County Manager

Richard Wm. Wesch
County Attorney

Donna Marie Collins
Hearing Examiner

Ms. Renée J. Kwiat, CHMM
Environmental Consultant
Florida Department of Environmental Protection, South District
P.O. Box 2549
Fort Myers, FL 33902-2549

**Re: Lee County Resource Recovery Facility, PA90-30H
Construction & Demolition Debris Recycling Facility
WACS ID No. 93715
2nd Semi-Annual 2017 Water Quality Monitoring Report**

Dear Ms. Kwiat:

Enclosed please find the Second Semi-Annual 2017 Water Quality Monitoring (WQM) Report for the Lee County Resource Recovery Facility (RRF) and the Construction & Demolition Debris Recycling Facility (CDDRF). Flowers Chemical Laboratories, Inc. (FCL) sampled the RRF's six (6) shallow monitoring wells, or WTE-1S, WTE-2S, WTE-3SR, WTE-4S, WTE-5S and WTE-6S, which include the CDDRF's three (3) monitoring wells or WTE-2S, WTE-3SR and WTE-4S, on August 21, 2017.

Sampling was performed in accordance with the Facility's Ground Water Monitoring Plan (GWMP) dated August 2010 and approved by the Department on October 19, 2010. The laboratory analytical results from this WQM event were compared to the Department's water quality standards or maximum contaminant levels (MCL) established in Chapter 62-550, F.A.C., and are summarized below.

Ground Water Monitoring Data Discussion

Ground water from all six (6) shallow monitoring wells sampled exceeded the secondary drinking water standard for Iron which is 0.3 milligrams per liter (mg/L) as established by Rule 62-550, F.A.C. Ground water from three (3) of the six (6) shallow wells sampled, i.e., WTE-2S, WTE-4S and WTE-5S, exceeded the secondary drinking water standard for Total Dissolved Solids (TDS) which is 500 mg/L as established by Rule 62-550, F.A.C. The concentrations of Iron and TDS in the wells that exceeded the standards as noted above are reported in Table 1. Note that the Iron and TDS concentrations reported are consistent with background and historical monitoring results and the ground water quality in this region.

Table 1 –Results which Exceeded Standards in Chapter 62-550, F.A.C.

Parameter (units)	WTE-1S	WTE-2S	WTE-3SR	WTE-4S	WTE-5S	WTE-6S
Iron (mg/L)	3.99	3.95	3.23	1.33	3.64	1.65
TDS (mg/L)	BS	620	BS	508	706	BS

Water Quality Standards: Iron- 0.3 mg/L; TDS- 500 mg/L; BS-Below Standard

Electronic Data Files

As required, this WQM Report includes the field and laboratory ADaPT files which are provided as separate electronic files prepared in the Department specified format.

Ground Water Elevations

The ground water elevations at the six (6) shallow (water table aquifer) and six (6) deep (sandstone aquifer) monitoring wells are provided in Table 2 below. The elevations were determined in accordance with the DEP-SOP-001/01, and specifically, FS2200, Ground Water Sampling. The data used to determine the ground water elevations is provided in the Attachments to this WQM Report.

Table 2 – Ground Water Elevations (ft., NGVD) Measured August 21, 2017

WELL ID	Elevation (ft., NGVD)	WELL ID	Elevation (ft., NGVD)
WTE-1S	21.71	WTE-1D	14.49
WTE-2S	21.15	WTE-2D	19.92
WTE-3SR	20.12	WTE-3DR	19.04
WTE-4S	18.46	WTE-4D	17.59
WTE-5S	20.74	WTE-5D	19.51
WTE-6S	17.81	WTE-6D	17.04

Note: WTE-2S, WTE-3SR and WTE-4S comprise the monitoring well network for the CDDRF

Field Documentation and Report Certification

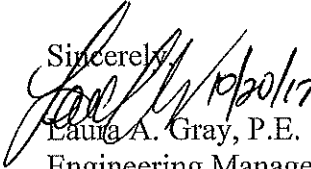
The attachments to this WQM Report include DEP Form #62-701.900(31), F.A.C., Water Quality Monitoring Certification, DEP Form FD 9000-24, Ground Water Sampling Log for each well sampled, field data sheets and chain of custody.

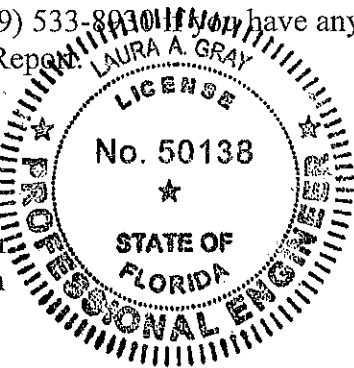
Ms. Renée Kwiat
October 20, 2017
Page 3 of 3

Recommendations/Conclusions

The monitoring results reported herein are consistent with the Department's water quality standards and/or background water quality for the RRF and the CDDRF; therefore, no additional water quality monitoring is recommended.

Please call me at (239) 533-8930 if you have any questions pertaining to this Water Quality Monitoring Report.

Sincerely,

Laura A. Gray, P.E.
Engineering Manager
Solid Waste Division



Attachments

Cc: Bureau of Solid and Hazardous Waste, FDEP
Siting Coordination Office, FDEP
Keith Howard, SWD
Rebecca Rodriguez, SWD
Mike Duff, Covanta
Tyler Huffman, Covanta
File II E107

LIST OF ATTACHMENTS

Attachment A - Ground Water Monitoring Report Certification,
DEP Form # 62-701.900(31)

Attachment B - Ground Water Contour Maps (Shallow and Sandstone Wells) and
Supporting Data

Attachment C - Ground Water Monitoring Well Inspection and Water Level
Measurement Form (Shallow and Sandstone Wells)

Attachment D – Sampling Documentation (Shallow Wells)

- Ground Water Sampling Logs, FD 9000-24
- Field Sheets
 - Calibration Sheet
 - Field Data Sheet
 - Chain of Custody

*Lee County Resource Recovery Facility, PA90-30H
Construction & Demolition Debris Recycling Facility
WACS ID No. 93715
Second Semi-Annual 2017 Water Quality Monitoring Report*

Attachment A-Ground Water Monitoring Report Certification,
DEP Form # 62-701.900(31)



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form #: 62-701.900(31), F.A.C.
Form Title: Water Quality Monitoring Certification
Effective Date: January 6, 2010
Incorporated in Rule 62-701.510(9), F.A.C.

WATER QUALITY MONITORING CERTIFICATION

PART I GENERAL INFORMATION

(1) Facility Name Lee County Solid Waste Resource Recovery Facility
 Address 10500 Buckingham Road
 City Fort Myers Zip 33905 County Lee
 Telephone Number (239) 533-8000

(2) WACS Facility ID 93715

(3) DEP Permit Number PA90-30H

(4) Authorized Representative's Name Keith Howard Title Director
 Address 10500 Buckingham Road
 City Fort Myers Zip 33907 County Lee
 Telephone Number (239) 533-8000
 Email address (if available) khoward@leegov.com

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submission of false information including the possibility of fine and imprisonment.

10/16/17
(Date)

[Signature]
(Owner or Authorized Representative's Signature)

PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization Flowers Chemical Laboratories, Inc.
 Analytical Lab NELAC / HRS Certification # E83018
 Lab Name Flowers Chemical Laboratories, Inc
 Address P.O. Box 150597, Altamonte Springs, FL 32715-0597
 Phone Number (407) 339-5984
 Email address (if available) _____

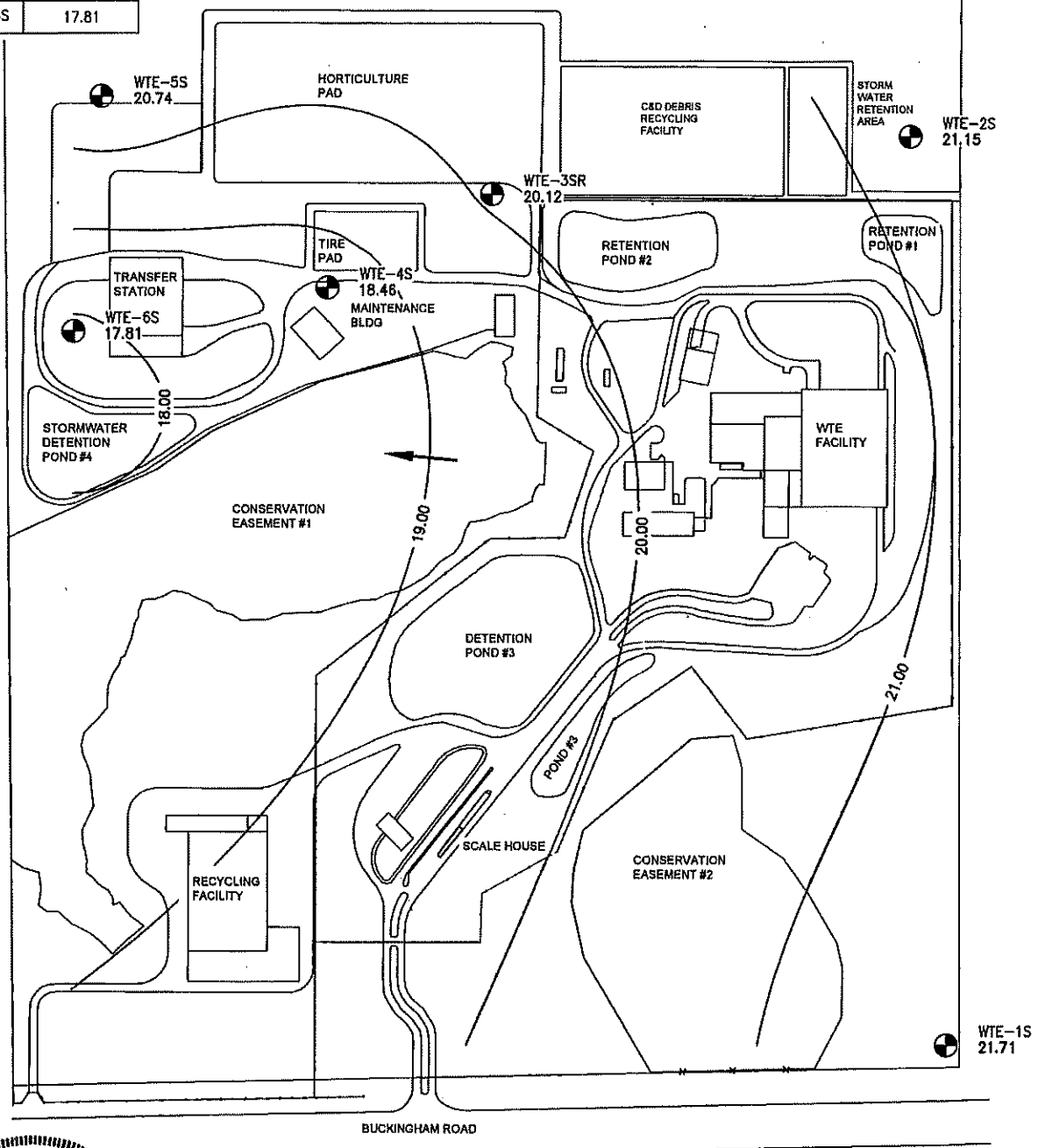
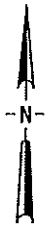
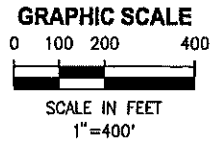
*Lee County Resource Recovery Facility, PA90-30H
Construction & Demolition Debris Recycling Facility
WACS ID No. 93715
Second Semi-Annual 2017 Water Quality Monitoring Report*

Attachment B –Ground Water Contour Maps (Shallow and Sandstone Wells) and Supporting Data

12345-005-01
 PLOTTED: 10/18/2017 04:00 PM PATRICK KARDISH

1752_SHALLOW.DWG
 2017.1752.LEE WTE_1752_SHALLOW.DWG
 2017.1752.LEE WTE_1752_SHALLOW.DWG
 10/16/2017 12:11 PM PHARDISH

WELL	GW ELEVATION
WTE-1S	21.71
WTE-2S	21.15
WTE-3SR	20.12
WTE-4S	18.46
WTE-5S	20.74
WTE-6S	17.81



LEE COUNTY WTE LANDFILL
 GROUNDWATER CONTOUR MAP
 OF THE SHALLOW SURFICIAL ZONE
 AUGUST 21, 2017

LEGEND

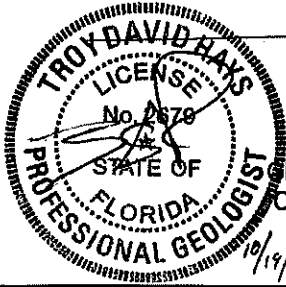
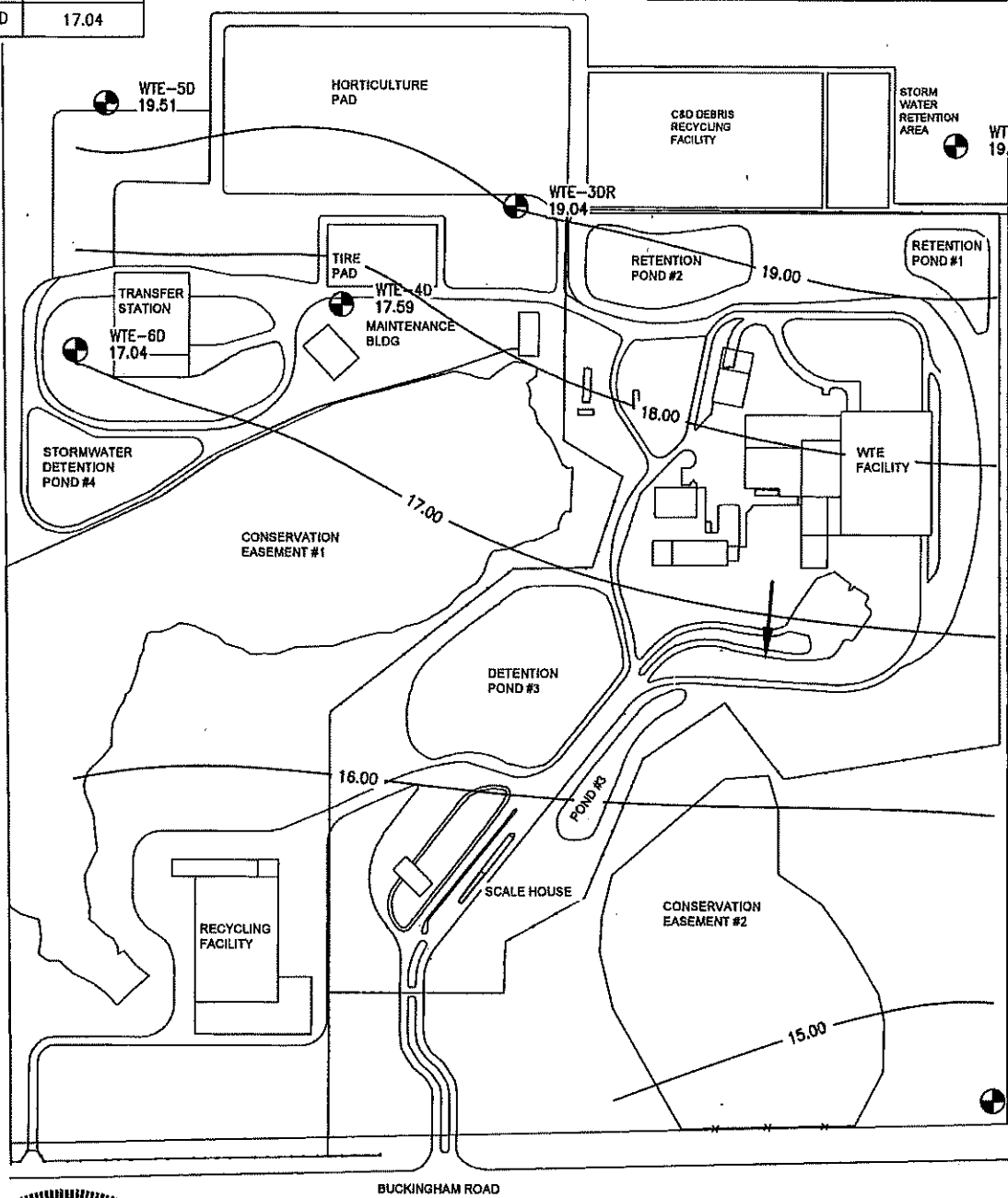
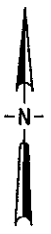
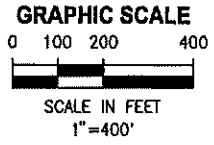
- WTE-1S 21.71 GROUNDWATER MONITORING WELL
- GW ELEVATION 21.71 GROUNDWATER ELEVATION
- 19.00 — GROUNDWATER CONTOUR AT 1.00 FOOT INTERVALS
- GROUNDWATER FLOW DIRECTION



12345-005-01
 PLOTTED: 10/16/2017 03:53 PM PATRICK KARDISH

SAVED: 10/16/2017 12:02 PM PKARDISH \\JEDCAD\GMA\JONES EDWARDS\LEE COUNTY\WTE PLANT\GWM 2017\1752\LEE WTE_1752_DEEP.DWG

WELL	GW ELEVATION
WTE-1D	14.49
WTE-2D	19.92
WTE-3DR	19.04
WTE-4D	17.59
WTE-5D	19.51
WTE-6D	17.04



LEE COUNTY WTE LANDFILL
 GROUNDWATER CONTOUR MAP
 OF THE DEEP SURFICIAL ZONE
 AUGUST 21, 2017

LEGEND

- WTE-2D 19.92 GROUNDWATER MONITORING WELL
- 15.00 GROUNDWATER CONTOUR AT 1.00 FOOT INTERVALS
- GROUNDWATER FLOW DIRECTION



**Lee County Resource Recovery Facility
Ground Water Elevations for Aug. 21, 2017**

Well ID	GW Elevation (ft, NGVD)	Well ID	GW Elevation (ft, NGVD)
WTE-1S	21.71	WTE-1D	14.49
WTE-2S	21.15	WTE-2D	19.92
WTE-3SR	20.12	WTE-3DR	19.04
WTE-4S	18.46	WTE-4D	17.59
WTE-5S	20.74	WTE-5D	19.51
WTE-6S	17.81	WTE-6D	17.04

All deep wells are 4 inch diameter and all shallow well are 2 inches diameter

Well No.	Elev. TOC, NGVD	Depth to Water, ft.	Water Elevation, Ft., NGVD
WTE-1S	21.91	0.2	21.71
WTE-1D	22.96	8.47	14.49
WTE-2S	24.18	3.03	21.15
WTE-2D	23.52	3.6	19.92
WTE-3SR	23.98	3.86	20.12
WTE-3DR	23.91	4.87	19.04
WTE-4S	22.48	4.02	18.46
WTE-4D	23.81	6.22	17.59
WTE-5S	23.81	3.07	20.74
WTE-5D	24.5	4.99	19.51
WTE-6S	23.66	5.85	17.81
WTE-6D	22.91	5.87	17.04

*Lee County Resource Recovery Facility, PA90-30H
Construction & Demolition Debris Recycling Facility
WACS ID No. 93715
Second Semi-Annual 2017 Water Quality Monitoring Report*

**Attachment C – Ground Water Monitoring Well Inspection and
Water Level Measurement Form (Shallow and Sandstone Wells)**

Ground Water Monitoring Well Inspections & Water Level Measurements

Date: 8/21/17 Inspector Name: Rory Thomas
 Site and/or Well Network Name: WTE Plant

Well ID	Well TOC, ft., NGVD	Time*	Distance to Water, ft.	Elevation, ft., NGVD	Well in Good Condition (Y/N)? **
WTE-1S	21.91	951	.2		Y
WTE-1D	22.96	952	8.47		Y
WTE-2S	24.18	845	3.03		Y
WTE-2D	23.52	846	3.6		Y
WTE-3SR	23.98	916	3.86		Y
WTE-3DR	23.91	917	4.87		Y
WTE-4S	22.48	938	4.02		Y
WTE-4D	23.81	939	6.22		Y
WTE-5S	23.81	920	3.07		Y
WTE-5D	24.5	921	4.99		Y
WTE-6S	23.66	BY 932 933	5.87		Y
WTE-6D	22.91	BY 932 932	BY 5.85		Y

*Enter date too if different than noted above.

** If 'N' entered, explain below. Attach additional sheets if needed.

Enter Comments Below As Needed. Ensure well ID is clearly noted for each comment.

Additional Pages Attached (Y/N)?

Inspector Signature: 

Attachment D – Sampling Documentation (Shallow Wells Only)

- Ground Water (GW) Sampling Logs, FD 9000-24
- Field Sheets
 - Calibration Sheet
 - Field Data Sheet
 - Chain of Custody

*Lee County Resource Recovery Facility, PA90-30H
Construction & Demolition Debris Recycling Facility
WACS ID No. 93715
Second Semi-Annual 2017 Water Quality Monitoring Report*

Ground Water (GW) Sampling Logs, FD 9000-24

GROUNDWATER SAMPLING LOG

SITE					LOCATION: SWERF WTE Semiannual Wells						
NAME: Lee Co Solid Waste					WELL NO: WTE-1S		SAMPLE ID: 341247GW1			DATE: 8/21/2017	
PURGING DATA											
WELL		TUBING		WELL SCREEN INTERVAL DEPTH: 10 feet to 20 feet			STATIC DEPTH(feet): 0.20		PURGE PUMP TYPE: RFPP		
DIAMETER (inches): 2.0		DIAMETER (inches): 0.25		TOC (feet): 21.91							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (21.91 feet - 0.20 feet) X 0.16 gallons/foot = 3.47 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): 15.00			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.00			PURGING INITIATED AT: 09:53		PURGING ENDED AT: 10:38		TOTAL VOLUME PURGED (gal): 5.85	
TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
10:20	3.51	3.51	0.13	0.50	6.69	24.4	721.0	0.33	10.64	Brown tint	None
10:29	1.17	4.68	0.13	0.50	6.69	24.4	720.0	0.32	9.09	Brown tint	None
10:38	1.17	5.85	0.13	0.50	6.69	24.4	720.0	0.29	5.62	Brown tint	None
WELL CAPACITY (Gallons Per Foot) 0.75" = 0.02; 1" = 0.04; 1.25" = 0.08; 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" = 0.0005; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.008; 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: Rory Thomas/FCL				SAMPLER(S) SIGNATURE(S):				SAMPLING INITIATED AT: 10:38		SAMPLING ENDED AT: 10:39	
PUMP OR TUBING DEPTH IN WELL (feet): 15.00				TUBING MATERIAL CODE: P:E		FIELD-FILTERED: No				FILTER SIZE: mm	
FIELD DECONTAMINATION: PUMP No				TUBING Replaced				DUPLICATE: No			
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION						SAMPLE PUMP	
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	FLOW RATE (Gal/Min)		
							See COC	RFPP	0.13		
REMARKS: No sheen.											
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)
 2, 2009

GROUNDWATER SAMPLING LOG

SITE NAME: Lee Co Solid Waste		SITE LOCATION: SWERF WTE Semiannual Wells	
WELL NO: WTE-2S	SAMPLE ID: 341247GW2	DATE: 8/21/2017	

PURGING DATA			
WELL	TUBING	WELL SCREEN INTERVAL DEPTH: 14 feet to 24 feet	STATIC DEPTH(fe TOC 24.18
DIAMETER (inches): 2.0	DIAMETER (inches):0.25	PURGE PUMP TYPE: RFPP	

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (24.18 feet - 3.03 feet) X 0.16 gallons/foot = 3.38 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):18.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet):18.00	PURGING INITIATED 10:49	PURGING ENDED 11:38	TOTAL VOLUME PURGED (gal): 5.88
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
11:18	3.48	3.48	0.12	3.11	6.63	24.4	948.0	0.43	8.55	Brown tint	None
11:28	1.20	4.68	0.12	3.11	6.64	24.4	947.0	0.40	9.04	Brown tint	None
11:38	1.20	5.88	0.12	3.11	6.64	24.4	947.0	0.39	5.38	Brown tint	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 = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA			
SAMPLED BY (PRINT) /AFFILIATION: Rory Thomas/FCL		SAMPLER(S) SIGNATURE(S):	
PUMP OR TUBING DEPTH IN WELL (feet):18.00		TUBING MATERIAL CODE: P:E	FIELD-FILTERED: No FILTER SIZE: mm
FIELD DECONTAMINATION: PUMP No		TUBING Replaced	
DUPLICATE: No		SAMPLING INITIATED AT:11:38	
		SAMPLING ENDED AT:11:39	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			SAMPLE PUMP		
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	FLOW RATE (Gal / Min)
							See COC	RFPP	0.12

REMARKS:

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 = Bailor; 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)

GROUNDWATER SAMPLING LOG

SITE NAME: Lee Co Solid Waste		SITE LOCATION: SWERF WTE Semiannual Wells	
WELL NO: WTE-3SR	SAMPLE ID: 341247GW6	DATE: 8/21/2017	

PURGING DATA			
WELL	TUBING	WELL SCREEN INTERVAL DEPTH: 13 feet to 23 feet	STATIC DEPTH (feet): 3.86
DIAMETER (inches): 2.0	DIAMETER (inches): 0.25	TOC (feet): 23.98	PURGE PUMP TYPE RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
 (only fill out if applicable)
 = (23.15 feet - 3.86 feet) X 0.16 gallons/foot = 3.09 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): 18.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18.00	PURGING INITIATED AT: 13:39	PURGING ENDED: 14:09	TOTAL VOLUME PURGED (Gal): 5.40
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TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
13:57	3.24	3.24	0.18	3.92	6.82	27.9	706.0	0.20	5.68	Brown tint	None
14:03	1.08	4.32	0.18	3.92	6.81	27.9	706.0	0.19	7.35	Brown tint	None
14:09	1.08	5.40	0.18	3.92	6.81	27.9	706.0	0.19	5.72	Brown tint	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 = Bailor, BP = Bladder Pump, ESP = Electric Submersible Pump, PP = Peristaltic Pump, O = Other (Specify)

SAMPLED BY (PRINT) / AFFILIATION: Rory Thomas/FCL		SAMPLER(S) SIGNATURE(S):		SAMPLING INITIATED AT: 14:09	SAMPLING ENDED AT: 14:10
PUMP OR TUBING DEPTH IN WELL (feet): 18.00		TUBING MATERIAL CODE: P:E		FIELD-FILTERED: No	FILTER SIZE: mm
FIELD DECONTAMINATION: PUMP No		TUBING Replaced		DUPLICATE: No	

SAMPLE ID CODE	SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (Gal / Min)
	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
							See COC	RFPP	0.18

REMARKS: No sheen.

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 = Bailor, 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)

GROUNDWATER SAMPLING LOG

SITE NAME: Lee Co Solid Waste					SITE LOCATION: SWERF WTE Semiannual Wells							
WELL NO: WTE-4S			SAMPLE ID: 341247GW5				DATE: 8/21/2017					
PURGING DATA												
WELL		TUBING		WELL SCREEN INTERVAL			STATIC DEPTH(feet)		PURGE PUMP TYPE: RFP			
DIAMETER (inches): 2.0		DIAMETER (inches): 0.25		DEPTH: 12 feet to 22 feet			4.02					
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable) = (22.48 feet - 4.02 feet) X 0.16 gallons/foot = 2.95 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): 15.00			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.00			PURGING INITIATED AT: 13:05		PURGING ENDED 13:34		TOTAL VOLUME PURGED (Gal): 5.22		
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)	
13:22	3.06	3.06	0.18	4.09	6.67	29.3	830.0	0.25	6.67	Brown tint	None	
13:28	1.08	4.14	0.18	4.09	6.67	29.3	832.0	0.24	4.42	Brown tint	None	
13:34	1.08	5.22	0.18	4.09	6.67	29.3	830.0	0.23	3.88	Brown tint	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./FL): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0025; 5/16" = 0.004; 3/8" = 0.008; 1/2" = 0.010; 5/8" = 0.016												
PURGING EQUIPMENT CODES: B = Bailor, BP = Bladder Pump, ESP = Electric Submersible Pump, PP = Peristaltic Pump, O = Other (Specify)												
SAMPLING DATA												
SAMPLED BY (PRINT) / AFFILIATION: Rory Thomas/FCL				SAMPLER(S) SIGNATURE(S):				SAMPLING INITIATED AT: 13:34		SAMPLING ENDED AT: 13:35		
PUMP OR TUBING DEPTH IN WELL (feet): 15.00				TUBING MATERIAL CODE: P:E				FIELD-FILTERED: No		FILTER SIZE: mm		
FIELD DECONTAMINATION: PUMP No				TUBING Replaced				DUPLICATE: No				
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION						SAMPLE PUMP FLOW RATE (Gal / Min)		
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	0.18			
							See COC	RFP				
REMARKS: No sheen.												
MATERIAL CODES: AG = Amber Glass, CG = Clear Glass, PE = Polyethylene, PP = Polypropylene, S = Silicone, T = Teflon, O = Other (Specify)												
SAMPLING EQUIPMENT CODES: RFP = Reverse Flow Peristaltic Pump; B = Bailor, BP = Bladder Pump, ESP = Electric Submersible Pump; RFP = 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 62-166, 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)
 3, 2009

GROUNDWATER SAMPLING LOG

SITE NAME: Lee Co Solid Waste		SITE LOCATION: SWERF WTE Semiannual Wells	
WELL NO: WTE-5S	SAMPLE ID: 341247GW3	DATE: 8/21/2017	

PURGING DATA			
WELL	TUBING	WELL SCREEN INTERVAL DEPTH: 13 feet to 23 feet	STATIC DEPTH(feet): 3.07
DIAMETER (inches): 2.0	DIAMETER (inches): 0.25	TOC (feet): 23.81	PURGE PUMP TYPE RFPF

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
 (only fill out if applicable)
 = (23.81 feet - 3.07 feet) X 0.16 gallons/foot = 3.32 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): 15.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15.00	PURGING INITIATED AT: 11:50	PURGING ENDED 12:23	TOTAL VOLUME PURGED (gal): 5.94
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TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:09	3.42	3.42	0.18	3.31	6.63	27.1	1028.0	0.24	5.30	Brown tint	None
12:16	1.26	4.68	0.18	3.31	6.63	27.1	1028.0	0.25	5.69	Brown tint	None
12:23	1.26	5.94	0.18	3.31	6.63	27.1	1028.0	0.24	9.34	Brown tint	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" = 0.0005; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.008; 1/2" = 0.010; 5/8" = 0.016

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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Rory Thomas/FCL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 12:23	SAMPLING ENDED AT: 12:24
PUMP OR TUBING DEPTH IN WELL (feet): 15.00	TUBING MATERIAL CODE: P:E	FIELD-FILTERED: No	FILTER SIZE: mm
FIELD DECONTAMINATION: PUMP No	TUBING Replaced	DUPLICATE: No	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (Gal / Min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
							See COC	RFPF	0.18

REMARKS: No sheen.

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 = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPF = 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)
 2, 2009

GROUNDWATER SAMPLING LOG

SITE NAME: Lee Co Solid Waste WELL NO: WTE-6S	SITE LOCATION: SWERF WTE Semiannual Wells SAMPLE ID: 341247GW4 DATE: 8/21/2017
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PURGING DATA			
WELL	TUBING	WELL SCREEN INTERVAL DEPTH: 13 feet to 23 feet	STATIC DEPTH (feet): 5.85 PURGE PUMP TYPE: RFPP
DIAMETER (inches): 2.0	DIAMETER (inches): 0.25		TOC (feet): 23.66

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY
 (only fill out if applicable)
 = (23.66 feet - 5.85 feet) X 0.16 gallons/foot = 2.85 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): 18.00	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18.00	PURGING INITIATED AT: 12:31	PURGING ENDED: 12:49
			TOTAL VOLUME PURGED (gal): 5.04

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:47	2.88	2.88	0.18	5.96	6.84	26.8	625.0	0.27	19.60	Brown tint	None
12:53	1.08	3.96	0.18	5.96	6.84	26.8	623.0	0.25	18.25	Brown tint	None
12:59	1.08	5.04	0.18	5.96	6.84	26.8	624.0	0.25	16.20	Brown tint	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" = 0.0028; 5/16" = 0.004; 3/8" = 0.008; 1/2" = 0.016; 5/8" = 0.0316
 PURGING EQUIPMENT CODES: B = Bailor, BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA			
SAMPLED BY (PRINT) / AFFILIATION: Rory Thomas/FCL PUMP OR TUBING DEPTH IN WELL (feet): 18.00	SAMPLER(S) SIGNATURE(S): TUBING MATERIAL CODE: P:E	SAMPLING INITIATED AT: 12:59	SAMPLING ENDED AT: 13:00 FIELD-FILTERED: No FILTER SIZE: mm
FIELD DECONTAMINATION: PUMP No TUBING Replaced		DUPLICATE: No	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (Gal / Min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
							See COC	RFPP	0.18

REMARKS: No sheen.

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 = Bailor; 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)

*Lee County Resource Recovery Facility, PA90-30H
Construction & Demolition Debris Recycling Facility
WACS ID No. 93715
Second Semi-Annual 2017 Water Quality Monitoring Report*

- Field Sheets
 - Calibration Sheet
 - Field Data Sheet
 - Chain of Custody

Flowers Chemical Labs Field

Calibration Sheet



Sampler: Rory Thomas

Project: Lee Co Solid Waste – SWERF WTE Semainnual Wells

Date: 08/21/17

Sample Site I.D.'s WTE-1S, WTE-2S, WTE-5S, WTE-6S, WTE-4S, WTE-35R

Equipment Used: YSI Pro

Weather conditions: Sunny

Starting Calibration Values: 06:45

	Unit	Standard	Reading	Standard	Reading	Standard	Reading
pH	pH	4.00	4.03	7.00	6.97	10.00	9.96
pH WSL#/Std ID		460E48/0391		F350-08/0373		2703951/0416	
Conductivity	us			1413	1419		
Turbidity	NTU	0.02	0.02	10.00	10.00		
Turbidity WSL#/Std ID		51231		51231			
DO	%Saturation		100.00				

Ending Calibration Values: 14:15

	Unit	Standard	Reading
pH	pH	7.00	7.00
Conductivity	us	1413	1413
Turbidity	NTU	10.00	10.00
DO	%Saturation		100.00

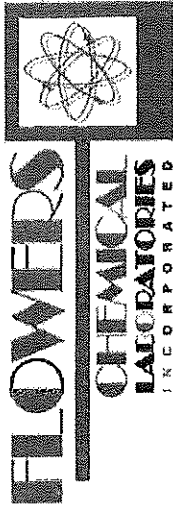
Check Box That Applies To Your Location

Flowers Chemical Laboratories, Inc.
 481 Newburyport Ave.
 Altamonte Springs, FL 32701
 Bus: 407-339-5984
 Fax: 407-260-6110

Flowers Chemical Labs-South
 West Park Industrial Plaza
 571 N.W. Mercantile Pl., Ste. 111
 Port St. Lucie, FL 34986
 Bus: 772-343-8006
 Fax: 772-343-8089

Flowers Chemical Labs-North
 812 S.W. Harvey Greene Dr.
 Madison, FL 32340
 Bus: 850-973-6878
 Fax: 850-973-6878

Flowers Chemical Labs-Key
 3880 Overseas Highway, Ste. 103
 Marathon, FL 33050
 Bus: 305-743-8598
 Fax: 305-743-8598



DOWNLOAD REPORTS, INVOICES AND CHAINS OF CUSTODY WWW.FLOWERSLABS.COM

Client: Law Co Solid Waste Project Name: SUWERF WTE S/A Well P.O.# _____
 Address: _____ Client Contact: Quick ~ Lee Co - WTE New permit FAX _____
 FCL Project Manager: _____ E-MAIL _____

Phone: _____ Requested Due Date: _____ OR _____
 Rush Charges May Apply

Sampled By (PRINT): Rory Thomas Pick-Up Fee: \$ _____ Vehicle Surcharge: \$ _____ Sampling Fee: \$ X 6
 Sampler Signature: _____

Date Sampled: 8/21/17

GW - ground water DW - drinking water WW - wastewater
 SW - surface water SO - soil/solid SL - sludge HW - waste

ITEM NO.	SAMPLE ID	DATE	TIME	MATRIX	(LAB USE ONLY) LAB NO.	PRESERVATIVES				ANALYSES REQUEST	COMMENTS	Total # Containers
						NONE	H ₂ SO ₄	HNO ₃	HO			
1	WTE-1S	8/24/17	1038	GW	341247 GW	X	X	X				6
2	WTE-2S		1138									
3	WTE-5S		1223									
4	WTE-6S		1254									
5	WTE-4S		1334									
6	WTE-3SA		1404									
7	Trip Blank			DZ								2
8												
9												
10												

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
			<u>Flowers</u>	<u>8/21/17</u>	<u>1703</u>
			<u>WTE Lab</u>		
			<u>MAL</u>	<u>8/22</u>	<u>08:30</u>

FINANCE CHARGES APPLIED TO PAST DUE INVOICES