

## Johnson, Sabrina O

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**From:** Fischer, Shane <SFischer@SCSEngineers.com>  
**Sent:** Friday, September 14, 2018 8:30 AM  
**To:** SWD\_Waste; Tafuni, Steven  
**Cc:** Anthony Detweiler; Bryan White; Jim Bokish; Cooper, Dan; Lebron, Carlo  
**Subject:** Manatee County Lena Road Landfill Monthly Report August 2018  
**Attachments:** August 2018 Report.pdf

Mr. Tafuni,

Attached is the Manatee County Lena Road Landfill Monthly Report (for August 2018) which includes the following:

- Monthly Water Balance Report (Exhibit A)
- Monthly Leachate Tracking Summary - 2018 (Exhibit B)
- Monthly Leachate Meter Readings
- Monthly Rainfall
- Monthly Groundwater Gradient Report

If you should have any questions concerning this report, please contact me at (813) 804-6714.

Thanks

Shane R. Fischer, P.E.  
Project Director  
SCS Engineers  
3922 Coconut Palm Drive, Suite 102  
Tampa, Florida 33619  
(813) 804-6714 (W)  
(813) 503-1044 (C)  
[sfischer@scsengineers.com](mailto:sfischer@scsengineers.com)

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September 14, 2018  
File No. 09217088.05

Mr. Steven Tafuni  
Florida Department of Environmental Protection  
Southwest District Office - Solid Waste Section  
130501 N. Telecom Parkway  
Temple Terrace, Florida 33637-0926

Subject: Manatee County Lena Road Landfill  
Monthly Report - August 2018

Dear Mr. Tafuni:

This letter includes the following monthly reports: Monthly Water Balance Report (Exhibit A), Monthly Leachate Tracking Summary - 2018 (Exhibit B), Monthly Leachate Meter Readings, Monthly Rainfall, and Monthly Groundwater Gradient Report.

Sincerely,



Shane R. Fischer, P.E.  
Project Director  
SCS Engineers



Donovan Dickey  
Associate Professional  
SCS Engineers

SRF/DHD

cc: C. Mike Gore, Manatee County Utilities Department Director  
Bryan White, Manatee County Landfill Superintendent  
Anthony Detweiler, Manatee County Landfill Operations Supervisor

Enclosures

EXHIBIT A

**MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY  
LENA ROAD LANDFILL  
MONTHLY WATER BALANCE REPORT  
June-18**

A	B	C	D	E	F	G	H	I
DATE	LEACHATE STAGE I Lift Station 1  (gallons)	LEACHATE STAGE I Lift Station 2  (gallons)	LEACHATE STAGE I TOTAL  (gallons)	LEACHATE STAGE II TOTAL  (gallons)	LEACHATE STAGE III TOTAL  (gallons)	TOTAL LEACHATE PUMPED  (gallons)	RAINFALL  (inches)	RAINFALL  (gallons)
1-Aug-18	43,694	6,533	50,227	48	57,186	107,461	0.07	543,663
2-Aug-18	44,560	6,487	51,047	32	60,136	111,215	0.38	2,951,314
3-Aug-18	42,426	25	42,451	32	56,026	98,509	0.28	2,174,652
4-Aug-18	0	0	0	0	0	0	0.00	0
5-Aug-18	0	0	0	0	0	0	0.27	2,096,986
6-Aug-18	124,073	13,677	137,750	128	172,486	310,364	0.59	4,582,303
7-Aug-18	37,341	6,595	43,936	629,696	49,478	723,110	0.34	2,640,649
8-Aug-18	39,006	6,595	45,601	347,792	51,490	444,883	0.09	698,995
9-Aug-18	38,052	57	38,109	284,588	58,572	381,269	0.00	0
10-Aug-18	38,282	7,096	45,378	258,852	51,392	355,622	0.00	0
11-Aug-18	0	0	0	0	0	0	2.21	17,164,221
12-Aug-18	0	0	0	0	0	0	0.19	1,475,657
13-Aug-18	114,724	14,165	128,889	683,776	161,186	973,851	0.20	1,553,323
14-Aug-18	36,378	49	36,427	215,872	59,528	311,827	0.22	1,708,656
15-Aug-18	39,972	7,175	47,147	221,216	58,148	326,511	2.12	16,465,226
16-Aug-18	40,360	6,553	46,913	216,720	54,910	318,543	0.03	232,998
17-Aug-18	35,490	6,596	42,086	2,048	62,100	106,234	0.39	3,028,980
18-Aug-18	0	0	0	0	0	0	0.00	0
19-Aug-18	0	0	0	0	0	0	0.11	854,328
20-Aug-18	112,426	13,641	126,067	160	183,032	309,259	0.00	0
21-Aug-18	34,890	16,466	51,356	48	51,026	102,430	0.03	232,998
22-Aug-18	35,556	9,120	44,676	48	54,786	99,510	0.61	4,737,636
23-Aug-18	36,028	8,115	44,143	48	51,102	95,293	0.18	1,397,991
24-Aug-18	37,202	8,275	45,477	236	57,468	103,181	0.47	3,650,310
25-Aug-18	0	0	0	0	0	0	1.70	13,203,247
26-Aug-18	0	0	0	0	0	0	0.17	1,320,325
27-Aug-18	101,402	27,097	128,499	68,724	255,844	453,067	0.03	232,998
28-Aug-18	32,768	8,456	41,224	68,464	88,150	197,838	1.36	10,562,598
29-Aug-18	34,794	6,818	41,612	328,464	62,322	432,398	0.48	3,727,976
30-Aug-18	35,638	7,592	43,230	234,384	70,200	347,814	0.48	0
31-Aug-18	38,644	8,000	46,644	220,512	83,196	350,352	0.17	1,320,325
<b>TOTAL</b>	<b>1,173,706</b>	<b>195,183</b>	<b>1,368,889</b>	<b>3,781,888</b>	<b>1,909,764</b>	<b>7,060,541</b>	<b>13.17</b>	<b>98,558,357</b>
Leachate Pumped as Percentage of Rainfall				3.8%	9.0%	8.1%		

**Column Notes:**

A - Date of reading.

B - Leachate pumped (gallons) from Stage I by lift station 1.

C - Leachate pumped (gallons) from Stage I by lift station 2.

D - Total Stage I leachate pumpage (B+C).

E - Leachate pumped (gallons) from Stage II.

F - Leachate pumped (gallons) from Stage III.

G - Total leachate pumped to WWTP storage tank (D+E+F).

H - Rainfall (inches) recorded on this date.

I - Rainfall (gallons) calculated based on open area (H x Area x 27,156 gal/acre-in).

**Comments**

"0" = no data recorded

	Stage I (acres)	Stage II (acres)	Stage III (acres)	TOTAL (acres)
Initial Cover	102.0	113.0	66.0	281.0
Interm. Cover	0.0	5.0	--	5.0
Closed	30.0	0.0	--	30.0
<b>TOTAL</b>	<b>132.0</b>	<b>118.0</b>	<b>66.0</b>	<b>316.0</b>
<b>Open Area</b>	<b>102.0</b>	<b>118.0</b>	<b>66.0</b>	<b>286.0</b>

EXHIBIT B

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY  
 LENA ROAD LANDFILL  
 MONTHLY LEACHATE TRACKING SUMMARY -- 2018

MONTH	B STAGE I LEACHATE (gallons)	C STAGE II LEACHATE (gallons)	D STAGE III LEACHATE (gallons)	E TOTAL LEACHATE (gallons)	F RAINFALL (inches)	G RAINFALL (gallons)	H STAGE I LEACHATE/ RAINFALL (%)	I STAGE II LEACHATE/ RAINFALL (%)	J STAGE III LEACHATE/ RAINFALL (%)
JANUARY	637,352	2,649,648	521,360	3,808,360	2.32	18,018,549	9.9%	35.6%	12.5%
FEBRUARY	883,518	2,222,160	516,750	3,622,428	0.96	7,455,951	33.2%	72.2%	30.0%
MARCH	667,517	1,952,576	430,794	3,050,887	1.46	11,339,259	16.5%	41.7%	16.5%
APRIL	631,184	1,964,448	477,524	3,073,156	2.51	19,494,206	9.1%	24.4%	10.6%
MAY	692,586	2,377,648	974,292	4,044,526	11.80	83,918,286	2.1%	6.3%	4.6%
JUNE	717,412	3,610,928	1,165,894	5,494,234	10.20	75,646,840	2.5%	11.0%	6.4%
JULY	815,455	4,038,080	1,371,106	6,224,641	12.55	76,967,165	2.3%	10.0%	6.1%
AUGUST	1,368,889	3,781,888	1,909,764	7,060,541	13.17	98,558,357	3.8%	9.0%	8.1%
SEPTEMBER									
OCTOBER									
NOVEMBER									
DECEMBER									
<b>TOTAL</b>	<b>6,413,913</b>	<b>22,597,376</b>	<b>7,367,484</b>	<b>36,378,773</b>	<b>54.97</b>	<b>391,398,613</b>	<b>4.2%</b>	<b>14.8%</b>	<b>4.8%</b>

Notes:

- (B) Total leachate pumped from Stage I.
- (C) Total leachate pumped from Stage II
- (D) Total leachate pumped from Stage III
- (E) Total leachate (Column B+C+D) pumped to WWTP storage tank.
- (F) Total rainfall in inches.
- (G) Total rainfall in gallons (Stage I, II, and III Open Area of 286-acres x Rainfall)
- (H) Stage I leachate as a percentage of rainfall.
- (I) Stage II leachate pumped as a percentage of rainfall.
- (J) Stage III leachate pumped as a percentage of rainfall.

Landfill Stage Land Area

	Stage I (acres)	Stage II (acres)	Stage III (acres)	TOTAL (acres)
Initial Cover	102.0	113.0	66.0	281.0
Intermed. Cover	0.0	5.0	--	5.0
Closed	30.0	0.0	--	30.0
TOTAL	132.0	118.0	66.0	316.0
<b>Open Area</b>	<b>102.0</b>	<b>118.0</b>	<b>66.0</b>	<b>286.0</b>

## LEACHATE METER READINGS

DATE	LEACHATE METERS				STORMWATER S.G.		COMMENTS	NAME (Initials)
	#1	#2	#3	#4	#1	#2		
	8/1/18	16951380	3349492	23707818	169743248	34.59		
8/2/18	16995940	3355979	23767954	169743280	34.50	32.38	OK	M.G.
8/3/18	17038366	3356004	23823980	169743312	34.52	32.39	OK	M.G.
8/4/18								
8/5/18								
8/6/18	17162439	3369681	23996466	169743344	34.35	32.34	OK	R.B.
8/7/18	17199760	3376276	24045944	170373136	34.39	32.36	OK	R.B.
8/8/18	17236786	3382871	24097434	170720928	34.41	32.37	OK	R.B.
8/9/18	17276636	3382929	24156006	17100576	34.35	32.36	OK	R.B.
8/10/18	17315120	3390024	24207398	171264366	34.31	32.36	OK	R.B.
8/11/18								
8/12/18								
8/13/18	17429844	3404189	24368584	171946144	34.56	32.42	OK	R.B.
8/14/18	17466222	3404238	24428112	172164016	34.49	32.37	OK	R.B.
8/15/18	17506194	3411413	24486260	172385232	34.47	32.36	OK	R.B.
8/16/18	17546554	3417966	24541170	172604952	34.84	32.46	OK	R.B.
8/17/18	17582044	3424822	24608870	172604100	34.56	32.38	OK	R.B.
8/18/18								
8/19/18								
8/20/18	17694970	3435203	24786222	172604160	34.45	32.36	OK	R.B.
8/21/18	17729360	3454669	24837326	172604208	34.39	32.36	OK	R.B.
8/22/18	17764916	3463789	24892114	172604256	34.37	32.36	OK	R.B.
8/23/18	17800944	3471904	24943216	172604304	34.40	32.36	OK	R.B.
8/24/18	17838146	3480179	25000681	172604352	34.37	32.35	OK	R.B.
8/25/18								
8/26/18								
8/27/18	17939548	3507276	25156526	172604400	34.53	32.38	OK	R.B.
8/28/18	17972316	3514732	25344678	172741728	34.46	32.37	OK	R.B.
8/29/18	18007110	3522550	25407000	173070492	34.60	32.41	OK	R.B.
8/30/18	18042746	3530142	25477200	173304576	34.61	32.40	OK	R.B.
8/31/18	18081392	3538142	25560396	173525068	34.58	32.42	OK	R.B.

## Anthony Detweiler

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**From:** Michelle Curtis  
**Sent:** Tuesday, September 04, 2018 7:53 AM  
**To:** Anthony Detweiler  
**Cc:** Anthony Detweiler; Dalton Cook; Michael Whiddon  
**Subject:** August data

LANDFILL SHEET			LAKE LEVEL DATA					
			IN FEET NGVD					
2018	RAIN	LEACHATE	SOUTH	EAST				
Aug	FALL	MGD	(86 ACRE)	(63 ACRE)				
1	0.07	0.052	42.30	39.30				
2	0.38	0.052	42.40	39.30				
3	0.28	0.052	42.30	39.40				
4	0.00	0.052	42.40	39.40				
5	0.27	0.052	42.30	39.30				
6	0.59	0.052	42.30	39.20				
7	0.34	0.049	42.40	39.30				
8	0.09	0.077	42.40	39.30				
9	0.00	0.070	42.40	39.30				
10	0.00	0.061	42.40	38.90				
11	2.21	0.063	42.40	39.00				
12	0.19	0.063	42.40	39.10				
13	0.20	0.061	42.40	39.10				
14	0.22	0.062	42.40	38.80				
15	2.12	0.060	42.40	38.90				
16	0.03	0.033	42.40	38.90				
17	0.39	0.045	42.40	38.90				
18	0.00	0.031	42.40	38.70				
19	0.11	0.026	42.40	38.70				
20	0.00	0.027	42.40	38.70				
21	0.03	0.026	42.40	38.70				
22	0.61	0.022	42.40	38.70				
23	0.18	0.025	42.40	38.80				
24	0.47	0.027	42.40	37.50				
25	1.70	0.028	42.40	37.50				
26	0.17	0.041	42.40	37.50				
27	0.03	0.050	42.40	37.40				
28	1.36	0.080	42.40	37.50				
29	0.48	0.077	42.40	37.50				
30	0.48	0.079	42.30	37.60				

31	0.17	0.076		42.40	37.70				
TOTAL	13.17	1.571							
AVG		0.051							
MIN									
MAX	2.21	0.080							
Fax #	9-708-5668								

FIGURE L-7

Manatee County Lena Road Landfill  
**Monthly Groundwater Gradient Report**  
 Month and Year: August 2018

Piezometers Inside Slurry Wall				Groundwater Monitoring Wells Outside Slurry Wall		
Piezometer	Riser Elevation	Leachate Elevation	Gradient Flow	Monitoring Well	Riser Elevation	Groundwater Elevation
P-1	42.68	NA	NA	GW-1	38.68	NA
P-2	42.32	NA	NA	GW-2	40.92	NA
P-3	40.36	27.14	<i>inward</i>	GW-3	39.40	35.42
P-4	40.78	23.80	<i>inward</i>	GW-4	40.53	34.20
P-5	40.73	23.96	<i>inward</i>	GW-5	39.90	33.63
P-6	40.74	23.80	<i>inward</i>	GW-6	38.95	33.11
P-7	40.60	23.78	<i>inward</i>	GW-7	39.49	31.83
P-8	40.21	23.74	<i>inward</i>	GW-8	39.75	30.49
P-9	39.97	23.79	<i>inward</i>	GW-9	39.65	30.39
P-10	39.86	22.85	<i>inward</i>	GW-10	38.34	31.23
P-11	40.52	24.07	<i>inward</i>	GW-11	38.26	31.96
P-12	43.28	29.72	<i>inward</i>	GW-12	42.09	33.16
P-13	44.78	30.78	<i>inward</i>	GW-13	44.79	34.63
P-14	45.09	29.86	<i>inward</i>	GW-14	39.63	35.23
P-15	45.57	31.01	<i>inward</i>	GW-15	42.33	35.52
P-16	44.67	31.07	<i>inward</i>	GW-16	44.41	35.93
P-17	44.28	30.25	<i>inward</i>	GW-17	42.19	35.42
P-18	43.16	24.52	<i>inward</i>	GW-18	41.76	35.28
P-19	42.91	23.48	<i>inward</i>	GW-19	41.20	35.12
P-20	42.54	26.39	<i>inward</i>	GW-20	41.00	33.85
P-21	42.23	25.34	<i>inward</i>	GW-21	40.94	31.77
P-22	42.06	24.18	<i>inward</i>	GW-22	41.53	30.82
P-23	42.08	23.16	<i>inward</i>	GW-23	40.91	34.01
P-24	42.03	23.07	<i>inward</i>	GW-24	41.37	33.60
P-25	42.16	23.07	<i>inward</i>	GW-25	41.11	34.86
P-26	42.50	21.53	<i>inward</i>	GW-26	41.44	35.18
P-27R	42.73	22.47	<i>inward</i>	GW-27R	40.90	35.43

NA = Not Applicable - wells and piezometers abandoned in March 2016  
 Wells (GW-18 through GW-27R) and piezometers (P-18 through P-27R) installed in April 2016  
 Date Data Collected: 08/28/2018