

## Smith, George

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**From:** Fischer, Shane <SFischer@SCSEngineers.com>  
**Sent:** Thursday, December 14, 2017 11:50 AM  
**To:** SWD\_Waste  
**Cc:** Tafuni, Steven; Anthony Detweiler; Bryan White; Lynette Falkowski; Cooper, Dan; Lebron, Carlo  
**Subject:** Manatee County Lena Road Landfill Monthly Report November 2017  
**Attachments:** Monthly Gradient Report November 2017.pdf

Mr. Tafuni,

Attached is the Manatee County Lena Road Landfill Monthly Report (for November 2017) which includes the following:

- Monthly Water Balance Report (Exhibit A)
- Monthly Leachate Tracking Summary - 2017 (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.  
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SCS Engineers  
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## SCS ENGINEERS

December 14, 2017  
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 - November 2017

Dear Mr. Tafuni:

This letter includes the following monthly reports: Monthly Water Balance Report (Exhibit A), Monthly Leachate Tracking Summary - 2017 (Exhibit B), Monthly Leachate Meter Readings, Monthly Rainfall, and Monthly Groundwater Gradient Report.

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

Sincerely,



Shane R. Fischer, P.E.  
Project Director  
**SCS ENGINEERS**

SRF/BMW:srf



Buckley Weglarz, E.I.  
Associate Staff Professional  
**SCS ENGINEERS**

Attachments

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



EXHIBIT A

**MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY  
LENA ROAD LANDFILL  
MONTHLY WATER BALANCE REPORT  
November-17**

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-Nov-17	18,444	7,458	25,902	156,128	30,338	212,368	0.00	0
2-Nov-17	18,363	47	18,410	137,520	25,826	181,756	0.00	0
3-Nov-17	16,545	7,488	24,033	132,592	24,556	181,181	0.00	0
4-Nov-17	0	0	0	0	0	0	0.00	0
5-Nov-17	0	0	0	0	0	0	0.00	0
6-Nov-17	62,271	7,432	69,703	423,280	79,207	572,190	0.00	0
7-Nov-17	18,295	43	18,338	123,968	21,917	164,223	0.00	0
8-Nov-17	20,009	7,562	27,571	131,856	25,844	185,271	0.00	0
9-Nov-17	18,703	7,648	26,351	133,008	22,332	181,691	0.00	0
10-Nov-17	19,542	7,396	26,938	132,624	25,768	185,330	0.00	0
11-Nov-17	0	0	0	0	0	0	0.00	0
12-Nov-17	0	0	0	0	0	0	0.93	7,222,953
13-Nov-17	52,660	7,506	60,166	383,360	69,300	512,826	0.00	0
14-Nov-17	18,143	7,171	25,314	119,120	21,864	166,298	0.00	0
15-Nov-17	20,629	42	20,671	118,400	21,884	160,955	0.00	0
16-Nov-17	19,190	43	19,233	364,084	21,996	405,313	0.00	0
17-Nov-17	18,025	7,419	25,444	115,932	21,971	163,347	0.00	0
18-Nov-17	0	0	0	0	0	0	0.00	0
19-Nov-17	0	0	0	0	0	0	0.00	0
20-Nov-17	56,735	7,264	63,999	362,032	65,843	491,874	0.00	0
21-Nov-17	18,700	7,281	25,981	112,752	21,674	160,407	0.00	0
22-Nov-17	21,656	46	21,702	162,934	26,024	210,660	0.11	854,328
23-Nov-17	0	0	0	0	0	0	0.12	931,994
24-Nov-17	41,172	7,560	48,732	182,602	43,224	274,558	0.08	621,329
25-Nov-17	0	0	0	0	0	0	0.02	155,332
26-Nov-17	0	0	0	0	0	0	0.00	0
27-Nov-17	46,507	7,627	54,134	339,024	57,844	451,002	0.00	0
28-Nov-17	14,458	7,131	21,589	96,736	17,690	136,015	0.00	0
29-Nov-17	14,370	38	14,408	104,656	18,012	137,076	0.00	0
30-Nov-17	17,950	7,318	25,268	120,704	18,934	164,906	0.00	0
<b>TOTAL</b>	<b>552,367</b>	<b>111,520</b>	<b>663,887</b>	<b>3,953,312</b>	<b>682,048</b>	<b>5,299,247</b>	<b>1.26</b>	<b>9,785,936</b>
Leachate Pumped as Percentage of Rainfall				19.0%	97.9%	30.2%		

**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 -- 2017

	B	C	D	E	F	G	H	I	J
MONTH	STAGE I LEACHATE (gallons)	STAGE II LEACHATE (gallons)	STAGE III LEACHATE (gallons)	TOTAL LEACHATE (gallons)	RAINFALL (inches)	RAINFALL (gallons)	STAGE I LEACHATE/ RAINFALL (%)	STAGE II LEACHATE/ RAINFALL (%)	STAGE III LEACHATE/ RAINFALL (%)
JANUARY	638,719	3,558,368	468,096	4,665,183	1.82	14,135,257	12.7%	61.0%	14.4%
FEBRUARY	700,268	2,701,624	373,077	3,774,969	2.49	19,338,895	10.2%	33.9%	8.4%
MARCH	444,964	2,655,032	345,620	3,890,580	0.75	5,824,962	21.4%	110.5%	25.7%
APRIL	427,892	2,134,880	273,796	2,836,568	0.42	3,261,979	36.8%	158.6%	36.4%
MAY	400,805	2,333,600	290,841	3,203,689	1.89	14,678,904	7.7%	38.5%	8.6%
JUNE	691,538	5,641,712	1,303,683	7,636,933	12.67	98,403,025	2.0%	13.9%	5.7%
JULY	881,994	7,666,088	1,356,678	9,052,189	11.57	89,859,747	2.8%	20.7%	6.5%
AUGUST	1,011,283	8,689,052	1,795,807	11,496,142	19.78	153,623,664	1.8%	13.7%	5.1%
SEPTEMBER	984,379	5,749,672	1,591,344	7,721,852	8.99	69,821,878	4.0%	20.0%	9.9%
OCTOBER	795,985	5,880,896	1,022,637	7,699,518	3.35	26,018,164	8.6%	54.8%	17.0%
NOVEMBER	663,887	3,953,312	682,048	5,299,247	1.26	9,785,936	19.0%	97.9%	30.2%
DECEMBER									
TOTAL	7,641,714	50,964,236	9,503,627	67,276,870	64.99	504,752,411	4.2%	28.3%	5.3%

Notes:

1. (B) Total leachate pumped from Stage I.
2. (C) Total leachate pumped from Stage II
3. (D) Total leachate pumped from Stage III
4. (E) Total leachate (Column B+C+D) pumped to WWTP storage tank.
5. (F) Total rainfall in inches.
6. (G) Total rainfall in gallons (Stage I, II, and III Open Area of 286-acres x Rainfall)
7. (H) Stage I leachate as a percentage of rainfall.
8. (I) Stage II leachate pumped as a percentage of rainfall.
9. (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
Open Area	102.0	118.0	66.0	286.0

# LEACHATE METER READINGS

DATE	LEACHATE METERS				STORMWATER S.G.		COMMENTS	NAME (Initials)
	#1	#2	#3	#4	#1	#2		
11/1/17	11799399	2272735	17055482	14472428	33.64	31.86	OK	R.B.
11/2/17	11817762	2272785	17081506	144861808	33.63	31.84	OK	R.B.
11/3/17	11834307	2280273	17106062	144994400	33.61	31.82	OK	R.B.
11/4/17								
11/5/17								
11/6/17	11896576	2287705	17185269	14547680	33.59	31.43	OK	R.B.
11/7/17	11914873	2287746	17207186	145541646	33.59	31.36	OK	R.B.
11/8/17	11934682	2295310	17233030	145733504	33.59	31.32	OK	R.B.
11/9/17	11953585	2295353	17255362	145806512	33.59	31.30	OK	R.B.
11/10/17	11973127	2302749	17281130	145939136	33.58	31.24	OK	ORS
11/11/17								
11/12/17								
11/13/17	12025767	2310255	17380430	14632496	33.60	31.14	OK	R.B.
11/14/17	12043930	2317426	17372294	146441616	33.60	31.10	OK	R.B.
11/15/17	12064559	2317468	17394178	146560016	33.59	30.94	OK	R.B.
11/16/17	12083749	2317511	17416174	146686580	33.58	30.90	OK	R.B.
11/17/17	12101774	2324930	17438142	1468050	33.58	30.86	OK	R.B.
11/18/17								
11/19/17								
11/20/17	12158509	2332194	17503986	147164544	33.56	30.60	OK	R.B.
11/21/17	12177209	2339475	17525662	14727896	33.56	30.56	OK	R.B.
11/22/17	12198865	2339521	17551686	14740232	33.55	30.56	OK	M.B.
11/23/17								
11/24/17	12240037	2347081	17594910	147622832	33.59	30.58	OK	ORS
11/25/17								
11/26/17								
11/27/17	12266544	2354708	17652754	14796186	33.57	30.50	OK	R.B.
11/28/17	12301002	2361689	17670444	148088882	33.57	30.47	OK	R.B.
11/29/17	12315372	2361677	17688456	148162346	33.57	30.46	OK	R.B.
11/30/17	12333322	2368195	17707390	14826392	33.57	30.40	OK	R.B.

Landfill

LANDFILL SHEET			LAKE LEVEL DATA IN FEET NGVD	
2017 Nov	RAIN FALL	LEACHATE MGD	SOUTH (86 ACRE)	EAST (63 ACRE)
1	0.00	0.044	53.60	35.90
2	0.00	0.048	53.60	35.90
3	0.00	0.045	53.60	35.90
4	0.00	0.046	53.60	35.90
5	0.00	0.047	53.60	35.90
6	0.00	0.042	53.60	35.90
7	0.00	0.046	53.60	35.90
8	0.00	0.043	53.60	35.90
9	0.00	0.042	53.60	35.90
10	0.00	0.041	53.60	35.90
11	0.00	0.041	53.60	35.90
12	0.93	0.041	53.60	35.90
13	0.00	0.041	53.60	35.90
14	0.00	0.042	53.60	35.90
15	0.00	0.041	53.60	35.90
16	0.00	0.040	53.60	35.90
17	0.00	0.040	53.60	35.90
18	0.00	0.040	53.60	35.90
19	0.00	0.038	53.60	35.90
20	0.00	0.041	53.60	35.90
21	0.00	0.039	53.60	35.90
22	0.11	0.040	53.60	35.90
23	0.12	0.039	53.60	35.90
24	0.08	0.036	53.60	35.90
25	0.02	0.036	53.60	35.90
26	0.00	0.037	53.60	35.90
27	0.00	0.037	53.60	35.90
28	0.00	0.034	53.60	35.90
29	0.00	0.036	53.60	35.90
30	0.00	0.038	53.60	35.90
31			50.60	35.90
TOTAL	1.26	1.221		
AVG		0.041		
MIN				
MAX	0.93	0.048		

Fax # 9-708-5668

FIGURE L-7

Manatee County Lena Road Landfill

# Monthly Groundwater Gradient Report

Month and Year: November 2017

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	25.40	<i>inward</i>	GW-3	39.40	32.06
P-4	40.78	23.72	<i>inward</i>	GW-4	40.53	31.38
P-5	40.73	23.72	<i>inward</i>	GW-5	39.90	31.23
P-6	40.74	23.63	<i>inward</i>	GW-6	38.95	28.55
P-7	40.60	23.58	<i>inward</i>	GW-7	39.49	28.49
P-8	40.21	23.51	<i>inward</i>	GW-8	39.75	27.18
P-9	39.97	23.74	<i>inward</i>	GW-9	39.65	27.23
P-10	39.86	22.70	<i>inward</i>	GW-10	38.34	27.49
P-11	40.52	23.99	<i>inward</i>	GW-11	38.26	30.07
P-12	43.28	30.57	<i>inward</i>	GW-12	42.09	32.30
P-13	44.78	30.76	<i>inward</i>	GW-13	44.79	33.57
P-14	45.09	30.36	<i>inward</i>	GW-14	39.63	34.12
P-15	45.57	30.97	<i>inward</i>	GW-15	42.33	34.55
P-16	44.67	31.07	<i>inward</i>	GW-16	44.41	35.06
P-17	44.28	30.66	<i>inward</i>	GW-17	42.19	33.61
P-18	43.16	23.97	<i>inward</i>	GW-18	41.76	31.47
P-19	42.91	23.08	<i>inward</i>	GW-19	41.20	30.44
P-20	42.54	25.57	<i>inward</i>	GW-20	41.00	29.46
P-21	42.23	25.02	<i>inward</i>	GW-21	40.94	27.06
P-22	42.06	23.91	<i>inward</i>	GW-22	41.53	26.73
P-23	42.08	22.42	<i>inward</i>	GW-23	40.91	28.49
P-24	42.03	19.97	<i>inward</i>	GW-24	41.37	28.86
P-25	42.16	19.19	<i>inward</i>	GW-25	41.11	30.17
P-26	42.50	19.16	<i>inward</i>	GW-26	41.44	32.08
P-27R	42.73	19.60	<i>inward</i>	GW-27R	40.90	32.01

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: 11/27/2017