Smith, George

From: Fischer, Shane <SFischer@SCSEngineers.com>
Sent: Tuesday, June 13, 2017 10:22 AM
To: SWD_Waste
Cc: Morris, John R.; Anthony Detweiler; Bryan White; Lynette Falkowski; Cooper, Dan; Lebron, Carlo
Subject: Manatee County Lena Road Landfill Monthly Report May 2017
Attachments: Monthly Gradient Report May 2017.pdf

Mr. Morris,

Attached is the Manatee County Lena Road Landfill Monthly Report (for May 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

June 13, 2017
File No. 09217088.01

Mr. John Morris, P.G.
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 - May 2017

Dear Mr. Morris:

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. During this monthly event an outward hydraulic gradient was identified at monitoring points P-12 and GW-12, P16 and GW-16, and P-21 and GW-21. The following liquid measurements were identified at these locations:

Monitoring Points	Leachate Elevation	Groundwater Elevation	Gradient Differential (Feet)
P-12/GW-12	30.62	29.77	0.85
P-16/GW-16	31.09	30.09	1.00
P-21/GW-21	24.48	23.82	0.66

Due to the readings obtained during the May event, the County and SCS are currently reviewing historical piezometer and groundwater readings to evaluate possible trends. The County will continue normal pumping operations and will review the readings at these monitoring points during the next monthly event.

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

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

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

SRF/BMW:srf
Attachments

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

58026
6/13/17

EXHIBIT A

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY
LENA ROAD LANDFILL
MONTHLY WATER BALANCE REPORT
May-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-May-17	28,253	7,365	35,618	210,184	24,241	298,296	0.00	0
2-May-17	11,897	33	11,930	72,464	12,078	108,369	0.03	232,998
3-May-17	11,919	36	11,955	80,088	8,047	112,009	0.00	0
4-May-17	14,245	7,301	21,546	65,720	12,036	113,547	0.02	155,332
5-May-17	16,150	38	16,188	72,408	12,034	116,780	0.12	931,994
6-May-17	0	0	0	0	0	0	0.00	0
7-May-17	0	0	0	0	0	0	0.00	0
8-May-17	2,489	22,278	24,767	205,496	23,862	256,614	0.00	0
9-May-17	15,142	34	15,176	73,096	6,660	110,074	0.00	0
10-May-17	11,411	31	11,442	65,976	7,998	96,827	0.00	0
11-May-17	11,388	7,580	18,968	73,320	8,025	111,701	0.00	0
12-May-17	13,680	33	13,713	65,912	12,106	105,411	0.00	0
13-May-17	0	0	0	0	0	0	0.06	465,997
14-May-17	0	0	0	0	0	0	0.00	0
15-May-17	28,617	14,878	43,495	206,192	27,967	306,271	0.00	0
16-May-17	63	7,557	7,620	66,224	8,110	82,017	0.04	310,665
17-May-17	64	7,542	7,606	65,768	8,090	81,528	0.00	0
18-May-17	55	7,355	7,410	65,568	8,055	81,088	0.00	0
19-May-17	52	15,107	15,159	73,640	7,949	96,800	0.15	1,164,992
20-May-17	0	0	0	0	0	0	0.98	7,611,284
21-May-17	0	0	0	0	0	0	0.00	0
22-May-17	49	29,766	29,815	210,472	23,712	264,048	0.09	698,995
23-May-17	152	14,215	14,367	75,280	12,215	102,014	0.00	0
24-May-17	8,304	14,839	13,143	72,800	11,983	96,230	0.40	3,106,646
25-May-17	1,514	14,097	25,611	73,776	7,890	118,791	0.00	0
26-May-17	52	7,514	7,566	73,992	7,951	89,561	0.00	0
27-May-17	0	0	0	0	0	0	0.00	0
28-May-17	0	0	0	0	0	0	0.00	0
29-May-17	0	0	0	0	0	0	0.00	0
30-May-17	2,900	37,288	40,188	290,416	31,852	365,356	0.00	0
31-May-17	47	7,475	7,522	74,808	7,980	90,357	0.00	0
TOTAL	**178,443**	**222,362**	**400,805**	**2,333,600**	**290,841**	**3,203,689**	**1.89**	**14,678,904**
Leachate Pumped as Percentage of Rainfall				7.66%	38.53%	8.59%		

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).

	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
TOTAL	132.0	118.0	66.0	316.0
Open Area	**102.0**	**118.0**	**66.0**	**286.0**

Comments

"0" = no data recorded

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									
JULY									
AUGUST									
SEPTEMBER									
OCTOBER									
NOVEMBER									
DECEMBER									
TOTAL	**2,612,648**	**13,383,504**	**1,751,430**	**18,370,989**	**7.37**	**57,239,997**	**12.8%**	**65.6%**	**8.6%**

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	**Stage II**	**Stage III**	**TOTAL**
	(acres)	(acres)	(acres)	*(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		
5/1/17	8088006	1235753	9863054	107550576	32.34	Dry	OK	R.B
5/2/17	8099903	1235786	9875132	107623040	32.32	Dry	OK	R B
5/3/17	8111822	1235822	9883179	107703626	32.29	Dry	OK	R B.
5/4/17	8126067	1243123	9895215	107768848	32.25	Dry	OK	R.B.
5/5/17	8142217	1243161	9907249	107841256	32.24	Dry	OK	R B
5/6/17								
5/7/17								
5/8/17	8144706	1265439	9931111	108046252	32.15	Dry	OK	R.B
5/9/17	8159848	1265473	9937771	108119648	32.12	Dry	OK	R B
5/10/17	8171259	1265804	9945769	108185824	32.10	Dry	OK	R B
5/11/17	8182647	1273084	9953794	108259144	32.08	Dry	OK	R B
5/12/17	8196327.50	1273117.50	9965900	108325052	32.00	DRY	OK	dm
5/13/17								
5/14/17								
5/15/17	8224944	1287995	9993867	108534948	32.00	Dry	OK	R B
5/16/17	8325007	1295552	10001977	108597472	32.00	Dry	OK	DRS
5/17/17	8225071	1303094	10016067	108663240	32.00	Dry	OK	DRS
5/18/17	8225126	1310449	10018122	108728808	32.00	DRY	OK	DRS
5/19/17	8225178	1325556	10026071	108802448	32.00	Dry	OK	DRS
5/20/17								
5/21/17								
5/22/17	8225327	1355322.58	10049783	109012920	32.00	Dry	OK	M.H.G
5/23/17	8225379	1365537	10061995	109068800	32.00	Dry	OK	R B
5/24/17	8233603	1384376	10073961	109116000	32.00	Dry	OK	R B
5/25/17	8235197	1396473	10081871	109234076	32.00	Dry	OK	R B
5/26/17	8235249	1409987	10089822	109305768	32.00	Dry	OK	R B
5/27/17								
5/28/17								
3/29/17								
3/30/17	8238149	1443275	10121674	109599184	32.00	Dry	OK	R B
3/31/17	8238196	1450150	10129154	109673992	32.00	Dry	OK	R B

LANDFILL SHEET		
2017 May	RAIN FALL	LEACHATE MGD
1	0.00	0.024
2	0.03	0.022
3	0.00	0.021
4	0.02	0.026
5	0.12	0.021
6	0.00	0.019
7	0.00	0.021
8	0.00	0.022
9	0.00	0.022
10	0.00	0.022
11	0.00	0.022
12	0.00	0.022
13	0.06	0.024
14	0.00	0.020
15	0.00	0.019
16	0.04	0.021
17	0.00	0.019
18	0.00	0.021
19	0.15	0.022
20	0.98	0.019
21	0.00	0.022
22	0.09	0.020
23	0.00	0.028
24	0.40	0.023
25	0.00	0.021
26	0.00	0.021
27	0.00	0.022
28	0.00	0.021
29	0.00	0.021
30	0.00	0.021
31	0.00	0.022
TOTAL	1.89	0.671
AVG		0.022
MIN		
MAX	0.98	0.028

Fax # 9-708-5668

LAKE LEVEL DATA IN FEET NGVD	
SOUTH (86 ACRE)	EAST (63 ACRE)
38.70	27.70
38.60	27.30
38.50	27.60
38.40	27.40
38.30	27.30
38.10	27.10
38.00	27.10
37.90	27.10
37.50	26.70
37.60	27.00
37.60	26.60
37.60	26.50
37.60	26.60
37.50	25.90
37.50	26.20
37.30	26.10
37.30	26.10
37.20	26.10
37.30	26.20
37.30	26.20
37.30	26.10
37.30	26.20
37.30	26.20
37.40	26.30
37.40	26.20
37.30	26.40
37.40	26.40
37.40	26.40
37.30	26.10
36.90	25.70
37.20	25.40

FIGURE L-7

Manatee County Lena Road Landfill

Monthly Groundwater Gradient Report

Month and Year: May 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	23.76	*inward*	GW-3	39.40	30.03
P-4	40.78	23.79	*inward*	GW-4	40.53	29.17
P-5	40.73	23.81	*inward*	GW-5	39.90	28.79
P-6	40.74	23.76	*inward*	GW-6	38.95	28.93
P-7	40.60	23.72	*inward*	GW-7	39.49	25.66
P-8	40.21	23.66	*inward*	GW-8	39.75	24.38
P-9	39.97	23.67	*inward*	GW-9	39.65	23.85
P-10	39.86	22.71	*inward*	GW-10	38.34	23.99
P-11	40.52	23.92	*inward*	GW-11	38.26	27.66
P-12	43.28	30.62	*outward*	GW-12	42.09	29.77
P-13	44.78	30.77	*inward*	GW-13	44.79	31.96
P-14	45.09	30.28	*inward*	GW-14	39.63	31.12
P-15	45.57	30.97	*inward*	GW-15	42.33	32.82
P-16	44.67	31.09	*outward*	GW-16	44.41	30.09
P-17	44.28	30.67	*inward*	GW-17	42.19	30.68
P-18	43.16	23.85	*inward*	GW-18	41.76	29.66
P-19	42.91	22.83	*inward*	GW-19	41.20	26.91
P-20	42.54	25.13	*inward*	GW-20	41.00	25.94
P-21	42.23	24.48	*outward*	GW-21	40.94	23.82
P-22	42.06	23.60	*inward*	GW-22	41.53	23.63
P-23	42.08	22.42	*inward*	GW-23	40.91	24.41
P-24	42.03	19.89	*inward*	GW-24	41.37	24.87
P-25	42.16	19.23	*inward*	GW-25	41.11	27.01
P-26	42.50	19.29	*inward*	GW-26	41.44	29.11
P-27R	42.73	19.62	*inward*	GW-27R	40.90	29.22

NA = Not Applicable - wells and piezometers abondoned in March 2016

Wells (GW-18 through GW-27R) and piezometers (P-18 through P-27R) installed in April 2016

Date Data Collected: May 30, 2017