Smith, George

From: Bayne, Bradley J <Bradley.Bayne@atkinsglobal.com>
Sent: Tuesday, January 17, 2017 12:44 PM
To: SWD_Waste (Shared Mailbox)
Cc: Morris, John R.; Tafuni, Steven; Anthony Detweiler; Lynette Falkowski; Bryan White; Starr, Matthew S; Cronyn, Edward
Subject: 0810055-012-AV / Manatee County -Lena Road Landfill Monthly Report_December 2016
Attachments: 0810055-012-AV_Manatee County-Lena Road Landfill Monthly Report_DEP-December 2016.pdf

Mr. Morris,

Attached is the Manatee County Lena Road Landfill Monthly Report (for December 2016) which includes the following:

- Monthly Water Balance Report (Exhibit A)
- Monthly Leachate Tracking Summary – 2016 (Exhibit B)
- Monthly Leachate Readings
- Monthly Rainfall
- Monthly Groundwater Gradient Report

If you should have any questions concerning this report, please call me at 813-281-8377.

Thanks,

Brad Bayne, P.G.
Senior Scientist II, GeoSciences Group

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January 13, 2017

Mr. John Morris, P.G.
Florida Department of Environmental Protection
Southwest District Office - Solid Waste Section
13051 N. Telecom Parkway
Temple Terrace, Florida 33637-0926

Re: Manatee County Lena Road Landfill
Monthly Report –December 2016

Dear Mr. Morris:

This letter includes the following monthly reports: Monthly Water Balance Report (Exhibit A), Monthly Leachate Tracking Summary - 2016 (Exhibit B), Monthly Leachate Meter Readings, Monthly Rainfall, Monthly Groundwater Gradient Report. Due to the relatively low amount of rainfall in December, the percentage of leachate in comparison to the rainfall amount is higher than usual (as compared to months with typical rainfall).

If you should have any questions concerning this report, please call me at 813/281-8377.

Sincerely,

Bradley J. Bayne

Bradley Bayne, P.G.
Senior Geologist
Florida PG #1733

Attachments

cc: C. Mike Gore, Manatee County Utilities Department Director
Bryan White, Manatee County Landfill Superintendent
Anthony Detweiler, Manatee County Landfill Operations Supervisor
File – 100047674-01.01

EXHIBIT A

MANATEE COUNTY SOLID WASTE MANAGEMENT FACILITY
LENA ROAD LANDFILL
MONTHLY WATER BALANCE REPORT
December-16

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)
01-Dec-16	19,553	95	19,648	148,692	19,480	187,820	0.00	0
02-Dec-16	17,829	87	17,916	154,208	19,324	191,448	0.00	0
03-Dec-16	0	0	0	0	0	0	0.00	0
04-Dec-16	0	0	0	0	0	0	0.00	0
05-Dec-16	55,680	15,118	70,798	425,386	53,296	549,480	0.00	0
06-Dec-16	21,232	91	21,323	138,134	19,305	178,762	1.00	7,766,625
07-Dec-16	18,337	91	18,428	144,176	14,921	177,525	0.00	0
08-Dec-16	15,911	7,189	23,100	139,528	18,815	181,443	0.02	155,332
09-Dec-16	16,983	79	17,062	134,528	14,661	166,251	0.18	1,397,992
10-Dec-16	0	0	0	0	0	0	0.00	0
11-Dec-16	0	0	0	0	0	0	0.02	155,332
12-Dec-16	1,907	7,123	9,030	42,616	51,736	103,382	0.00	0
13-Dec-16	1,801	7,179	8,980	288,528	16,182	313,690	0.00	0
14-Dec-16	48,524	7,382	55,906	183,376	18,928	258,210	0.00	0
15-Dec-16	23,624	103	23,727	156,144	14,869	194,740	0.00	0
16-Dec-16	19,156	98	19,254	153,856	18,913	192,023	0.00	0
17-Dec-16	0	0	0	0	0	0	0.00	0
18-Dec-16	0	0	0	0	0	0	0.00	0
19-Dec-16	54,463	15,222	69,685	424,552	48,196	542,433	0.00	0
20-Dec-16	15,032	80	15,112	127,408	14,452	156,972	0.00	0
21-Dec-16	18,287	89	18,376	128,512	14,513	161,401	0.00	0
22-Dec-16	18,874	7,365	26,239	133,568	18,692	178,499	0.00	0
23-Dec-16	0	0	0	0	0	0	0.00	0
24-Dec-16	0	0	0	0	0	0	0.00	0
25-Dec-16	0	0	0	0	0	0	0.00	0
26-Dec-16	0	0	0	0	0	0	0.00	0
27-Dec-16	84,397	7,609	92,006	638,368	77,162	807,536	0.00	0
28-Dec-16	18,267	7,357	25,624	118,784	14,756	159,164	0.00	0
29-Dec-16	20,158	79	20,237	126,448	15,173	161,858	0.00	0
30-Dec-16	16,873	7,124	23,997	118,096	14,620	156,713	0.00	0
31-Dec-16	0	0	0	0	0	0	0.00	0
TOTAL	**506,888**	**89,560**	**596,448**	**3,924,908**	**497,994**	**5,019,350**	**1.22**	**9,475,282**
Leachate Pumped as Percentage of Rainfall			17.7%	100.4%	22.8%			

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 -- 2016

	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	785,550	0	0	785,550	5.67	25,867,748	8.5%	0.0%	0.0%
FEBRUARY	961,680	0	0	961,680	1.67	7,618,986	35.4%	0.0%	0.0%
MARCH	581,148	0	168,250	749,398	1.58	7,208,297	22.6%	0.0%	10.1%
APRIL	576,293	0	509,075	1,085,368	2.56	11,679,265	13.8%	0.0%	18.9%
MAY	718,675	0	798,107	1,516,782	8.81	40,193,097	5.0%	0.0%	8.6%
JUNE	747,181	0	1,003,510	1,750,691	12.15	55,430,888	3.8%	0.0%	7.8%
JULY	669,228	0	769,741	1,438,969	8.66	39,508,765	4.7%	0.0%	8.4%
AUGUST	982,090	0	1,399,591	2,381,681	18.22	83,123,522	3.3%	0.0%	7.3%
SEPTEMBER	969,849	8,969,404	1,393,236	11,332,489	8.76	68,035,631	4.0%	32.0%	8.9%
OCTOBER	925,438	7,640,748	1,199,474	9,765,660	5.39	41,862,106	6.2%	44.2%	12.4%
NOVEMBER	710,632	5,009,668	639,146	6,359,446	0.05	388,331	513.1%	3126.7%	713.2%
DECEMBER	596,448	3,924,908	497,994	5,019,350	1.22	9,475,282	17.7%	100.4%	22.8%
TOTAL	**9,224,212**	**25,544,728**	**8,378,124**	**43,147,064**	**74.74**	**390,391,918**	**6.6%**	**15.9%**	**9.3%**

Notes: * = separate meter for Stage II completed installation and testing in late August 2016

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 the 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) ** = includes Stage II rainfall after August
7. (H) Stage I leachate pumped 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 Areas

	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		
12/1/16	5731252	768546	7899710	92531392	33.66	29.98	OK	DRS
12/2/16	5749061	766633	7919034	92609200	33.65	29.88	OK	RB
12/3/16								
12/4/16								
12/5/16	5804761	763751	7972330	93109986	33.61	29.66	OK	RB
12/6/16	5825993	763842	7991635	93249120	33.61	29.66	OK	RB
12/7/16	5844330	763933	8006556	93393896	33.72	30.07	OK	RB
12/8/16	5860241	791122	8025371	93535624	33.70	30.14	OK	RB
12/9/16	5877224	791201	8040032	93667352	33.66	30.22	OK	RB
12/10/16								
12/11/16								
12/12/16	5879131	798324	8091760	93709968	33.64	30.40	OK	RB
12/13/16	5880932	805503	8107950	93998496	33.64	30.40	OK	RB
12/14/16	5929456	812865	8086878	94181872	33.63	30.39	OK	RB
12/15/16	5953080	812968	8141747	94338016	33.63	30.39	OK	RB
12/16/16	5972236	813086	8160660	94491872	33.60	30.36	OK	DRS
12/17/16								
12/18/16								
12/19/16	6026699	836308	8205856	94911684	33.59	30.17	OK	RB
12/20/16	6041731	838388	8223508	95043632	33.59	30.07	OK	RB
12/21/16	6060018	838477	8237621	95172344	33.58	30.02	OK	RB
12/22/16	6078892	835842	8256513	95308912	33.58	29.96	OK	RB
12/23/16								
12/24/16								
12/25/16								
12/26/16								
12/27/16	6162289	843451	8333675	95944080	33.56	Dry	OK	RB
12/28/16	6181556	850808	8348431	96063064	33.56	Dry	OK	RB
12/29/16	6201714	850887	8363604	96189512	33.55	Dry	OK	RB
12/30/16	6219507	856011	8379284	96307408	33.55	Dry	OK	RB

LANDFILL SHEET			LAKE LEVEL DATA IN FEET NGVD	
2016 Dec	RAIN FALL	LEACHATE MGD	SOUTH (86 ACRE)	EAST (63 ACRE)
1	0.00	0.043	45.80	35.50
2	0.00	0.041	45.80	35.50
3	0.00	0.044	45.80	35.50
4	0.00	0.043	44.30	33.70
5	0.00	0.045	44.00	33.10
6	1.00	0.040	44.00	33.10
7	0.00	0.042	44.00	33.10
8	0.02	0.039	44.40	33.10
9	0.18	0.026	44.30	33.00
10	0.00	0.007	44.30	33.00
11	0.02	0.005	44.60	33.10
12	0.00	0.055	44.80	33.10
13	0.00	0.061	44.80	33.10
14	0.00	0.049	44.90	33.10
15	0.00	0.043	44.80	33.00
16	0.00	0.043	44.80	33.00
17	0.00	0.042	44.80	33.00
18	0.00	0.039	44.80	33.00
19	0.00	0.040	44.80	33.00
20	0.00	0.039	44.50	32.90
21	0.00	0.038	44.50	32.90
22	0.00	0.040	44.50	32.90
23	0.00	0.037	44.50	32.90
24	0.00	0.038	44.00	32.90
25	0.00	0.037	44.50	33.00
26	0.00	0.037	44.50	33.00
27	0.00	0.039	45.00	32.90
28	0.00	0.037	44.40	32.90
29	0.00	0.038	44.30	32.80
30	0.00	0.034	44.30	32.70
31	0.00	0.036	44.30	32.80
TOTAL	1.22	1.197		
AVG		0.039		
MIN				
MAX	1.00	0.061		

Fax # 9-708-5668

FIGURE L-7

Manatee County Lena Road Landfill

Monthly Groundwater Gradient Report

Month and Year: DECEMBER 2016

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	25.09	*inward*	GW-3	39.40	31.48
P-4	40.78	23.67	*inward*	GW-4	40.53	30.67
P-5	40.73	23.68	*inward*	GW-5	39.90	30.14
P-6	40.74	23.59	*inward*	GW-6	38.95	29.50
P-7	40.60	23.55	*inward*	GW-7	39.49	27.42
P-8	40.21	23.49	*inward*	GW-8	39.75	26.20
P-9	39.97	23.63	*inward*	GW-9	39.65	26.54
P-10	39.86	22.59	*inward*	GW-10	38.34	26.57
P-11	40.52	23.90	*inward*	GW-11	38.26	28.98
P-12	43.28	29.91	*inward*	GW-12	42.09	31.84
P-13	44.78	30.59	*inward*	GW-13	44.79	33.54
P-14	45.09	30.35	*inward*	GW-14	39.63	33.65
P-15	45.57	30.96	*inward*	GW-15	42.33	34.55
P-16	44.67	31.06	*inward*	GW-16	44.41	33.98
P-17	44.28	30.17	*inward*	GW-17	42.19	33.46
P-18	43.16	24.12	*inward*	GW-18	41.76	30.91
P-19	42.91	23.05	*inward*	GW-19	41.20	29.36
P-20	42.54	25.61	*inward*	GW-20	41.00	28.46
P-21	42.23	25.05	*inward*	GW-21	40.94	26.20
P-22	42.06	23.91	*inward*	GW-22	41.53	26.00
P-23	42.08	22.43	*inward*	GW-23	40.91	27.87
P-24	42.03	20.04	*inward*	GW-24	41.37	27.99
P-25	42.16	19.22	*inward*	GW-25	41.11	29.27
P-26	42.50	19.21	*inward*	GW-26	41.44	31.36
P-27R	42.73	19.61	*inward*	GW-27R	40.90	31.34

Comments:

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: DECEMBER 27, 2016

Form Revised December 6, 2004