ATKINS

Atkins North America, Inc.
482 South Keller Road
Orlando, Florida 32810-6101
Telephone: +1.407.647.7275
www.atkinsglobal.com/northamerica

June 13, 2016

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 –May 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. Between March 16, 2016 and May 4, 2016, monitoring wells GW-18 through GW-27R and piezometers P-18 through P-27R were installed around the perimeter of Stage II.

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

Sincerely,

Bradley D. 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
May-16

A	B	C	D	E	F	G	H
DATE	LEACHATE STAGE I Lift Station 1 (gallons)	LEACHATE STAGE I Lift Station 2 (gallons)	LEACHATE STAGE I TOTAL (gallons)	LEACHATE STAGE III TOTAL (gallons)	TOTAL LEACHATE PUMPED (gallons)	RAINFALL (inches)	RAINFALL (gallons)
01-May-16	0	0	0	0	0	0.00	0
02-May-16	51,887	7,555	59,442	49,823	109,265	0.00	0
03-May-16	16,744	104	16,848	17,711	34,559	0.00	0
04-May-16	22,745	7,041	29,786	23,112	52,898	7.30	33,304,155
05-May-16	23,227	133	23,360	38,187	61,547	0.00	0
06-May-16	23,114	6,924	30,038	55,277	85,315	0.00	0
07-May-16	0	0	0	0	0	0.00	0
08-May-16	0	0	0	0	0	0.00	0
09-May-16	57,313	7,185	64,498	101,991	166,489	0.00	0
10-May-16	19,622	155	19,777	26,517	46,294	0.00	0
11-May-16	19,695	158	19,853	28,447	48,300	0.00	0
12-May-16	21,062	7,071	28,133	25,800	53,933	0.00	0
13-May-16	21,576	164	21,740	28,361	50,101	0.00	0
14-May-16	0	0	0	0	0	0.00	0
15-May-16	0	0	0	0	0	0.00	0
16-May-16	64,854	13,456	78,310	74,296	152,606	0.00	0
17-May-16	21,107	135	21,242	20,341	41,583	0.83	3,786,637
18-May-16	21,501	130	21,631	25,081	46,712	0.02	91,244
19-May-16	20,580	7,206	27,786	20,281	48,067	0.10	456,221
20-May-16	20,044	123	20,167	23,025	43,192	0.51	2,326,729
21-May-16	0	0	0	0	0	0.00	0
22-May-16	0	0	0	0	0	0.00	0
23-May-16	64,585	7,272	71,857	70,889	142,746	0.00	0
24-May-16	18,470	7,273	25,743	22,824	48,567	0.00	0
25-May-16	16,045	105	16,150	17,986	34,136	0.00	0
26-May-16	16,657	103	16,760	20,181	36,941	0.00	0
27-May-16	21,656	125	21,781	22,745	44,526	0.00	0
28-May-16	0	0	0	0	0	0.00	0
29-May-16	0	0	0	0	0	0.00	0
30-May-16	0	0	0	0	0	0.05	228,111
31-May-16	83,407	366	83,773	85,232	169,005	0.00	0
TOTAL	**645,891**	**72,784**	**718,675**	**798,107**	**1,516,782**	**8.81**	**40,193,097**
Leachate Pumped as Percentage of Rainfall			2.9%	5.1%			

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 III.
F - Total leachate pumped to WWTP storage tank (D+E).
G - Rainfall (inches) recorded on this date.
H - Rainfall (gallons) calculated based on open area (G x Area x 27,156 gal/acre-in).

	Stage I (acres)	Stage III (acres)	TOTAL (acres)
Initial Cover	--	66.0	66.0
Intermediate Cover	102.0	--	102.0
Closed	30.0	--	30.0
TOTAL	132.0	66.0	198.0
Open Area	**102.0**	**66.0**	**168.0**

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
MONTH	STAGE I LEACHATE (gallons)	STAGE III LEACHATE (gallons)	TOTAL LEACHATE (gallons)	RAINFALL (inches)	RAINFALL (gallons)	STAGE I LEACHATE/ RAINFALL (%)	STAGE III LEACHATE /RAINFALL (%)
JANUARY	785,550	0	785,550	5.67	25,867,748	5.0%	0.0%
FEBRUARY	961,680	0	961,680	1.67	7,618,986	20.8%	0.0%
MARCH	581,148	168,250	749,398	1.58	7,208,297	13.3%	5.9%
APRIL	576,293	509,075	1,085,368	2.56	11,679,265	8.1%	11.1%
MAY	718,675	798,107	1,516,782	8.81	40,193,097	2.9%	5.1%
JUNE							
JULY							
AUGUST							
SEPTEMBER							
OCTOBER							
NOVEMBER							
DECEMBER							
TOTAL	**3,623,346**	**1,475,432**	**5,098,778**	**20.29**	**92,567,393**	**6.4%**	**4.1%**

Notes:

1. (B) Total leachate pumped from Stage I.
2. (C) Total leachate pumped from Stage III.
3. (D) Total leachate (Column B+C) pumped to the WWTP storage tank.
4. (E) Total rainfall in inches.
5. (F) Total rainfall in gallons (Stage I and III Open Area of 168-acres x Rainfall)
6. (G) Stage I leachate pumped as a percentage of rainfall.
7. (H) Stage III leachate pumped as a percentage of rainfall.

Landfill Stage Land Areas

	Stage I	Stage III	TOTAL
	(acres)	*(acres)*	*(acres)*
Initial Cover	--	66.0	66.0
Intermediate Cov	102.0	--	102.0
Closed	30.0	--	30.0
TOTAL	132.0	66.0	198.0
Open Area	**102.0**	**66.0**	**168.0**

LECHATE MAY 2016

DATE	LEACHATE			STORMWATER		COMMENTS	NAME
	METER # 1	METER # 2	METER # 3	S. G. # 1	S. G. # 2		
5/2/16	710505	105998	727148	33,39	29:76	OK	TDC
5/3/16	727249	106102	744859	33.40	29.60	OK	D.S
5/4/16	749994	113143	767971	35.00	33.75	OK	D S
5/5/16	773211	113276	806158	35.35	32.60	OK	D.S
5/6/16	796335	120200	861435	34.46	32.46	OK	D.S
5/9/16	853648	127385	963426	33.84	32.36	OK	TDC
5/10/16	873270	127540	989943	33.78	32.36	OK	DRS
5/11/16	892965	127698	1018390	33.77	32.30	OK	TDC
5/12/16	914027	134769	1044190	33.68	32.30	OK	TDC
5/13/16	935603	134933	1072551	33.68	32.26	OK	TDC
5/16/16	1000457	148389	1146447	33.61	32.09	OK	R B.
5/17/16	1021564	148524	1167188	33.59	32.01	OK	R B.
5/18/16	1043065	148654	1192269	33.65	32.02	OK	R B
5/19/16	1063645	155860	1212550	33.64	31 97	OK	R B.
5/20/16	1083669	155963	1235575	33.61	31.89.	OK	R B
5/23/16	1149274	163255	1306464	33.61	31.76	OK	R B
5/24/16	1166744	170528	1329288	33.59	31.69	OK	R B
5/25/16	1182789	170633	1347274	33.57	31.60	OK	R B.
5/26/16	1199446	170736	1360455	33.55	31.49	OK	R B
5/27/16	1221102	170861	1390200	33.52	31.40	OK	JR
5/30/16							
5/31/16	1304509	171227	1475432	33.80	30.00	OK	R.B.

LANDFILL SHEET			LAKE LEVEL DATA IN FEET NGVD	
2016 May	RAIN FALL	LEACHATE MGD	SOUTH (86 ACRE)	EAST (63 ACRE)
1	0.00	0.107	44.60	34.00
2	0.00	0.104	43.70	33.80
3	0.00	0.105	43.70	33.60
4	7.30	0.119	44.70	33.60
5	0.00	0.126	44.90	34.10
6	0.00	0.128	44.90	34.10
7	0.00	0.122	44.90	34.00
8	0.00	0.122	44.90	34.00
9	0.00	0.120	44.50	33.80
10	0.00	0.114	44.30	33.60
11	0.00	0.113	44.60	34.00
12	0.00	0.112	44.60	34.00
13	0.00	0.111	44.20	34.00
14	0.00	0.106	44.20	33.80
15	0.00	0.104	43.30	33.80
16	0.00	0.099	43.20	33.60
17	0.83	0.100	43.60	33.60
18	0.02	0.099	43.60	33.60
19	0.10	0.095	43.50	33.50
20	0.51	0.093	43.50	33.50
21	0.00	0.095	43.50	33.40
22	0.00	0.092	43.60	33.40
23	0.00	0.091	43.40	33.30
24	0.00	0.086	43.40	33.30
25	0.00	0.085	43.20	33.00
26	0.00	0.088	42.90	32.70
27	0.00	0.086	41.70	32.50
28	0.00	0.083	42.40	32.30
29	0.00	0.082	42.40	32.20
30	0.05	0.082	42.20	32.00
31	0.00	0.080	41.90	31.80
TOTAL	8.81	3.149		
AVG		0.102		
MIN				
MAX	7.30	0.128		

Fax # 9-708-5668

FIGURE L-7

Manatee County Lena Road Landfill

Monthly Groundwater Gradient Report

Month and Year: MAY 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	25.35	*inward*	GW-3	39.40	33.29
P-4	40.78	23.75	*inward*	GW-4	40.53	32.39
P-5	40.73	23.75	*inward*	GW-5	39.90	31.91
P-6	40.74	23.42	*inward*	GW-6	38.95	31.40
P-7	40.60	23.46	*inward*	GW-7	39.49	31.04
P-8	40.21	23.60	*inward*	GW-8	39.75	30.02
P-9	39.97	23.60	*inward*	GW-9	39.65	30.02
P-10	39.86	22.61	*inward*	GW-10	38.34	30.30
P-11	40.52	23.91	*inward*	GW-11	38.26	31.32
P-12	43.28	29.89	*inward*	GW-12	42.09	32.13
P-13	44.78	30.60	*inward*	GW-13	44.79	33.67
P-14	45.09	30.30	*inward*	GW-14	39.63	34.09
P-15	45.57	30.95	*inward*	GW-15	42.33	34.82
P-16	44.67	30.99	*inward*	GW-16	44.41	34.10
P-17	44.28	30.10	*inward*	GW-17	42.19	33.85
P-18	43.16	24.35	*inward*	GW-18	41.76	32.51
P-19	42.91	23.16	*inward*	GW-19	41.20	31.74
P-20	42.54	26.32	*inward*	GW-20	41.00	30.64
P-21	42.23	25.32	*inward*	GW-21	40.94	27.81
P-22	42.06	24.25	*inward*	GW-22	41.53	28.11
P-23	42.08	22.61	*inward*	GW-23	40.91	31.09
P-24	42.03	20.32	*inward*	GW-24	41.37	30.55
P-25	42.16	18.79	*inward*	GW-25	41.11	31.65
P-26	42.50	19.12	*inward*	GW-26	41.44	33.07
P-27R	42.73	19.29	*inward*	GW-27R	40.90	33.02

Comments:

NA = Not Applicable - wells and piezometers (GW-1/P-1 and GW-2/P-2) abandoned in March 2016

Stage II wells (GW-18 through GW-27R) and piezometers (P-18 through P-27R) installed in April 2016

Date Data Collected: MAY 23, 2016

Form Revised December 6, 2004

6/8/2016 - 9:47 AM