

Johnson, Sabrina O

From: Fischer, Shane <SFischer@SCSEngineers.com>
Sent: Wednesday, April 11, 2018 2:11 PM
To: SWD_Waste; Tafuni, Steven
Cc: Anthony Detweiler; Bryan White; Lynette Falkowski; Cooper, Dan; Lebron, Carlo
Subject: Manatee County Lena Road Landfill Monthly Report March 2018
Attachments: Monthly Gradient Report March 2018.pdf

Mr. Tafuni,

Attached is the Manatee County Lena Road Landfill Monthly Report (for March 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
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SCS ENGINEERS

April 11, 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 - March 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.

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

Sincerely,

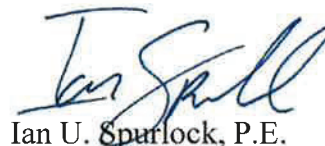


Shane R. Fischer, P.E.
Project Director
SCS ENGINEERS

SRF/IUS:srf

Attachments

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



Ian U. Spurlock, P.E.
Project Professional
SCS ENGINEERS

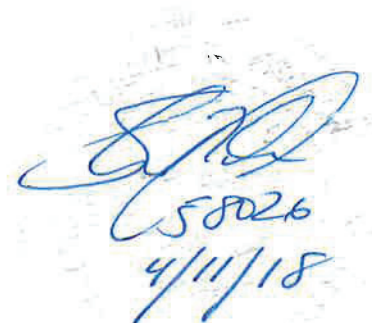


EXHIBIT A

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

| A | B | C | D | E | F | G | H | I |
|---|---|---|--|---|--|---|-------------------------------------|--------------------------------------|
| DATE | LEACHATE STAGE I Lift Station 1 <small>(gallons)</small> | LEACHATE STAGE I Lift Station 2 <small>(gallons)</small> | LEACHATE STAGE I TOTAL <small>(gallons)</small> | LEACHATE STAGE II TOTAL <small>(gallons)</small> | LEACHATE STAGE III TOTAL <small>(gallons)</small> | TOTAL LEACHATE PUMPED <small>(gallons)</small> | RAINFALL <small>(inches)</small> | RAINFALL <small>(gallons)</small> |
| 1-Mar-18 | 24,224 | 49 | 24,273 | 69,200 | 17,250 | 110,723 | 0.00 | 0 |
| 2-Mar-18 | 21,853 | 6,954 | 28,807 | 73,168 | 14,636 | 116,611 | 0.00 | 0 |
| 3-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 |
| 4-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 |
| 5-Mar-18 | 60,770 | 7,214 | 67,984 | 202,496 | 42,868 | 313,348 | 0.00 | 0 |
| 6-Mar-18 | 21,014 | 39 | 21,053 | 64,576 | 17,068 | 102,697 | 0.00 | 0 |
| 7-Mar-18 | 22,614 | 7,064 | 29,678 | 65,936 | 16,924 | 112,538 | 0.38 | 2,951,314 |
| 8-Mar-18 | 20,791 | 37 | 20,828 | 64,688 | 13,416 | 98,932 | 0.00 | 0 |
| 9-Mar-18 | 18,262 | 6,790 | 25,052 | 72,192 | 13,382 | 110,626 | 0.00 | 0 |
| 10-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.05 | 388,331 |
| 11-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.01 | 77,666 |
| 12-Mar-18 | 64,334 | 6,940 | 71,274 | 191,664 | 50,446 | 313,384 | 0.10 | 776,662 |
| 13-Mar-18 | 18,295 | 34 | 18,329 | 64,528 | 9,880 | 92,737 | 0.00 | 0 |
| 14-Mar-18 | 17,631 | 7,236 | 24,867 | 64,336 | 13,396 | 102,599 | 0.00 | 0 |
| 15-Mar-18 | 16,609 | 36 | 16,645 | 65,952 | 13,032 | 95,629 | 0.00 | 0 |
| 16-Mar-18 | 18,000 | 36 | 18,036 | 65,168 | 13,330 | 96,534 | 0.00 | 0 |
| 17-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 |
| 18-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 |
| 19-Mar-18 | 61,010 | 14,104 | 75,114 | 192,960 | 47,338 | 315,412 | 0.00 | 0 |
| 20-Mar-18 | 22,656 | 40 | 22,696 | 64,448 | 17,412 | 104,556 | 0.92 | 7,145,287 |
| 21-Mar-18 | 20,686 | 6,847 | 27,533 | 63,776 | 13,530 | 104,839 | 0.00 | 0 |
| 22-Mar-18 | 14,472 | 30 | 14,502 | 56,480 | 9,740 | 80,722 | 0.00 | 0 |
| 23-Mar-18 | 14,440 | 33 | 14,473 | 71,008 | 9,850 | 95,331 | 0.00 | 0 |
| 24-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 |
| 25-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 |
| 26-Mar-18 | 55,271 | 7,591 | 62,862 | 189,568 | 44,174 | 296,604 | 0.00 | 0 |
| 27-Mar-18 | 13,891 | 804 | 14,695 | 62,896 | 9,538 | 87,129 | 0.00 | 0 |
| 28-Mar-18 | 16,948 | 6,762 | 23,710 | 60,738 | 13,258 | 97,706 | 0.00 | 0 |
| 29-Mar-18 | 18,846 | 37 | 18,883 | 63,742 | 16,898 | 99,523 | 0.00 | 0 |
| 30-Mar-18 | 18,799 | 7,424 | 26,223 | 63,056 | 13,428 | 102,707 | 0.00 | 0 |
| 31-Mar-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 |
| TOTAL | 581,416 | 86,101 | 667,517 | 1,952,576 | 430,794 | 3,050,887 | 1.46 | 11,339,259 |
| Leachate Pumped as Percentage of Rainfall | | | | 16.5% | 41.7% | 16.5% | | |

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

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 | | | | | | | | | |
| MAY | | | | | | | | | |
| JUNE | | | | | | | | | |
| JULY | | | | | | | | | |
| AUGUST | | | | | | | | | |
| SEPTEMBER | | | | | | | | | |
| OCTOBER | | | | | | | | | |
| NOVEMBER | | | | | | | | | |
| DECEMBER | | | | | | | | | |
| TOTAL | 2,188,387 | 6,824,384 | 1,468,904 | 10,481,675 | 4.74 | 36,813,760 | 16.7% | 52.0% | 11.2% |

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 |
| 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 | | |
| | 3/1/18 | 14115733 | 2635031 | 19246272 | 159866720 | 33.58 | | |
| 3/2/18 | 14137566 | 2641985 | 19262908 | 159941888 | 33.51 | 30.04 | OK | R.B. |
| 3/3/18 | | | | | | | | |
| 3/4/18 | | | | | | | | |
| 3/5/18 | 14196356 | 2649199 | 19305776 | 156144384 | 33.46 | 29.70 | OK | R.B. |
| 3/6/18 | 14219370 | 2649238 | 19322844 | 156208960 | 33.43 | 29.65 | OK | R.B. |
| 3/7/18 | 14241984 | 2656302 | 19339768 | 15627456 | 33.44 | 29.76 | OK | R.B. |
| 3/8/18 | 14262775 | 2656339 | 19353184 | 156339584 | 33.43 | 29.68 | OK | R.B. |
| 3/9/18 | 14281037 | 2663129 | 19366568 | 156411776 | 33.40 | 29.60 | OK | R.B. |
| 3/10/18 | | | | | | | | |
| 3/11/18 | | | | | | | | |
| 3/12/18 | 14345371 | 2670069 | 19417012 | 156603440 | 33.37 | 29.52 | OK | R.B. |
| 3/13/18 | 14363666 | 2670103 | 19426892 | 156667968 | 33.37 | 29.46 | OK | R.B. |
| 3/14/18 | 14381297 | 2677339 | 19440288 | 15673284 | 33.35 | 29.38 | OK | R.B. |
| 3/15/18 | 14397906 | 2677375 | 19453320 | 156796256 | 33.34 | Dry | OK | R.B. |
| 3/16/18 | 14415906 | 2677411 | 19466650 | 15686324 | 33.31 | Dry | OK | R.B. |
| 3/17/18 | | | | | | | | |
| 3/18/18 | | | | | | | | |
| 3/19/18 | 14476816 | 2681515 | 19513988 | 157098384 | 33.29 | Dry | OK | R.B. |
| 3/20/18 | 14499522 | 2681555 | 19531400 | 157120632 | 33.29 | Dry | OK | R.B. |
| 3/21/18 | 14520258 | 2688402 | 19544930 | 157184168 | 33.37 | 29.58 | OK | R.B. |
| 3/22/18 | 14537730 | 2688432 | 19554670 | 157241088 | 33.35 | 29.50 | OK | R.B. |
| 3/23/18 | 14549170 | 2699416 | 19564520 | 157312096 | 33.33 | 29.45 | OK | R.B. |
| 3/24/18 | | | | | | | | |
| 3/25/18 | | | | | | | | |
| 3/26/18 | 14604441 | 2706096 | 19608684 | 157501664 | 33.29 | Dry | OK | R.B. |
| 3/27/18 | 14619532 | 2706886 | 19618232 | 157544640 | 33.28 | Dry | OK | R.B. |
| 3/28/18 | 14635280 | 2713622 | 19631490 | 157625280 | 33.26 | Dry | OK | M.G. |
| 3/29/18 | 14654126 | 2713659 | 19648388 | 157689040 | 33.26 | Dry | OK | M.G. |
| 3/30/18 | 14672925 | 2721083 | 19661816 | 157752000 | 33.22 | Dry | OK | M.G. |

Landfill

| LANDFILL SHEET | | | LAKE LEVEL DATA IN FEET NGVD | |
|----------------|--------------|-----------------|---------------------------------|-------------------|
| 2018 Mar | RAIN FALL | LEACHATE MGD | SOUTH (86 ACRE) | EAST (63 ACRE) |
| 1 | 0.00 | 0.026 | 42.30 | 39.60 |
| 2 | 0.00 | 0.026 | 42.30 | 39.60 |
| 3 | 0.00 | 0.024 | 42.30 | 39.10 |
| 4 | 0.00 | 0.028 | 42.30 | 39.00 |
| 5 | 0.00 | 0.025 | 42.30 | 39.00 |
| 6 | 0.00 | 0.027 | 42.30 | 39.00 |
| 7 | 0.38 | 0.026 | 42.30 | 38.90 |
| 8 | 0.00 | 0.024 | 42.30 | 38.90 |
| 9 | 0.00 | 0.025 | 42.30 | 38.90 |
| 10 | 0.05 | 0.027 | 42.30 | 38.90 |
| 11 | 0.01 | 0.025 | 42.30 | 38.80 |
| 12 | 0.10 | 0.024 | 42.30 | 38.80 |
| 13 | 0.00 | 0.025 | 42.30 | 38.30 |
| 14 | 0.00 | 0.024 | 42.30 | 38.30 |
| 15 | 0.00 | 0.023 | 42.30 | 38.30 |
| 16 | 0.00 | 0.026 | 42.30 | 38.30 |
| 17 | 0.00 | 0.024 | 42.30 | 38.30 |
| 18 | 0.00 | 0.027 | 42.30 | 38.30 |
| 19 | 0.00 | 0.026 | 42.30 | 39.20 |
| 20 | 0.92 | 0.026 | 42.30 | 38.00 |
| 21 | 0.00 | 0.023 | 42.30 | 38.00 |
| 22 | 0.00 | 0.022 | 42.30 | 37.90 |
| 23 | 0.00 | 0.023 | 42.30 | 37.90 |
| 24 | 0.00 | 0.024 | 42.30 | 37.50 |
| 25 | 0.00 | 0.026 | 42.30 | 37.80 |
| 26 | 0.00 | 0.022 | 42.30 | 37.80 |
| 27 | 0.00 | 0.024 | 42.30 | 37.40 |
| 28 | 0.00 | 0.024 | 42.30 | 37.60 |
| 29 | 0.00 | 0.024 | 42.30 | 37.60 |
| 30 | 0.00 | 0.025 | 42.30 | 37.30 |
| 31 | 0.00 | 0.023 | 42.30 | 37.40 |
| TOTAL | 1.46 | 0.768 | | |
| AVG | | 0.025 | | |
| MIN | | | | |
| MAX | 0.92 | 0.028 | | |

Fax # 9-708-5668

FIGURE L-7

Manatee County Lena Road Landfill

Monthly Groundwater Gradient Report

Month and Year: March 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 | 24.98 | <i>inward</i> | GW-3 | 39.40 | 31.63 |
| P-4 | 40.78 | 23.81 | <i>inward</i> | GW-4 | 40.53 | 31.30 |
| P-5 | 40.73 | 23.77 | <i>inward</i> | GW-5 | 39.90 | 30.87 |
| P-6 | 40.74 | 23.74 | <i>inward</i> | GW-6 | 38.95 | 29.98 |
| P-7 | 40.60 | 23.59 | <i>inward</i> | GW-7 | 39.49 | 27.35 |
| P-8 | 40.21 | 23.64 | <i>inward</i> | GW-8 | 39.75 | 24.42 |
| P-9 | 39.97 | 22.64 | <i>inward</i> | GW-9 | 39.65 | 26.51 |
| P-10 | 39.86 | 22.67 | <i>inward</i> | GW-10 | 38.34 | 26.59 |
| P-11 | 40.52 | 23.85 | <i>inward</i> | GW-11 | 38.26 | 29.18 |
| P-12 | 43.28 | 29.53 | <i>inward</i> | GW-12 | 42.09 | 31.83 |
| P-13 | 44.78 | 30.75 | <i>inward</i> | GW-13 | 44.79 | 33.27 |
| P-14 | 45.09 | 30.31 | <i>inward</i> | GW-14 | 39.63 | 32.43 |
| P-15 | 45.57 | 30.87 | <i>inward</i> | GW-15 | 42.33 | 33.91 |
| P-16 | 44.67 | 31.04 | <i>inward</i> | GW-16 | 44.41 | 33.27 |
| P-17 | 44.28 | 30.16 | <i>inward</i> | GW-17 | 42.19 | 33.36 |
| P-18 | 43.16 | 23.90 | <i>inward</i> | GW-18 | 41.76 | 30.74 |
| P-19 | 42.91 | 20.86 | <i>inward</i> | GW-19 | 41.20 | 28.65 |
| P-20 | 42.54 | 25.12 | <i>inward</i> | GW-20 | 41.00 | 27.53 |
| P-21 | 42.23 | 24.46 | <i>inward</i> | GW-21 | 40.94 | 24.91 |
| P-22 | 42.06 | 23.61 | <i>inward</i> | GW-22 | 41.53 | 25.04 |
| P-23 | 42.08 | 22.42 | <i>inward</i> | GW-23 | 40.91 | 26.09 |
| P-24 | 42.03 | 19.90 | <i>inward</i> | GW-24 | 41.37 | 26.93 |
| P-25 | 42.16 | 19.19 | <i>inward</i> | GW-25 | 41.11 | 28.77 |
| P-26 | 42.50 | 19.15 | <i>inward</i> | GW-26 | 41.44 | 31.18 |
| P-27R | 42.73 | 19.59 | <i>inward</i> | GW-27R | 40.90 | 31.03 |

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: 03/26/2018