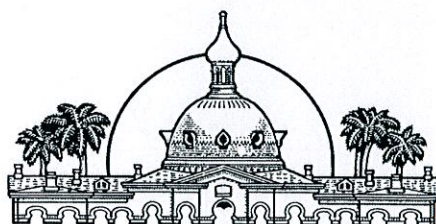


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January 9, 2012

Ms. Susan J. Pelz, P.E.  
Solid Waste Section  
Florida Department of Environmental Protection  
Southwest District  
13051 N. Telecom Pkwy  
Temple Terrace, Florida 33637

RE: Southeast County Landfill – Leachate Data Quarterly Report

Dear Ms. Pelz:

In accordance with Specific Condition No. 8 of Permit No. 35435-014-SO, the Solid Waste Management Group (SWMG) is submitting the Quarterly Leachate Water Balance summary for the Southeast County Landfill for the quarter ending January 15, 2012.

The data is being submitted as separate monthly reports for October, November, and December 2011. The information includes the leachate level in Pump Station B (PS-B). PS-B was below the 24-inch normal operation level during this quarter.

Also attached is the top of the phosphatic clay liner elevation at the Pump Station B Sump.

Please advise should you have any questions concerning the attached submittal.

Sincerely,

A handwritten signature in blue ink that reads "Larry E. Ruiz".

Larry E. Ruiz  
General Manager III  
Solid Waste Management Group  
Public Utilities Department

Attachment

xc: Rich Siemering, HDR  
Ron Cope, EPC  
Paul Schipfer, EPC

Dept. Of Environmental Protection  
JAN 18 2012  
Southwest District

**TABLE 3. LEACHATE BALANCE SUMMARY  
SOUTHEAST COUNTY LANDFILL  
HILLSBOROUGH COUNTY, FLORIDA  
YEAR-2011**

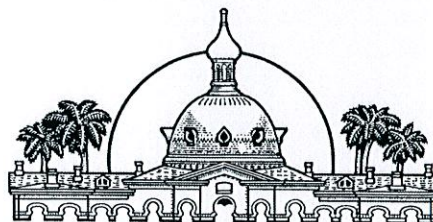
Month	Rainfall (in.)	Leachate Arriving at LTRF				Leachate Leaving LTRF			Effluent Disposal			Inflow / Outflow For LTRF		
		Leachate Hauled to LTRF from HHLF/TRLF (gal.)	Leachate from Section 9 Pumped to LTRF (gal.)	Leachate from Section 7-8 Pumped to LTRF (gal.)	Leachate from Phases I-VI Pumped to LTRF (gal.)	Total Leachate Hauled from LTRF (gal.)	Leachate Dust Control (Sprayed) (gal.)	Leachate Treated at LTRF (gal.)	Total Effluent Hauled (gal.)	Effluent Dust Control (Sprayed) (gal.)	Effluent Irrigation (gal.)	Total Inflow to LTRF (gal.)	Total Outflow from LTRF (gal.)	Change in Storage <sup>3</sup> (gal.)
January	3.65	0	24,351	39,496	739,603	894,048	42,104	0	0	0	0	803,450	936,152	-132,702
February	0.76	0	23,363	20,193	624,230	759,786	13,056	0	0	0	20,035	667,786	772,842	-105,056
March	7.69	0	23,662	20,672	684,412	755,806	12,009	0	0	0	27,337	728,746	767,815	-39,069
April	1.69	0	26,362	98,585	786,859	819,210	65,972	0	0	0	0	911,806	885,182	26,624
May	1.10	0	21,789	52,376	705,995	749,220	123,324	0	0	0	0	780,160	872,544	-92,385
June	8.04	0	19,669	61,037	662,771	532,937	117,426	0	0	0	0	743,477	650,363	93,114
July	11.76	0	19,712	200,692	1,034,289	1,201,511	8,710	0	0	0	108,000	1,254,693	1,210,221	44,472
August	7.61	0	24,227	144,022	1,131,091	1,088,781	0	0	0	0	0	1,299,340	1,088,781	210,559
September	3.84	0	21,972	100,605	1,008,537	1,135,216	87,364	0	0	0	0	1,131,114	1,222,580	-91,466
October	5.10	0	16,140	123,784	1,133,809	1,016,279	110,118	0	0	0	0	1,273,733	1,126,397	147,336
November	0.68	0	14,767	31,256	976,953	919,646	132,101	0	0	0	0	1,022,976	1,051,747	-28,771
December	0.30	0	18,806	71,178	932,543	900,650	74,529	0	0	0	0	1,022,527	975,179	47,348
YTD Total	52.22	0	254,819	963,896	10,421,092	10,773,090	786,713	0	0	0	155,372	11,639,807	11,559,803	80,004

Note:

1. If the bypass at the effluent pond is ever used to pump effluent back to the LTRF, this table must be modified.
2. Leachate from the Hillsborough Heights and Taylor Road landfills is being hauled to the Faulkenburg Road Wastewater Treatment Facility.
3. Change in storage represents total inflow to LTRF minus total outflow from LTRF.

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MEMORANDUM

DATE: November 4, 2011

TO: *fer* Larry Ruiz, General Manager III, Solid Waste Management Group

FROM: *CP* Cindy Pelley, Environmental Specialist II, Environmental Services Group  
Raymond Graves, Sr. Eng. Tech., Solid Waste Management Group

SUBJECT: Leachate Water Balance Report Forms for October  
Southeast County Landfill, Hillsborough County, Florida

The Solid Waste Management Group (SWMG) staff has compiled and reviewed the leachate management operational data from the Southeast County Landfill Phases I-VI, Sections 7-8, and Section 9. Attached are the Leachate Water Balance Report Form (Table 1), the Leachate Field Data Entry Form (Table 2), and the 2011 Summary (Table 3). Also, attached find Figure 1 showing leachate levels in Pump Station B sump of Phases I-VI and rainfall for the month.

TABLE 1

Day (Column I)

Column I presents the calendar days for the month.

Rainfall (Column II)

Column II presents the average rainfall, in inches, as measured in the field from rainfall stations at the site. This month there was 5.10 inches of rainfall at the Southeast County Landfill (SCLF).

Dept. Of Environmental Protection  
JAN 18 2012  
Southwest District



## MEMORANDUM

November 4, 2011

Page 2 of 6

### **Depth in Pond A (Column III)**

Column III presents the daily depth, in feet, of effluent stored in effluent pond (Pond A). The daily depth in Pond A varies as a function of the spray irrigation frequency/duration and effluent hauled from the pond. This month effluent was not stored in Pond A.

### **Depth in Pond B (Column IV)**

Column IV presents the daily depth, in feet, of effluent or leachate that is stored in the effluent/leachate storage pond (Pond B). The depth in Pond B varies as a function of the evaporation frequency/duration and effluent or leachate hauled from the pond. This month effluent/leachate was not stored in Pond B.

### **Estimated Depth at Pump Station B Sump (PS-B) (Column V)**

Column V presents the depth of leachate, in inches, in the PS-B sump. Leachate from Phases I-VI flows to the PS-B sump for removal from the landfill. PS-B then pumps the leachate to Pump Station A (PS-A). Daily depth readings from the PS-B sump are included in this column. This month PS-B was below the normal operation level of 24-inches. The average recorded depth of leachate in the PS-B sump was 21.5 inches.

### **Leachate Pumped to PS-B from TPS-6 (Column VI)**

Column VI presents the quantity of leachate from Phase IV pumped to PS-B by Temporary Pump Station-6 (TPS-6). The quantity of leachate removed by TPS-6 is measured in gallons by an in-line flow meter and is included in the quantity of leachate pumped to the Main Leachate Pump Station (MLPS) from Phases I-VI (Column VII).

The average daily amount of leachate pumped from TPS-6 was 12,465 gallons. A total of 386,430 gallons of leachate was pumped this month.

### **Leachate Pumped to MLPS from Phases I-VI (Column VII)**

Column VII presents the daily amount of leachate, in gallons, collected from PS-A and pumped through the MLPS to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. The quantity in column VII also includes the daily amount of leachate, in gallons, pumped from TPS-6. The average daily amount of leachate pumped from PS-A was 36,574 gallons. A total of 1,133,809 gallons of leachate was pumped this month.



MEMORANDUM

November 4, 2011

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**Leachate Pumped from Sections 7-8 LDS (Column VIII)**

Column VIII presents the quantity of leachate removed from the leak detection system (LDS) of Sections 7-8. The quantity is measured by a flow meter before being pumped for removal with Sections 7-8 leachate. The removal rate did not exceed 1,930 gallons per day. This month a total of 3,003 gallons of leachate was removed from the leak detection system of Sections 7-8.

**Leachate Pumped to MLPS from Sections 7-8 (Column IX)**

Column IX presents the quantity of leachate collected at Sections 7-8 and pumped to the MLPS. The quantity is measured by a flow meter and includes any leachate removed from the leak detection system of Sections 7-8 (Column VIII). This month a total of 123,784 gallons of leachate was pumped from Sections 7-8.

**Leachate Pumped to LTRF from the MLPS (Column X)**

Column X presents the total quantity of leachate pumped to the LTRF from Phases I-VI and Sections 7-8. This month a total of 1,257,593 gallons of leachate were pumped to the LTRF.

**Leachate Pumped to LTRF from Section 9 (Column XI)**

Column XI presents the daily amount of leachate, in gallons, collected from Section 9 and pumped to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. A total of 16,109 gallons of leachate was pumped this month.

**Leachate Pumped from Section 9 LDS (Column XII)**

Column XII presents the daily amount of leachate, in gallons, collected from the LDS of Section 9 and pumped to the 575,000-gallon storage tank at the LTRF for treatment or disposal. The removal rate did not exceed 4,651 gallons per day. This month a total of 31 gallons of leachate were removed from the leak detection system.

**Leachate in 575,000-Gallon Tank (Column XIII)**

Column XIII presents the daily amount of leachate, in gallons, stored in the 575,000-gallon leachate holding tank at the LTRF. The amount of leachate stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month leachate was not stored in the tank.

MEMORANDUM

November 4, 2011

Page 4 of 6

**Effluent in 575,000-Gallon Tank (Column XIV)**

Column XIV presents the daily amount of effluent, in gallons, stored in the 575,000-gallon effluent holding tank at the LTRF. The amount of effluent stored in the tank is calculated based on the circumference of the tank and the daily level reading. The treatment plant is down due to tankage inspection. As such, on December 1, 2010, the SWMG began storing leachate in this tank until the inspection of the leachate tank is completed. This month an average of 415,600 gallons of *leachate* was stored in the tank.

**Leachate Treated at LTRF (Column XV)**

Column XV presents the daily amount of leachate, in gallons, treated at the LTRF. The plant was shutdown on December 22, 2010 in preparation for tankage inspection. This month leachate was not treated at the plant.

**Total Leachate Hauled (Column XVI)**

Column XVI presents the daily amount of leachate, in gallons, hauled off site. This month a total of 1,016,279 gallons of leachate was hauled off site.

**Leachate Dust Control Sprayed (Column XVII)**

Column XVII presents the daily amount of leachate, in gallons, measured from the flow meter at the bypass-loading arm at the leachate storage tank. The leachate is used for dust control in the active area of the landfill. This month 110,118 gallons of leachate were used for dust control.

**Pond A Storage (Column XVIII)**

Column XVIII presents the daily amount of effluent, in gallons, stored in Pond A. The daily amount stored in the pond is calculated by using the daily depth of effluent in the Pond A (Column IV). Under normal operating conditions, the daily amount of effluent stored in the pond varies depending upon the daily amount of leachate treated at the LTRF, the daily rainfall, daily effluent hauling operations, daily spray irrigation operations, and the daily amount of effluent used for dust control/evaporation. This month effluent was not stored in Pond A.



## MEMORANDUM

November 4, 2011

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### **Pond B Storage (Column XIX)**

Column XIX presents the daily amount of effluent, in gallons, stored in Pond B. The daily amount stored in the pond is calculated by using the daily depth of effluent in Pond B (Column IV). Under normal operating conditions, the amount stored in the pond will vary depending upon the daily amount of effluent removed from the pond by the evaporation system, hauled from the pond, used for dust control or evaporated. This month effluent/leachate was not stored in Pond B.

### **Effluent Sprayed at Pond B (Column XX)**

Column XX presents the daily amount of effluent, in gallons, sprayed for evaporation at Pond B. The amount evaporated is calculated by using 5 percent of the daily flow meter quantity sprayed at Pond B and it is included in Column XXIV. This month effluent was not sprayed in Pond B.

### **Effluent Irrigation (Column XXI)**

Column XXI presents the daily amount of effluent, in gallons, used for spray irrigation on top of Phases I-VI. The daily amount of effluent irrigation on Phases I-VI is measured from the flow meter at the irrigation pump station. This month effluent was not used for spray irrigation.

### **Effluent Dust Control Sprayed (Column XXII)**

Column XXII presents the daily amount of effluent, in gallons, sprayed for dust control in the active areas of the SCLF. The daily amount of effluent used for dust control, is measured from the flow meter at the bypass-loading arm. This month effluent was not sprayed as dust control.

### **Total Effluent Hauled (Column XXIII)**

Column XXIII presents the daily amount of effluent, in gallons, hauled off site, as measured from the flow meter at the bypass-loading arm. This month effluent was not hauled off site.

### **Total Evaporation (Column XXIV)**

Column XXIV presents the daily amount of leachate and effluent, in gallons, that evaporates and therefore will not be returned to the SCLF and/or requires treatment. Evaporation rates of 80 percent and 5 percent evaporation rate for spray in Pond B are assumed. The total evaporation estimated for this month was 88,000 gallons.

MEMORANDUM  
November 4, 2011  
Page 6 of 6

**TABLE 2**

Table 2 presents data assembled from daily logs compiled by the SWMG staff.

**TABLE 3**

**Leachate Balance Summary**

The Leachate Balance Summary (see Table 3) presents a review of inflow and outflow quantities for the LTRF, as well as rainfall and effluent disposal quantities at the landfill. Total inflow quantity to the LTRF was 1,273,733 gallons. Total outflow quantity from the LTRF was 1,126,397 gallons. The change in storage for the month increased by 147,336 gallons.

Please advise should you have any questions concerning the information provided.



**TABLE 1. LEACHATE WATER BALANCE REPORT FORM  
OCTOBER 2011  
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV
Day	Rainfall (in.)	Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PS-B (in.)	Leachate Pumped to PS-B from TPS-6 (gal.)	Leachate Pumped to MLPS from Phases I-VI (gal.)	Leachate Pumped from Sections 7-8 LDS (gal.)	Leachate Pumped to MLPS from Sections 7-8 (gal.)	Leachate Pumped to LTRF from MPLS (gal.)	Leachate Pumped to LTRF from Section 9 (gal.)	Leachate Pumped from Section 9 LDS (gal.)	Leachate in 575K Tank (gal.)	Effluent in 575K Tank (gal.)	Leachate Treated at LTRF (gal.)	Total Leachate Hauled (gal.)	Leachate Dust Control (Sprayed) (gal.)	Pond A Storage (gal.)	Pond B Storage (gal.)	Effluent Sprayed Pond B (gal.)	Effluent Irrigation (gal.)	Effluent Dust Control (Sprayed) (gal.)	Total Effluent Hauled (gal.)	Total Evaporation (gal.)
1	0.00	0.0	0.0	22.0	16,610	37,007	2	2,521	39,528	0	0	0	365,000	0	0	3,006	0	0	0	0	0	0	2,400
2	0.00	0.0	0.0	22.1	9,175	27,878	0	0	27,878	0	0	0	388,000	0	0	0	0	0	0	0	0	0	0
3	0.00	0.0	0.0	22.2	9,175	27,878	0	0	27,878	0	0	0	410,000	0	44,607	9,000	0	0	0	0	0	0	7,200
4	0.00	0.0	0.0	23.3	17,960	30,234	30	4,765	34,999	0	0	0	386,000	0	37,763	9,017	0	0	0	0	0	0	7,200
5	0.00	0.0	0.0	18.5	17,720	30,957	68	2,935	33,892	48	0	0	381,000	0	37,978	4,000	0	0	0	0	0	0	3,200
6	0.00	0.0	0.0	14.9	17,510	32,230	0	2,812	35,042	0	0	0	372,000	0	38,337	9,016	0	0	0	0	0	0	7,200
7	0.12	0.0	0.0	21.5	18,070	32,977	1	2,536	35,513	44	2	0	355,000	0	33,223	6,002	0	0	0	0	0	0	4,800
8	1.80	0.0	0.0	21.4	17,660	31,559	23	5,065	36,624	255	0	0	358,000	0	0	0	0	0	0	0	0	0	0
9	2.07	0.0	0.0	21.2	8,930	37,933	121	7,304	45,236	819	2	0	403,000	0	0	0	0	0	0	0	0	0	0
10	0.00	0.0	0.0	21.0	8,930	37,933	121	7,304	45,236	819	2	0	449,000	0	51,499	0	0	0	0	0	0	0	0
11	0.00	0.0	0.0	22.0	18,220	47,055	117	7,288	54,343	770	1	0	449,000	0	39,083	0	0	0	0	0	0	0	0
12	0.00	0.0	0.0	21.8	18,060	44,618	176	6,461	51,079	554	1	0	456,000	0	32,509	6,005	0	0	0	0	0	0	4,800
13	0.00	0.0	0.0	23.4	17,460	43,888	222	6,542	50,430	1,172	2	0	473,000	0	58,221	0	0	0	0	0	0	0	0
14	0.00	0.0	0.0	21.0	17,730	46,032	271	7,321	53,353	2,206	2	0	466,000	0	61,118	15,032	0	0	0	0	0	0	12,000
15	0.00	0.0	0.0	21.3	6,330	37,044	385	6,461	43,505	2,290	0	0	432,000	0	64,222	3,002	0	0	0	0	0	0	2,400
16	0.00	0.0	0.0	21.9	3,495	35,482	612	6,080	41,562	0	0	0	439,000	0	0	0	0	0	0	0	0	0	0
17	0.00	0.0	0.0	22.4	3,495	35,482	612	6,080	41,562	0	0	0	446,000	0	46,004	0	0	0	0	0	0	0	0
18	0.18	0.0	0.0	22.0	17,240	46,168	159	5,694	51,862	0	0	0	444,000	0	51,272	0	0	0	0	0	0	0	0
19	0.07	0.0	0.0	21.0	17,690	54,514	2	4,684	59,198	19	0	0	451,000	0	25,895	0	0	0	0	0	0	0	0
20	0.00	0.0	0.0	23.3	3,260	28,470	0	2,347	30,817	0	0	0	461,000	0	44,309	9,002	0	0	0	0	0	0	7,200
21	0.00	0.0	0.0	21.0	0	26,082	0	1,805	27,887	0	0	0	427,000	0	62,883	6,001	0	0	0	0	0	0	4,800
22	0.00	0.0	0.0	21.3	9,710	29,199	0	2,013	31,212	270	1	0	394,000	0	64,615	3,006	0	0	0	0	0	0	2,400
23	0.00	0.0	0.0	21.5	4,495	35,711	2	1,958	37,669	504	5	0	401,000	0	0	0	0	0	0	0	0	0	0
24	0.00	0.0	0.0	21.6	4,495	35,711	2	1,958	37,669	504	5	0	408,000	0	44,181	7,024	0	0	0	0	0	0	5,600
25	0.00	0.0	0.0	22.4	18,730	35,976	0	1,142	37,118	657	0	0	391,000	0	38,233	12,001	0	0	0	0	0	0	9,600
26	0.00	0.0	0.0	22.2	17,460	36,087	0	1	36,088	662	5	0	381,000	0	38,138	3,002	0	0	0	0	0	0	2,400
27	0.04	0.0	0.0	22.2	16,830	43,164	0	1	43,165	639	1	0	381,000	0	24,903	6,002	0	0	0	0	0	0	4,800
28	0.23	0.0	0.0	21.5	17,760	40,162	0	4,667	44,829	629	1	0	394,000	0	38,577	0	0	0	0	0	0	0	0
29	0.16	0.0	0.0	21.5	15,510	40,671	39	6,034	46,705	854	0	0	410,000	0	0	0	0	0	0	0	0	0	0
30	0.10	0.0	0.0	21.4	8,360	32,854	21	5,004	37,858	0	0	0	441,000	0	0	0	0	0	0	0	0	0	0
31	0.33	0.0	0.0	21.3	8,360	32,854	21	5,004	37,858	2,394	2	0	473,000	0	38,709	0	0	0	0	0	0	0	0
Total	5.10				386,430	1,133,809	3,003	123,784	1,257,593	16,109	31			0	1,016,279	110,118			0	0	0	0	88,000
Daily Average		0.0	0.0	21.5	12,465	36,574	97	3,993	40,568	520	1	0	415,600				0	0					
Mo. Average																3,600				0	0	0	2,840

projects\balance\2011\10-11bal.xls (jdw 11/01/11)

**Notes:**

1. NR = No Records, NA = Not Available.
2. Values in bold are estimated, values in italic are substitute for missing data and are based on averaged values.
3. Daily average is calculated by dividing the total by the actual days measured in the month.
4. Monthly average calculated by dividing the total by the number of days of the month.
5. Column II, Trace is less than 0.01 inches and is not included in total.
6. Columns III and IV, field measured at staff gauges.
7. Column V, PPS-B sensor reading plus 9 inches.
8. Columns VIII & IX, Section 7-8 leak detection pumped into Section 7 leachate sump riser.
9. Column XIII and XIV, calculated from depth in 575,000 gal. tanks.
10. Columns VI-XII, XV-XVII, and XX-XXIII, quantities from flow meters.
11. Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.



**TABLE 2. FIELD DATA ENTRY FORM  
OCTOBER 2011  
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Day	Rainfall (in.)	Flow Meter TPS-6 (gal.)	Flow Meter Pump Sta. A (gal.)	Reading PS-B (in.)	Section 9 Pump 1 (gal.)	Section 9 Pump 2 (gal.)	Section 9 LDS (gal.)	Sections 7-8 Pump (gal.)	Sections 7-8 LDS (gal.)	Pond B Depth (ft.)	Pond B Effluent Sprayed (gal.)	Pond A Depth (ft.)	Effluent Spray Irrigation (gal.)	Depth in 575K Tank Leachate (ft.)	Depth in 575K Tank Effluent (ft.)	Leachate Treated at LTRF (gal.)	Leachate Hauled		Leachate Dust Control (Sprayed) (gal.)	Effluent Hauled		Effluent Dust Control (Sprayed) (gal.)
																	Contractor (gal.)	County (gal.)		Contractor (gal.)	County (gal.)	
1	0.00	27,229,340	5,015,421	13.0	1,891,923	1,542,633	5,483	3,378,099	12	0.0	0.0	0.0	0	0.00	12.67	0	0	0	3,006	0	0	0
2	0.00	27,238,515	5,043,299	13.1	1,891,923	1,542,633	5,483	3,378,099	12	0.0	0.0	0.0	0	0.00	13.5	0	0	0	0	0	0	0
3	0.00	27,247,690	5,071,177	13.2	1,891,923	1,542,633	5,483	3,378,099	12	0.0	0.0	0.0	0	0.00	14.25	0	26,729	17,878	9,000	0	0	0
4	0.00	27,265,650	5,101,411	14.3	1,891,923	1,542,633	5,483	3,382,864	42	0.0	0.0	0.0	0	0.00	13.42	0	19,756	18,007	9,017	0	0	0
5	0.00	27,283,370	5,132,368	9.5	1,891,971	1,542,633	5,483	3,385,799	110	0.0	0.0	0.0	0	0.00	13.25	0	19,976	18,002	4,000	0	0	0
6	0.00	27,300,880	5,164,598	5.9	1,891,971	1,542,633	5,483	3,388,611	110	0.0	0.0	0.0	0	0.00	12.92	0	20,332	18,005	9,016	0	0	0
7	0.12	27,318,950	5,197,575	12.5	1,892,015	1,542,633	5,485	3,391,147	111	0.0	0.0	0.0	0	0.00	12.33	0	27,215	6,008	6,002	0	0	0
8	1.80	27,336,610	5,229,134	12.4	1,892,015	1,542,888	5,485	3,396,212	134	0.0	0.0	0.0	0	0.00	12.42	0	0	0	0	0	0	0
9	2.07	27,345,540	5,267,067	12.2	1,892,027	1,543,695	5,487	3,403,516	255	0.0	0.0	0.0	0	0.00	14.0	0	0	0	0	0	0	0
10	0.00	27,354,470	5,304,999	12.0	1,892,039	1,544,502	5,488	3,410,819	375	0.0	0.0	0.0	0	0.00	15.58	0	27,478	24,021	0	0	0	0
11	0.00	27,372,690	5,352,054	13.0	1,892,063	1,545,248	5,489	3,418,107	492	0.0	0.0	0.0	0	0.00	15.58	0	27,078	12,005	0	0	0	0
12	0.00	27,390,750	5,396,672	12.8	1,892,073	1,545,792	5,490	3,424,568	668	0.0	0.0	0.0	0	0.00	15.83	0	26,509	6,000	6,005	0	0	0
13	0.00	27,408,210	5,440,560	14.4	1,892,094	1,546,943	5,492	3,431,110	890	0.0	0.0	0.0	0	0.00	16.42	0	40,215	18,006	0	0	0	0
14	0.00	27,425,940	5,486,592	12.0	1,892,094	1,549,149	5,494	3,438,431	1,161	0.0	0.0	0.0	0	0.00	16.17	0	61,118	0	15,032	0	0	0
15	0.00	27,432,270	5,523,636	12.3	1,892,094	1,551,439	5,494	3,444,892	1,546	0.0	0.0	0.0	0	0.00	15.00	0	64,222	0	3,002	0	0	0
16	0.00	27,435,765	5,559,118	12.9	1,892,094	1,551,439	5,494	3,450,972	2,158	0.0	0.0	0.0	0	0.00	15.3	0	0	0	0	0	0	0
17	0.00	27,439,260	5,594,600	13.4	1,892,094	1,551,439	5,494	3,457,051	2,769	0.0	0.0	0.0	0	0.00	15.50	0	27,979	18,025	0	0	0	0
18	0.18	27,456,500	5,640,768	13.0	1,892,094	1,551,439	5,494	3,462,745	2,928	0.0	0.0	0.0	0	0.00	15.42	0	32,978	18,294	0	0	0	0
19	0.07	27,474,190	5,695,282	12.0	1,892,113	1,551,439	5,494	3,467,429	2,930	0.0	0.0	0.0	0	0.00	15.67	0	19,884	6,011	0	0	0	0
20	0.00	27,477,450	5,723,752	14.3	1,892,113	1,551,439	5,494	3,469,776	2,930	0.0	0.0	0.0	0	0.00	16.00	0	26,522	17,787	9,002	0	0	0
21	0.00	27,477,450	5,749,834	12.0	1,892,113	1,551,439	5,494	3,471,581	2,930	0.0	0.0	0.0	0	0.00	14.83	0	56,882	6,001	6,001	0	0	0
22	0.00	27,487,160	5,779,033	12.3	1,892,113	1,551,709	5,495	3,473,594	2,930	0.0	0.0	0.0	0	0.00	13.67	0	64,615	0	3,006	0	0	0
23	0.00	27,491,655	5,814,744	12.5	1,892,113	1,552,213	5,500	3,475,552	2,932	0.0	0.0	0.0	0	0.00	13.9	0	0	0	0	0	0	0
24	0.00	27,496,150	5,850,455	12.6	1,892,113	1,552,717	5,505	3,477,510	2,933	0.0	0.0	0.0	0	0.00	14.17	0	26,467	17,714	7,024	0	0	0
25	0.00	27,514,880	5,886,431	13.4	1,892,113	1,553,374	5,505	3,478,652	2,933	0.0	0.0	0.0	0	0.00	13.58	0	19,866	18,367	12,001	0	0	0
26	0.00	27,532,340	5,922,518	13.2	1,892,113	1,554,036	5,510	3,478,653	2,933	0.0	0.0	0.0	0	0.00	13.25	0	20,011	18,127	3,002	0	0	0
27	0.04	27,549,170	5,965,682	13.2	1,892,113	1,554,675	5,511	3,478,654	2,933	0.0	0.0	0.0	0	0.00	13.25	0	6,700	18,203	6,002	0	0	0
28	0.23	27,566,930	6,005,844	12.5	1,892,113	1,555,304	5,512	3,483,321	2,933	0.0	0.0	0.0	0	0.00	13.67	0	20,533	18,044	0	0	0	0
29	0.16	27,582,440	6,046,515	12.5	1,892,113	1,556,158	5,512	3,489,355	2,972	0.0	0.0	0.0	0	0.00	14.25	0	0	0	0	0	0	0
30	0.10	27,590,800	6,079,369	12.4	1,892,113	1,558,552	5,514	3,494,359	2,993	0.0	0.0	0.0	0	0.00	15.3	0	0	0	0	0	0	0
31	0.33	27,599,160	6,112,223	12.3	1,892,113	1,560,946	5,515	3,499,362	3,013	0.0	0.0	0.0	0	0.00	16.42	0	20,691	18,018	0	0	0	0
Totals	5.10										0		0			0	703,756	312,523	110,118	0	0	0

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- Notes:
1. NR = No Records, NA = Not Available.
  2. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values
  3. Column IV includes quantities from leak detection system.

4. Column B, trace is less than 0.01 inches.
5. Columns C, D, F, G, H, I, J, L, N, Q, R-V and W are quantities from flow meters.
6. Columns K and M measured from staff gages in each pond.

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open	0	0	5
Intermediate	139.4	19.3	10
Final	23	0	0
Not Opened	0	0	0



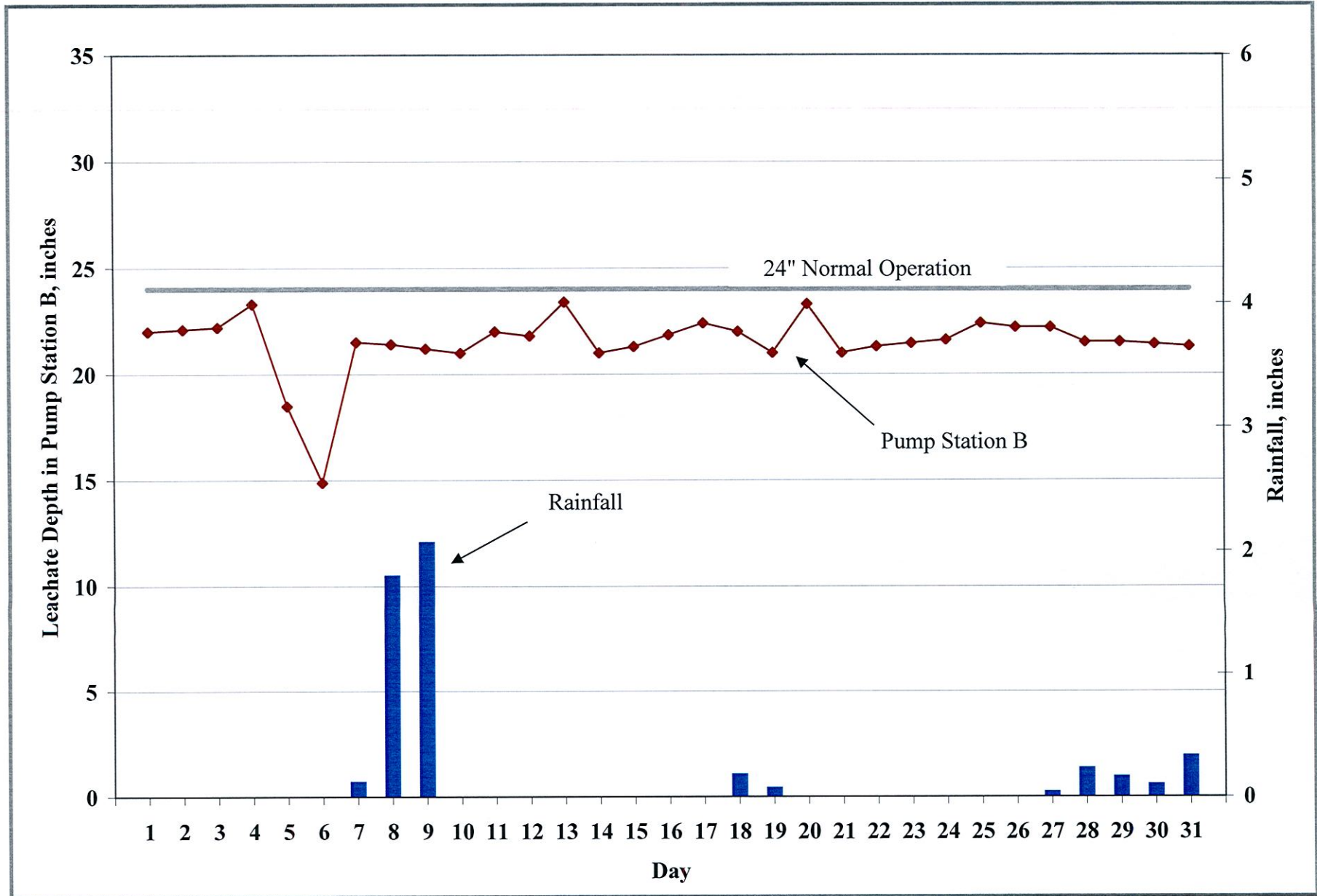
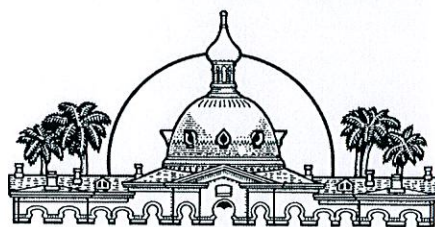


Figure 1. Leachate Levels in Pump Station B and Rainfall for October 2011.

BOARD OF COUNTY COMMISSIONERS

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MEMORANDUM

Dept. Of Environmental Protection  
JAN 18 2012  
Southwest District

**DATE:** December 23, 2011

**TO:** *for* Larry Ruiz, General Manager III, Solid Waste Management Group

**FROM:** *CP* Cindy Pelley, Environmental Specialist II, Environmental Services Group  
Raymond Graves, Sr. Eng. Tech., Solid Waste Management Group

**SUBJECT:** Leachate Water Balance Report Forms for November  
Southeast County Landfill, Hillsborough County, Florida

The Solid Waste Management Group (SWMG) staff has compiled and reviewed the leachate management operational data from the Southeast County Landfill Phases I-VI, Sections 7-8, and Section 9. Attached are the Leachate Water Balance Report Form (Table 1), the Leachate Field Data Entry Form (Table 2), and the 2011 Summary (Table 3). Also, attached find Figure 1 showing leachate levels in Pump Station B sump of Phases I-VI and rainfall for the month.

**TABLE 1**

**Day (Column I)**

Column I presents the calendar days for the month.

**Rainfall (Column II)**

Column II presents the average rainfall, in inches, as measured in the field from rainfall stations at the site. This month there was 0.68 inches of rainfall at the Southeast County Landfill (SCLF).



**Depth in Pond A (Column III)**

Column III presents the daily depth, in feet, of effluent stored in effluent pond (Pond A). The daily depth in Pond A varies as a function of the spray irrigation frequency/duration and effluent hauled from the pond. This month effluent was not stored in Pond A.

**Depth in Pond B (Column IV)**

Column IV presents the daily depth, in feet, of effluent or leachate that is stored in the effluent/leachate storage pond (Pond B). The depth in Pond B varies as a function of the evaporation frequency/duration and effluent or leachate hauled from the pond. This month effluent/leachate was not stored in Pond B.

**Estimated Depth at Pump Station B Sump (PS-B) (Column V)**

Column V presents the depth of leachate, in inches, in the PS-B sump. Leachate from Phases I-VI flows to the PS-B sump for removal from the landfill. PS-B then pumps the leachate to Pump Station A (PS-A). Daily depth readings from the PS-B sump are included in this column. This month PS-B was below the normal operation level of 24-inches. The average recorded depth of leachate in the PS-B sump was 21.8 inches.

**Leachate Pumped to PS-B from TPS-6 (Column VI)**

Column VI presents the quantity of leachate from Phase IV pumped to PS-B by Temporary Pump Station-6 (TPS-6). The quantity of leachate removed by TPS-6 is measured in gallons by an in-line flow meter and is included in the quantity of leachate pumped to the Main Leachate Pump Station (MLPS) from Phases I-VI (Column VII).

The average daily amount of leachate pumped from TPS-6 was 13,776 gallons. A total of 413,270 gallons of leachate was pumped this month.

**Leachate Pumped to MLPS from Phases I-VI (Column VII)**

Column VII presents the daily amount of leachate, in gallons, collected from PS-A and pumped through the MLPS to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. The quantity in column VII also includes the daily amount of leachate, in gallons, pumped from TPS-6. The average daily amount of leachate pumped from PS-A was 32,565 gallons. A total of 976,953 gallons of leachate was pumped this month.

**Leachate Pumped from Sections 7-8 LDS (Column VIII)**

Column VIII presents the quantity of leachate removed from the leak detection system (LDS) of Sections 7-8. The quantity is measured by a flow meter before being pumped for removal with Sections 7-8 leachate. The removal rate did not exceed 1,930 gallons per day. This month a total of 850 gallons of leachate was removed from the leak detection system of Sections 7-8.

**Leachate Pumped to MLPS from Sections 7-8 (Column IX)**

Column IX presents the quantity of leachate collected at Sections 7-8 and pumped to the MLPS. The quantity is measured by a flow meter and includes any leachate removed from the leak detection system of Sections 7-8 (Column VIII). This month a total of 31,256 gallons of leachate was pumped from Sections 7-8.

**Leachate Pumped to LTRF from the MLPS (Column X)**

Column X presents the total quantity of leachate pumped to the LTRF from Phases I-VI and Sections 7-8. This month a total of 1,008,209 gallons of leachate were pumped to the LTRF.

**Leachate Pumped to LTRF from Section 9 (Column XI)**

Column XI presents the daily amount of leachate, in gallons, collected from Section 9 and pumped to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. A total of 14,752 gallons of leachate was pumped this month.

**Leachate Pumped from Section 9 LDS (Column XII)**

Column XII presents the daily amount of leachate, in gallons, collected from the LDS of Section 9 and pumped to the 575,000-gallon storage tank at the LTRF for treatment or disposal. The removal rate did not exceed 4,651 gallons per day. This month a total of 15 gallons of leachate were removed from the leak detection system.

**Leachate in 575,000-Gallon Tank (Column XIII)**

Column XIII presents the daily amount of leachate, in gallons, stored in the 575,000-gallon leachate holding tank at the LTRF. The amount of leachate stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month leachate was not stored in the tank.



**Effluent in 575,000-Gallon Tank (Column XIV)**

Column XIV presents the daily amount of effluent, in gallons, stored in the 575,000-gallon effluent holding tank at the LTRF. The amount of effluent stored in the tank is calculated based on the circumference of the tank and the daily level reading. The treatment plant is down due to tankage inspection. As such, on December 1, 2010, the SWMG began storing leachate in this tank until the inspection of the leachate tank is completed. This month an average of 429,800 gallons of *leachate* was stored in the tank.

**Leachate Treated at LTRF (Column XV)**

Column XV presents the daily amount of leachate, in gallons, treated at the LTRF. The plant was shutdown on December 22, 2010 in preparation for tankage inspection. This month leachate was not treated at the plant.

**Total Leachate Hauled (Column XVI)**

Column XVI presents the daily amount of leachate, in gallons, hauled off site. This month a total of 919,646 gallons of leachate was hauled off site.

**Leachate Dust Control Sprayed (Column XVII)**

Column XVII presents the daily amount of leachate, in gallons, measured from the flow meter at the bypass-loading arm at the leachate storage tank. The leachate is used for dust control in the active area of the landfill. This month 132,101 gallons of leachate were used for dust control.

**Pond A Storage (Column XVIII)**

Column XVIII presents the daily amount of effluent, in gallons, stored in Pond A. The daily amount stored in the pond is calculated by using the daily depth of effluent in the Pond A (Column IV). Under normal operating conditions, the daily amount of effluent stored in the pond varies depending upon the daily amount of leachate treated at the LTRF, the daily rainfall, daily effluent hauling operations, daily spray irrigation operations, and the daily amount of effluent used for dust control/evaporation. This month effluent was not stored in Pond A.

MEMORANDUM

December 23, 2011

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**Pond B Storage (Column XIX)**

Column XIX presents the daily amount of effluent, in gallons, stored in Pond B. The daily amount stored in the pond is calculated by using the daily depth of effluent in Pond B (Column IV). Under normal operating conditions, the amount stored in the pond will vary depending upon the daily amount of effluent removed from the pond by the evaporation system, hauled from the pond, used for dust control or evaporated. This month effluent/leachate was not stored in Pond B.

**Effluent Sprayed at Pond B (Column XX)**

Column XX presents the daily amount of effluent, in gallons, sprayed for evaporation at Pond B. The amount evaporated is calculated by using 5 percent of the daily flow meter quantity sprayed at Pond B and it is included in Column XXIV. This month effluent was not sprayed in Pond B.

**Effluent Irrigation (Column XXI)**

Column XXI presents the daily amount of effluent, in gallons, used for spray irrigation on top of Phases I-VI. The daily amount of effluent irrigation on Phases I-VI is measured from the flow meter at the irrigation pump station. This month effluent was not used for spray irrigation.

**Effluent Dust Control Sprayed (Column XXII)**

Column XXII presents the daily amount of effluent, in gallons, sprayed for dust control in the active areas of the SCLF. The daily amount of effluent used for dust control, is measured from the flow meter at the bypass-loading arm. This month effluent was not sprayed as dust control.

**Total Effluent Hauled (Column XXIII)**

Column XXIII presents the daily amount of effluent, in gallons, hauled off site, as measured from the flow meter at the bypass-loading arm. This month effluent was not hauled off site.

**Total Evaporation (Column XXIV)**

Column XXIV presents the daily amount of leachate and effluent, in gallons, that evaporates and therefore will not be returned to the SCLF and/or requires treatment. Evaporation rates of 80 percent and 5 percent evaporation rate for spray in Pond B are assumed. The total evaporation estimated for this month was 105,500 gallons.



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December 23, 2011  
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**TABLE 2**

Table 2 presents data assembled from daily logs compiled by the SWMG staff.

**TABLE 3**

**Leachate Balance Summary**

The Leachate Balance Summary (see Table 3) presents a review of inflow and outflow quantities for the LTRF, as well as rainfall and effluent disposal quantities at the landfill. Total inflow quantity to the LTRF was 1,022,976 gallons. Total outflow quantity from the LTRF was 1,051,747 gallons. The change in storage for the month decreased by 28,771 gallons.

Please advise should you have any questions concerning the information provided.

**SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

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1. NR = No Records. NA = Not Available

2. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values.

3. Daily average is calculated by dividing the total by the actual days measured in the month

4. Monthly average calculated by dividing the total by the number of days of the month.

5. Column II. Trace is less than 0.01 inches and is not included in total

6. Columns III and IV, field measured at staff gauges

7. Column V. PPS-B sensor reading plus 9 inches

8. Columns VIII & IX Section 7-8 leak detection pumped into Section 7 leachate sump riser

9. Column XIII and XIV, calculated from depth in 575,000 gal. tanks.

10. Columns VI-XII, XV-XVII, and XX-XXIII: quantities from flow meters

11. Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.



**TABLE 2. FIELD DATA ENTRY FORM**  
**NOVEMBER 2011**  
**SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Day	Rainfall (in.)	Flow Meter TPS-6 (gal.)	Flow Meter Pump Sta. A (gal.)	Reading PS-B (in.)	Section 9 Pump 1 (gal.)	Section 9 Pump 2 (gal.)	Section 9 LDS (gal.)	Sections 7-8 Pump (gal.)	Sections 7-8 LDS (gal.)	Pond B Depth (ft.)	Pond B Effluent Sprayed (gal.)	Pond A Depth (ft.)	Effluent Spray Irrigation (gal.)	Depth in 575K Tank Leachate (ft.)	Depth in 575K Tank Effluent (ft.)	Leachate Treated at LTRF (gal.)	Leachate Hauled		Leachate Dust Control (Sprayed) (gal.)	Effluent Hauled		Effluent Dust Control (Sprayed) (gal.)
																	Contractor (gal.)	County (gal.)		Contractor (gal.)	County (gal.)	
1	0.00	27,616,550	6,145,583	12.4	1,892,113	1,560,946	5,515	3,502,786	3,021	0.0	0.0	0.0	0	0.00	16.33	0	27,186	12,241	0	0	0	0
2	0.00	27,633,530	6,176,010	12.3	1,892,113	1,560,946	5,515	3,505,854	3,021	0.0	0.0	0.0	0	0.00	16.25	0	20,415	17,700	3,003	0	0	0
3	0.00	27,636,510	6,206,223	13.6	1,892,113	1,560,946	5,515	3,509,433	3,021	0.0	0.0	0.0	0	0.00	15.83	0	27,257	18,204	9,006	0	0	0
4	0.00	27,655,810	6,247,450	12.0	1,892,160	1,561,210	5,516	3,512,812	3,033	0.0	0.0	0.0	0	0.00	15.33	0	27,372	12,023	6,004	0	0	0
5	0.00	27,667,880	6,281,780	13.2	1,892,188	1,564,333	5,517	3,514,491	3,033	0.0	0.0	0.0	0	0.00	15.25	0	20,500	0	6,026	0	0	0
6	0.00	27,674,550	6,311,923	12.5	1,892,188	1,564,333	5,517	3,514,957	3,033	0.0	0.0	0.0	0	0.00	15.9	0	0	0	0	0	0	0
7	0.00	27,681,220	6,342,066	11.8	1,892,188	1,564,333	5,517	3,515,423	3,033	0.0	0.0	0.0	0	0.00	16.50	0	26,925	18,033	6,004	0	0	0
8	0.00	27,699,030	6,376,102	12.6	1,892,188	1,564,333	5,517	3,516,091	3,033	0.0	0.0	0.0	0	0.00	16.00	0	27,108	18,012	9,012	0	0	0
9	0.00	27,716,350	6,412,136	13.3	1,892,214	1,564,333	5,517	3,516,732	3,035	0.0	0.0	0.0	0	0.00	15.58	0	20,448	24,015	8,007	0	0	0
10	0.00	27,732,450	6,451,509	12.0	1,892,225	1,565,145	5,521	3,517,390	3,035	0.0	0.0	0.0	0	0.00	15.08	0	34,041	24,022	8,934	0	0	0
11	0.00	27,750,440	6,484,025	11.8	1,892,225	1,568,196	5,527	3,517,850	3,035	0.0	0.0	0.0	0	0.00	13.75	0	34,102	0	6,014	0	0	0
12	0.00	27,768,140	6,510,075	12.1	1,892,225	1,568,196	5,527	3,518,140	3,035	0.0	0.0	0.0	0	0.00	13.92	0	0	0	3,003	0	0	0
13	0.00	27,776,135	6,539,996	12.2	1,892,236	1,568,196	5,527	3,518,517	3,035	0.0	0.0	0.0	0	0.00	14.8	0	0	0	0	0	0	0
14	0.00	27,784,130	6,569,916	12.2	1,892,247	1,568,196	5,527	3,518,893	3,035	0.0	0.0	0.0	0	0.00	15.58	0	27,298	24,164	9,005	0	0	0
15	0.00	27,802,390	6,607,408	12.4	1,892,247	1,568,456	5,528	3,519,319	3,035	0.0	0.0	0.0	0	0.00	14.92	0	20,462	24,004	11,043	0	0	0
16	0.00	27,820,330	6,643,943	12.0	1,892,260	1,572,845	5,530	3,519,704	3,035	0.0	0.0	0.0	0	0.00	14.42	0	20,478	18,699	8,005	0	0	0
17	0.00	27,837,270	6,677,661	14.3	1,892,260	1,572,845	5,530	3,519,832	3,038	0.0	0.0	0.0	0	0.00	14.08	0	20,519	24,014	3,000	0	0	0
18	0.00	27,855,810	6,707,487	14.4	1,892,260	1,572,845	5,530	3,519,832	3,038	0.0	0.0	0.0	0	0.00	13.33	0	20,670	24,013	6,001	0	0	0
19	0.00	27,874,770	6,754,364	13.2	1,892,260	1,572,845	5,530	3,519,832	3,038	0.0	0.0	0.0	0	0.00	13.25	0	0	0	0	0	0	0
20	0.00	27,888,435	6,775,356	12.6	1,892,271	1,574,185	5,530	3,519,833	3,038	0.0	0.0	0.0	0	0.00	13.9	0	0	0	0	0	0	0
21	0.00	27,902,100	6,796,348	12.0	1,892,282	1,575,525	5,530	3,519,834	3,038	0.0	0.0	0.0	0	0.00	14.58	0	27,347	18,245	6,003	0	0	0
22	0.00	27,920,600	6,830,778	12.2	1,892,282	1,575,525	5,530	3,519,835	3,038	0.0	0.0	0.0	0	0.00	13.83	0	20,492	24,006	3,001	0	0	0
23	0.10	27,937,330	6,862,894	13.7	1,892,282	1,575,525	5,530	3,519,837	3,061	0.0	0.0	0.0	0	0.00	13.25	0	27,634	24,159	2,999	0	0	0
24	0.00	27,947,545	6,892,607	13.5	1,892,282	1,575,525	5,530	3,519,838	3,105	0.0	0.0	0.0	0	0.00	13.3	0	0	0	0	0	0	0
25	0.00	27,957,760	6,922,320	13.3	1,892,282	1,575,525	5,530	3,519,838	3,148	0.0	0.0	0.0	0	0.00	13.42	0	13,664	0	0	0	0	0
26	0.00	27,972,140	6,953,136	12.2	1,892,282	1,575,525	5,530	3,519,838	3,242	0.0	0.0	0.0	0	0.00	14.25	0	0	0	0	0	0	0
27	0.00	27,979,230	6,986,962	12.9	1,892,284	1,575,525	5,530	3,525,227	3,394	0.0	0.0	0.0	0	0.00	15.6	0	0	0	0	0	0	0
28	0.58	27,986,320	7,020,787	13.6	1,892,286	1,575,525	5,530	3,530,616	3,545	0.0	0.0	0.0	0	0.00	16.92	0	18,197	18,068	5,996	0	0	0
29	0.00	27,997,360	7,057,330	14.2	1,892,286	1,575,525	5,530	3,530,617	3,704	0.0	0.0	0.0	0	0.00	16.42	0	12,112	24,015	3,007	0	0	0
30	0.00	28,012,430	7,089,176	12.6	1,892,286	1,575,825	5,531	3,530,618	3,863	0.0	0.0	0.0	0	0.00	16.25	0	34,305	23,477	9,028	0	0	0
Totals	0.68										0		0			0	528,532	391,114	132,101	0	0	0

projects\balance\2011\11-11bal.xls (jdw 12/02/11)

Notes:

- NR = No Records, NA = Not Available.
- Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values
- Column IV includes quantities from leak detection system.
- Column B, trace is less than 0.01 inches.
- Columns C, D, F, G, H, I, J, L, N, Q, R-V and W are quantities from flow meters.
- Columns K and M measured from staff gages in each pond.

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open	0	0	5
Intermediate	139.4	19.3	10
Final	23	0	0
Not Opened	0	0	0

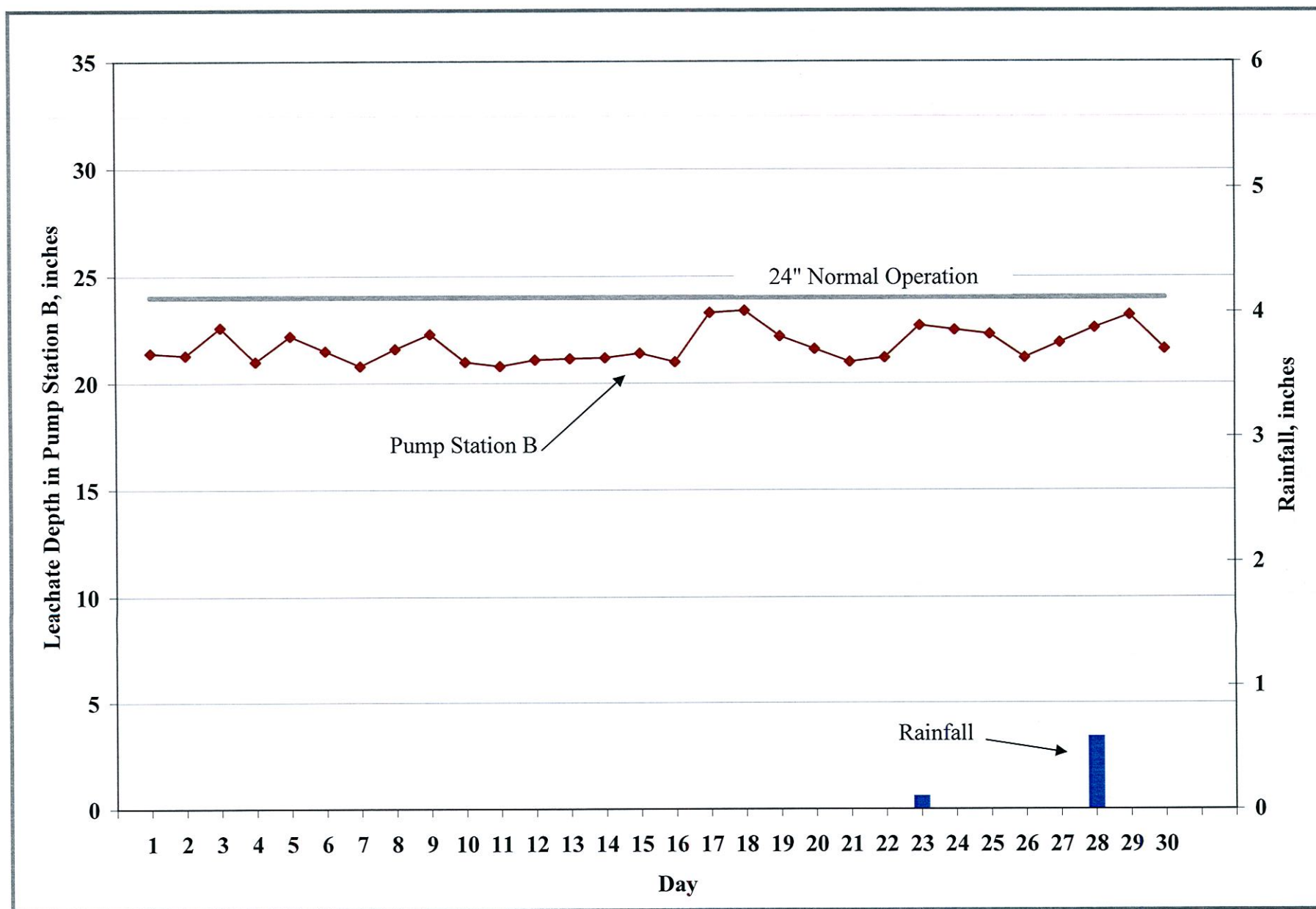
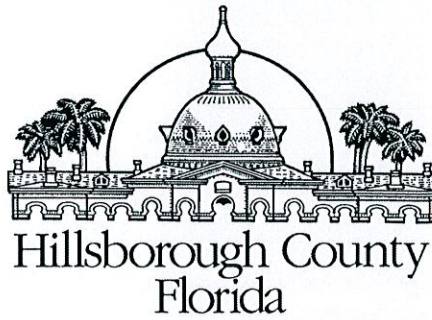


Figure 1. Leachate Levels in Pump Station B and Rainfall for November 2011.



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MEMORANDUM

DATE: January 9, 2012

TO: *for* Larry Ruiz, General Manager III, Solid Waste Management Group

FROM: *CP* Cindy Pelley, Environmental Specialist II, Environmental Services Group  
Raymond Graves, Sr. Eng. Tech., Solid Waste Management Group

SUBJECT: Leachate Water Balance Report Forms for December  
Southeast County Landfill, Hillsborough County, Florida

Dept. Of Environmental Protection  
JAN 18 2012  
Southwest District

The Solid Waste Management Group (SWMG) staff has compiled and reviewed the leachate management operational data from the Southeast County Landfill Phases I-VI, Sections 7-8, and Section 9. Attached are the Leachate Water Balance Report Form (Table 1), the Leachate Field Data Entry Form (Table 2), and the 2011 Summary (Table 3). Also, attached find Figure 1 showing leachate levels in Pump Station B sump of Phases I-VI and rainfall for the month.

TABLE 1

Day (Column I)

Column I presents the calendar days for the month.

Rainfall (Column II)

Column II presents the average rainfall, in inches, as measured in the field from rainfall stations at the site. This month there was 0.30 inches of rainfall at the Southeast County Landfill (SCLF).

## MEMORANDUM

January 9, 2012

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### **Depth in Pond A (Column III)**

Column III presents the daily depth, in feet, of effluent stored in effluent pond (Pond A). The daily depth in Pond A varies as a function of the spray irrigation frequency/duration and effluent hauled from the pond. This month effluent was not stored in Pond A.

### **Depth in Pond B (Column IV)**

Column IV presents the daily depth, in feet, of effluent or leachate that is stored in the effluent/leachate storage pond (Pond B). The depth in Pond B varies as a function of the evaporation frequency/duration and effluent or leachate hauled from the pond. This month effluent/leachate was not stored in Pond B.

### **Estimated Depth at Pump Station B Sump (PS-B) (Column V)**

Column V presents the depth of leachate, in inches, in the PS-B sump. Leachate from Phases I-VI flows to the PS-B sump for removal from the landfill. PS-B then pumps the leachate to Pump Station A (PS-A). Daily depth readings from the PS-B sump are included in this column. This month PS-B was below the normal operation level of 24-inches. The average recorded depth of leachate in the PS-B sump was 21.9 inches.

### **Leachate Pumped to PS-B from TPS-6 (Column VI)**

Column VI presents the quantity of leachate from Phase IV pumped to PS-B by Temporary Pump Station-6 (TPS-6). The quantity of leachate removed by TPS-6 is measured in gallons by an in-line flow meter and is included in the quantity of leachate pumped to the Main Leachate Pump Station (MLPS) from Phases I-VI (Column VII).

The average daily amount of leachate pumped from TPS-6 was 14,524 gallons. A total of 450,240 gallons of leachate was pumped this month.

### **Leachate Pumped to MLPS from Phases I-VI (Column VII)**

Column VII presents the daily amount of leachate, in gallons, collected from PS-A and pumped through the MLPS to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. The quantity in column VII also includes the daily amount of leachate, in gallons, pumped from TPS-6. The average daily amount of leachate pumped from PS-A was 30,082 gallons. A total of 932,543 gallons of leachate was pumped this month.



## MEMORANDUM

January 9, 2012

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### **Leachate Pumped from Sections 7-8 LDS (Column VIII)**

Column VIII presents the quantity of leachate removed from the leak detection system (LDS) of Sections 7-8. The quantity is measured by a flow meter before being pumped for removal with Sections 7-8 leachate. The removal rate did not exceed 1,930 gallons per day. This month a total of 1,196 gallons of leachate was removed from the leak detection system of Sections 7-8.

### **Leachate Pumped to MLPS from Sections 7-8 (Column IX)**

Column IX presents the quantity of leachate collected at Sections 7-8 and pumped to the MLPS. The quantity is measured by a flow meter and includes any leachate removed from the leak detection system of Sections 7-8 (Column VIII). This month a total of 71,178 gallons of leachate was pumped from Sections 7-8.

### **Leachate Pumped to LTRF from the MLPS (Column X)**

Column X presents the total quantity of leachate pumped to the LTRF from Phases I-VI and Sections 7-8. This month a total of 1,003,721 gallons of leachate were pumped to the LTRF.

### **Leachate Pumped to LTRF from Section 9 (Column XI)**

Column XI presents the daily amount of leachate, in gallons, collected from Section 9 and pumped to the 575,000-gallon storage tank at the Leachate Treatment and Reclamation Facility (LTRF) for treatment or disposal. A total of 18,781 gallons of leachate was pumped this month.

### **Leachate Pumped from Section 9 LDS (Column XII)**

Column XII presents the daily amount of leachate, in gallons, collected from the LDS of Section 9 and pumped to the 575,000-gallon storage tank at the LTRF for treatment or disposal. The removal rate did not exceed 4,651 gallons per day. This month a total of 25 gallons of leachate were removed from the leak detection system.

### **Leachate in 575,000-Gallon Tank (Column XIII)**

Column XIII presents the daily amount of leachate, in gallons, stored in the 575,000-gallon leachate holding tank at the LTRF. The amount of leachate stored in the tank is calculated based on the circumference of the tank and the daily level reading. This month leachate was not stored in the tank.

## MEMORANDUM

January 9, 2012

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### **Effluent in 575,000-Gallon Tank (Column XIV)**

Column XIV presents the daily amount of effluent, in gallons, stored in the 575,000-gallon effluent holding tank at the LTRF. The amount of effluent stored in the tank is calculated based on the circumference of the tank and the daily level reading. The treatment plant is down due to tankage inspection. As such, on December 1, 2010, the SWMG began storing leachate in this tank until the inspection of the leachate tank is completed. This month an average of 388,500 gallons of *leachate* was stored in the tank.

### **Leachate Treated at LTRF (Column XV)**

Column XV presents the daily amount of leachate, in gallons, treated at the LTRF. The plant was shutdown on December 22, 2010 in preparation for tankage inspection. This month leachate was not treated at the plant.

### **Total Leachate Hauled (Column XVI)**

Column XVI presents the daily amount of leachate, in gallons, hauled off site. This month a total of 900,650 gallons of leachate was hauled off site.

### **Leachate Dust Control Sprayed (Column XVII)**

Column XVII presents the daily amount of leachate, in gallons, measured from the flow meter at the bypass-loading arm at the leachate storage tank. The leachate is used for dust control in the active area of the landfill. This month 74,529 gallons of leachate were used for dust control.

### **Pond A Storage (Column XVIII)**

Column XVIII presents the daily amount of effluent, in gallons, stored in Pond A. The daily amount stored in the pond is calculated by using the daily depth of effluent in the Pond A (Column IV). Under normal operating conditions, the daily amount of effluent stored in the pond varies depending upon the daily amount of leachate treated at the LTRF, the daily rainfall, daily effluent hauling operations, daily spray irrigation operations, and the daily amount of effluent used for dust control/evaporation. This month effluent was not stored in Pond A.



## MEMORANDUM

January 9, 2012

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### **Pond B Storage (Column XIX)**

Column XIX presents the daily amount of effluent, in gallons, stored in Pond B. The daily amount stored in the pond is calculated by using the daily depth of effluent in Pond B (Column IV). Under normal operating conditions, the amount stored in the pond will vary depending upon the daily amount of effluent removed from the pond by the evaporation system, hauled from the pond, used for dust control or evaporated. This month effluent/leachate was not stored in Pond B.

### **Effluent Sprayed at Pond B (Column XX)**

Column XX presents the daily amount of effluent, in gallons, sprayed for evaporation at Pond B. The amount evaporated is calculated by using 5 percent of the daily flow meter quantity sprayed at Pond B and it is included in Column XXIV. This month effluent was not sprayed in Pond B.

### **Effluent Irrigation (Column XXI)**

Column XXI presents the daily amount of effluent, in gallons, used for spray irrigation on top of Phases I-VI. The daily amount of effluent irrigation on Phases I-VI is measured from the flow meter at the irrigation pump station. This month effluent was not used for spray irrigation.

### **Effluent Dust Control Sprayed (Column XXII)**

Column XXII presents the daily amount of effluent, in gallons, sprayed for dust control in the active areas of the SCLF. The daily amount of effluent used for dust control, is measured from the flow meter at the bypass-loading arm. This month effluent was not sprayed as dust control.

### **Total Effluent Hauled (Column XXIII)**

Column XXIII presents the daily amount of effluent, in gallons, hauled off site, as measured from the flow meter at the bypass-loading arm. This month effluent was not hauled off site.

### **Total Evaporation (Column XXIV)**

Column XXIV presents the daily amount of leachate and effluent, in gallons, that evaporates and therefore will not be returned to the SCLF and/or requires treatment. Evaporation rates of 80 percent and 5 percent evaporation rate for spray in Pond B are assumed. The total evaporation estimated for this month was 59,600 gallons.

MEMORANDUM  
January 9, 2012  
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**TABLE 2**

Table 2 presents data assembled from daily logs compiled by the SWMG staff.

**TABLE 3**

**Leachate Balance Summary**

The Leachate Balance Summary (see Table 3) presents a review of inflow and outflow quantities for the LTRF, as well as rainfall and effluent disposal quantities at the landfill. Total inflow quantity to the LTRF was 1,022,976 gallons. Total outflow quantity from the LTRF was 1,051,747 gallons. The change in storage for the month increased by 47,348 gallons.

Please advise should you have any questions concerning the information provided.



**TABLE 1. LEACHATE WATER BALANCE REPORT FORM  
DECEMBER 2011  
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV
Day	Rainfall (in.)	Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PPS-B (in.)	Leachate Pumped to PPS-6 from TPS-6 (gal.)	Leachate Pumped to MLPS from Phases I-VI (gal.)	Leachate Pumped from Sections 7-8 LDS (gal.)	Leachate Pumped to MLPS from Sections 7-8 (gal.)	Leachate Pumped to LTRF from MPLS (gal.)	Leachate Pumped to LTRF from Section 9 (gal.)	Leachate Pumped from Section 9 LDS (gal.)	Leachate in 575K Tank (gal.)	Effluent in 575K Tank (gal.)	Leachate Treated at LTRF (gal.)	Total Leachate Hauled (gal.)	Leachate Dust Control (Sprayed) (gal.)	Pond A Storage (gal.)	Pond B Storage (gal.)	Effluent Sprayed Pond B (gal.)	Effluent Irrigation (gal.)	Effluent Dust Control (Sprayed) (gal.)	Total Effluent Hauled (gal.)	Total Evaporation (gal.)
1	0.00	0.0	0.0	23.2	9,540	27,475	155	0	27,475	347	1	0	432,000	0	44,701	3,998	0	0	0	0	0	0	3,200
2	0.00	0.0	0.0	21.2	11,290	25,856	87	0	25,856	343	3	0	386,000	0	30,007	3,001	0	0	0	0	0	0	2,400
3	0.00	0.0	0.0	21.5	14,690	35,000	0	0	35,000	365	0	0	381,000	0	0	3,000	0	0	0	0	0	0	2,400
4	0.00	0.0	0.0	21.6	8,025	30,457	0	5,880	36,337	545	1	0	410,000	0	0	0	0	0	0	0	0	0	0
5	0.00	0.0	0.0	21.7	8,025	30,457	0	5,880	36,337	545	1	0	439,000	0	56,554	8,002	0	0	0	0	0	0	6,400
6	0.00	0.0	0.0	21.0	18,830	36,557	0	10,678	47,235	742	1	0	420,000	0	51,514	8,000	0	0	0	0	0	0	6,400
7	0.07	0.0	0.0	20.8	46,580	48,628	1	3,770	52,398	690	0	0	415,000	0	44,717	7,007	0	0	0	0	0	0	5,600
8	0.00	0.0	0.0	21.3	6,230	23,294	0	2	23,296	634	1	0	386,000	0	43,990	8,002	0	0	0	0	0	0	6,400
9	0.01	0.0	0.0	22.2	17,750	30,483	0	0	30,483	631	1	0	362,000	0	44,691	3,000	0	0	0	0	0	0	2,400
10	0.00	0.0	0.0	21.7	17,750	30,207	0	0	30,207	886	2	0	353,000	0	0	0	0	0	0	0	0	0	0
11	0.00	0.0	0.0	21.4	7,850	28,056	0	1	28,056	1,797	3	0	379,000	0	0	0	0	0	0	0	0	0	0
12	0.00	0.0	0.0	21.1	7,850	28,056	0	1	28,056	1,797	3	0	405,000	0	44,743	6,002	0	0	0	0	0	0	4,800
13	0.00	0.0	0.0	21.1	18,040	29,998	0	0	29,998	1,211	1	0	379,000	0	45,170	3,000	0	0	0	0	0	0	2,400
14	0.00	0.0	0.0	22.3	17,220	27,864	43	12,043	39,907	0	0	0	374,000	0	38,982	0	0	0	0	0	0	0	0
15	0.00	0.0	0.0	21.3	16,220	28,829	56	8,061	36,890	0	0	0	372,000	0	50,818	0	0	0	0	0	0	0	0
16	0.00	0.0	0.0	22.8	18,120	31,114	62	3,585	34,699	0	0	0	353,000	0	38,817	7,001	0	0	0	0	0	0	5,600
17	0.00	0.0	0.0	21.2	11,430	28,603	55	3,126	31,729	0	0	0	345,000	0	0	0	0	0	0	0	0	0	0
18	0.00	0.0	0.0	20.8	7,900	26,946	54	2,911	29,856	139	0	0	372,000	0	0	0	0	0	0	0	0	0	0
19	0.00	0.0	0.0	20.4	7,900	26,946	54	2,911	29,856	139	0	0	398,000	0	37,814	0	0	0	0	0	0	0	0
20	0.00	0.0	0.0	22.3	15,950	31,110	54	1	31,111	684	1	0	386,000	0	50,857	3,015	0	0	0	0	0	0	2,400
21	0.00	0.0	0.0	23.4	17,100	31,944	53	3,661	35,605	1,004	2	0	369,000	0	38,577	0	0	0	0	0	0	0	0
22	0.00	0.0	0.0	22.0	16,090	31,508	53	2,902	34,410	3,842	1	0	365,000	0	26,693	3,001	0	0	0	0	0	0	2,400
23	0.00	0.0	0.0	21.8	16,080	30,598	51	2,894	33,492	0	0	0	369,000	0	31,874	3,000	0	0	0	0	0	0	2,400
24	0.00	0.0	0.0	22.9	15,830	28,835	51	2,873	31,708	0	0	0	372,000	0	0	0	0	0	0	0	0	0	0
25	0.00	0.0	0.0	22.8	7,920	25,825	56	0	25,825	0	0	0	394,000	0	0	0	0	0	0	0	0	0	0
26	0.00	0.0	0.0	22.7	7,920	25,825	56	0	25,825	0	0	0	415,000	0	34,653	0	0	0	0	0	0	0	0
27	0.22	0.0	0.0	22.8	16,500	32,251	52	0	32,251	0	0	0	410,000	0	20,713	0	0	0	0	0	0	0	0
28	0.00	0.0	0.0	22.3	14,490	32,682	50	0	32,682	6	0	0	420,000	0	39,980	1,499	0	0	0	0	0	0	1,200
29	0.00	0.0	0.0	21.7	17,640	28,440	53	0	28,440	363	2	0	415,000	0	50,975	0	0	0	0	0	0	0	0
30	0.00	0.0	0.0	22.8	17,490	29,768	51	0	29,768	0	0	0	386,000	0	33,810	4,001	0	0	0	0	0	0	3,200
31	0.00	0.0	0.0	21.5	15,990	28,934	50	0	28,934	2,073	1	0	381,000	0	0	0	0	0	0	0	0	0	0
Total	0.30				450,240	932,543	1,196	71,178	1,003,721	18,781	25			0	900,650	74,529			0	0	0	0	59,600
Daily Average		0.0	0.0	21.9	14,524	30,082	39	2,296	32,378	606	1	0	388,500				0	0					
Mo. Average																2,400				0	0	0	1,920

Notes:

1. NR = No Records, NA = Not Available.
2. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values.
3. Daily average is calculated by dividing the total by the actual days measured in the month.
4. Monthly average calculated by dividing the total by the number of days of the month.
5. Column II, Trace is less than 0.01 inches and is not included in total.
6. Columns III and IV, field measured at staff gauges.

7. Column V, PPS-B sensor reading plus 9 inches.
8. Columns VIII & IX, Section 7-8 leak detection pumped into Section 7 leachate sump riser.
9. Column XIII and XIV, calculated from depth in 575,000 gal. tanks.
10. Columns VI-XII, XV-XVII, and XX-XXIII, quantities from flow meters.
11. Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.

projects/balance2011/12-11bal.xls (RCG01/04/12)



**TABLE 2. FIELD DATA ENTRY FORM  
DECEMBER 2011  
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Day	Rainfall (in.)	Flow Meter TPS-6 (gal.)	Flow Meter Pump Sta. A (gal.)	Reading PS-B (in.)	Section 9 Pump 1 (gal.)	Section 9 Pump 2 (gal.)	Section 9 LDS (gal.)	Sections 7-8 Pump (gal.)	Sections 7-8 LDS (gal.)	Pond B Depth (ft.)	Pond B Effluent Sprayed (gal.)	Pond A Depth (ft.)	Effluent Spray Irrigation (gal.)	Depth in 575K Tank Leachate (ft.)	Depth in 575K Tank Effluent (ft.)	Leachate Treated at LTRF (gal.)	Leachate Hauled		Leachate Dust Control (Sprayed) (gal.)	Effluent Hauled		Effluent Dust Control (Sprayed) (gal.)
																	Contractor (gal.)	County (gal.)		Contractor (gal.)	County (gal.)	
1	0.00	28,021,970	7,116,654	14.2	1,892,286	1,576,172	5,532	3,530,618	4,018	0.0	0.0	0.0	0	0.00	15.00	0	20,557	24,144	3,998	0	0	0
2	0.00	28,033,260	7,142,510	12.2	1,892,286	1,576,515	5,535	3,530,618	4,105	0.0	0.0	0.0	0	0.00	13.42	0	0	30,007	3,001	0	0	0
3	0.00	28,047,950	7,177,510	12.5	1,892,286	1,576,880	5,535	3,530,618	4,105	0.0	0.0	0.0	0	0.00	13.25	0	0	0	3,000	0	0	0
4	0.00	28,055,975	7,207,967	12.6	1,892,286	1,577,425	5,536	3,536,498	4,105	0.0	0.0	0.0	0	0.00	14.3	0	0	0	0	0	0	0
5	0.00	28,064,000	7,238,423	12.7	1,892,286	1,577,969	5,537	3,542,378	4,105	0.0	0.0	0.0	0	0.00	15.25	0	20,463	36,091	8,002	0	0	0
6	0.00	28,082,830	7,274,980	12.0	1,892,286	1,578,711	5,538	3,553,056	4,105	0.0	0.0	0.0	0	0.00	14.58	0	27,713	23,801	8,000	0	0	0
7	0.07	28,129,410	7,323,608	11.8	1,892,286	1,579,401	5,538	3,556,826	4,106	0.0	0.0	0.0	0	0.00	14.42	0	20,534	24,183	7,007	0	0	0
8	0.00	28,135,640	7,346,902	12.3	1,892,288	1,580,033	5,539	3,556,828	4,106	0.0	0.0	0.0	0	0.00	13.42	0	13,723	30,267	8,002	0	0	0
9	0.01	28,153,390	7,377,385	13.2	1,892,288	1,580,664	5,540	3,556,828	4,106	0.0	0.0	0.0	0	0.00	12.58	0	20,664	24,027	3,000	0	0	0
10	0.00	28,171,140	7,407,592	12.7	1,892,292	1,581,546	5,542	3,556,828	4,106	0.0	0.0	0.0	0	0.00	12.25	0	0	0	0	0	0	0
11	0.00	28,178,990	7,435,648	12.4	1,892,292	1,583,343	5,545	3,556,829	4,106	0.0	0.0	0.0	0	0.00	13.2	0	0	0	0	0	0	0
12	0.00	28,186,840	7,463,703	12.1	1,892,292	1,585,140	5,548	3,556,829	4,106	0.0	0.0	0.0	0	0.00	14.08	0	20,740	24,003	6,002	0	0	0
13	0.00	28,204,880	7,493,701	12.1	1,892,292	1,586,351	5,549	3,556,829	4,106	0.0	0.0	0.0	0	0.00	13.17	0	20,831	24,339	3,000	0	0	0
14	0.00	28,222,100	7,521,565	13.3	1,892,292	1,586,351	5,549	3,568,872	43	0.0	0.0	0.0	0	0.00	13.00	0	20,966	18,016	0	0	0	0
15	0.00	28,238,320	7,550,394	12.3	1,892,292	1,586,351	5,549	3,576,933	99	0.0	0.0	0.0	0	0.00	12.92	0	20,807	30,011	0	0	0	0
16	0.00	28,256,440	7,581,508	13.8	1,892,292	1,586,351	5,549	3,580,518	161	0.0	0.0	0.0	0	0.00	12.25	0	20,772	18,045	7,001	0	0	0
17	0.00	28,267,870	7,610,111	12.2	1,892,292	1,586,351	5,549	3,583,644	216	0.0	0.0	0.0	0	0.00	12.00	0	0	0	0	0	0	0
18	0.00	28,275,770	7,637,057	11.8	1,892,292	1,586,490	5,549	3,586,555	270	0.0	0.0	0.0	0	0.00	12.9	0	0	0	0	0	0	0
19	0.00	28,283,670	7,664,002	11.4	1,892,292	1,586,628	5,549	3,589,465	324	0.0	0.0	0.0	0	0.00	13.83	0	13,715	24,099	0	0	0	0
20	0.00	28,299,620	7,695,112	13.3	1,892,292	1,587,312	5,550	3,589,466	378	0.0	0.0	0.0	0	0.00	13.42	0	20,815	30,042	3,015	0	0	0
21	0.00	28,316,720	7,727,056	14.4	1,892,292	1,588,316	5,552	3,593,127	431	0.0	0.0	0.0	0	0.00	12.83	0	20,913	17,664	0	0	0	0
22	0.00	28,332,810	7,758,564	13.0	1,892,292	1,592,158	5,553	3,596,029	484	0.0	0.0	0.0	0	0.00	12.67	0	20,693	6,000	3,001	0	0	0
23	0.00	28,348,890	7,789,162	12.8	1,892,292	1,592,158	5,553	3,598,923	535	0.0	0.0	0.0	0	0.00	12.83	0	13,868	18,006	3,000	0	0	0
24	0.00	28,364,720	7,817,997	13.9	1,892,292	1,592,158	5,553	3,601,796	586	0.0	0.0	0.0	0	0.00	12.92	0	0	0	0	0	0	0
25	0.00	28,372,640	7,843,822	13.8	1,892,292	1,592,158	5,553	3,601,796	642	0.0	0.0	0.0	0	0.00	13.7	0	0	0	0	0	0	0
26	0.00	28,380,560	7,869,647	13.7	1,892,292	1,592,158	5,553	3,601,796	697	0.0	0.0	0.0	0	0.00	14.42	0	34,653	0	0	0	0	0
27	0.22	28,397,060	7,901,898	13.8	1,892,292	1,592,158	5,553	3,601,796	749	0.0	0.0	0.0	0	0.00	14.25	0	20,713	0	0	0	0	0
28	0.00	28,411,550	7,934,580	13.3	1,892,298	1,592,158	5,553	3,601,796	799	0.0	0.0	0.0	0	0.00	14.58	0	27,933	12,047	1,499	0	0	0
29	0.00	28,429,190	7,963,020	12.7	1,892,298	1,592,521	5,555	3,601,796	852	0.0	0.0	0.0	0	0.00	14.42	0	20,861	30,114	0	0	0	0
30	0.00	28,446,680	7,992,788	13.8	1,892,298	1,594,405	5,557	3,601,796	903	0.0	0.0	0.0	0	0.00	13.42	0	27,810	6,000	4,001	0	0	0
31	0.00	28,462,670	8,021,722	12.5	1,892,298	1,596,478	5,558	3,601,796	953	0.0	0.0	0.0	0	0.00	13.25	0	0	0	0	0	0	0
Totals	0.30										0		0			0	449,744	450,906	74,529	0	0	0

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- Notes:
1. NR = No Records, NA = Not Available.
  2. Values in bold are estimated; values in italic are substitute for missing data and are based on averaged values
  3. Column IV includes quantities from leak detection system.

4. Column B, trace is less than 0.01 inches.
5. Columns C, D, F, G, H, I, J, L, N, Q, R-V and W are quantities from flow meters.
6. Columns K and M measured from staff gages in each pond.

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open	0	0	5
Intermediate	139.4	19.3	10
Final	23	0	0
Not Opened	0	0	0



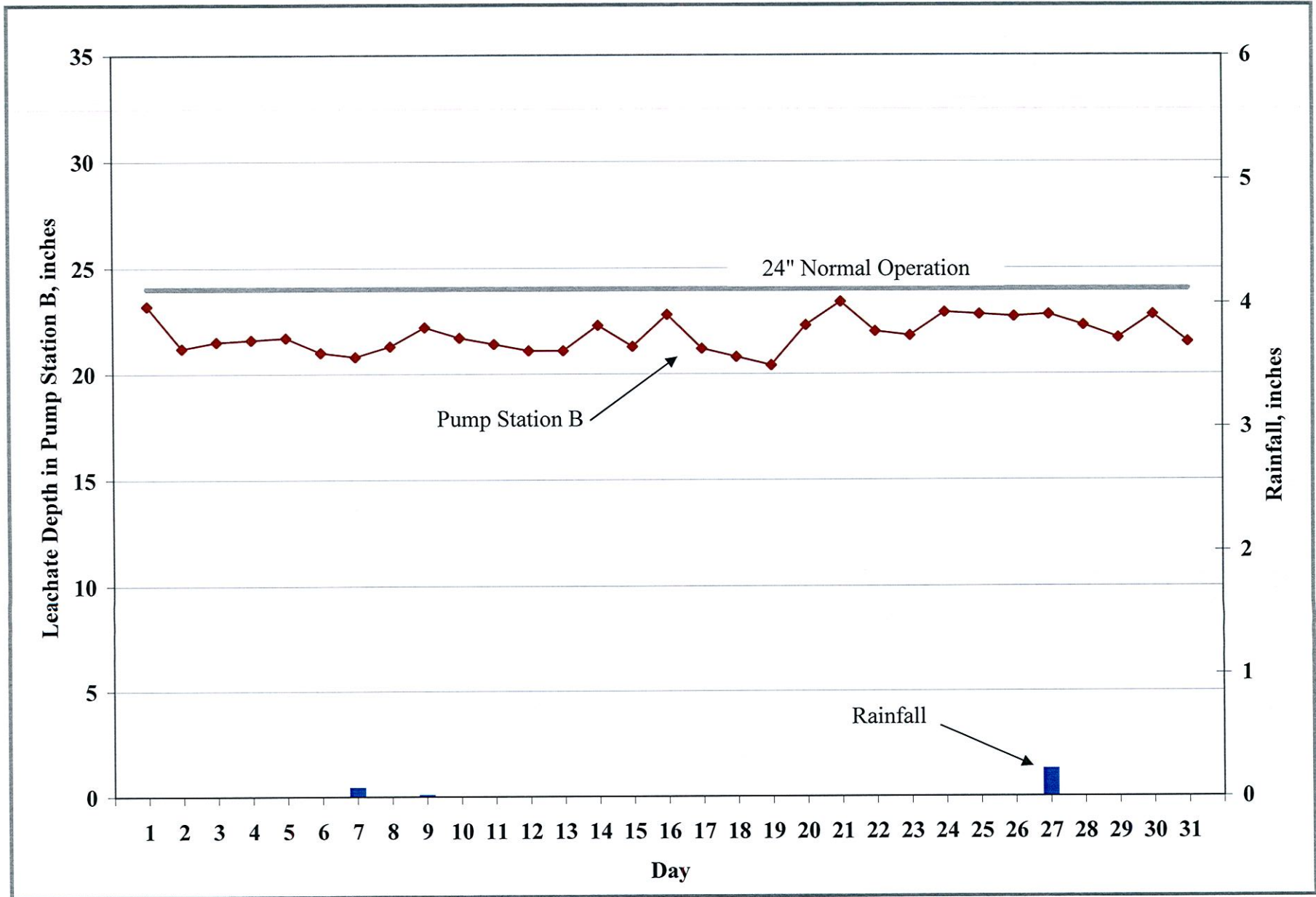


Figure 1. Leachate Levels in Pump Station B and Rainfall for December 2011.