

August 24, 2018
File No. 09215600.06

Mr. Steve Morgan, P.E.
Florida Department of Environmental Protection
Southwest District
13051 N. Telecom Parkway, Suite 101
Temple Terrace, Florida 33637

RECEIVED
Florida Department of Environmental
Protection

AUG 29 2018

Permitting & Compliance
Assistance Program

Subject: Remaining Disposal Capacity and Site Life – Reporting Year 2018
Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9)
Southeast County Landfill
Permit No.: 35435-025-SO-MM

Dear Mr. Morgan,

On behalf of the Hillsborough County Public Works Department, Solid Waste Management Division (SWMD), SCS Engineers (SCS) has prepared the remaining disposal capacity and site life estimates for Phases I-VI and the Capacity Expansion Area (CEA) (Permit No 35435-025-SO-MM), Southeast County Landfill (SCLF), Hillsborough County, Florida. This letter is in accordance with Rule 62-701.500(13)(c) and Specific Condition Part C.16.b of the facility's solid waste operations permit.

ANNUAL TOPOGRAPHIC SURVEY AND REMAINING CAPACITY ANALYSIS

The aerial topographic survey was performed by Pickett and Associates, Inc. (Pickett) on July 9, 2018 (see attachments) and demonstrates that Phases I-VI and the CEA Sections 7, 8, and 9 have been filled in general accordance with the permitted operations sequence plans including that the side slopes are no greater than 4H to 1V (Phases I-VI) and 3H to 1V (CEA Sections 7, 8, and 9). In addition, the top elevations do not exceed the permitted maximum design height elevation of 255 feet NGVD and 285 feet NGVD for Phases I-VI and the CEA Sections 7, 8, and 9, respectively. Waste has not been placed outside the permitted limits of waste/liner in either Phases I-VI or the CEA Sections 7, 8, and 9.

Using AutoCAD software, the gross remaining airspace volumes were calculated using the permitted conceptual final build-out contours for the Phases I-VI and the CEA Sections 7, 8, and 9, and comparing the surfaces to the July 9, 2018 topographic survey (refer to attachments for volume summaries). The estimated gross remaining airspace for the Phases I-VI and the CEA Sections 7, 8, and 9 is 8,046,585 cubic yards (CY) based on the airspace analyses performed using AutoCAD. The estimated gross remaining airspace does not include volume that may be regained through the removal of intermediate cover soil or landfill settlement.

Based on the information provided by the SWMD, approximately 295,872 tons of municipal solid waste (MSW) was disposed of at the SCLF between July 1, 2017 and June 30, 2018. This is 39,183 tons more than reported during the same time period the previous year.

In accordance with the permitted operating sequence plan, waste was placed as follows: from July 1, 2017 to July 31, 2017, waste was placed in the CEA Sections 7, 8, and 9; and, from August 1, 2017 to June 30, 2018, waste was placed in Phases I-VI. Assuming an apparent waste density of 2,000 pounds per cubic yard, the estimated annual airspace consumed in cubic yards was 278,434 CY for Phases I-VI and 17,438 CY for the CEA. The apparent waste density is defined as the actual waste tonnage disposed divided by the volume of airspace consumed by both waste and daily cover soil.

REMAINING DISPOSAL CAPACITY AND SITE LIFE FOR THE CEA (SECTION 7, 8, AND 9)

The estimated remaining disposal capacity (remaining airspace) of CEA Sections 7, 8, and 9 is 844,277 CY. This was calculated by subtracting the final cover soil volume of 145,600 CY from the gross remaining air space of 989,877 CY. The remaining site life of the CEA was calculated assuming that the current annual disposal rate at the SCLF is 295,872 CY per year, that the disposal rate will increase 1.5-percent annually, and that half of the waste will be placed in the CEA Sections 7, 8, and 9 until the CEA capacity is reached. Using these assumptions the remaining site life for the CEA Sections 7, 8, and 9 was estimated to be approximately 5.5 years from July 9, 2018, as shown in Table 1. The estimated remaining site life will fluctuate depending on the future waste composition, disposal rates, and in-situ waste density.

REMAINING DISPOSAL CAPACITY AND SITE LIFE FOR PHASES I-VI

The estimated remaining disposal capacity (remaining airspace) of Phases I-VI is 6,390,839 CY which was calculated by subtracting the final cover soil volume of 665,869 CY from the gross remaining air space (not including ash stockpiles) of 7,056,708 CY. The remaining site life of Phases I-VI was calculated assuming that the current annual disposal rate at the SCLF is 295,872 CY per year, that the disposal rate will increase 1.5-percent annually, and that half of the waste will be placed in Phases I-VI while the CEA is accepting waste. Using these assumptions, the remaining site life for Phases I-VI was estimated to be approximately 20.9 years from July 9, 2018, as shown in Table 1. The estimated remaining site life will fluctuate depending on the future waste composition, disposal rates, and in-situ waste density.

FACILITY SITE LIFE

The effective site life for the facility, which includes Phases I-VI and the CEA, is 20.9 years, with a projected final closure in 2039.

Mr. Steve Morgan, P.E.
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Please call us if you require any clarifications or additional information.

Sincerely,

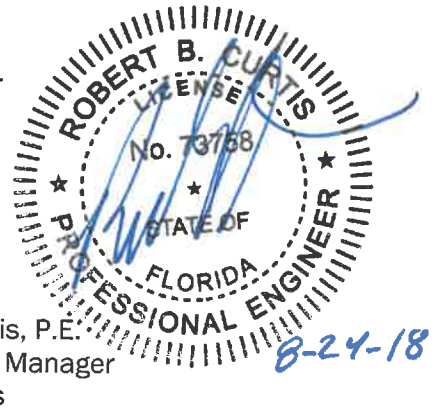


Ken E. Guilbeault, P.G.
Project Director
SCS Engineers

KEG/RBC:kl

cc: Kimberly Byer, SWMD
Larry Ruiz, SWMD
Ron Cope, EPC

Attachments



Robert B. Curtis, P.E.
Senior Project Manager
SCS Engineers

ATTACHMENTS

SITE LIFE TABLE

Table 1
Projected Remaining Capacity and Site Life
Phase I-VI and Capacity Expansion Area (Sections 7, 8, and 9)
Southeast County Landfill
Hillsborough County, Florida
August 24, 2018

Phases I - VI Remaining Gross Air Space⁴ = 7,056,708 CY Phases I - VI Estimated Final Cover Soils = 665,869 CY
CEA Sections 7-9 Remaining Gross Air Space⁴ = 989,877 CY CEA Section 7-9 Estimated Final Cover Soils = 145,600 CY
Total Gross Remaining Air Space = 8,046,585 CY

Design Life Estimates from Table Below: Total Remaining Net Air Space (Gross Air Space - Final Cover Soils) = 7,235,116 CY
CEA Sections 7-9 = 5.5 years Annual Disposal Rate Increase = 1.5%
Phases I-VI = 20.9 years Apparent Waste Density = 2,000 lbs/CY

Year	Projected Disposal Rates ^{1,2}	Diversion to Section 7-9	Diversion to Phases I-VI	Waste to Phases I-VI	Waste to Phases I-VI	Waste to Sections 7-9	Waste to Sections 7-9	Remaining Capacity for Phases I-VI ⁵	Remaining Capacity for Sections 7-9 ⁵	
	Tons	%	%	Tons	CY ³	Tons	CY ³	CY	CY	
	Beginning Capacity as of July 09, 2018								6,390,839	844,277
2018	147,936	50%	50%	73,968	73,968	73,968	73,968	6,316,871	770,309	
2019	300,310	50%	50%	150,155	150,155	150,155	150,155	6,166,717	620,154	
2020	304,814	50%	50%	152,407	152,407	152,407	152,407	6,014,309	467,747	
2021	309,386	50%	50%	154,693	154,693	154,693	154,693	5,859,616	313,054	
2022	314,027	50%	50%	157,014	157,014	157,014	157,014	5,702,603	156,040	
2023	318,738	49%	51%	162,697	162,697	156,040	156,040	5,539,905	0	
2024	323,519	0%	100%	323,519	323,519	0	0	5,216,387	0	
2025	328,371	0%	100%	328,371	328,371	0	0	4,888,015	0	
2026	333,297	0%	100%	333,297	333,297	0	0	4,554,718	0	
2027	338,297	0%	100%	338,297	338,297	0	0	4,216,422	0	
2028	343,371	0%	100%	343,371	343,371	0	0	3,873,051	0	
2029	348,522	0%	100%	348,522	348,522	0	0	3,524,529	0	
2030	353,749	0%	100%	353,749	353,749	0	0	3,170,780	0	
2031	359,056	0%	100%	359,056	359,056	0	0	2,811,724	0	
2032	364,441	0%	100%	364,441	364,441	0	0	2,447,283	0	
2033	369,908	0%	100%	369,908	369,908	0	0	2,077,375	0	
2034	375,457	0%	100%	375,457	375,457	0	0	1,701,918	0	
2035	381,089	0%	100%	381,089	381,089	0	0	1,320,830	0	
2036	386,805	0%	100%	386,805	386,805	0	0	934,025	0	
2037	392,607	0%	100%	392,607	392,607	0	0	541,418	0	
2038	398,496	0%	100%	398,496	398,496	0	0	142,922	0	
2039	404,473	0%	35%	142,922	142,922	0	0	0	0	

Notes:

- 1 Projected disposal rate tonnages based on historical tonnage received in 2018 (295,872 tons) and annual increase based on Hillsborough County Planning Commission Population Estimates of 1.5% average annual increases for 2004 - 2025.
- 2 Projected disposal rate for 2018 based on approximately 6 months remaining in 2018 (July 1 - December 31) = 295,872 x 6 months / 12 months = 147,936 tons.
- 3 Cubic yard conversion from tons based on 2,000 lbs/cy apparent waste density based on typical waste densities calculated using monthly surveys and tonnage reports by the County.
- 4 Remaining estimated air space based on Pickett's July 09, 2018 aerial topographic survey and permitted final buildout contours.
- 5 Remaining volumes and site life calculations based on gross remaining air space. Final cover soil for Phases I-VI has been deducted from the available air space. The total remaining gross air space for Phases I-VI is 7,056,708 cubic yards. From the financial assurance cost estimates, it was estimated that 665,869 cubic yards of final cover soil would be needed for closure of Phases I-VI. Therefore, the total available net remaining air space for waste and daily cover soil is 7,056,708 - 665,869 cubic yards = 6,390,839 cubic yards. Similarly, final cover soil for CEA has been deducted from the available air space. The total remaining air space for the CEA (Sections 7-9) is 989,877 cubic yards. From the financial assurance cost estimates, it was estimated that 145,600 cubic yards of final cover soil would be needed for closure of the CEA (Sections 7-9). Therefore, the total available net remaining air space for waste and daily cover soil is 989,877 - 145,600 cubic yards = 844,277 cubic yards.

SCS VOLUME MEMOS

August 22, 2018

File No. 09215600.06

MEMORANDUM

TO: Ken Guilbeault, P.G., Bob Curtis, P.E.
FROM: Kollan Spradlin, P.E.
SUBJECT: **SCLF - Phases I-VI**
Semi-Annual Volume Calculations – July 2018

Below I have included the available volume in Phases I-VI. The Lift 23 Permitted conceptual final build-out contours from HDR were compared to the July 9, 2018 semi-annual topographic survey by Pickett using AutoCAD Civil 3D 2018.

The results from Phase I-VI are as follows:

CAD File – Phase I-VI 07-09-18 vs Buildout

Volume Surface: Phase I-VI 7-09-18 vs Buildout
Description: Full Volume Remaining for Phases I-VI

Volume Fill: 7,041,630.59

Compare Surface: PHI- VI_Lift 23 Updated Final
Base Surface: Phase I-VI 7-09-18

CAD File – 071617 vs 070918 Phase I-VI Volume

Volume Surface: 2017 vs 2018 Phase I-VI Volume (Ash Study Area Boundary Applied)
Description: Ash Study Area Fill Volume

Volume Fill: 15,077.55

Compare Surface: Phase I-VI 7-09-18
Base Surface: Phase I-VI 7-16-17

Total Remaining Volume following Restoration of Ash Study Area: **7,056,708.14**

Gross Remaining Volume Per Phase:

Phase I - CAD File – Phase I 07-09-18 vs Buildout

Volume Surface: 2018 vs Buildout Phases

Description: Full Volume remaining for Phase I-VI (limited to Phase I Boundary)

Volume Fill: 870,075.17

Compare Surface: PHI- VI_Lift 23 Updated Final

Base Surface: Phase I-VI 7-09-18

Phase II - CAD File – Phase II 7-09-18 vs Buildout

Volume Surface: Phase I-VI 7-09-18 vs Buildout

Description: Full Volume remaining for Phase I-VI (limited to Phase II Boundary)

Volume Fill: 1,496,800.63

Compare Surface: PHI- VI_Lift 23 Updated Final

Base Surface: Phase I-VI 7-09-18

Phase III – CAD File – Phase III 7-09-18 vs Buildout

Volume Surface: Phase I-VI 7-09-18 vs Buildout

Description: Full Volume remaining for Phase I-VI (limited to Phase III Boundary)

Volume Fill: 1,297,156.97

Note – volume fill = 1,312,234.52 following completion of ash reuse pilot study

Compare Surface: PHI- VI_Lift 23 Updated Final

Base Surface: Phase I-VI 7-09-18

Phase IV - CAD File – Phase IV 7-09-18 vs Buildout

Volume Surface: Phase I-VI 7-09-18 vs Buildout

Description: Full Volume remaining for Phase I-VI (limited to Phase IV Boundary)

Volume Fill: 832,723.80

Compare Surface: PHI- VI_Lift 23 Updated Final

Base Surface: Phase I-VI 7-09-18

Phase V - CAD File - Phase V 7-09-18 vs Buildout

Volume Surface: Phase I-VI 7-09-18 vs Buildout

Description: Full Volume remaining for Phase I-VI (limited to Phase V Boundary)

Volume Fill: 566,540.63

Compare Surface: PHI- VI_Lift 23 Updated Final

Base Surface: Phase I-VI 7-09-18

Phase VI - CAD File - Phase VI 7-09-18 vs Buildout

Volume Surface: Phase I-VI 7-09-18 vs Buildout

Description: Full Volume remaining for Phase I-VI (limited to Phase VI Boundary)

Volume Fill: 1,978,333.39

Compare Surface: PHI- VI_Lift 23 Updated Final

Base Surface: Phase I-VI 7-09-18

August 22, 2018

File No. 09215600.06

MEMORANDUM

TO: Ken Guilbeault, P.G., Bob Curtis, P.E.
FROM: Kollan Spradlin, P.E.
SUBJECT: **SCLF - Capacity Expansion Area Sections 7, 8, and 9
Semi-Annual Volume Calculations - July 2018**

Below I have included the available volume in Section 7-9. The Lift 18 Permitted conceptual final build-out contours from HDR were compared to the July 9, 2018 semi-annual topographic survey by Pickett using AutoCAD Civil 3D 2018.

The results from Capacity Expansion Area (CEA) are as follows:

CAD File - Sections 7-9 07-09-18 vs Buildout

Volume Surface: Sections 7-9 7-09-18 vs Buildout
Description: Full Volume Remaining for Sections 7-9

Volume Fill: **989,876.62**

Compare Surface: CEA_SEQ-18_FULLBUILD
Base Surface: 7-09-18CEA

Gross Remaining Volume Per Phase:

Section 7 - CAD File - Section 7 07-09-18 vs Buildout

Volume Surface: Sections 7-9 7-09-18 vs Buildout
Description: Full Volume Remaining for Sections 7-9 (Limited to Section 7 Boundary)

Volume Fill: 428,937.52

Compare Surface: CEA_SEQ-18_FULLBUILD
Base Surface: 7-09-18CEA

Section 8 - CAD File – Section 8 07-09-18 vs Buildout

Volume Surface: Sections 7-9 7-09-18 vs Buildout

Description: Full Volume Remaining for Sections 7-9 (Limited to Section 8 Boundary)

Volume Fill: 146,554.91

Compare Surface: CEA_SEQ-18_FULLBUILD

Base Surface: 7-09-18CEA

Section 9 - CAD File – Section 9 07-09-18 vs Buildout

Volume Surface: Sections 7-9 7-09-18 vs Buildout

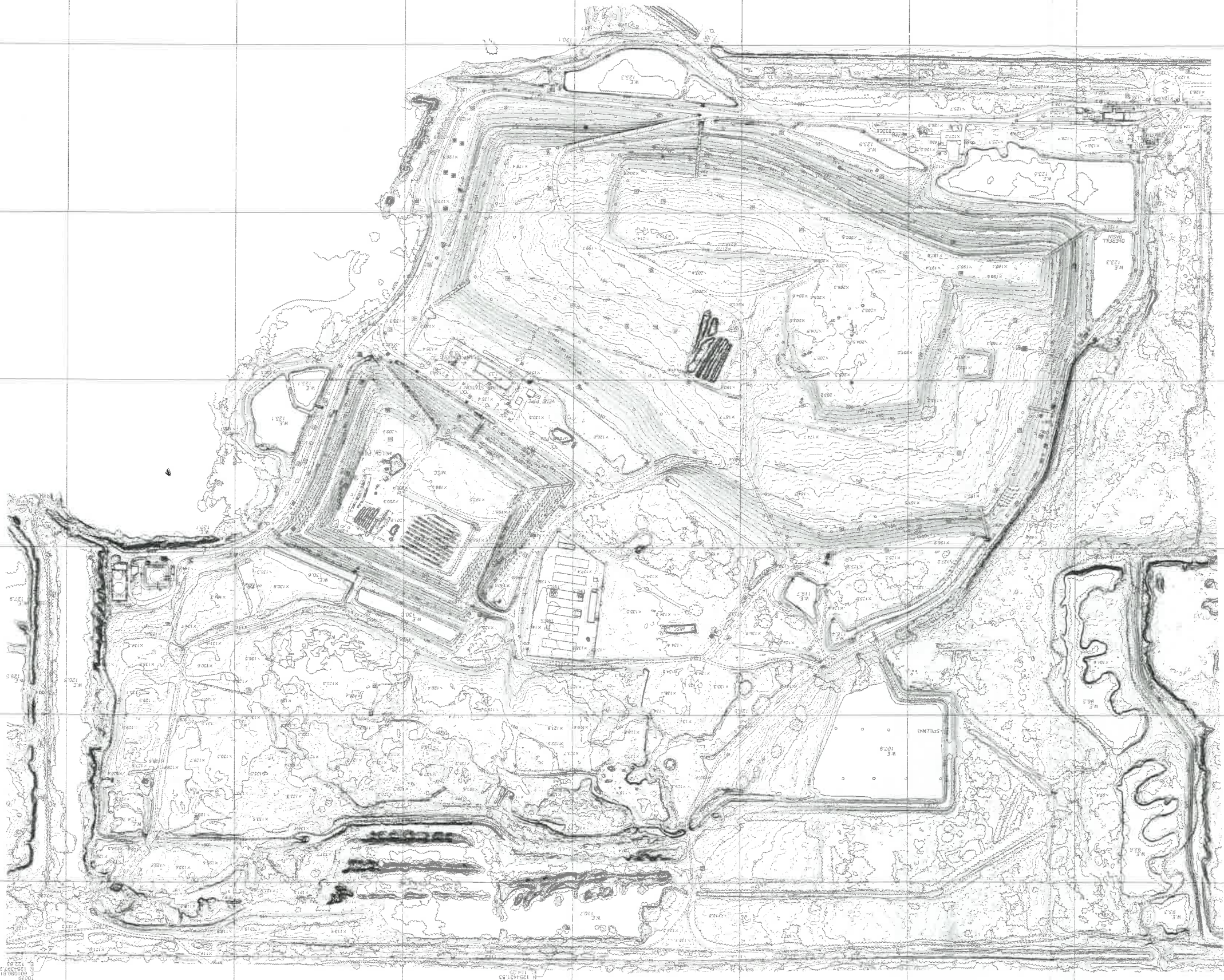
Description: Full Volume Remaining for Sections 7-9 (Limited to Section 9 Boundary)

Volume Fill: 414,376.44

Compare Surface: CEA_SEQ-18_FULLBUILD

Base Surface: 7-09-18CEA

PICKETT – SEMI-ANNUAL TOPOGRAPHIC SURVEY



TOPOGRAPHIC SURVEY
SOUTHEAST LANDFILL
 LOCATED IN SECS 14, 15, 22, & 23 TWP 32S
 RANG 23E, HILLSBOROUGH COUNTY, FLORIDA
 PREPARED FOR: WASTE MANAGEMENT

SURVEYOR'S NOTES:
 1) Notes, the plan, and the accompanying data were prepared in accordance with the Florida Statutes, Chapter 469, Part I, and the Florida Board of Surveying and Mapping, Rules and Regulations, Part 469.001, Florida Statutes, and the Florida Board of Surveying and Mapping, Rules and Regulations, Part 469.001, Florida Statutes.
 2) This map was prepared by the Surveyor's Office of the State of Florida, Department of Transportation, and is not intended for any other purpose.
 3) This map was prepared by the Surveyor's Office of the State of Florida, Department of Transportation, and is not intended for any other purpose.

PICKETT SURVEYING & ENGINEERING
 1101 W. 11th St., Suite 100, St. Petersburg, FL 33705
 Phone: (727) 327-7111
 Fax: (727) 327-7112
 Email: info@pickettsurveying.com
 Website: www.pickettsurveying.com

DATE: 12/15/2011
 DRAWN BY: J. B. Pickett
 CHECKED BY: J. B. Pickett
 SCALE: 1" = 200'

LEGEND
 (SEE EXPLANATION AND REVISIONS)
 CONTOUR LINES
 BOUNDARY LINES
 ROAD CENTER LINES
 ROAD RIGHT-OF-WAY LINES
 PROPERTY LINES
 BUILDING FOOTPRINTS
 DRIVEWAYS
 UTILITY LINES
 EROSION CONTROL STRUCTURES
 FENCE LINES
 POWER LINES
 TELEPHONE LINES
 WATER MAINS
 SEWER LINES
 DRAINAGE CANALS
 SWAMP LINES
 RAILROADS
 AIRPORTS
 CANALS
 DITCHES
 TRENCHES
 EROSION CONTROL STRUCTURES
 FENCE LINES
 POWER LINES
 TELEPHONE LINES
 WATER MAINS
 SEWER LINES
 DRAINAGE CANALS
 SWAMP LINES
 RAILROADS
 AIRPORTS
 CANALS
 DITCHES
 TRENCHES