

Cell Construction Cost Estimate - Seminole Road Landfill Phase 3 Unit 2 Cells 1 & 2

Item	Type	Units	Quantity	Unit Price	Cost
Excavation/Fill					
Mobilization	General Contractor	EA.	1	\$45,000.00	\$45,000.00
Excavation	Contracted Excavation	CY	71,040	\$2.06	\$146,638.40
Excavation	Solid Waste Excavation	CY	1,650	\$8.00	\$13,200.00
Excavation	Liner Tie In Preparation	LF	650	\$8.00	\$5,200.00
Soil Fill	Prepare Subgrade	SF		\$0.13	\$0.00
Soil Fill	General Fill & Protective Cover	CY	200,178	\$6.58	\$1,316,420.48
Soil Fill	6" Clay Bottom Liner	CY	16,702	\$9.90	\$165,349.80
Miscellaneous	Clear & Grub	AC.	21.0	\$3,340.13	\$70,142.80
Geosynthetics					
60-mil Textured HDPE	Material & Install	SF	1,803,830	\$0.48	\$859,388.15
Geocomposite	Material & Install	SF	1,803,830	\$0.47	\$841,724.70
Geosynthetic Clay Liner	Material & Install	SF	901,915	\$0.49	\$445,955.97
Mobilization/Demobilization	Geosynthetics Installer Mob/Demob	EA.	1	\$14,550.00	\$14,550.00
Geosynthetics	Liner Edge Protection	LF	1,610	\$3.67	\$5,900.65
Geosynthetics	Rain Flap Weld		1,610	\$8.21	\$13,222.13
Geosynthetics	Tie-In Seams	LF	650	\$8.43	\$5,477.33
Miscellaneous	Anchor Trench	LF	2,770	\$8.21	\$22,748.63
Miscellaneous	Conformance Testing	LS	1	\$5,579.00	\$5,579.00
Leachate Collection System					
Leachate Collection	Piping	LF	2,735	\$28.93	\$79,109.88
Leachate Collection	Gravel	CY	304	\$71.14	\$21,620.01
Leachate Collection	Geotextile	SF	36,430	\$0.18	\$6,653.25
Leachate Collection	Tie In to Existing LCS	EA.	2	\$1,500.00	\$3,000.00
Leachate Collection	Leachate Cleanout	EA.	2	\$50.00	\$100.00
Leachate Collection	Cleanout Risers	EA.	2	\$6,925.00	\$13,850.00
Miscellaneous					
Permitting	Permitting Fees (Estimated Mods with each construction effort)	EA.	1	\$15,000.00	\$15,000.00
Permitting	Construction NOI & SWPPP	EA.	1	\$10,750.00	\$10,750.00
Engineering & Bidding	Construction Documents	EA.	1	\$5,000.00	\$5,000.00
Engineering & Bidding	Bid Process	EA.	1	\$15,000.00	\$15,000.00
Project Management		EA.	1	\$25,000.00	\$25,000.00
Surveying		EA.	1	\$21,666.67	\$21,666.67

General Conditions	Bonds	EA.	1	\$25,000.00	\$25,000.00
Quality Assurance	Field Monitoring	EA.	1	\$100,000.00	\$100,000.00
Quality Assurance	Office Work	EA.	1	\$15,000.00	\$15,000.00
Quality Assurance	Reports	EA.	1	\$5,000.00	\$5,000.00
Site Preparation	Silt Fence	LF	1,650	\$50.00	\$82,500.00
Site Preparation	BMPs	EA.	1	\$15,000.00	\$15,000.00
SUBTOTAL:					\$4,435,747.83
TAXES (8%):					\$354,859.83
CONTINGENCY (20% OF SUBTOTAL):					\$887,149.57
ACRES:					19.3
TOTAL COST:					\$5,677,757.23
COST PER ACRE:					\$294,184.31



SUBJECT SEMINOLE LANDFILL LANDFILL LIFE CALCULATIONS			
JOB NO	2390081-008	MADE BY	CCP
REF	Seminole Road Landfill	CHECKED	LS / WRP
		REVIEWED	
		DATE	7/14/2017
		DATE	8/3/2017
		DATE	

SHEET 1 OF 2

OBJECTIVE

To provide summary calculations for site life and density relative to the current metrics of operation at the Seminole Landfill. Values will be used to estimate average monthly consumption and remaining site life.

APPROACH

Two methods are used to calculate the density of waste and projected monthly consumption of airspace. These methods consider the landfill volume consumed between survey dates and since the site opened.

$$\text{Operational Density} = \frac{\text{Deplete Tons Received Between Survey Dates}}{[\text{Active Airspace Consumed Between Survey Dates} - \text{Waste Relocated into Active Airspace Volume Consumed Between Survey Dates}]}$$

$$\text{Composite Density} = \frac{\text{Deplete Tons Received Between Survey Dates}}{[\text{Net Airspace Consumed Between Survey Dates} - \text{Waste Relocated into Active Airspace Volume Consumed Between Survey Dates}]}$$

INPUT INFORMATION

The following information is obtained from using a comparison of Autocad Drawings of Survey Information for the previous two years.

Parameter	Unit	Value
Date of 2016 Survey	-	9/1/2016
Waste received between surveys	Tons	499,641
Total remaining airspace as of survey	CY	2,378,048
Active airspace consumed between surveys	CY	570,922
Waste relocated into Active airspace consumed between surveys	CY	0
Recoverable airspace created by settlement	CY	58,395
Net airspace consumed between surveys	CY	512,527
Calendar days between aerial surveys	Days	372
Constructed remaining airspace as of survey	CY	2,378,048
Volume of Overfill	CY	307,665
Projected daily waste	Tons/Day	1,958
Volume of waste outside of permitted area	CY	0
Airspace volume of new cell in 2016 after survey	CY	0

CALCULATIONS

Operational Density:

$$\text{Operational Density} = \frac{\text{Waste Received}}{\text{Volume Consumed} - \text{Waste Relocated}} = \frac{499,641}{570,922}$$

$$\text{Operational Density} = 0.88 \text{ Tons/Cubic Yard}$$

$$\text{Operational Density} = 1750.30 \text{ Lbs/Cubic Yard}$$

Composite Density:

$$\text{Composite Density} = \frac{\text{Waste Received}}{\text{Net Airspace Consumed} - \text{Waste Relocated}} = \frac{499,641}{512,527}$$

$$\text{Composite Density} = 0.97 \text{ Tons/Cubic Yard}$$

$$\text{Composite Density} = 1948.72 \text{ Lbs/Cubic Yard}$$



**Golder
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SHEET 2 OF 2

CALCULATIONS (cont'd)

Monthly Airspace Consumption:

$$\text{Average Monthly Tons} = \frac{\text{Tons / Day} \times 250 \text{ operational days per Year}}{12 \text{ months / year}}$$

$$\text{Average Monthly Tons} = \frac{489500}{12} = 40,792 \text{ tons/month}$$

Operational

$$\text{Average Monthly Tons} \times \frac{\text{Cubic Yard}}{0.88 \text{ tons}} = \text{Cubic Yards Consumed per Month}$$

$$40,791.67 \times 1.14 = 46,611 \text{ cubic yards per month}$$

Composite

$$\text{Average Monthly Tons} \times \frac{\text{Cubic Yard}}{0.97 \text{ tons}} = \text{Cubic Yards Consumed per Month}$$

$$40,791.67 \times 1.03 = 41,844 \text{ cubic yards per month}$$

Site Life and Constructed Life Estimates

Operational Site Life

$$\text{Operational Life} = \frac{\text{Total Remaining Airspace Volume - Overfill - Volume Outside of Permitted Area}}{\text{Average Operational Monthly Consumption}}$$

$$\text{Operational Life} = \frac{2,070,383}{46611.19} = \begin{matrix} 44.4 \text{ months remaining} \\ 3.7 \text{ years remaining} \end{matrix} \quad \begin{matrix} \text{Projected Closing} \\ 5/14/2020 \end{matrix}$$

Composite Site Life

$$\text{Composite Life} = \frac{\text{Total Remaining Airspace Volume - Overfill - Volume Outside of Permitted Area}}{\text{Average Composite Monthly Consumption}}$$

$$\text{Composite Life} = \frac{2,070,383}{41843.70} = \begin{matrix} 49.5 \text{ months remaining} \\ 4.1 \text{ years remaining} \end{matrix} \quad \begin{matrix} \text{Projected Closing} \\ 10/14/2020 \end{matrix}$$

Operational Constructed Life

$$\text{Operational Life} = \frac{\text{Constructed Remaining Airspace Volume}}{\text{Average Operational Monthly Consumption}}$$

$$\text{Operational Life} = \frac{2,378,048}{46611.19} = \begin{matrix} 51.0 \text{ months remaining} \\ 4.3 \text{ years remaining} \end{matrix} \quad \begin{matrix} \text{Cell Needed By:} \\ 11/30/2020 \end{matrix}$$

Composite Constructed Life

$$\text{Composite Life} = \frac{\text{Constructed Remaining Airspace Volume}}{\text{Average Composite Monthly Consumption}}$$

$$\text{Composite Life} = \frac{2,378,048}{41843.70} = \begin{matrix} 56.8 \text{ months remaining} \\ 4.7 \text{ years remaining} \end{matrix} \quad \begin{matrix} \text{Cell Needed By:} \\ 5/28/2021 \end{matrix}$$

Sanitation GEFA Loan for Cell Construction

[illegible]

Sanitation GEFA Loan for Cell Construction

Principal Amount \$ 6,000,000.00
Interest Rate 2.75%
Annual Payment \$ 173,826.98
Term 5 yrs
Administrative Fee \$ 60,000.00

Totals	\$ 7,472,771.24	\$ 6,000,000.00	\$ 257,771.22	\$ 1,155,000.02	\$ 60,000.00	\$ 7,472,771.24
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Payment		Total Payment		Principal	Interest	Construction Interest	Loan Origination Fee	Balance
Number								
Jun-21	26	\$	173,826.98	\$	164,535.01	\$	9,291.97	\$ 3,890,143.70
Jul-21	27	\$	173,826.98	\$	164,912.07	\$	8,914.91	\$ 3,725,231.64
Aug-21	28	\$	173,826.98	\$	165,289.99	\$	8,536.99	\$ 3,559,941.65
Sep-21	29	\$	173,826.98	\$	165,668.78	\$	8,158.20	\$ 3,394,272.87
Oct-21	30	\$	173,826.98	\$	166,048.44	\$	7,778.54	\$ 3,228,224.43
Nov-21	31	\$	173,826.98	\$	166,428.96	\$	7,398.01	\$ 3,061,795.47
Dec-21	32	\$	173,826.98	\$	166,810.36	\$	7,016.61	\$ 2,894,985.10
Jan-22	33	\$	173,826.98	\$	167,192.64	\$	6,634.34	\$ 2,727,792.47
Feb-22	34	\$	173,826.98	\$	167,575.79	\$	6,251.19	\$ 2,560,216.68
Mar-22	35	\$	173,826.98	\$	167,959.82	\$	5,867.16	\$ 2,392,256.86
Apr-22	36	\$	173,826.98	\$	168,344.72	\$	5,482.26	\$ 2,223,912.14
May-22	37	\$	173,826.98	\$	168,730.51	\$	5,096.47	\$ 2,055,181.63
Jun-22	38	\$	173,826.98	\$	169,117.19	\$	4,709.79	\$ 1,886,064.44
Jul-22	39	\$	173,826.98	\$	169,504.75	\$	4,322.23	\$ 1,716,559.69
Aug-22	40	\$	173,826.98	\$	169,893.20	\$	3,933.78	\$ 1,546,666.50
Sep-22	41	\$	173,826.98	\$	170,282.53	\$	3,544.44	\$ 1,376,383.96
Oct-22	42	\$	173,826.98	\$	170,672.77	\$	3,154.21	\$ 1,205,711.20
Nov-22	43	\$	173,826.98	\$	171,063.89	\$	2,763.09	\$ 1,034,647.31
Dec-22	44	\$	173,826.98	\$	171,455.91	\$	2,371.07	\$ 863,191.40
Jan-23	45	\$	173,826.98	\$	171,848.83	\$	1,978.15	\$ 691,342.56
Feb-23	46	\$	173,826.98	\$	172,242.65	\$	1,584.33	\$ 519,099.91
Mar-23	47	\$	173,826.98	\$	172,637.37	\$	1,189.60	\$ 346,462.54
Apr-23	48	\$	173,826.98	\$	173,033.00	\$	793.98	\$ 173,429.54
May-23	49	\$	173,826.98	\$	173,429.54	\$	397.44	\$ (0.00)
								\$ 869,134.89

\$ 7,472,771.24	\$ 6,000,000.00	\$ 257,771.22	\$ 1,155,000.02	\$ 60,000.00	\$ 7,472,771.24
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