

**Part III
Attachment III-D
Appendix III-D.4**

LANDFILL OPERATION AND SITE LIFE

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**



March 2015

**Prepared for:
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3-2-2015


A circular professional engineer seal for Michael W. Oden, State of Texas, registration number 67165. The seal features a five-pointed star in the center, surrounded by the words "STATE OF TEXAS" and "REGISTERED PROFESSIONAL ENGINEER". The name "MICHAEL W. ODEN" and the number "67165" are also present. A handwritten signature in blue ink is written across the bottom of the seal.

This document is released for the purpose of permitting only under the authority of Michael W. Oden, P.E. #67165. It is not to be used for bidding or construction. Texas Registered Engineering Firm F-5650

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1.0 SITE LIFE

The PERC Landfill will accept waste generated in Webb County, Texas, adjacent counties and surrounding areas and even remote locations delivered by transfer vehicles or rail. The PERC Landfill has been designed to provide efficient disposal capacity for waste generated from practically any area, including Mexico. The facility will have the ability to accept waste 24 hours per day, 7 days per week. It is projected that the landfill waste acceptance rate will begin at approximately 1,000,000 tons per year (2,740 tons per day) and increase to approximately 3,650,000 tons per year (10,000 tons per day) in seven years before leveling off to an annual increase of 1.0 percent per year for the remaining life of the facility. Based on this assumption, the life has been calculated at approximately 47 years. See Table III-D.4-1.

2.0 LANDFILL CAPACITY

There are two waste disposal units within the PERC facility. They are termed the North unit and South unit, with the North unit planned to open first and disposal operations proceeding in a southerly direction. Utilizing AutoCAD Civil 3D[®] software, the disposal capacity for the North and South units is 107,967,900 and 115,349,900 cubic yards respectively. These volumes were generated from surfaces representing the top of the liner protective cover and the bottom of the final cover surface (top of waste grades) and present the volume available for waste and daily cover.

3.0 AIRSPACE UTILIZATION

For planning purposes, an airspace utilization factor (AUF) of 0.8775 tons per cubic yard (65 pounds per cubic foot) has been used to project site life. The AUF is defined as the tons of waste received for disposal divided by the actual volume used for the waste and daily cover.

Technically Complete, March 11, 2016

Pescadito Environmental Resource Center
Landfill Life Calculations
Table III-D.4-1

North Unit Capacity =	107,966,900	Cubic Yards of Solid Waste and Daily Cover (Airspace)	
South Unit Capacity =	115,349,900	Cubic Yards of Solid Waste and Daily Cover (Airspace)	
	223,316,800	Total Cubic Yards Airspace	
Airspace Utilization Factor =	0.8775	Tons Solid Waste per Cubic Yard Airspace	
North Unit Capacity =	94,740,955	Tons Solid Waste	
South Unit Capacity =	101,219,537	Tons Solid Waste	
Annual Increase after year 7 =	1.00%		
Operating Days per year =	365		

Year	Tons per day	Tons per year	Airspace Consumed per year (CY)	Cumulative Airspace Consumed (CY)	Airspace Remaining (CY)	Remaining Life based on current year waste acceptance (Years)
1	2,740	1,000,000	1,139,601	1,139,601	222,177,199	195
2	3,288	1,200,000	1,367,521	2,507,123	220,809,677	161
3	3,836	1,400,000	1,595,442	4,102,564	219,214,236	137
4	4,384	1,600,000	1,823,362	5,925,926	217,390,874	119
5	4,932	1,800,000	2,051,282	7,977,208	215,339,592	105
6	5,479	2,000,000	2,279,202	10,256,410	213,060,390	93
7	10,000	3,650,000	4,159,544	14,415,954	208,900,846	50
8	10,100	3,686,500	4,201,140	18,617,094	204,699,706	49
9	10,201	3,723,365	4,243,151	22,860,245	200,456,555	47
10	10,303	3,760,599	4,285,583	27,145,828	196,170,972	46
11	10,406	3,798,205	4,328,438	31,474,266	191,842,534	44
12	10,510	3,836,187	4,371,723	35,845,989	187,470,811	43
13	10,615	3,874,549	4,415,440	40,261,429	183,055,371	41
14	10,721	3,913,294	4,459,594	44,721,023	178,595,777	40
15	10,829	3,952,427	4,504,190	49,225,213	174,091,587	39
16	10,937	3,991,951	4,549,232	53,774,445	169,542,355	37
17	11,046	4,031,871	4,594,725	58,369,170	164,947,630	36
18	11,157	4,072,189	4,640,672	63,009,842	160,306,958	35
19	11,268	4,112,911	4,687,078	67,696,920	155,619,880	33
20	11,381	4,154,040	4,733,949	72,430,869	150,885,931	32
21	11,495	4,195,581	4,781,289	77,212,158	146,104,642	31
22	11,610	4,237,537	4,829,102	82,041,260	141,275,540	29
23	11,726	4,279,912	4,877,393	86,918,652	136,398,148	28
24	11,843	4,322,711	4,926,167	91,844,819	131,471,981	27
25	11,961	4,365,938	4,975,428	96,820,247	126,496,553	25
26	12,081	4,409,598	5,025,183	101,845,430	121,471,370	24
27	12,202	4,453,694	5,075,434	106,920,864	116,395,936	23
28	12,324	4,498,231	5,126,189	112,047,053	111,269,747	22
29	12,447	4,543,213	5,177,451	117,224,503	106,092,297	20
30	12,572	4,588,645	5,229,225	122,453,728	100,863,072	19
31	12,697	4,634,531	5,281,517	127,735,246	95,581,554	18
32	12,824	4,680,877	5,334,333	133,069,578	90,247,222	17
33	12,953	4,727,686	5,387,676	138,457,254	84,859,546	16
34	13,082	4,774,962	5,441,553	143,898,807	79,417,993	15
35	13,213	4,822,712	5,495,968	149,394,775	73,922,025	13
36	13,345	4,870,939	5,550,928	154,945,703	68,371,097	12
37	13,478	4,919,649	5,606,437	160,552,140	62,764,660	11
38	13,613	4,968,845	5,662,501	166,214,641	57,102,159	10
39	13,749	5,018,533	5,719,126	171,933,768	51,383,032	9
40	13,887	5,068,719	5,776,318	177,710,085	45,606,715	8
41	14,026	5,119,406	5,834,081	183,544,166	39,772,634	7
42	14,166	5,170,600	5,892,422	189,436,588	33,880,212	6
43	14,308	5,222,306	5,951,346	195,387,934	27,928,866	5
44	14,451	5,274,529	6,010,859	201,398,793	21,918,007	3.6
45	14,595	5,327,274	6,070,968	207,469,761	15,847,039	2.6
46	14,741	5,380,547	6,131,678	213,601,439	9,715,361	1.6
47	14,889	5,434,353	6,192,994	219,794,433	3,522,367	0.6
48	15,038	5,488,696	6,254,924	226,049,358	(2,732,558)	(0.4)