

Select Information Related to Off-Site Disposal (License Termination Alternative) Cost Estimation

- See Tables 1 and 2, attached, for details on material volumes and estimates of numbers of trucks and railcars associated with off-site disposal.
- Assumed rail trip routes – a detailed route analysis of the rail route from the SMC facility to the disposal facility in Utah was not conducted. However, the estimated travel distance for shipment to Utah is 2,250 miles, as indicated in Section 7.2.3 of Rev. 1 of the DP.
- Planning and management costs – as indicated in Table 17.15 of Rev. 1A, implementation costs totaling \$2.8 million are included to cover administrative costs (\$474,000), project management during construction (\$949,000), permits and legal documentation (\$474,000) and engineering design (\$949,000).
- Excavation costs are indicated under the “On-site Slag Processing” task as “Relocation of Coarse Slag to Staging Area” and Relocation of Baghouse Dust, Finer Slag and Soils to Staging Area” line items in Table 17.15 of Rev. 1A. For associated volumes of materials, see Table 2 attached hereto.
- Slag crushing costs are indicated under the “Crush Slag Larger than Disposal Facility Cutoff” line item in Table 17.15 of Rev. 1A. Materials in piles 4, 5, 6, 9, 10 and 11 (see Table 2 attached hereto and Figure 1-6 of the Environmental Report) are assumed to require size reduction prior to shipment.
- Loading costs are indicated under the “Load Slag Materials into Railcars” line item in Table 17.15 of Rev. 1A.
- Environmental controls and barriers are indicated in Table 17.15 of Rev. 1A under the Site Preparation task as the Sediment and Erosion Controls line item, under the Onsite Slag Processing task as the Adjacent Soil Characterization line item, and under the Site Restoration task as line items that constitute placement of clean soil and seeding over the former Storage Yard area and drainage improvements. Final status survey costs are also included as a separate line item.
- Each of the costs listed above is broken down into materials, labor, equipment and overhead and profit components within Table 17.15 of Rev. 1A.

Table 1
Estimation of Numbers of Vehicles/Train Cars Associated with Off-Site Disposal

Project Duration		<u>Basis for value</u>
Total Time (MONTHS)	10	Estimated at 5 months per year for 2 years
Time for Removal (MONTHS/year)	5	See above
Time for Cover Placement (MONTHS)	5	Assumed
Working Days per Week	5	Assumed
Weeks per Year	21	Based on 5 months per year
Hours per Day	8	Assumed
Material to Be Removed		
Total Cubic Yards of Material to be Removed	76,000	From Table 2
Total Tons of Material to be Removed	132,705	From Table 2(based on density assumptions used for estimating emissions associated with the implementation of this alternative)
Capacity per Train Car (tons)	90	Assumed; within typical range of train car capacities and reflecting assumption that, due to the irregular-sized nature of the material, achievement of maximum load capacity may not be achievable
Number of Train Cars	1,475	= Total tons of Material to be Removed / Capacity per Train Car
Train Cars per Day	7.0	= Train Cars per Year / (Weeks per Year x Days per Week)
Train Cars per Year	737	= Total Number of Train Cars / 2 (which represents the two 5 month periods)
Soil Cover to Be Placed After Removal of Materials		
Depth of Cover (feet)	1	Assumed
Area to be Covered (square feet)	310,687	CAD-Based Estimate of Storage Yard Area
Area to be Covered (acres)	7.1	= Area in Square Feet / 43,560
Total Material Needed for Cover (cubic yards)	11,507	= Depth of Cover x Area of Cover / 27
Yards per Load	20	Assumed
Number of Truck Trips	575	= Total Material Needed / Yards per Load
Trucks per Day	5.31	= Total Number of Truck Trips / (5/12 Months * 52 Weeks * 5 Days)
Estimated # of Employees at Any Given Time		
Associated number of cars/trucks entering/leaving	8-10	workers
	8-10	cars/trucks per day

**Table 2
Material Volumes and Tonnage**

Pile # (per Figure 1-6)	Material Type	Volume (cubic yard)	Pile Size (acre)	Density		Mass (tons)
				(lbs/ft ³)	(g/cm ³)	
1	Excavated Soil Mixed with Slag	15,000	0.9	120	1.92	24,300
2	Excavated Soil from D111	1,000	0.2	105	1.68	1,418
3	Canal Slag (In & Out of Supersacs)	3,000	0.2	165	2.64	6,683
4	Slag	30,000	1.0	140	2.24	56,700
5	Slag & Demolition Concrete	5,000	0.5	140	2.24	9,450
6	Hi-Ratio Slag	2,000	0.3	140	2.24	3,780
7	Hi-Ratio Slag & D111 Flex Kleen Bags & D116 Polishing Compound Contaminated Equipment & Cleaning	1,000	0.3	130	2.08	1,755
8	Baghouse Dust	13,000	0.9	100	1.60	17,550
9	Baghouse Dust Mixed with Slag	4,000	0.4	145	2.32	7,830
10	D111/D112 Concrete	500	0.05	120	1.92	810
11	D111/D112 Concrete	1,500	0.1	120	1.92	2,430
Total Volume & Mass of Material		76,000				132,705 tons

Volumes were estimated using CAD methods by comparing existing topography (Plate A in Environmental Report) to an assumed ground surface prior to placement of the materials (based on an extension of surrounding contours) and by defining the various material piles as indicated on Figure 1-6 of the Environmental Report. CAD-generated volume estimates were rounded up to the nearest 1,000 cubic yards. A figure overlying the assumed original contours for the Storage Yard area with the various material areas is provided as Figure A1 to this attachment. A copy of the CAD-generated volumes is also presented for Piles 1-9. Material areas were also estimated using CAD.

Table 3
Estimation of Numbers of Vehicles Associated with On-Site Stabilization

Operation Duration		<u>Basis for value</u>
Total Time (MONTHS)	7	Estimated (see Figure 18.9 Project Schedule) - Rev. 1a
Time for Creating Consolidated Pile (DAYS)	Calendar Days	90
	Work Days	64
Time for Engineered Barrier (DAYS)	Calendar Days	90
	Work Days	64
Placement of Soil Isolation Layer (DAYS)	Calendar Days	60
	Work Days	44
Placement of Stone Barrier Layer (DAYS)	Calendar Days	30
	Work Days	20
Soil Cover for Non-Engineered Barrier Area (DAYS)	Calendar Days	14
	Work Days	10
Engineered Barrier Material		
Amount of Topsoil for Disturbed Areas (cubic yards)	3,055	See 6/1/06 engineering estimate
Amount of Soil Isolation & Frost Protection (cubic yards)	14,700	See 6/1/06 engineering estimate
Amount of Stone Filter Layer (cubic yards)	1,549	See 6/1/06 engineering estimate
Amount of 1/2" - 1 1/2" Stone on Top Slopes (cubic yards)	323	See 6/1/06 engineering estimate
Amount of 2" - 4" Stone on Sideslopes (cubic yards)	2,251	See 6/1/06 engineering estimate
Amount of 4" - 6" Stone at toe of Sideslopes (cubic yards)	524	See 6/1/06 engineering estimate
Material Total (cubic yards)	22,402	= Sum of the above
Pounds per Cubic Foot of Topsoil & Soil Isolation, Density	105	Assumed (Table 2); in lb/cf
Pounds per Cubic Yard, Density	2,835	= Pounds per Cubic Foot x 27
Pounds per Cubic Foot of Filter Layer, Density	110	Assumed (Table 2); in lb/cf
Pounds per Cubic Yard, Density	2,970	= Pounds per Cubic Foot x 27
Pounds per Cubic Foot of 1/2" - 1 1/2" Stone	175	Dunrite Sand & Gravel (lb/cf)
Pounds per Cubic Yard, Density	4,725	= Pounds per Cubic Foot x 27
Pounds per Cubic Foot of 2" - 4" Stone, Density	62	Dunrite Sand & Gravel (lb/cf)
Pounds per Cubic Yard, Density	1,666	= Pounds per Cubic Foot x 27
Pounds per Cubic Foot of 6" - 8" Stone, Density	62	Dunrite Sand & Gravel (lb/cf)
Pounds per Cubic Yard, Density	1,666	= Pounds per Cubic Foot x 27

Table 3
Estimation of Numbers of Vehicles Associated with On-Site Stabilization

Yards per Truck Load		20	Given
Number of Trucks to Move All Material		1,120	= Material Needed / Yards per Load
Time for Engineered Barrier + Soil Cover for Disturbed Areas	Working Days	74	Assumed (see above)
Trucks per Day, All Material		15	= Trucks/Working Day
Trucks Topsoil		153	= Volume/ Yards per Load
Trucks of Soil Isolation & Frost Protection		735	= Volume/ Yards per Load
Trucks of Stone Filter Layer		77	= Volume/ Yards per Load
Trucks of 1/2" - 1 1/2" Stone on Top Slopes		16	= Volume/ Yards per Load
Trucks of 2" - 4" Stone on Sideslopes		113	= Volume/ Yards per Load
Trucks of 4" - 6" Stone at toe of Sideslopes		26	= Volume/ Yards per Load
Estimated # of Employees at Any Given Time		6-12	workers
Associated number of cars/trucks entering/leaving		6-12	cars/trucks per day