

**Revegetation of Construction Areas and Roadways**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations**

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
<b>Seed and/or Scarify and Seed</b>		<b>1.4</b>	30.0	4.0	2.4	0.62	1.5	-
Year -1	-	2.0	30.0	4.0	2.4	0.62	1.5	-
Year 1	-	1.0	30.0	4.0	2.4	0.62	1.5	-
Year 2	100.0	1.0	30.0	4.0	2.4	0.62	1.5	67.2
Year 3	100.0	1.0	30.0	4.0	2.4	0.62	1.5	67.2
Year 4	75.0	1.0	30.0	4.0	2.4	0.62	1.5	50.4
Year 5	50.0	1.0	30.0	4.0	2.4	0.62	1.5	33.6
Years 6-10	50.0	2.0	30.0	4.0	2.4	0.62	1.5	67.2
Year 11-15	25.0	1.0	30.0	4.0	2.4	0.62	1.5	16.8
Year 16-20	25.0	2.0	30.0	4.0	2.4	0.62	1.5	33.6
Post-operational period	15.4	2.0	30.0	4.0	2.4	0.62	1.5	20.7

**Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation (\$/ac) <sup>1</sup>	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
<b>75D Challenger</b>	-	-	<b>194.48</b>	<b>69,372.06</b>	<b>30.66</b>	<b>10,936.66</b>	<b>495.00</b>	<b>713,983.10</b>	<b>\$ 794,291.82</b>	-
Year -1	-	-	194.48	-	30.66	-	1,621.25	-	\$ -	-
Year 1	-	-	194.48	-	30.66	-	1,621.25	-	\$ -	-
Year 2	100.0	67.2	194.48	13,069.81	30.66	2,060.48	1,621.25	162,125.00	\$ 177,255.29	1,772.55
Year 3	100.0	67.2	194.48	13,069.81	30.66	2,060.48	1,621.25	162,125.00	\$ 177,255.29	1,772.55
Year 4	75.0	50.4	194.48	9,802.36	30.66	1,545.36	1,621.25	121,593.75	\$ 132,941.47	1,772.55
Year 5	50.0	33.6	194.48	6,534.90	30.66	1,030.24	1,621.25	81,062.50	\$ 88,627.65	1,772.55
Years 6-10	50.0	67.2	194.48	13,069.81	30.66	2,060.48	1,621.25	81,062.50	\$ 96,192.79	1,923.86
Year 11-15	25.0	16.8	194.48	3,267.45	30.66	515.12	1,621.25	40,531.25	\$ 44,313.82	1,772.55
Year 16-20	25.0	33.6	194.48	6,534.90	30.66	1,030.24	1,621.25	40,531.25	\$ 48,096.40	1,923.86
Post-operational period	15.4	20.7	194.48	4,023.02	30.66	634.24	1,621.25	24,951.85	\$ 29,609.10	1,923.86

1. Assumes Wheeler method for revegetation with seed mix and amendments for \$495/ac. Additional cost for reseeding by more aggressive means at \$5000/ac.

**Revegetation of Disturbed Areas**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations**

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
<b>Seed and/or Scarify and Seed</b>		<b>1.4</b>	30.0	4.0	2.4	0.62	1.5	-
Year -1	483.1	2.0	30.0	4.0	2.4	0.62	1.5	649.3
Year 1	124.4	1.0	30.0	4.0	2.4	0.62	1.5	83.6
Year 2	86.1	1.0	30.0	4.0	2.4	0.62	1.5	57.8
Year 3	70.1	1.0	30.0	4.0	2.4	0.62	1.5	47.1
Year 4	54.8	1.0	30.0	4.0	2.4	0.62	1.5	36.8
Year 5	125.4	1.0	30.0	4.0	2.4	0.62	1.5	84.3
Years 6-10	249.3	2.0	30.0	4.0	2.4	0.62	1.5	335.0
Year 11-15		1.0	30.0	4.0	2.4	0.62	1.5	-
Year 16-20		2.0	30.0	4.0	2.4	0.62	1.5	-
Post-operational period	15.4	2.0	30.0	4.0	2.4	0.62	1.5	20.7

**Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation (\$/ac) <sup>1</sup>	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
<b>75D Challenger</b>	-	-	<b>194.48</b>	<b>255,670.42</b>	<b>30.66</b>	<b>40,307.00</b>	<b>495.00</b>	<b>598,205.27</b>	<b>\$ 894,182.69</b>	-
Year -1	483.1	649.3	194.48	126,267.42	30.66	19,906.33	495.00	239,109.75	\$ 385,283.50	797.61
Year 1	124.4	83.6	194.48	16,263.42	30.66	2,563.96	495.00	61,595.33	\$ 80,422.70	646.30
Year 2	86.1	57.8	194.48	11,248.53	30.66	1,773.36	495.00	42,602.18	\$ 55,624.06	646.30
Year 3	70.1	47.1	194.48	9,159.98	30.66	1,444.09	495.00	34,692.08	\$ 45,296.14	646.30
Year 4	54.8	36.8	194.48	7,163.56	30.66	1,129.35	495.00	27,130.95	\$ 35,423.86	646.30
Year 5	125.4	84.3	194.48	16,390.19	30.66	2,583.95	495.00	62,075.48	\$ 81,049.62	646.30
Years 6-10	249.3	335.0	194.48	65,154.30	30.66	10,271.72	495.00	123,381.23	\$ 198,807.25	797.61
Year 11-15	-	-	194.48	-	30.66	-	495.00	-	\$ -	-
Year 16-20	-	-	194.48	-	30.66	-	495.00	-	\$ -	-
Post-operational period	15.4	20.7	194.48	4,023.02	30.66	634.24	495.00	7,618.30	\$ 12,275.55	797.61

1) The Wheeler method of revegetation has been used.

Perimeter Berm

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Grading and Planting Perimeter Berm

D10R Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
<b>Regrading Perimeter Berm</b>		<b>0.5</b>	-	<b>1,300</b>	<b>0.57</b>	<b>742.9</b>	-
Year -1	-	0.5	-	1,300	0.57	742.9	-
Year 1	130.5	0.5	105,253.9	1,300	0.57	742.9	141.7
Year 2	70.9	0.5	57,152.3	1,300	0.57	742.9	76.9
Year 3	71.8	0.5	57,942.9	1,300	0.57	742.9	78.0
Year 4	39.0	0.5	31,443.9	1,300	0.57	742.9	42.3
Year 5	53.3	0.5	43,011.5	1,300	0.57	742.9	57.9
Years 6-10	-	0.5	-	1,300	0.57	742.9	-
Year 11-15	-	0.5	-	1,300	0.57	742.9	-
Year 16-20	-	0.5	-	1,300	0.57	742.9	-
Post-operational period	36.5	0.5	29,480.4	1,300	0.57	742.9	39.7

Scraper	Regrade Area (acres)	Placement Depth (ft)	Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
<b>Place Topsoil</b>		<b>1.0</b>	-	<b>237</b>	<b>0.56</b>	<b>132.7</b>	-
Year -1	-	1.0	-	237	0.56	132.7	-
Year 1	130.5	1.0	210,507.7	237	0.56	132.7	1,585.8
Year 2	70.9	1.0	114,304.7	237	0.56	132.7	861.1
Year 3	71.8	1.0	115,885.7	237	0.56	132.7	873.0
Year 4	39.0	1.0	62,887.7	237	0.56	132.7	473.7
Year 5	53.3	1.0	86,022.9	237	0.56	132.7	648.0
Years 6-10	-	1.0	-	237	0.56	132.7	-
Year 11-15	-	1.0	-	237	0.56	132.7	-
Year 16-20	-	1.0	-	237	0.56	132.7	-
Post-operational period	36.5	1.0	58,960.9	237	0.56	132.7	444.2

D10R Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
<b>Regrading Perimeter Berm</b>		<b>1.5</b>	-	<b>1,850</b>	<b>0.57</b>	<b>1,057.2</b>	-
Year -1	-	1.5	-	1,850	0.57	1,057.2	-
Year 1	130.5	1.5	315,761.6	1,850	0.57	1,057.2	298.7
Year 2	70.9	1.5	171,457.0	1,850	0.57	1,057.2	162.2
Year 3	71.8	1.5	173,828.6	1,850	0.57	1,057.2	164.4
Year 4	39.0	1.5	94,331.6	1,850	0.57	1,057.2	89.2
Year 5	53.3	1.5	129,034.4	1,850	0.57	1,057.2	122.1
Years 6-10	-	1.5	-	1,850	0.57	1,057.2	-
Year 11-15	-	1.5	-	1,850	0.57	1,057.2	-
Year 16-20	-	1.5	-	1,850	0.57	1,057.2	-
Post-operational period	36.5	1.5	88,441.3	1,850	0.57	1,057.2	83.7

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
<b>Seed and/or Scarify and Seed</b>		<b>1.4</b>	30.0	4.0	2.4	0.62	1.5	-
Year -1	-	2.0	30.0	4.0	2.4	0.62	1.5	-
Year 1	130.5	1.0	30.0	4.0	2.4	0.62	1.5	87.7
Year 2	70.9	1.0	30.0	4.0	2.4	0.62	1.5	47.6
Year 3	71.8	1.0	30.0	4.0	2.4	0.62	1.5	48.3
Year 4	39.0	1.0	30.0	4.0	2.4	0.62	1.5	26.2
Year 5	53.3	1.0	30.0	4.0	2.4	0.62	1.5	35.8
Years 6-10	-	2.0	30.0	4.0	2.4	0.62	1.5	-
Year 11-15	-	1.0	30.0	4.0	2.4	0.62	1.5	-
Year 16-20	-	2.0	30.0	4.0	2.4	0.62	1.5	-
Post-operational period	36.5	2.0	30.0	4.0	2.4	0.62	1.5	49.1

Perimeter Berm

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Grading and Planting Perimeter Berm

Cost Summary

Equipment	Area Reclaimed (acres)	Hours	Cost								
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation (\$/ac) <sup>1</sup>	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)	
<b>D-10R Dozer</b>	-	-	<b>227.75</b>	-	<b>30.66</b>	-	-	-	-	-	-
Year -1	-	-	227.75	-	30.66	-	-	-	-	-	-
Year 1	130.5	440.4	227.75	100,293.96	30.66	13,501.47	-	-	113,795.43	872.13	
Year 2	70.9	239.1	227.75	54,459.13	30.66	7,331.23	-	-	61,790.36	872.13	
Year 3	71.8	242.4	227.75	55,212.41	30.66	7,432.64	-	-	62,645.05	872.13	
Year 4	39.0	131.6	227.75	29,962.13	30.66	4,033.47	-	-	33,995.60	872.13	
Year 5	53.3	180.0	227.75	40,984.63	30.66	5,517.31	-	-	46,501.93	872.13	
Years 6-10	-	-	227.75	-	30.66	-	-	-	-	-	
Year 11-15	-	-	227.75	-	30.66	-	-	-	-	-	
Year 16-20	-	-	227.75	-	30.66	-	-	-	-	-	
Post-operational period	36.5	123.3	227.75	28,091.23	30.66	3,781.61	-	-	31,872.84	872.13	
<b>Scraper</b>	-	-	<b>199.46</b>	-	<b>16.90</b>	-	-	-	-	-	
Year -1	-	-	199.46	-	16.90	-	-	-	-	-	
Year 1	130.5	1,585.8	199.46	316,294.10	16.90	26,799.68	-	-	343,093.78	2,629.47	
Year 2	70.9	861.1	199.46	171,746.15	16.90	14,552.09	-	-	186,298.24	2,629.47	
Year 3	71.8	873.0	199.46	174,121.75	16.90	14,753.38	-	-	188,875.13	2,629.47	
Year 4	39.0	473.7	199.46	94,490.68	16.90	8,006.22	-	-	102,496.90	2,629.47	
Year 5	53.3	648.0	199.46	129,252.01	16.90	10,951.56	-	-	140,203.56	2,629.47	
Years 6-10	-	-	199.46	-	16.90	-	-	-	-	-	
Year 11-15	-	-	199.46	-	16.90	-	-	-	-	-	
Year 16-20	-	-	199.46	-	16.90	-	-	-	-	-	
Post-operational period	36.5	444.2	199.46	88,590.47	16.90	7,506.29	-	-	96,096.76	2,629.47	
<b>75D Challenger</b>	-	-	<b>194.48</b>	-	<b>30.66</b>	-	<b>495.00</b>	-	-	-	
Year -1	-	-	194.48	-	30.66	-	495.00	-	-	-	
Year 1	130.5	87.7	194.48	17,053.49	30.66	2,688.52	495.00	64,587.60	84,329.61	646.30	
Year 2	70.9	47.6	194.48	9,259.96	30.66	1,459.85	495.00	35,070.75	45,790.56	646.30	
Year 3	71.8	48.3	194.48	9,388.04	30.66	1,480.05	495.00	35,555.85	46,423.94	646.30	
Year 4	39.0	26.2	194.48	5,094.61	30.66	803.18	495.00	19,295.10	25,192.89	646.30	
Year 5	53.3	35.8	194.48	6,968.82	30.66	1,098.65	495.00	26,393.40	34,460.87	646.30	
Years 6-10	-	-	194.48	-	30.66	-	495.00	-	-	-	
Year 11-15	-	-	194.48	-	30.66	-	495.00	-	-	-	
Year 16-20	-	-	194.48	-	30.66	-	495.00	-	-	-	
Post-operational period	36.5	49.1	194.48	9,552.98	30.66	1,506.05	495.00	18,090.27	29,149.30	797.61	
<b>TOTAL</b>	<b>402.0</b>	<b>6,537.2</b>	<b>207.23</b>	<b>1,340,816.6</b>	<b>26.07</b>	<b>133,203.2</b>	<b>495.00</b>	<b>198,993.0</b>	<b>\$ 1,673,012.76</b>	<b>4,161.66</b>	
Year -1	-	-	207.23	-	26.07	-	495.00	-	-	-	
Year 1	130.5	2,113.8	207.23	433,641.6	26.07	42,989.7	495.00	64,587.6	541,218.82	4,147.91	
Year 2	70.9	1,147.8	207.23	235,465.2	26.07	23,343.2	495.00	35,070.8	293,879.16	4,147.91	
Year 3	71.8	1,163.7	207.23	238,722.2	26.07	23,666.1	495.00	35,555.9	297,944.11	4,147.91	
Year 4	39.0	631.5	207.23	129,547.4	26.07	12,842.9	495.00	19,295.1	161,685.39	4,147.91	
Year 5	53.3	863.8	207.23	177,205.5	26.07	17,567.5	495.00	26,393.4	221,166.37	4,147.91	
Years 6-10	-	-	207.23	-	26.07	-	495.00	-	-	-	
Year 11-15	-	-	207.23	-	26.07	-	495.00	-	-	-	
Year 16-20	-	-	207.23	-	26.07	-	495.00	-	-	-	
Post-operational period	36.5	616.6	207.23	126,234.7	26.07	12,794.0	495.00	18,090.3	157,118.90	4,299.21	

1. The Wheeler method of revegetation has been used.

**Rosemont Pit**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Grade and Shape Pit Berm**

D-10R Dozer	Open Pit Area (acres)	Berm Length Area (ft)	Berm Sectional Area (sf)	Total Berm Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Grade and Shap Pit Berm <sup>1</sup> (D10R dozer)	86.0	5,000	62.5	11,574	1,300	0.48	619.1	18.7

D-10R Dozer	Bench Areas	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Spread fines material and rip	49.0	1.0	79,053.3	1,850	0.40	743.7	106.3

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Seeding and/or Scarify	49.0	2.0	30.0	4.0	2.4	0.62	1.5	65.9

**Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation (\$/ac) <sup>2</sup>	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
TOTAL		190.9	211.12	41,276.1	23.78	4,945.3	495.00	24,255.0	\$ 70,476.41	-
D-10R Dozer	135.0	125.0	227.75	28,467.67	30.66	3,832.29			\$ 32,299.96	239.26
Challenger	49.0	65.9	194.48	12,808.41	16.90	1,113.04	495.00	24,255.00	38,176.45	779.11

1. Berm size is assumed to be 5 foot high with 2.5:1 sideslopes.  
2. No revegetation in this case.

**Barrel Waste Rock Stockpile**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Barrel Waste Stockpile**

CAT 777C Haul Truck	Growth Media Placement Volume (cy)	Maximum Truck Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Regrade waste dump sloped areas to blend with existing topo		421.2	0.62	262	-
Year -1	-	421.2	0.62	262	-
Year 1	-	421.2	0.62	262	-
Year 2	-	421.2	0.62	262	-
Year 3	-	421.2	0.62	262	-
Year 4	-	421.2	0.62	262	-
Year 5	-	421.2	0.62	262	-
Years 6-10	-	421.2	0.62	262	-
Year 11-15	164,996	421.2	0.62	262	629.21
Year 16-20	2,176,855	421.2	0.62	262	8,301.47
Post-operational period	234,185	421.2	0.62	262	893.07

CAT 992 Loader	Total Truck Time (hr)	Percent Loader Required	Total Loader Time (hr)
Load haul trucks		33%	-
Year -1	-	33%	-
Year 1	-	33%	-
Year 2	-	33%	-
Year 3	-	33%	-
Year 4	-	33%	-
Year 5	-	33%	-
Years 6-10	-	33%	-
Year 11-15	629.2	33%	207.6
Year 16-20	8,301.5	33%	2,739.5
Post-operational period	893.1	33%	294.7

D10R/10U Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Rip and regrade waste dump footprint to prepare for revegetation		1.0	-	1,850	0.40	743.7	-
Year -1	-	-	-	1,850	0.40	743.7	-
Year 1	-	-	-	1,850	0.40	743.7	-
Year 2	-	-	-	1,850	0.40	743.7	-
Year 3	-	-	-	1,850	0.40	743.7	-
Year 4	-	-	-	1,850	0.40	743.7	-
Year 5	-	-	-	1,850	0.40	743.7	-
Years 6-10	-	-	-	1,850	0.40	743.7	-
Year 11-15	102	1.5	247,493.4	1,850	0.40	743.7	332.8
Year 16-20	1,349	1.5	3,265,281.8	1,850	0.40	743.7	4,390.6
Post-operational period	145	1.5	351,277.5	1,850	0.40	743.7	472.3

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Seeding and/or Scarify		1.4	30.0	4.0	2.4	0.62	1.5	-
Year -1	-	2.0	30.0	4.0	2.4	0.62	1.5	-
Year 1	-	1.0	30.0	4.0	2.4	0.62	1.5	-
Year 2	-	1.0	30.0	4.0	2.4	0.62	1.5	-
Year 3	-	1.0	30.0	4.0	2.4	0.62	1.5	-
Year 4	-	1.0	30.0	4.0	2.4	0.62	1.5	-
Year 5	-	1.0	30.0	4.0	2.4	0.62	1.5	-
Years 6-10	-	2.0	30.0	4.0	2.4	0.62	1.5	-
Year 11-15	102.3	1.0	30.0	4.0	2.4	0.62	1.5	68.7
Year 16-20	1,349.3	2.0	30.0	4.0	2.4	0.62	1.5	1,813.6
Post-operational period	145.2	2.0	30.0	4.0	2.4	0.62	1.5	195.1

**Barrel Waste Rock Stockpile**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Barrel Waste Stockpile  
Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
CAT 777C Haul Truck		-	174.49	1,714,145.9	23.94	235,180.5		-	1,949,326.4	-
Year -1	-	-	174.49	-	23.94	\$ -		-	-	-
Year 1	-	-	174.49	-	23.94	\$ -		-	-	-
Year 2	-	-	174.49	-	23.94	\$ -		-	-	-
Year 3	-	-	174.49	-	23.94	\$ -		-	-	-
Year 4	-	-	174.49	-	23.94	\$ -		-	-	-
Year 5	-	-	174.49	-	23.94	\$ -		-	-	-
Years 6-10	-	-	174.49	-	23.94	\$ -		-	-	-
Year 11-15	102.3	629.21	174.49	109,791.41	23.94	\$ 15,063.36			124,854.77	1,220.83
Year 16-20	1,349.3	8,301.47	174.49	1,448,523.02	23.94	\$ 198,737.13			1,647,260.15	1,220.83
Post-operational period	145.2	893.07	174.49	155,831.44	23.94	\$ 21,380.05			177,211.49	1,220.83
CAT 992 Loader		-	270.65	877,390.22	32.77	106,235.00		-	983,625.22	-
Year -1	-	-	270.65	-	32.77	-		-	-	-
Year 1	-	-	270.65	-	32.77	-		-	-	-
Year 2	-	-	270.65	-	32.77	-		-	-	-
Year 3	-	-	270.65	-	32.77	-		-	-	-
Year 4	-	-	270.65	-	32.77	-		-	-	-
Year 5	-	-	270.65	-	32.77	-		-	-	-
Years 6-10	-	-	270.65	-	32.77	-		-	-	-
Year 11-15	102.3	207.6	270.65	56,197.03	32.77	6,804.37			63,001.40	616.03
Year 16-20	1,349.3	2,739.5	270.65	741,430.44	32.77	89,772.90			831,203.34	616.03
Post-operational period	145.2	294.7	270.65	79,762.75	32.77	9,657.73			89,420.47	616.03
D-10R Dozer		5,195.7	227.75	1,183,344.71	30.66	159,300.60		-	1,342,645.31	-
Year -1	-	-	227.75	-	30.66	-		-	-	-
Year 1	-	-	227.75	-	30.66	-		-	-	-
Year 2	-	-	227.75	-	30.66	-		-	-	-
Year 3	-	-	227.75	-	30.66	-		-	-	-
Year 4	-	-	227.75	-	30.66	-		-	-	-
Year 5	-	-	227.75	-	30.66	-		-	-	-
Years 6-10	-	-	227.75	-	30.66	-		-	-	-
Year 11-15	102.3	332.8	227.75	75,793.48	30.66	10,203.24			85,996.72	840.88
Year 16-20	1,349.3	4,390.6	227.75	999,974.44	30.66	134,615.49			1,134,589.93	840.88
Post-operational period	145.2	472.3	227.75	107,576.79	30.66	14,481.87			122,058.66	840.88
75D Challenger (Scarification and Seeding & Cover)		2,077.4	194.48	404,008.95	30.66	63,692.89	495.00	790,374.42	1,258,076.27	-
Year -1	-	-	194.48	-	30.66	-	495.00	-	-	-
Year 1	-	-	194.48	-	30.66	-	495.00	-	-	-
Year 2	-	-	194.48	-	30.66	-	495.00	-	-	-
Year 3	-	-	194.48	-	30.66	-	495.00	-	-	-
Year 4	-	-	194.48	-	30.66	-	495.00	-	-	-
Year 5	-	-	194.48	-	30.66	-	495.00	-	-	-
Years 6-10	-	-	194.48	-	30.66	-	495.00	-	-	-
Year 11-15	102.3	68.7	194.48	13,366.49	30.66	2,107.26	495.00	50,623.65	66,097.40	646.30
Year 16-20	1,349.3	1,813.6	194.48	352,699.24	30.66	55,603.81	495.00	667,898.55	1,076,201.59	797.61
Post-operational period	145.2	195.1	194.48	37,943.22	30.66	5,981.83	495.00	71,852.22	115,777.27	797.61
<b>TOTAL</b>	<b>1,596.7</b>	<b>20,338.7</b>	<b>216.84</b>	<b>4,178,889.8</b>	<b>29.51</b>	<b>564,409.0</b>	<b>495.00</b>	<b>790,374.4</b>	<b>\$ 5,533,673.21</b>	<b>3,465.66</b>
Year -1	-	-	216.84	-	29.51	-	495.00	-	\$ -	-
Year 1	-	-	216.84	-	29.51	-	495.00	-	\$ -	-
Year 2	-	-	216.84	-	29.51	-	495.00	-	\$ -	-
Year 3	-	-	216.84	-	29.51	-	495.00	-	\$ -	-
Year 4	-	-	216.84	-	29.51	-	495.00	-	\$ -	-
Year 5	-	-	216.84	-	29.51	-	495.00	-	\$ -	-
Years 6-10	-	-	216.84	-	29.51	-	495.00	-	\$ -	-
Year 11-15	102.3	1,238.4	216.84	255,148.4	29.51	34,178.2	495.00	50,623.7	\$ 339,950.30	3,324.05
Year 16-20	1,349.3	17,245.1	216.84	3,542,627.1	29.51	478,729.3	495.00	667,898.6	\$ 4,689,255.01	3,475.35
Post-operational period	145.2	1,855.2	216.84	381,114.2	29.51	51,501.5	495.00	71,852.2	\$ 504,467.91	3,475.35

1. Seed Mix is used for revegetation (\$363/ac) plus an amendment cost for 16-16-8 fertilizer (\$30/ac) and a charge (\$5/ac) for testing suitability of plant growth material.

**Waste Rock Storage - Top and Interior, Walk-Away During Operations**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Middle Barrel Waste Storage**

CAT 777C Haul Truck	Depth of Material	Growth Media Placement Volume (cy)	Maximum Truck Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Regrade waste dump sloped areas to blend with existing topo		3,749,387	538.2	0.62	335	11,190.77
Year -1	1.00	627,587	538.2	0.62	335	1,873.15
Year 1	1.00	945,413	538.2	0.62	335	2,821.77
Year 2	1.00	1,164,827	538.2	0.62	335	3,476.65
Year 3	1.00	1,253,560	538.2	0.62	335	3,741.49
Year 4	1.00	1,708,520	538.2	0.62	335	5,099.41
Year 5	1.00	1,756,920	538.2	0.62	335	5,243.87
Years 6-10	1.00	3,749,387	538.2	0.62	335	11,190.77
Year 11-15	1.00	3,738,093	538.2	0.62	335	11,157.06
Year 16-20	1.00	374,939	538.2	0.62	335	1,119.08
Post-operational period	1.00	-	538.2	0.62	335	-

CAT 992 Loader	Total Truck Time (hr)	Percent Loader Required	Total Loader Time (hr)
Load haul trucks		33%	-
Year -1	1,873.2	33%	618.1
Year 1	2,821.8	33%	931.2
Year 2	3,476.6	33%	1,147.3
Year 3	3,741.5	33%	1,234.7
Year 4	5,099.4	33%	1,682.8
Year 5	5,243.9	33%	1,730.5
Years 6-10	11,190.8	33%	3,693.0
Year 11-15	11,157.1	33%	3,681.8
Year 16-20	1,119.1	33%	369.3
Post-operational period	-	33%	-

D10R/10U Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Rip and regrade waste dump footprint to prepare for revegetation		1.0	-	1,300	0.48	619.1	-
Year -1	627	1.5	1,517,340.0	1,300	0.48	619.1	2,451.0
Year 1	389	1.5	941,380.0	1,300	0.48	619.1	1,520.6
Year 2	586	1.5	1,418,120.0	1,300	0.48	619.1	2,290.7
Year 3	722	1.5	1,747,240.0	1,300	0.48	619.1	2,822.3
Year 4	777	1.5	1,880,340.0	1,300	0.48	619.1	3,037.3
Year 5	1,059	1.5	2,562,780.0	1,300	0.48	619.1	4,139.7
Years 6-10	1,089	1.5	2,635,380.0	1,300	0.48	619.1	4,257.0
Year 11-15	2,324	1.5	5,624,080.0	1,300	0.48	619.1	9,084.6
Year 16-20	2,317	1.5	5,607,140.0	1,300	0.48	619.1	9,057.3
Post-operational period	232	1.5	562,408.0	1,300	0.48	619.1	908.5

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Seeding and/or Scarify		1.4	30.0	4.0	2.4	0.62	1.5	-
Year -1	627.0	2.0	30.0	4.0	2.4	0.62	1.5	842.7
Year 1	389.0	1.0	30.0	4.0	2.4	0.62	1.5	261.4
Year 2	586.0	1.0	30.0	4.0	2.4	0.62	1.5	393.8
Year 3	722.0	1.0	30.0	4.0	2.4	0.62	1.5	485.2
Year 4	777.0	1.0	30.0	4.0	2.4	0.62	1.5	522.2
Year 5	1,059.0	1.0	30.0	4.0	2.4	0.62	1.5	711.7
Years 6-10	1,089.0	2.0	30.0	4.0	2.4	0.62	1.5	1,463.7
Year 11-15	2,324.0	1.0	30.0	4.0	2.4	0.62	1.5	1,561.8
Year 16-20	2,317.0	2.0	30.0	4.0	2.4	0.62	1.5	3,114.2
Post-operational period	232.4	2.0	30.0	4.0	2.4	0.62	1.5	312.4

**Waste Rock Storage - Top and Interior, Walk-Away During Operations**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Middle Barrel Waste Storage  
Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
CAT 777C Haul Truck		11,190.77	174.49	7,978,247.3	23.94	1,094,614.2		-	9,072,861.5	-
Year -1	627.0	1,873.15	174.49	326,846.49	23.94	\$ 44,843.29			371,689.78	592.81
Year 1	389.0	2,821.77	174.49	492,370.30	23.94	\$ 67,553.13			559,923.42	1,439.39
Year 2	586.0	3,476.65	174.49	606,640.53	23.94	\$ 83,230.98			689,871.52	1,177.26
Year 3	722.0	3,741.49	174.49	652,852.76	23.94	\$ 89,571.29			742,424.06	1,028.29
Year 4	777.0	5,099.41	174.49	889,795.47	23.94	\$ 122,079.80			1,011,875.26	1,302.28
Year 5	1,059.0	5,243.87	174.49	915,002.14	23.94	\$ 125,538.15			1,040,540.28	982.57
Years 6-10	1,089.0	11,190.77	174.49	1,952,676.74	23.94	\$ 267,906.93			2,220,583.67	2,039.10
Year 11-15	2,324.0	11,157.06	174.49	1,946,795.18	23.94	\$ 267,099.99			2,213,895.16	952.62
Year 16-20	2,317.0	1,119.08	174.49	195,267.67	23.94	\$ 26,790.69			222,058.37	95.84
Post-operational period	232.4	-	174.49	-	23.94	\$ -			-	-
CAT 992 Loader		-	270.65	4,083,687.52	32.77	494,455.64		-	4,578,143.15	-
Year -1	627.0	618.1	270.65	167,297.26	32.77	20,256.47			187,553.73	299.13
Year 1	389.0	931.2	270.65	252,021.07	32.77	30,514.88			282,535.95	726.31
Year 2	586.0	1,147.3	270.65	310,510.60	32.77	37,596.83			348,107.44	594.04
Year 3	722.0	1,234.7	270.65	334,164.46	32.77	40,460.86			374,625.32	518.87
Year 4	777.0	1,682.8	270.65	455,444.22	32.77	55,145.49			510,589.72	657.13
Year 5	1,059.0	1,730.5	270.65	468,346.33	32.77	56,707.69			525,054.02	495.80
Years 6-10	1,089.0	3,693.0	270.65	999,482.89	32.77	121,018.06			1,120,500.95	1,028.93
Year 11-15	2,324.0	3,681.8	270.65	996,472.40	32.77	120,653.55			1,117,125.94	480.69
Year 16-20	2,317.0	369.3	270.65	99,948.29	32.77	12,101.81			112,050.09	48.36
Post-operational period	232.4	-	270.65	-	32.77	-			-	-
D-10R Dozer		39,569.0	227.75	9,011,990.62	30.66	1,213,184.54		-	10,225,175.16	-
Year -1	627.0	2,451.0	227.75	558,219.21	30.66	75,146.87			633,366.08	1,010.15
Year 1	389.0	1,520.6	227.75	346,327.39	30.66	46,622.22			392,949.61	1,010.15
Year 2	586.0	2,290.7	227.75	521,716.84	30.66	70,232.96			591,949.80	1,010.15
Year 3	722.0	2,822.3	227.75	642,797.88	30.66	86,532.76			729,330.64	1,010.15
Year 4	777.0	3,037.3	227.75	691,764.47	30.66	93,124.59			784,889.07	1,010.15
Year 5	1,059.0	4,139.7	227.75	942,829.57	30.66	126,922.71			1,069,752.28	1,010.15
Years 6-10	1,089.0	4,257.0	227.75	969,538.63	30.66	130,518.25			1,100,056.88	1,010.15
Year 11-15	2,324.0	9,084.6	227.75	2,069,061.31	30.66	278,534.82			2,347,596.13	1,010.15
Year 16-20	2,317.0	9,057.3	227.75	2,062,829.20	30.66	277,695.86			2,340,525.06	1,010.15
Post-operational period	232.4	908.5	227.75	206,906.13	30.66	27,853.48			234,759.61	1,010.15
75D Challenger (Scarification and Seeding & Cover)		9,669.2	194.48	1,880,457.90	30.66	296,458.30	495.00	5,010,588.00	7,187,504.20	-
Year -1	627.0	842.7	194.48	163,895.40	30.66	25,838.47	495.00	310,365.00	500,098.87	797.61
Year 1	389.0	261.4	194.48	50,841.55	30.66	8,015.28	495.00	192,555.00	251,411.84	646.30
Year 2	586.0	393.8	194.48	76,589.08	30.66	12,074.44	495.00	290,070.00	378,733.51	646.30
Year 3	722.0	485.2	194.48	94,364.02	30.66	14,876.69	495.00	357,390.00	466,630.71	646.30
Year 4	777.0	522.2	194.48	101,552.41	30.66	16,009.96	495.00	384,615.00	502,177.37	646.30
Year 5	1,059.0	711.7	194.48	138,409.27	30.66	21,820.52	495.00	524,205.00	684,434.80	646.30
Years 6-10	1,089.0	1,463.7	194.48	284,660.43	30.66	44,877.34	495.00	539,055.00	868,592.77	797.61
Year 11-15	2,324.0	1,561.8	194.48	303,742.35	30.66	47,885.65	495.00	1,150,380.00	1,502,007.99	646.30
Year 16-20	2,317.0	3,114.2	194.48	605,654.92	30.66	95,482.82	495.00	1,146,915.00	1,848,052.75	797.61
Post-operational period	232.4	312.4	194.48	60,748.47	30.66	9,577.13	495.00	115,038.00	185,363.60	797.61
<b>TOTAL</b>		<b>110,050.1</b>	<b>216.84</b>	<b>22,954,383.3</b>	<b>29.51</b>	<b>3,098,712.7</b>	<b>495.00</b>	<b>5,010,588.0</b>	<b>\$ 31,063,684.04</b>	<b>-</b>
Year -1	627.0	5,785.0	216.84	1,216,258.4	29.51	166,085.1	495.00	310,365.0	\$ 1,692,708.46	2,699.69
Year 1	389.0	5,535.0	216.84	1,141,560.3	29.51	152,705.5	495.00	192,555.0	\$ 1,486,820.82	3,822.16
Year 2	586.0	7,308.5	216.84	1,515,457.1	29.51	203,135.2	495.00	290,070.0	\$ 2,008,662.27	3,427.75
Year 3	722.0	8,283.7	216.84	1,724,179.1	29.51	231,441.6	495.00	357,390.0	\$ 2,313,010.73	3,203.62
Year 4	777.0	10,341.7	216.84	2,138,556.6	29.51	286,359.8	495.00	384,615.0	\$ 2,809,531.42	3,615.87
Year 5	1,059.0	11,825.7	216.84	2,464,587.3	29.51	330,989.1	495.00	524,205.0	\$ 3,319,781.38	3,134.83
Years 6-10	1,089.0	20,604.4	216.84	4,206,358.7	29.51	564,320.6	495.00	539,055.0	\$ 5,309,734.26	4,875.79
Year 11-15	2,324.0	25,485.3	216.84	5,316,071.2	29.51	714,174.0	495.00	1,150,380.0	\$ 7,180,625.23	3,089.77
Year 16-20	2,317.0	13,659.9	216.84	2,963,700.1	29.51	412,071.2	495.00	1,146,915.0	\$ 4,522,686.27	1,951.96
Post-operational period	232.4	1,220.8	216.84	267,654.6	29.51	37,430.6	495.00	115,038.0	\$ 420,123.21	1,807.76

1. Seed Mix is used for revegetation (\$363/ac) plus an amendment cost for 16-16-8 fertilizer (\$30/ac) and a charge (\$5/ac) for testing suitability of plant growth material.

Leach Pad

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Leach Pad

D10R/10U Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Rip and regrade leach pad footprint to prepare for revegetation	1,121.0	1.0	1,808,546.7	1,300	0.48	619.1	2,921.4
Year -1	73.0	0.5	58,886.7	1,300	0.48	619.1	95.1
Year 1	111.0	1.0	179,080.0	1,300	0.48	619.1	289.3
Year 2	149.0	1.0	240,386.7	1,300	0.48	619.1	388.3
Year 3	178.0	1.0	287,173.3	1,300	0.48	619.1	463.9
Year 4	199.0	1.0	321,053.3	1,300	0.48	619.1	518.6
Year 5	199.0	1.5	481,580.0	1,300	0.48	619.1	777.9
Years 6-10	212.0	2.0	684,053.3	1,300	0.48	619.1	1,105.0

Drum Compactor	Total Compaction Area (ac)	Total Lifts	Total Passes	Maximum Compactor Production (ac/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Compact and prepare ore surface for low permeability layer - CS583	212.0		2	6.8	0.62	4.23	100.33
Compact low permeability cover material (2 six inch lifts) - CP563C	212.0	2	2	6.8	0.62	4.23	200.66
Year -1	73.0	1	4	6.8	0.62	4.23	69.10
Year 1	111.0	1	4	6.8	0.62	4.23	105.06
Year 2	149.0	1	4	6.8	0.62	4.23	141.03
Year 3	178.0	1	4	6.8	0.62	4.23	168.48
Year 4	199.0	1	4	6.8	0.62	4.23	188.36
Year 5	199.0	1	4	6.8	0.62	4.23	188.36
Years 6-10	212.0	1	4	6.8	0.62	4.23	200.66

Water Truck	Total Compactor Time (hr)	Percent Loader Required	Total Time (hr)
Moisture condition ore	100.3	100%	100.3
Moisture Condition low permeability cover material	200.7	100%	200.7
Year -1	69.1	100%	69.1
Year 1	105.1	100%	105.1
Year 2	141.0	100%	141.0
Year 3	168.5	100%	168.5
Year 4	188.4	100%	188.4
Year 5	188.4	100%	188.4
Years 6-10	200.7	100%	200.7

CAT 631E Scraper	Required/ Available Volume (cy)	Total Coverage Area (ac)	Total Coverage Depth (ft)	Material Required based on area and depth	Scraper Capacity (cy)	Maximum Scraper Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Excavate and haul low permeability borrow material	387,545.7	212.0	1.0		31.0	354.3	0.56	198.5	1,952.5
Haul and place topsoil material <sup>1</sup>	460,256.00	212.0	1.1	376,229.3	31.0	236.9	0.56	132.7	3,467.2
Year -1	176,660.00	73.0	1.0	117,773.3	31.0	236.9	0.56	132.7	1,330.8
Year 1	268,620.00	111.0	1.0	179,080.0	31.0	236.9	0.56	132.7	2,023.5
Year 2	360,580.00	149.0	1.0	240,386.7	31.0	236.9	0.56	132.7	2,716.3
Year 3	430,760.00	178.0	1.0	287,173.3	31.0	236.9	0.56	132.7	3,245.0
Year 4	481,580.00	199.0	1.0	321,053.3	31.0	236.9	0.56	132.7	3,627.8
Year 5	481,580.00	199.0	1.0	321,053.3	31.0	236.9	0.56	132.7	3,627.8
Years 6-10	513,040.00	212.0	1.0	342,026.7	31.0	236.9	0.56	132.7	3,864.8

CAT 14H Motor Grader	Total Lift Area (ac)	Total Lifts	Passes per lift	Maximum Production (ac/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Grade low permeability borrow material	212.0	2.0	4.0	7.3	0.85	6.2	272.3
Year -1	212.0	2.0	4.0	7.3	0.85	6.2	272.3
Year 1	73.0	2.0	4.0	7.3	0.85	6.2	93.8
Year 2	111.0	2.0	4.0	7.3	0.85	6.2	142.6
Year 3	149.0	2.0	4.0	7.3	0.85	6.2	191.4
Year 4	178.0	2.0	4.0	7.3	0.85	6.2	228.6
Year 5	199.0	2.0	4.0	7.3	0.85	6.2	255.6
Years 6-10	199.0	2.0	4.0	7.3	0.85	6.2	255.6

CAT 777C Haul Truck	Total Coverage area (ac)	Total Cover Depth	Shrinkage factor	Coverage Percentage (%)	Required Waste Rock Volume (cy)	Maximum Production (ac/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Excavate, haul and place waste rock cover material	212.0	4.0	1.0	100%	1,368,107	538.2	0.62	335.0	4,083.4
Year -1	73.0	4.0	1.0	100%	471,093	538.2	0.62	335.0	1,406.1
Year 1	111.0	4.0	1.0	100%	716,320	538.2	0.62	335.0	2,138.0
Year 2	149.0	4.0	1.0	100%	961,547	538.2	0.62	335.0	2,869.9
Year 3	178.0	4.0	1.0	100%	1,148,693	538.2	0.62	335.0	3,428.5
Year 4	199.0	4.0	1.0	100%	1,284,213	538.2	0.62	335.0	3,833.0
Year 5	199.0	4.0	1.0	100%	1,284,213	538.2	0.62	335.0	3,833.0
Years 6-10	212.0	4.0	1.0	100%	1,368,107	538.2	0.62	335.0	4,083.4

CAT 992 Loader	Total Truck Time (hr)	Percent Loader Required	Total Loader Time (hr)
Load haul trucks	4,083.4	25%	1,020.8
Year -1	1,406.1	25%	351.5
Year 1	2,138.0	25%	534.5
Year 2	2,869.9	25%	717.5
Year 3	3,428.5	25%	857.1
Year 4	3,833.0	25%	958.2
Year 5	3,833.0	25%	958.2
Years 6-10	4,083.4	25%	1,020.8

Leach Pad

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Leach Pad

Leach Pad - Continued

D10R/10U Dozer	Regrade/ Borrow Area (acres)	Rip/ Regrade or Strip Depth (ft)	Rip/ Regrade or Borrow Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Regrade spent ore to 2.5:1 sideslopes and top drainage	212.0	2.1	703,561.2	1,300	0.57	742.9	947.1
Strip Borrow Area <sup>2</sup>	0.0	0.5	8.0	1,300	0.57	742.9	0.0
Push Scraper Loads - 33.5% dozer time required per scraper hour)							650.2
Grade flat area waste rock to 4' depth	72.6	2.0	234,256.0	1,300	0.63	825.4	283.8
Grade sloped area waste rock to 4' depth	187.3	2.0	604,354.7	1,300	0.48	619.1	976.2
Push Scraper Loads - 33.5% dozer time required per scraper hour)							1,154.6

75D Challenger	Area (acres)	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Scarify	212.0	30.0	4.0	2.4	0.62	1.5	142.5
Seeding and Cover		30.0	4.0	2.4	0.62	1.5	-
Year -1	73.0	30.0	4.0	2.4	0.62	1.5	49.1
Year 1	111.0	30.0	4.0	2.4	0.62	1.5	74.6
Year 2	149.0	30.0	4.0	2.4	0.62	1.5	100.1
Year 3	178.0	30.0	4.0	2.4	0.62	1.5	119.6
Year 4	199.0	30.0	4.0	2.4	0.62	1.5	133.7
Year 5	199.0	30.0	4.0	2.4	0.62	1.5	133.7
Years 6-10	212.0	30.0	4.0	2.4	0.62	1.5	142.5

Cost Summary

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>4</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
Smooth Drum Compactor		100.33	52.60	5,276.98	30.66	3,076.13			8,353.11	-
Year -1	212.0	200.66	52.60	10,553.96	30.66	6,152.26			16,706.22	78.80
Year 1	73.0	69.10	52.60	3,634.15	30.66	2,118.47			5,752.61	78.80
Year 2	111.0	105.06	52.60	5,525.89	30.66	3,221.23			8,747.12	78.80
Year 3	149.0	141.03	52.60	7,417.64	30.66	4,324.00			11,741.64	78.80
Year 4	178.0	168.48	52.60	8,861.34	30.66	5,165.58			14,026.92	78.80
Year 5	199.0	188.36	52.60	9,906.78	30.66	5,775.00			15,681.78	78.80
Years 6-10	199.0	188.36	52.60	9,906.78	30.66	5,775.00			15,681.78	78.80
PadDED Drum Compactor		200.66	52.60	10,553.96	30.66	6,152.26			16,706.22	-
Year -1	73.0	69.10	52.60	3,634.15	30.66	2,118.47			5,752.61	78.80
Year 1	111.0	105.06	52.60	5,525.89	30.66	3,221.23			8,747.12	78.80
Year 2	149.0	141.03	52.60	7,417.64	30.66	4,324.00			11,741.64	78.80
Year 3	178.0	168.48	52.60	8,861.34	30.66	5,165.58			14,026.92	78.80
Year 4	199.0	188.36	52.60	9,906.78	30.66	5,775.00			15,681.78	78.80
Year 5	199.0	188.36	52.60	9,906.78	30.66	5,775.00			15,681.78	78.80
Years 6-10	212.0	200.66	52.60	10,553.96	30.66	6,152.26			16,706.22	78.80
Water Truck		301.0	76.78	23,110.49	23.94	7,205.73			30,316.22	-
Year -1	69.1	269.8	76.78	20,712.23	23.94	6,457.97			27,170.20	393.23
Year 1	105.1	174.2	76.78	13,372.11	23.94	4,169.35			17,541.46	166.96
Year 2	141.0	246.1	76.78	18,895.37	23.94	5,891.46			24,786.85	175.76
Year 3	168.5	309.5	76.78	23,764.56	23.94	7,409.67			31,174.22	185.03
Year 4	188.4	356.8	76.78	27,398.28	23.94	8,542.64			35,940.93	190.81
Year 5	188.4	376.7	76.78	28,924.45	23.94	9,018.49			37,942.94	201.44
Years 6-10	200.7	389.0	76.78	29,869.21	23.94	9,313.07			39,182.28	195.27
CAT 631E Scraper		5,419.6	199.46	1,080,983.85	16.90	91,582.04			1,172,575.89	-
Year -1	73.0	1,330.8	199.46	265,436.88	16.90	22,490.53			287,927.42	3,944.21
Year 1	111.0	2,023.5	199.46	403,609.51	16.90	34,197.94			437,807.44	3,944.21
Year 2	149.0	2,716.3	199.46	541,782.13	16.90	45,905.34			587,687.47	3,944.21
Year 3	178.0	3,245.0	199.46	647,229.66	16.90	54,839.93			702,069.59	3,944.21
Year 4	199.0	3,627.8	199.46	723,588.21	16.90	61,309.81			784,898.03	3,944.21
Year 5	199.0	3,627.8	199.46	723,588.21	16.90	61,309.81			784,898.03	3,944.21
Years 6-10	212.0	3,864.8	199.46	770,857.79	16.90	65,314.98			836,172.77	3,944.21
14H Motor Grader		272.3	72.67	19,789.36	16.90	4,602.05			24,391.41	-
Year -1	212.0	272.3	72.67	19,789.36	16.90	4,602.05			24,391.41	115.05
Year 1	73.0	93.8	72.67	6,814.26	16.90	1,584.67			8,398.93	115.05
Year 2	111.0	142.6	72.67	10,361.41	16.90	2,409.56			12,770.97	115.05
Year 3	149.0	191.4	72.67	13,908.56	16.90	3,234.46			17,143.02	115.05
Year 4	178.0	228.6	72.67	16,615.59	16.90	3,863.98			20,479.58	115.05
Year 5	199.0	255.6	72.67	18,575.86	16.90	4,319.85			22,895.71	115.05
Years 6-10	199.0	255.6	72.67	18,575.86	16.90	4,319.85			22,895.71	115.05
CAT 777C Haul Truck		4,083.4	174.49	712,508.55	23.94	97,756.06			810,264.61	-
Year -1	73.0	1,406.1	174.49	245,344.93	23.94	33,661.28			279,006.21	3,822.00
Year 1	111.0	2,138.0	174.49	373,068.72	23.94	51,183.60			424,252.32	3,822.00
Year 2	149.0	2,869.9	174.49	500,772.52	23.94	68,705.91			569,478.43	3,822.00
Year 3	178.0	3,428.5	174.49	598,238.31	23.94	82,078.20			680,316.51	3,822.00
Year 4	199.0	3,833.0	174.49	668,816.99	23.94	91,761.58			760,578.57	3,822.00
Year 5	199.0	3,833.0	174.49	668,816.99	23.94	91,761.58			760,578.57	3,822.00
Years 6-10	212.0	4,083.4	174.49	712,508.55	23.94	97,756.06			810,264.61	3,822.00

Leach Pad

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Leach Pad

Cost Summary Cont.

Equipment	Area Reclaimed (acres)	Hours	Cost							Total (\$)	Per Acre (\$/ac)
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>4</sup> (\$/ac)	Subtotal Revegetation (\$)			
CAT 992 Loader		1,020.8	270.65	276,287.45	32.77	33,453.07				309,740.52	
Year -1	73.0	351.5	270.65	95,136.72	32.77	11,519.22				106,655.93	1,461.04
Year 1	111.0	534.5	270.65	144,659.94	32.77	17,515.52				162,175.46	1,461.04
Year 2	149.0	717.5	270.65	194,183.16	32.77	23,511.83				217,694.99	1,461.04
Year 3	178.0	857.1	270.65	231,977.20	32.77	28,087.96				260,065.15	1,461.04
Year 4	199.0	958.2	270.65	259,345.30	32.77	31,401.70				290,747.00	1,461.04
Year 5	199.0	958.2	270.65	259,345.30	32.77	31,401.70				290,747.00	1,461.04
Years 6-10	212.0	1,020.8	270.65	276,287.45	32.77	33,453.07				309,740.52	1,461.04
D-10R Dozer	471.9	4,011.8	227.75	913,709.91	30.66	123,002.65				1,036,712.56	2,196.84
75D Challenger		142.5	194.48	27,707.99	30.66	4,368.23	495.00	-		32,076.22	
Year -1	73.0	49.1	194.48	9,540.96	30.66	1,504.15	495.00	36,135.00		47,180.11	646.30
Year 1	111.0	123.7	194.48	24,048.45	30.66	3,791.29	495.00	54,945.00		82,784.74	745.81
Year 2	149.0	174.7	194.48	33,981.50	30.66	5,357.26	495.00	73,755.00		113,093.76	759.02
Year 3	178.0	219.8	194.48	42,738.27	30.66	6,737.78	495.00	88,110.00		137,586.06	772.96
Year 4	199.0	253.4	194.48	49,273.18	30.66	7,768.02	495.00	98,505.00		155,546.20	781.64
Year 5	199.0	267.5	194.48	52,017.84	30.66	8,200.73	495.00	98,505.00		158,723.56	797.61
Years 6-10	212.0	276.2	194.48	53,716.91	30.66	8,468.59	495.00	104,940.00		167,125.50	788.33
<b>TOTAL</b>				2,770,530.60		330,549.41		-		3,101,080.01	
Year -1	73.0			534,510.87		65,926.70		36,135.00		636,572.57	8,720.17
Year 1	111.0			1,550,093.26		196,636.81		54,945.00		1,801,675.07	16,231.31
Year 2	149.0			1,344,365.57		162,679.17		109,890.00		1,616,934.74	10,851.91
Year 3	178.0			1,701,592.40		208,120.38		143,065.00		2,052,767.77	11,532.40
Year 4	199.0			1,995,200.52		245,843.17		172,260.00		2,413,303.69	12,127.15
Year 5	199.0			2,105,213.19		261,638.11		186,615.00		2,553,466.29	12,831.49
Years 6-10	212.0			2,275,634.16		282,996.49		203,445.00		2,762,075.66	13,028.66

- Assumes 1 foot overall regrade on top and slopes regraded to 2.5:1 for Walk-away scenario only - no closure cost associated with straight coner of the heap for other reclamation
- Borrow area acres are estimated, using the following assumptions:
  - Total Coverage Area (acres) 212
  - Total In-Place Depth (ft) 1
  - Shrinkage Factor 1.5
  - Estimated Borrow Depth (ft) 10
  - Estimated Borrow Area (acres) 0.01
- Topsail volume estimated from regrade requirements.
- Seed Mix used for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material.

Tailings Facility

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade and Cover Tailings

D10R Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Rip/light regrade and cover tailings		0.5	-	1,300	0.57	742.9	1,632.7
Year -1		2.0	-	1,300	0.57	742.9	-
Year 1	31.6	3.0	153,040.8	1,300	0.57	742.9	206.0
Year 2	15.9	3.0	77,052.8	1,300	0.57	742.9	103.7
Year 3	13.5	2.5	54,571.0	1,300	0.57	742.9	73.5
Year 4	15.8	2.5	63,847.7	1,300	0.57	742.9	85.9
Year 5	55.5	2.0	178,983.2	1,300	0.57	742.9	240.9
Years 6-10	196.0	2.0	632,426.7	1,300	0.57	742.9	851.3
Year 11-15		2.0	-	1,300	0.57	742.9	-
Year 16-20		2.0	-	1,300	0.57	742.9	-
Post-operational period	32.8	1.0	52,977.0	1,300	0.57	742.9	71.3

Scraper	Regrade Area (acres)	Placement Depth (ft)	Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Place Topsoil		1.0	-	237	0.56	132.7	-
Year -1		1.0	-	237	0.56	132.7	-
Year 1	31.6	1.0	51,013.6	237	0.56	132.7	384.3
Year 2	15.9	1.0	25,684.3	237	0.56	132.7	193.5
Year 3	13.5	1.0	21,828.4	237	0.56	132.7	164.4
Year 4	15.8	1.0	25,539.1	237	0.56	132.7	192.4
Year 5	55.5	1.0	89,491.6	237	0.56	132.7	674.2
Years 6-10	196.0	1.0	316,213.3	237	0.56	132.7	2,382.1
Year 11-15		1.0	-	237	0.56	132.7	-
Year 16-20		1.0	-	237	0.56	132.7	-
Post-operational period	32.8	1.0	52,977.0	237	0.56	132.7	399.1

D10R Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Regrading Permiter Berm		1.5	-	1,300	0.57	742.9	-
Year -1		1.5	-	1,300	0.57	742.9	-
Year 1	31.6	1.5	76,520.4	1,300	0.57	742.9	103.0
Year 2	15.9	1.5	38,526.4	1,300	0.57	742.9	51.9
Year 3	13.5	1.5	32,742.6	1,300	0.57	742.9	44.1
Year 4	15.8	1.5	38,308.6	1,300	0.57	742.9	51.6
Year 5	55.5	1.5	134,237.4	1,300	0.57	742.9	180.7
Years 6-10	196.0	1.5	474,320.0	1,300	0.57	742.9	638.5
Year 11-15		1.5	-	1,300	0.57	742.9	-
Year 16-20		1.5	-	1,300	0.57	742.9	-
Post-operational period	32.8	1.5	79,465.5	1,300	0.57	742.9	107.0

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Seeding and/or Scarify		1.0	30.0	4.0	2.4	0.62	1.5	373.6
Year -1		2.0	30.0	4.0	2.4	0.62	1.5	-
Year 1	31.6	2.0	30.0	4.0	2.4	0.62	1.5	42.5
Year 2	15.9	1.0	30.0	4.0	2.4	0.62	1.5	10.7
Year 3	13.5	1.0	30.0	4.0	2.4	0.62	1.5	9.1
Year 4	15.8	1.0	30.0	4.0	2.4	0.62	1.5	10.6
Year 5	55.5	1.0	30.0	4.0	2.4	0.62	1.5	37.3
Years 6-10	196.0	2.0	30.0	4.0	2.4	0.62	1.5	263.4
Year 11-15		-	30.0	4.0	2.4	0.62	1.5	-
Year 16-20		-	30.0	4.0	2.4	0.62	1.5	-
Post-operational period	32.8	-	30.0	4.0	2.4	0.62	1.5	-

**Tailings Facility**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade and Cover Tailings  
Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost								
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)	
<b>D-10R Dozer</b>		<b>1,632.7</b>	<b>227.75</b>	<b>371,847.89</b>	<b>30.66</b>	<b>50,057.77</b>					
Year -1	-	-	227.75	-	30.66	-	-	-	\$	421,905.65	-
Year 1	31.6	309.0	227.75	70,378.35	30.66	9,474.26	-	-	\$	79,852.61	2,525.38
Year 2	15.9	155.6	227.75	35,434.01	30.66	4,770.09	-	-	\$	40,204.10	2,525.38
Year 3	13.5	117.5	227.75	26,768.41	30.66	3,603.53	-	-	\$	30,371.94	2,244.78
Year 4	15.8	137.5	227.75	31,318.84	30.66	4,216.11	-	-	\$	35,534.95	2,244.78
Year 5	55.5	421.6	227.75	96,026.46	30.66	12,926.98	-	-	\$	108,953.44	1,964.19
Years 6-10	196.0	1,489.8	227.75	339,303.90	30.66	45,676.73	-	-	\$	384,980.62	1,964.19
Year 11-15	-	-	227.75	-	30.66	-	-	-	\$	-	-
Year 16-20	-	-	227.75	-	30.66	-	-	-	\$	-	-
Post-operational period	32.8	178.3	227.75	40,603.94	30.66	5,466.06	-	-	\$	46,070.00	1,402.99
<b>Scraper</b>			<b>199.46</b>		<b>16.90</b>						
Year -1	-	-	199.46	-	16.90	-	-	-	\$	-	-
Year 1	31.6	384.3	199.46	76,649.44	16.90	6,494.53	-	-	\$	83,143.97	2,629.47
Year 2	15.9	193.5	199.46	38,591.37	16.90	3,269.86	-	-	\$	41,861.23	2,629.47
Year 3	13.5	164.4	199.46	32,797.82	16.90	2,778.97	-	-	\$	35,576.78	2,629.47
Year 4	15.8	192.4	199.46	38,373.20	16.90	3,251.37	-	-	\$	41,624.58	2,629.47
Year 5	55.5	674.2	199.46	134,463.78	16.90	11,393.15	-	-	\$	145,856.93	2,629.47
Years 6-10	196.0	2,382.1	199.46	475,119.90	16.90	40,257.03	-	-	\$	515,376.93	2,629.47
Year 11-15	-	-	199.46	-	16.90	-	-	-	\$	-	-
Year 16-20	-	-	199.46	-	16.90	-	-	-	\$	-	-
Post-operational period	32.8	399.1	199.46	79,599.55	16.90	6,744.49	-	-	\$	86,344.04	2,629.47
<b>75D Challenger</b>		<b>373.6</b>	<b>194.48</b>	<b>72,666.83</b>	<b>16.90</b>	<b>11,456.08</b>	<b>495.00</b>	<b>178,797.47</b>		<b>262,920.38</b>	
Year -1	-	-	194.48	-	30.66	-	495.00	-		-	-
Year 1	31.6	42.5	194.48	8,265.35	30.66	1,303.05	495.00	15,651.90		25,220.30	797.61
Year 2	15.9	10.7	194.48	2,080.71	30.66	328.03	495.00	7,880.40		10,289.14	646.30
Year 3	13.5	9.1	194.48	1,768.35	30.66	278.78	495.00	6,697.35		8,744.48	646.30
Year 4	15.8	10.6	194.48	2,068.95	30.66	326.17	495.00	7,835.85		10,230.98	646.30
Year 5	55.5	37.3	194.48	7,249.82	30.66	1,142.95	495.00	27,457.65		35,850.42	646.30
Years 6-10	196.0	263.4	194.48	51,233.65	30.66	8,077.10	495.00	97,020.00		156,330.75	797.61
Year 11-15	-	-	194.48	-	30.66	-	495.00	-		-	-
Year 16-20	-	-	194.48	-	30.66	-	495.00	-		-	-
Post-operational period	32.8	-	194.48	-	30.66	-	495.00	16,254.32		16,254.32	495.00
<b>TOTAL</b>	<b>328.4</b>	<b>4,763.6</b>	<b>196.97</b>	<b>948,261.90</b>	<b>23.78</b>	<b>85,645.48</b>	<b>495.00</b>	<b>178,797.47</b>	<b>\$</b>	<b>1,212,704.84</b>	<b>3,693.10</b>
Year -1	-	-	196.97	-	23.78	-	495.00	-	\$	-	-
Year 1	31.6	426.8	196.97	84,914.79	23.78	7,797.58	495.00	15,651.90	\$	108,364.27	3,427.08
Year 2	15.9	204.2	196.97	40,672.08	23.78	3,597.89	495.00	7,880.40	\$	52,150.37	3,275.78
Year 3	13.5	173.5	196.97	34,566.16	23.78	3,057.75	495.00	6,697.35	\$	44,321.26	3,275.78
Year 4	15.8	203.0	196.97	40,442.15	23.78	3,577.55	495.00	7,835.85	\$	51,855.55	3,275.78
Year 5	55.5	711.4	196.97	141,713.60	23.78	12,536.10	495.00	27,457.65	\$	181,707.35	3,275.78
Years 6-10	196.0	2,645.5	196.97	526,353.55	23.78	48,334.13	495.00	97,020.00	\$	671,707.67	3,427.08
Year 11-15	-	-	196.97	-	23.78	-	495.00	-	\$	-	-
Year 16-20	-	-	196.97	-	23.78	-	495.00	-	\$	-	-
Post-operational period	32.8	399.1	196.97	79,599.55	23.78	6,744.49	495.00	16,254.32	\$	102,598.36	3,124.47

1. Seed Mix is used for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material.

Top and Interior of Tailings Storage - Walk-Away During Operations

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade and Cover Tailings

CAT 777C Haul Truck	Depth of Material	Growth Media Placement Volume (cy)	Maximum Truck Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Regrade tailings area		496,600	421.2	0.62	262	1,893.79
Year -1	1.00	-	421.2	0.62	262	-
Year 1	1.00	-	421.2	0.62	262	-
Year 2	1.00	-	421.2	0.62	262	-
Year 3	1.00	-	421.2	0.62	262	-
Year 4	1.00	-	421.2	0.62	262	-
Year 5	1.00	-	421.2	0.62	262	-
Years 6-10	1.00	323,054	421.2	0.62	262	1,231.97
Year 11-15	1.00	496,600	421.2	0.62	262	1,893.79
Year 16-20	1.00	-	421.2	0.62	262	-
Post-operational period	1.00	49,660	421.2	0.62	262	189.38

CAT 992 Loader	Total Truck Time (hr)	Percent Loader Required	Total Loader Time (hr)
Load haul trucks	1,893.8	33%	625.0
Year -1	-	33%	-
Year 1	-	33%	-
Year 2	-	33%	-
Year 3	-	33%	-
Year 4	-	33%	-
Year 5	-	33%	-
Years 6-10	1,232.0	33%	406.6
Year 11-15	1,893.8	33%	625.0
Year 16-20	-	33%	-
Post-operational period	189.4	33%	62.5

D10R Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Rip/light regrade and cover tailings		0.5	-	1,850	0.40	743.7	584.5
Year -1	-	0.5	-	1,850	0.40	743.7	-
Year 1	-	0.5	-	1,850	0.40	743.7	-
Year 2	-	0.5	-	1,850	0.40	743.7	-
Year 3	-	0.5	-	1,850	0.40	743.7	-
Year 4	-	0.5	-	1,850	0.40	743.7	-
Year 5	-	0.5	-	1,850	0.40	743.7	-
Years 6-10	200.2	0.5	161,526.9	1,850	0.40	743.7	217.2
Year 11-15	307.8	0.5	248,300.1	1,850	0.40	743.7	333.9
Year 16-20	-	0.5	-	1,850	0.40	743.7	-
Post-operational period	30.8	0.5	24,830.0	1,850	0.40	743.7	33.4

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Seeding and/or Scarify		2.0	30.0	4.0	2.4	0.62	1.5	-
Year -1	-		30.0	4.0	2.4	0.62	1.5	-
Year 1	-		30.0	4.0	2.4	0.62	1.5	-
Year 2	-		30.0	4.0	2.4	0.62	1.5	-
Year 3	-		30.0	4.0	2.4	0.62	1.5	-
Year 4	-		30.0	4.0	2.4	0.62	1.5	-
Year 5	-		30.0	4.0	2.4	0.62	1.5	-
Years 6-10	200.2	2.0	30.0	4.0	2.4	0.62	1.5	269.1
Year 11-15	307.8	2.0	30.0	4.0	2.4	0.62	1.5	413.7
Year 16-20	-		30.0	4.0	2.4	0.62	1.5	-
Post-operational period	30.8	2.0	30.0	4.0	2.4	0.62	1.5	41.4

Top and Interior of Tailings Storage - Walk-Away During Operations

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade and Cover Tailings

Cost Summary

Equipment	Area Reclaimed (acres)	Hours	Cost								
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)	
CAT 777C Haul Truck											
Year -1	-	-	174.49	578,459.1	23.94	79,364.5		-	657,823.6	-	
Year 1	-	-	174.49	-	23.94	\$ -		-	-	-	
Year 2	-	-	174.49	-	23.94	\$ -		-	-	-	
Year 3	-	-	174.49	-	23.94	\$ -		-	-	-	
Year 4	-	-	174.49	-	23.94	\$ -		-	-	-	
Year 5	-	-	174.49	-	23.94	\$ -		-	-	-	
Years 6-10	200.2	1,231.97	174.49	214,966.58	23.94	\$ 29,493.38		-	244,459.95	1,220.83	
Year 11-15	307.8	1,893.79	174.49	330,447.77	23.94	\$ 45,337.38		-	375,785.15	1,220.83	
Year 16-20	-	-	174.49	-	23.94	\$ -		-	-	-	
Post-operational period	30.8	189.38	174.49	33,044.78	23.94	\$ 4,533.74		-	37,578.52	1,220.83	
CAT 992 Loader											
Year -1	-	-	270.65	296,085.87	32.77	35,850.28		-	331,936.15	-	
Year 1	-	-	270.65	-	32.77	-		-	-	-	
Year 2	-	-	270.65	-	32.77	-		-	-	-	
Year 3	-	-	270.65	-	32.77	-		-	-	-	
Year 4	-	-	270.65	-	32.77	-		-	-	-	
Year 5	-	-	270.65	-	32.77	-		-	-	-	
Years 6-10	200.2	406.6	270.65	110,031.22	32.77	13,322.65		-	123,353.88	616.03	
Year 11-15	307.8	625.0	270.65	169,140.59	32.77	20,479.66		-	189,620.24	616.03	
Year 16-20	-	-	270.65	-	32.77	-		-	-	-	
Post-operational period	30.8	62.5	270.65	16,914.06	32.77	2,047.97		-	18,962.02	616.03	
D-10R Dozer											
Year -1	-	584.5	227.75	133,111.30	30.66	17,919.30		-	151,030.60	-	
Year 1	-	-	227.75	-	30.66	-		-	-	-	
Year 2	-	-	227.75	-	30.66	-		-	-	-	
Year 3	-	-	227.75	-	30.66	-		-	-	-	
Year 4	-	-	227.75	-	30.66	-		-	-	-	
Year 5	-	-	227.75	-	30.66	-		-	-	-	
Years 6-10	200.2	217.2	227.75	49,466.73	30.66	6,659.16		-	56,125.89	280.29	
Year 11-15	307.8	333.9	227.75	76,040.52	30.66	10,236.49		-	86,277.01	280.29	
Year 16-20	-	-	227.75	-	30.66	-		-	-	-	
Post-operational period	30.8	33.4	227.75	7,604.05	30.66	1,023.65		-	8,627.70	280.29	
75D Challenger											
Year -1	-	-	194.48	140,848.36	30.66	22,205.05	495.00	266,721.35	429,774.76	-	
Year 1	-	-	194.48	-	30.66	-	495.00	-	-	-	
Year 2	-	-	194.48	-	30.66	-	495.00	-	-	-	
Year 3	-	-	194.48	-	30.66	-	495.00	-	-	-	
Year 4	-	-	194.48	-	30.66	-	495.00	-	-	-	
Year 5	-	-	194.48	-	30.66	-	495.00	-	-	-	
Years 6-10	200.2	269.1	194.48	52,341.97	30.66	8,251.83	495.00	99,118.80	159,712.59	797.61	
Year 11-15	307.8	413.7	194.48	80,460.35	30.66	12,684.75	495.00	152,365.95	245,511.06	797.61	
Year 16-20	-	-	194.48	-	30.66	-	495.00	-	-	-	
Post-operational period	30.8	41.4	194.48	8,046.04	30.66	1,268.48	495.00	15,236.60	24,551.11	797.61	
<b>TOTAL</b>	<b>538.8</b>	<b>5,717.8</b>	<b>216.84</b>	<b>1,148,504.65</b>	<b>29.51</b>	<b>155,339.13</b>	<b>495.00</b>	<b>266,721.35</b>	<b>\$ 1,570,565.12</b>	<b>2,914.76</b>	
Year -1	-	-	216.84	-	29.51	-	495.00	-	\$ -	-	
Year 1	-	-	216.84	-	29.51	-	495.00	-	\$ -	-	
Year 2	-	-	216.84	-	29.51	-	495.00	-	\$ -	-	
Year 3	-	-	216.84	-	29.51	-	495.00	-	\$ -	-	
Year 4	-	-	216.84	-	29.51	-	495.00	-	\$ -	-	
Year 5	-	-	216.84	-	29.51	-	495.00	-	\$ -	-	
Years 6-10	200.2	2,124.9	216.84	426,806.50	29.51	57,727.02	495.00	99,118.80	\$ 583,652.31	2,914.76	
Year 11-15	307.8	3,266.3	216.84	656,089.23	29.51	88,738.28	495.00	152,365.95	\$ 897,193.46	2,914.76	
Year 16-20	-	-	216.84	-	29.51	-	495.00	-	\$ -	-	
Post-operational period	30.8	326.6	216.84	65,608.92	29.51	8,873.83	495.00	15,236.60	\$ 89,719.35	2,914.76	

1. Seed Mix is used for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material.

Top and Interior of Tailings Storage - Walk-Away During Operations

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade and Cover Tailings

CAT 777C Haul Truck	Depth of Material	Growth Media Placement Volume (cy)	Maximum Truck Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Regrade tailings area		997,040	538.2	0.62	335	2,975.86
Year -1	1.00	77,440	538.2	0.62	335	231.13
Year 1	1.00	342,027	538.2	0.62	335	1,020.84
Year 2	1.00	477,547	538.2	0.62	335	1,425.33
Year 3	1.00	608,227	538.2	0.62	335	1,815.37
Year 4	1.00	721,160	538.2	0.62	335	2,152.44
Year 5	1.00	782,467	538.2	0.62	335	2,335.42
Years 6-10	1.00	997,040	538.2	0.62	335	2,975.86
Year 11-15	1.00	290,400	538.2	0.62	335	866.75
Year 16-20	1.00	-	538.2	0.62	335	-
Post-operational period	1.00	99,704	538.2	0.62	335	297.59

CAT 992 Loader	Total Truck Time (hr)	Percent Loader Required	Total Loader Time (hr)
Load haul trucks		33%	-
Year -1	231.1	33%	76.3
Year 1	1,020.8	33%	336.9
Year 2	1,425.3	33%	470.4
Year 3	1,815.4	33%	599.1
Year 4	2,152.4	33%	710.3
Year 5	2,335.4	33%	770.7
Years 6-10	2,975.9	33%	982.0
Year 11-15	866.8	33%	286.0
Year 16-20	-	33%	-
Post-operational period	297.6	33%	98.2

D10R Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Rip/light regrade and cover tailings		0.5	-	1,300	0.48	619.1	3,550.5
Year -1	48.0	0.5	38,720.0	1,300	0.48	619.1	62.5
Year 1	212.0	0.5	171,013.3	1,300	0.48	619.1	276.2
Year 2	296.0	0.5	238,773.3	1,300	0.48	619.1	385.7
Year 3	377.0	0.5	304,113.3	1,300	0.48	619.1	491.2
Year 4	447.0	0.5	360,580.0	1,300	0.48	619.1	582.4
Year 5	485.0	0.5	391,233.3	1,300	0.48	619.1	632.0
Years 6-10	618.0	0.5	498,520.0	1,300	0.48	619.1	805.3
Year 11-15	180.0	0.5	145,200.0	1,300	0.48	619.1	234.5
Year 16-20	-	0.5	-	1,300	0.48	619.1	-
Post-operational period	61.8	0.5	49,852.0	1,300	0.48	619.1	80.5

75D Challenger	Area (acres)	Number of Passes	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Seeding and/or Scarify		2.0	30.0	4.0	2.4	0.62	1.5	-
Year -1	48.0		30.0	4.0	2.4	0.62	1.5	-
Year 1	212.0		30.0	4.0	2.4	0.62	1.5	-
Year 2	296.0		30.0	4.0	2.4	0.62	1.5	-
Year 3	377.0		30.0	4.0	2.4	0.62	1.5	-
Year 4	447.0		30.0	4.0	2.4	0.62	1.5	-
Year 5	485.0		30.0	4.0	2.4	0.62	1.5	-
Years 6-10	618.0		30.0	4.0	2.4	0.62	1.5	-
Year 11-15	180.0		30.0	4.0	2.4	0.62	1.5	-
Year 16-20	-	2.0	30.0	4.0	2.4	0.62	1.5	-
Post-operational period	61.8	2.0	30.0	4.0	2.4	0.62	1.5	83.1

Top and Interior of Tailings Storage - Walk-Away During Operations

Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade and Cover Tailings  
Cost Summary

Equipment	Area Reclaimed (acres)	Hours	Cost								
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)	
CAT 777C Haul Truck		231.13	174.49	2,289,437.9	23.94	314,110.5			-	2,603,548.4	-
Year -1	48.0	231.13	174.49	40,330.67	23.94	\$ 5,533.36				45,864.03	955.50
Year 1	212.0	1,020.84	174.49	178,127.14	23.94	\$ 24,439.01				202,566.15	955.50
Year 2	296.0	1,425.33	174.49	248,705.81	23.94	\$ 34,122.40				282,828.21	955.50
Year 3	377.0	1,815.37	174.49	316,763.82	23.94	\$ 43,459.95				360,223.77	955.50
Year 4	447.0	2,152.44	174.49	375,579.39	23.94	\$ 51,529.43				427,108.82	955.50
Year 5	485.0	2,335.42	174.49	407,507.84	23.94	\$ 55,910.01				463,417.85	955.50
Years 6-10	618.0	2,975.86	174.49	519,257.41	23.94	\$ 71,242.03				590,499.44	955.50
Year 11-15	180.0	866.75	174.49	151,240.02	23.94	\$ 20,750.11				171,990.13	955.50
Year 16-20	-	-	174.49	-	23.94	\$ -				-	-
Post-operational period	61.8	297.59	174.49	51,925.74	23.94	\$ 7,124.20				59,049.94	955.50
CAT 992 Loader		76.3	270.65	1,151,211.61	32.77	139,389.48			-	1,290,601.09	-
Year -1	48.0	336.9	270.65	91,174.86	32.77	11,039.51				102,214.37	2,129.47
Year 1	212.0	470.4	270.65	127,300.75	32.77	15,413.66				142,714.41	673.18
Year 2	296.0	599.1	270.65	162,136.42	32.77	19,631.59				181,768.01	614.08
Year 3	377.0	710.3	270.65	192,241.33	32.77	23,276.71				215,518.04	571.67
Year 4	447.0	770.7	270.65	208,583.99	32.77	25,255.49				233,839.48	523.13
Year 5	485.0	982.0	270.65	265,783.31	32.77	32,181.22				297,964.54	614.36
Years 6-10	618.0	286.0	270.65	77,412.62	32.77	9,373.17				86,785.79	140.43
Year 11-15	180.0	-	270.65	-	32.77	-				-	-
Year 16-20	-	98.2	270.65	26,578.33	32.77	3,218.12				29,796.45	-
Post-operational period	61.8	-	270.65	-	32.77	-				-	-
D-10R Dozer		3,550.5	227.75	808,631.42	30.66	108,857.10			-	917,488.52	-
Year -1	48.0	62.5	227.75	14,244.83	30.66	1,917.62				16,162.45	336.72
Year 1	212.0	276.2	227.75	62,914.66	30.66	8,469.50				71,384.16	336.72
Year 2	296.0	385.7	227.75	87,843.11	30.66	11,825.35				99,668.45	336.72
Year 3	377.0	491.2	227.75	111,881.26	30.66	15,061.34				126,942.59	336.72
Year 4	447.0	582.4	227.75	132,654.96	30.66	17,857.87				150,512.83	336.72
Year 5	485.0	632.0	227.75	143,932.12	30.66	19,375.99				163,308.11	336.72
Years 6-10	618.0	805.3	227.75	183,402.16	30.66	24,689.40				208,091.57	336.72
Year 11-15	180.0	234.5	227.75	53,418.11	30.66	7,191.09				60,609.19	336.72
Year 16-20	-	-	227.75	-	30.66	-				-	-
Post-operational period	61.8	80.5	227.75	18,340.22	30.66	2,468.94				20,809.16	336.72
75D Challenger		-	194.48	16,154.28	30.66	2,546.76	495.00	1,348,776.00		1,367,477.04	-
Year -1	48.0	-	194.48	-	30.66	-	495.00	23,760.00		23,760.00	495.00
Year 1	212.0	-	194.48	-	30.66	-	495.00	104,940.00		104,940.00	495.00
Year 2	296.0	-	194.48	-	30.66	-	495.00	146,520.00		146,520.00	495.00
Year 3	377.0	-	194.48	-	30.66	-	495.00	186,615.00		186,615.00	495.00
Year 4	447.0	-	194.48	-	30.66	-	495.00	221,265.00		221,265.00	495.00
Year 5	485.0	-	194.48	-	30.66	-	495.00	240,075.00		240,075.00	495.00
Years 6-10	618.0	-	194.48	-	30.66	-	495.00	305,910.00		305,910.00	495.00
Year 11-15	180.0	-	194.48	-	30.66	-	495.00	89,100.00		89,100.00	495.00
Year 16-20	-	-	194.48	-	30.66	-	495.00	-		-	-
Post-operational period	61.8	83.1	194.48	16,154.28	30.66	2,546.76	495.00	30,591.00		49,292.04	797.61
<b>TOTAL</b>		<b>21,007.8</b>	<b>216.84</b>	<b>4,265,435.17</b>	<b>29.51</b>	<b>564,903.84</b>	<b>495.00</b>	<b>1,348,776.00</b>	<b>\$</b>	<b>6,179,115.01</b>	<b>-</b>
Year -1	48.0	630.6	216.84	145,750.36	29.51	18,490.50	495.00	23,760.00	\$	188,000.86	3,916.68
Year 1	212.0	1,767.4	216.84	368,342.54	29.51	48,322.18	495.00	104,940.00	\$	521,604.72	2,460.40
Year 2	296.0	2,410.1	216.84	498,685.35	29.51	65,579.33	495.00	146,520.00	\$	710,784.68	2,401.30
Year 3	377.0	3,016.9	216.84	620,886.41	29.51	81,797.99	495.00	186,615.00	\$	889,299.40	2,358.88
Year 4	447.0	3,505.6	216.84	716,818.35	29.51	94,642.79	495.00	221,265.00	\$	1,032,726.14	2,310.35
Year 5	485.0	3,949.4	216.84	817,223.27	29.51	107,467.22	495.00	240,075.00	\$	1,164,765.49	2,401.58
Years 6-10	618.0	4,067.2	216.84	780,072.19	29.51	105,304.61	495.00	305,910.00	\$	1,191,286.80	1,927.65
Year 11-15	180.0	1,101.3	216.84	204,658.13	29.51	27,941.20	495.00	89,100.00	\$	321,699.32	1,787.22
Year 16-20	-	98.2	216.84	26,578.33	29.51	3,218.12	495.00	-	\$	29,796.45	-
Post-operational period	61.8	461.2	216.84	86,420.24	29.51	12,139.90	495.00	30,591.00	\$	129,151.14	2,089.82

1. Seed Mix is used for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material.

**Process Ponds**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Raffinate Pond and Diversions**

D10R Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Regrade and diversions to blend with topo		3.5	-	1,850	0.22	403.1	-
Year -1	-		-	1,850	0.22	403.1	-
Year 1	-		-	1,850	0.22	403.1	-
Year 2	-		-	1,850	0.22	403.1	-
Year 3	-		-	1,850	0.22	403.1	-
Year 4	-		-	1,850	0.22	403.1	-
Year 5	-		-	1,850	0.22	403.1	-
Years 6-10	8.0	4.0	51,368.5	1,850	0.22	403.1	127.4
Year 11-15	-		-	1,850	0.22	403.1	-
Year 16-20	12.0	3.0	58,080.0	1,850	0.22	403.1	144.1
Post-operational period			-	1,850	0.22	403.1	-

**Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
D-10R Dozer		271.5	227.75	61,843.89	30.66	8,325.36	5,000.00	99,800.00	\$ 169,969.25	-
Year -1	-	-	227.75	-	30.66	-	5,000.00	-	\$ -	-
Year 1	-	-	227.75	-	30.66	-	5,000.00	-	\$ -	-
Year 2	-	-	227.75	-	30.66	-	5,000.00	-	\$ -	-
Year 3	-	-	227.75	-	30.66	-	5,000.00	-	\$ -	-
Year 4	-	-	227.75	-	30.66	-	5,000.00	-	\$ -	-
Year 5	-	-	227.75	-	30.66	-	5,000.00	-	\$ -	-
Years 6-10	8.0	127.4	227.75	29,025.79	30.66	3,907.42	5,000.00	39,800.00	\$ 72,733.21	9,137.34
Year 11-15	-	-	227.75	-	30.66	-	5,000.00	-	\$ -	-
Year 16-20	12.0	144.1	227.75	32,818.10	30.66	4,417.94	5,000.00	60,000.00	\$ 97,236.04	8,103.00
Post-operational period	-	-	227.75	-	30.66	-	5,000.00	-	\$ -	-

1. The Wheeler method was used for revegetation - no reveg after year 10 for PLS ponds.

**Roads - No road closure at this point**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Roads**

D10R Dozer	Road Area (ac)	Road Length (ft)	Road Width (ft)	Estimated Rip/Regrade Depth (ft)	Total Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Rip/light regrade	-	0	0	0.50	-	1,850	0.40	743.7	-
					-	1,300	0.57	742.9	-
					-	1,850	0.40	743.7	-
					-	1,300	0.57	742.9	-
					-	1,850	0.40	743.7	-
					-	1,300	0.57	742.9	-

75D Challenger	Area (acres)	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Scarify	-	30.0	4.0	2.4	0.62	1.5	-
Seeding and Cover	-	30.0	4.0	2.4	0.62	1.5	-

**Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>2</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
D-10R Dozer	-	-	227.75	-	30.66	-	-	-	-	-
75D Challenger	-	-	194.48	-	30.66	-	495.00	-	-	-
<b>TOTAL</b>				<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>	<b>\$ -</b>	

1. Assume 2 foot regrade is sufficient to blend to existing topography.
2. Seed Mix is used for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material.

**Augusta Resource Rosemont Project - Life of Mine - Regrade Volume by M3  
Earthwork and Engineering Calculations  
Concrete Disposal, Rip and Regrade (Year 20)**

CAT 777C Haul Truck	Depth of Material	Growth Media Placement Volume (cy)	Maximum Truck Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Haul Cover	3.00	580,800	538.2	0.62	335	1,733.51

CAT 992 Loader	Total Truck Time (hr)	Percent Loader Required	Total Loader Time (hr)
Load Cover	1,733.5	33%	572.1

D10R Dozer	Reclaim Area (ac)	Total Rip Depth (ft)	Total Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy/hr)	Total Time (hours)
Rip/light regrade surfaces	120.0		1,500,000.0	1,850	0.40	743.7	2,016.9

75D Challenger	Area (acres)	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Scarify	168.0	30.0	4.0	2.4	0.62	1.5	112.9
Seeding and Cover	168.0	30.0	4.0	2.4	0.62	1.5	112.9

**Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
CAT 777C Haul Truck	120.0	1,733.51	174.49	302,480.05	23.94	\$ 41,500.21			343,980.26	2,866.50
CAT 992 Loader	120.0	572.1	270.65	154,825.23	32.77	18,746.34			173,571.58	1,446.43
D-10R Dozer	120.0	2,016.9	227.75	459,366.68	30.66	61,839.45			521,206.13	3,102.42
75D Challenger	168.0	225.8	194.48	43,914.56	30.66	6,923.23	495.00	83,160.00	133,997.78	797.61
<b>TOTAL</b>				<b>\$ 960,586.51</b>		<b>\$ 129,009.23</b>		<b>\$ 83,160.00</b>	<b>\$ 1,172,755.75</b>	<b>6,980.69</b>

1. Seed Mix is used for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material.

**Topsoil Stockpiles**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Topsoil Stockpile (Year 20)**

D10R Dozer	Regrade Area (acres)	Rip/ Regrade Depth (ft)	Rip/ Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Rip/light regrade stockpile areas for revegetation	200.0	0.5	161,333.3	1,300	0.57	742.9	217.2

75D Challenger	Area (acres)	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Scarify	200.0	30.0	4.0	2.4	0.62	1.5	134.4
Seeding and Cover	200.0	30.0	4.0	2.4	0.62	1.5	134.4

**Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
D-10R Dozer	200.0	217.2	227.75	49,461.21	30.66	6,658.42			56,119.62	280.60
75D Challenger	200.0	134.4	194.48	26,139.62	30.66	4,120.97	495.00	99,000.00	129,260.58	646.30
<b>TOTAL</b>				\$ 75,600.83		\$ 10,779.38		\$ 99,000.00	\$ 185,380.21	926.90

1. Seed Mix is used for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material.

**Stormwater Basins**

**Augusta Resource Rosemont Project - Life of Mine  
Earthwork and Engineering Calculations  
Regrade Stormwater Basins (Year 20)**

D10R Dozer	Regrade Area (acres)	Rip/Regrade Depth (ft)	Rip/Regrade Volume (cy)	Maximum Production (cy/hr)	Productivity Correction Factor	Factored Production (cy)	Total Time (hours)
Rip/light regrade basins to provide drainage and prepare for revegetation	1.5	5.0	12,100.0	1,850	0.40	743.7	16.3

75D Challenger	Area (acres)	Track Width (in)	Average Speed (mph)	Maximum Production (acres/hr)	Productivity Correction Factor	Factored Production (ac/hr)	Total Time (hours)
Scarify	1.5	30.0	4.0	2.4	0.62	1.5	1.0
Seeding and Cover	1.5	30.0	4.0	2.4	0.62	1.5	1.0

**Cost Summary**

Equipment	Area Reclaimed (acres)	Hours	Cost							
			Equipment (\$/hr)	Subtotal Equipment (\$)	Labor (\$/hr)	Subtotal Labor (\$)	Revegetation <sup>1</sup> (\$/ac)	Subtotal Revegetation (\$)	Total (\$)	Per Acre (\$/ac)
D-10R Dozer	1.5	16.3	227.75	3,705.56	30.66	498.84			4,204.40	2,802.93
75D Challenger	1.5	2.0	194.48	392.09	30.66	61.81	495.00	742.50	1,196.41	797.61
<b>TOTAL</b>				\$ 4,097.65		\$ 560.65		\$ 742.50	\$ 5,400.80	3,600.54

1. Seed Mix is used for revegetation plus an amendment cost for 16-16-8 fertilizer and a charge for testing suitability of plant growth material.

**APPENDIX D**  
**PRICE QUOTES AND BIDS**



**TETRA TECH**

10000  
2000  
10000

Tel: 408.377.7711 Fax: 408.377.7724  
www.tetra-tech.com

## Fax

Date: 2/1/2007

No. of pages including cover sheet: 2

To: Joel

Company: Empire Machinery

Phone: \_\_\_\_\_

Fax: 746-8206

CC:

From: Patty Gebel

Dept: \_\_\_\_\_

Phone: 297-7723

Fax: 297-7724

### REMARKS:

Urgent     For your review     Reply ASAP     Please comment

Per our recent conversation, please provide prices for the equipment listed on the following page. It would be helpful if you could include mobilization charges as well.

Thank you.

7400 S Nogales Hwy  
Tucson, AZ 85706



# FAX

Date: 2/2/07

Number of pages (including this page) 2

To: Patty

From: Jay Eller

Company: Tetra Tech

Rental Account Manager

Fax Number: 520-297-7724

Fax Number: 520-746-8206

Phone : 520-297-7723

Office: 520-746-8224

Mobile: 520-240-5819

Re: Equipment quote

Comments:

Jay Eller  
Rental Account Manager



February 2, 2007

Customer: Tetra Tech  
 Address: 3031 W. Ina Rd.  
 Phone: 520-287-7723  
 Contact: Patty Gebell

Job Ref: New Mine off Hwy 83

Model	Rental Rate		Freight (each way)
	Daily	Monthly	
777D Haul Truck	\$1770.00	\$21215.00	\$550.00
4K Water Truck	\$555.00	\$4997.00	\$255.00
988G Loader	\$1500.00	\$17900.00	\$425.00
982G Loader	\$3000.00	\$36000.00	Field Service Est.
D10T Dozer	\$2100.00	\$25200.00	\$4985.00
14h Grader	\$850.00	\$9950.00	\$300.00
CP-563	\$500.00	\$5855.00	\$195.00
CS-563	\$425.00	\$5000.00	\$195.00
631G Scraper	\$1800.00	\$21050.00	\$425.00
448E Backhoe	\$495.00	\$4600.00	\$195.00
330CL (no rental shear)	\$825.00	\$9750.00	\$350.00

Sales Tax Rate: 6.1%

\*All equipment subject to availability & or, prior sale

\*All equipment subject to terms of rental agreement

Submitted by:

A handwritten signature in black ink, appearing to read "Jay Eller".

Jay Eller  
 Rental Account Manager  
 520-746-8224 Office  
 520-240-5819 Cell



**TETRA TECH**

10000 N. 19th Ave  
Suite 1000  
Tucson, AZ 85704

Tel: (520) 297-7723 Fax: (520) 297-7724  
www.tetra-tech.com

## Fax

Date: 2/6/2007 \_\_\_\_\_

No. of pages including cover sheet: 2

To: Alroy \_\_\_\_\_

Company: Road Machinery \_\_\_\_\_

Phone: (602) 252-7121 \_\_\_\_\_

Fax: (602) 256-5254 \_\_\_\_\_

CC:

From: Patty Gebell \_\_\_\_\_

Dept: \_\_\_\_\_

Phone: (520) 297-7723 \_\_\_\_\_

Fax: (520) 297-7724 \_\_\_\_\_

### REMARKS:

Urgent     For your review     Reply ASAP     Please comment

Following is a list of equipment I need a price quote on. Please also include mobilization charge for the equipment. If you don't rent by the hour, you may provide a quote on a per day basis. This equipment will be used at one of our project sites about 35 miles south of Tucson.

If you have any questions, please contact me at (520) 297-7723

Thank you.



3285 East 44<sup>th</sup> Street  
 Tucson, AZ 85713  
 Phone: 520-823-8681  
 Cell: 520-940-2096  
 FAX: 520-798-1419

TO:	<u>Patty Gebeli</u>	DATE:	<u>2/9/2007</u>
COMPANY:	<u>Tetra Tech</u>	PHONE:	<u></u>
		FAX #:	<u>520-297-7724</u>
FROM:	<u>Armando Gonzales</u>	PAGE 1 OF:	<u>3</u>
PHONE:	<u>Cell: 520-940-2096</u>		

Hello Patty,

Here is the Rental quote and Freight charges you have requested from Road Machinery LLC. Please call me if you have any questions. On some of the freight charges listed below these are ball park figures due to the assemble and disassemble of the equipment in our shop as well as the job site. I can give you a better idea of the assemble charge of the bigger machine's if you decide to have Road Machinery support your equipment needs on this project.

HM400 - 72,000 lbs \$465.00 E/W  
 HD465 - 92,000 lbs \$1,880.00 E/W  
 WA600-6 - 119,000 lbs \$1,880.00 E/W  
 WA800 - 222,000 lbs \$3,000.00 E/W  
 D375 - 150,000 lbs \$2,352.00 E/W  
 GD655 Grader 32,000 lb \$375.00 E/W  
 BW213 84" Padfoot roller \$335.00 E/W  
 BW211 84" Smooth Roller \$335.00 E/W

Thank you for the opportunity.

Armando Gonzales  
 Rental & Sales Coordinator

Equipment Rental Unit Rates

Type of Equipment	Monthly Rate (\$)	Daily Rate	Hourly Rate (\$)
4x4 1/2 ton Pickup Truck	N/A	N/A	N/A
4x4 3/4 ton Pickup Truck	N/A	N/A	N/A
1 Ton Machine Truck	N/A	N/A	N/A
Tool Cargo Trailer	N/A	N/A	N/A
Crew Passenger Bus	N/A	N/A	N/A
24 CY End Dump Truck	N/A	N/A	N/A
111 D Haul Truck	N/A	N/A	N/A
777C Haul Truck	14,000	172.5	
Water Truck (4,000 gallon)	15,000	2,400	
928F Loader (with forks)	N/A	N/A	N/A
992D Loader	16,000	1,890	
01C/100 Dozer	24,000	2,500	
750 Challenger with Drive/steer and Disc Harrow	24,000	2,500	
14H Motor Grader	N/A	N/A	N/A
Padded Drum Compactor (CP-563C)	6,000	740	
Smooth Drum Compactor (CS-583C)	6,400	585	
631 E Scraper	8,400	535	
Backhoe (7100 or equivalent)	N/A	N/A	N/A
2350 Excavator (with shear and rammers)	N/A	N/A	N/A
14 Ton Box Truck	N/A	N/A	N/A
150 Ton Crane	N/A	N/A	N/A
28 Ton Hough Teraine Crane	N/A	N/A	N/A
60 Foot Reach Man Lift	N/A	N/A	N/A
1 Ton Truck-mounted Welding/Cutting Torch	N/A	N/A	N/A
20kW Mobile Genera. or	N/A	N/A	N/A

Funks 2,500 per month



**TETRA TECH**

1000 N. 17th St  
Phoenix, AZ 85016  
Tucson, AZ 85711

Tel: 602.277.7723 Fax: 602.277.7724  
www.tetra-tech.com

## Fax

Date: 2/5/2007

No. of pages including cover sheet: 2

To: Parts

Company: Tucson Tractor

Phone: \_\_\_\_\_

Fax: 623-6058

CC:

From: Patty Gebell

Dept: \_\_\_\_\_

Phone: 297-7723

Fax: 297-7724

### REMARKS:

Urgent     For your review     Reply ASAP     Please comment

Following is a list of equipment I need a price quote on. Please also include mobilization charge for the equipment. If you don't rent by the hour, you may quote on a daily basis. This equipment will be used on one of our project sites located about 35 miles southeast of Tucson

If you have any question, please contact me at 297-7723.

Thank you.

# TUCSON TRACTOR COMPANY

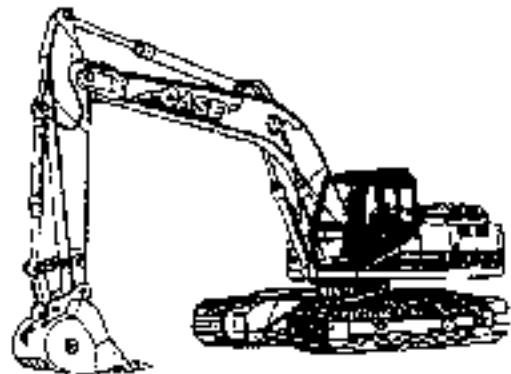
TUCSON TRACTOR COMPANY • 1701 WEST GRANT ROAD • TUCSON, AZ 85740 • Phone 520-623-5848 • Fax 520-623-6050

## Fax

To: Patty Grebel From: Kelly Dominguez  
 Company: \_\_\_\_\_ Date: 2/6/07  
 Fax: \_\_\_\_\_ Pages: 2  
 Phone: \_\_\_\_\_ Re: Quote

- Urgent     For Review     Please Comment     Please Reply     Please Recycle

Comments:



Equipment Rental Unit Rates

Type of Equipment	Monthly Rate (\$)	Hourly Rate (\$)
4x4 12 ton Pickup Truck	No Bid	
4x4 3/4 ton Pickup Truck	No Bid	
1 Ton Mechanics Truck	No Bid	
Tow Cargo Trailer	No Bid	
Great Passenger Bus	No Bid	
24 CY End Dump Truck	No Bid	
771 3 Bay Truck	No Bid	
777C Haul Truck	No Bid	
Water Truck (4,000 gallon)	4725.00	525.00
988E Loader (with forks)	No Bid	
992D Loader	No Bid	
D10R10U Dozer	No Bid	
750 Challenger w/ Dr. Broadcast Spreader and Disc Harrowed	No Bid	
14H Motor Grader	5895.00	520.00
Padded Drum Compactor (CP-663C)	5295.00	550.00
Smooth Drum Compactor (CS-593-C)	4950.00	550.00
631 E Scraper	No Bid	
Backhoe (100 or equivalent)	No Bid	
235D Excavator (With shear and rammer)	No Bid	
14 Ton Boom Truck	No Bid	
150 Ton Crane	No Bid	
28 Ton Rough Terrain Crane	No Bid	
60 Foot Reach Man Lift	No Bid	
1 Ton Truck-mounted Welder/Cutting Torch	No Bid	
20KW Mobile Generator	No Bid	



**TETRA TECH**

10000 Old Orchard Road  
Suite 2000  
Dallas, TX 75244

Tel: (972) 420-4000 Fax: (972) 420-4001  
www.tetra-tech.com

## Fax

Date: 5/30/2007

No. of pages including cover sheet: 2

To: Buck Thomas

Company: TB Contractors

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

CC: \_\_\_\_\_

From: Patty Gebell

Dept: \_\_\_\_\_

Phone: (520) 297-7723

Fax: (520) 297-7724

### REMARKS:

Urgent     For your review     Reply ASAP     Please comment

Hi Buck,

Per our conversation, attached is a list of equipment I need prices for based on a monthly rate.

Thanks in advance for your help.

# T B Contractors, Inc. T&M Rates

EQUIPMENT	RATE	COMMENTS	EQUIPMENT	RATE	COMMENTS
P-C-K-P	\$ 18.00	per hour	888E CAT Loader	\$ 60.00	per hour
F-700 Equipment Truck	\$ 22.00	per hour	938C CAT Truck Loader	\$ 47.50	per hour
Single axle dump tractor and 43 foot Boom Truck	\$ 35.00	per hour	IT-78 CAT Loader/Forklift	\$ 52.50	per hour
Welding Rig	\$ 30.00	per hour	CP-433 CAT Compactor	\$ 38.00	per hour
2000 Gallon Water Truck	\$ 42.00	per hour	60" Compaction Wheel for 390L	\$ 13.00	per hour
500 Gallon Water Trailer	\$ 32.50	per hour	TH 83 CAT Reach Forklift	\$ 60.00	per hour
Self Contained Hot Pressure Washer	\$ 63.00	per day	V200B CAT Forklift	\$ 52.50	per hour
15'-18' Trailers	\$ 12.50	per hour	25 RW 3 phase Generator	\$ 47.50	per day
18' 14,000lb Dump Trailer	\$ 6.50	per hour	10cfm Gas Powered Air Compressor	\$ 12.50	per hour
25' Gooseneck Trailer	\$ 8.50	per hour	150' 125 AJ Compressor	\$ 2.00	per hour
43' Gooseneck Trailer	\$ 10.50	per hour	1" Impact	\$ 2.00	per hour
Welding Machine	\$ 6.50	per hour	Rigid 200 Pipe Throder	\$ 5.50	per hour
1/4" 25 Wagon Feeder	\$ 6.50	per hour	Tenants Sweeper	\$ 60.00	per hour
100 Ton Hammer	\$ 210.00	per day	Micro-spike Compactor	\$ 73.50	per day
257 Multi-Terrain Loader	\$ 35.00	per hour	Air Sparged Compactor	\$ 73.00	per day
240 CAT Skidsteer	\$ 27.50	per hour	Toil Trailer	\$ 105.00	per day
240 Skidsteer w/ Auger, or Tractor	\$ 29.50	per hour	4000 W. Diesel Max	\$ 47.50	per day
D-250E CAT Haul Truck	\$ 58.50	per hour	Exc Rotary Hammer	\$ 37.00	per day
3-3 CAT Digger	\$ 37.00	per hour	Electric Core Drills	\$ 73.50	per day
3-5 CAT Dozer	\$ 50.50	per hour	5000 Jamboree Series	\$ 58.20	per day
D-8L CAT Dozer	\$ 120.00	per hour	Concrete Vibrator	\$ 21.00	per day
D-9M CAT Dozer	\$ 115.50	per hour	Vibrating Screen	\$ 53.50	per day
418 CAT 4x4 Exhaust Blower	\$ 29.50	per hour	35" Tumbling Machine	\$ 103.00	per day
420 or 426 CAT 4x4 Exhaust Blower	\$ 40.00	per hour	Chain Saw	\$ 1.50	per day
440G CAT Blower	\$ 52.50	per hour	Excavator Welder	\$ 105.00	per day
301.6 CAT Tractor	\$ 26.50	per hour	Hot Gun	\$ 21.00	per day
301.8 CAT Tractor with Hydro-Hammer	\$ 52.50	per hour	1" to 4" Fusion Machine	\$ 68.50	per day
303 CAT Tractor	\$ 25.00	per hour	4" to 12" Fusion Machine	\$ 232.00	per day
303 CAT Tractor with Hydro Hammer	\$ 56.00	per hour	6" to 18" Fusion Machine	\$ 357.00	per day
312 CAT Tractor	\$ 52.50	per hour	30" Fusion Machine	\$ 940.00	per day
312 CAT Tractor w/ Hyd. Thrust	\$ 69.50	per hour	208 Breaker	\$ 31.50	per day
330L CAT Tractor	\$ 122.00	per hour	308 Breaker	\$ 37.00	per day
330L CAT Tractor w/ Hyd. Thrust	\$ 147.00	per hour	Portable Light Tower	\$ 84.00	per day
330BL CAT Tractor w/ Steer	\$ 110.00	per hour	525 8'-1/2" Chipper	\$ 27.50	per hour

**NOTES:** In addition to the above rates, there will be transport at cost plus 15%. All equipment rental rates are fully insured but not operated. It is understood that contractor will operate equipment.

**NOTES:** Rates apply to contractor owned equipment only. Any equipment rented by the contractor will be charged at cost plus 10%, plus 100% of Blue Book Operating Cost and applicable taxes & insurance.

**NOTES:** Stand by rates will apply when work is halted by no fault of the contractor. Our stand by rates are 65% of the rates listed above. Excess wear and tear damage due to no fault of contractor will be billed at cost. Excess wear and tear damage to fuel tanks will be billed at cost. Rates valid through 2008. These prices are based upon January 2008 fuel prices. Pricing fuel cost will be added to the above prices. We reserve the right to change these rates without notice.

## T B Contractors, Inc. T&M Labor Rates

CRAFT CLASSIFICATION	REG. TIME RATE	OVERTIME RATE
Consulting / Construction Manager	\$ 80.50	\$ 126.50
Project Manager	\$ 45.50	\$ 70.50
Superintendent	\$ 43.00	\$ 67.50
Foreman	\$ 35.50	\$ 55.50
Welder	\$ 31.50	\$ 49.00
Operator	\$ 31.50	\$ 49.00
Pipefitter	\$ 30.00	\$ 46.50
Carpenter/Finisher	\$ 32.50	\$ 51.00
Milwright	\$ 31.50	\$ 49.00
Helper/Laborer	\$ 25.00	\$ 39.00
<b>Rates Valid Through 2008 (We reserve the right to change these rates without notice.)</b>		



1697 West 2100 North  
Lehi, UT 84043

# FAX

Phone: (801) 768-4422  
Fax: (801) 768-3967

Date: July 13, 2007

To: Colleen Kelley

Company: Tetra Tech

From: Bill Agnew

Pages (including Cover): 3

Re: Revised planting rates for Southwest seeding projects

Colleen:

Find the following revised seed mixture and planting rates for Tetra Tech's test projects in AZ. Note that all seed species are subject to availability from year to year and flexibility in using substitute, adapted and available seed species is paramount. Additionally, the specified Red three-awn in Mix 3 is almost never available so I substituted using Purple three-awn (*Aristida purpurea*) @ 2.0 pls #/acre. Based on our discussion find the revised application rates.

Mix 1	Planting Rates (pls #/acre)
Species	
Sideoats grama ( <i>Bouteloua curtipendula</i> )	4.00
Blue grama ( <i>Bouteloua gracilis</i> )	1.00
Green sprangletop ( <i>Leploctua dubia</i> )	2.00
Rothrock's grama ( <i>Bouteloua rothrockii</i> )	1.00
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	0.40
Needle grama ( <i>Bouteloua aristidoides</i> )	4.00
Bottlebrush squirreltail ( <i>Elymus elymoides</i> )	1.00
Desert marigold ( <i>Baileya multiradiata</i> )	1.00
Prarie aster ( <i>Machaeranthera tanacetifolia</i> )	1.00
White-thorn acacia ( <i>Acacia constricta</i> )	1.00
Oakbrush sumac ( <i>Rhus trilobata</i> )	1.00
Total	17.40

Estimated seed price/acre - \$ 384.00



# FAX

1697 West 2100 North  
Lehi, UT 84043

Phone: (801) 768-4422  
Fax: (801) 768-3967

Mix 2	
Species	Planting Rates (pls #'s/acre)
Cane beardgrass ( <i>Bothriochloa barbinodis</i> )	2.00
Arizona cottontop ( <i>Digitaria californica</i> )	1.00
Sideoats grama ( <i>Bouteloua curtipendula</i> )	4.00
Blue grama ( <i>Bouteloua gracilis</i> )	1.00
Tanglehead ( <i>Heteropogon contortus</i> )	1.00
Needle grama ( <i>Bouteloua aristidoides</i> )	4.00
Plains lovegrass ( <i>Fragrostis intermedia</i> )	0.50
Desert senna ( <i>Senna covesii</i> )	0.50
Mexican gold poppy ( <i>Eschscholzia Mexicana</i> )	2.50
Fairy duster ( <i>Calliandra eriophylla</i> )	0.25
Paperflower ( <i>Psilostrophe cooperi</i> )	0.10
Total	16.85

Estimated seed price/acre - \$ 511.00

Mix 3	
Species	Planting Rate (pls #'s/acre)
Cane beardgrass ( <i>Bothriochloa barbinodis</i> )	2.00
Arizona cottontop ( <i>Digitaria californica</i> )	1.00
Curly mesquite ( <i>Hilaria belangeri</i> )	1.00
Purple three-awn ( <i>Aristida purpurea</i> )	2.00
Needle grama ( <i>Bouteloua aristidoides</i> )	4.00
Muttongrass ( <i>Poa fedleri</i> )	1.00
Prairie junegrass ( <i>Koeleria macrantha</i> )	0.50
Gooseberry-leaf globemallow ( <i>Sphaeralcea grossulariaefolia</i> )	0.50
Arizona poppy ( <i>Kallstroemia grandiflora</i> )	1.00
Catclaw acacia ( <i>Acacia greggii</i> )	2.00
Fourwing saltbush ( <i>Atriplex canescens</i> )	2.00
Total	17.00

Estimated seed price/acre - \$ 579.00



# FAX

1897 West 2100 North  
Lehi, UT 84043

Phone: (801) 768-4422  
Fax: (801) 768-3967

Mix 4	
Species	Planting Rate (pls #/s/acre)
Purple three-awn ( <i>Aristida purpurea</i> )	2.00
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	0.40
Sideoats grama ( <i>Bouteloua curtipendula</i> )	4.00
Rothrock's grama ( <i>Bouteloua rothrockii</i> )	1.00
Needle grama ( <i>Bouteloua aristoides</i> )	4.00
Desert senna ( <i>Senna covesii</i> )	0.50
Desert marigold ( <i>Baileya multiradiata</i> )	1.00
Desert globemallow ( <i>Sphaeralcea ambigua</i> )	0.50
Mexican gold poppy ( <i>Eschscholzia mexicana</i> )	2.50
White-thorn acacia ( <i>Acacia constricta</i> )	1.00
Foothills palo verde ( <i>Parkinsonia microphylla</i> )	2.00
<b>Total</b>	<b>18.90</b>

Estimated seed price/acre - \$ 446.00

Other seed species that are native and are typically in good supply for potential use would include the following:

- Sweet acacia (*Acacia smallii*)
- Brittlebush (*Encelia farinosa*)
- Triangle-leaf bursage (*Ambrosia deltoidea*)
- Velvet mesquite (*Prosopis juliflora velutina*)
- Creosote bush (*Larrea tridentata*)
- Chia sage (*Salvia columbariae*)
- Gordon bladderpod (*Lesquerella gordonii*)

If you have questions, please let me know.

Bill Agnew

**APPENDIX E**  
**SOLUTIONS MANAGEMENT**

**SOLUTION EVAPORATION IN LEACH PAD**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE SOLUTION EVAPORATION</b>		
<b>ASSUMPTIONS</b>		
1 Spent ore	50,000,000	tons
2 Active spent ore	2,195,000	tons
3 Area of lined spent ore	4,500,000	square feet
4 Rainfall (annual)	22.27	inches
5 Labor and supplies	\$ 1,107	\$/day
6 Evaporation rate	5%	effective
7 Power costs	\$ 0.05	\$/kWh
8 Pond volume	3,000,000	gallons
<b>GALLONS OF SOLUTION TO EVAPORATE</b>		
2,195,000 tons x 2000 lbs/ton x 1 cu ft/125 lbs x 0.3 porosity x 0.1 gravitational water to drawdown	7.9	million gallons
Rainfall factor (1 million sq. ft x 1.86 ft)/7.48 gal/ft cu	4.0	million gallons
Amount remaining in pond	1.9	million gallons
<b>Total Gallons of Solution to Evaporate</b>	<b>13.8</b>	<b>million gallons</b>
<b>MONTHLY EVAPORATION<sup>1</sup></b>		
Month 1 (2,560 gal/min x 1440 min/day x30.5 days x 0.05)	5.6	million gallons
Month 2 (2,700 gal/min x 1440 min/day x30.5 days x 0.05)	5.9	million gallons
Month 3 (3,500 gal/min x 1440 min/day x30.5 days x 0.05)	7.7	million gallons
Month 4 (4,100 gal/min x 1440 min/day x30.5 days x 0.05)	9.0	million gallons
Month 5 (5,000 gal/min x 1440 min/day x30.5 days x 0.05)	11.0	million gallons
Month 6 (5,300 gal/min x 1440 min/day x30.5 days x 0.05)	11.6	million gallons
Month 7 (5,300 gal/min x 1440 min/day x30.5 days x 0.05)	11.6	million gallons
Month 8 (5,000 gal/min x 1440 min/day x30.5 days x 0.05)	11.0	million gallons
Month 9 (4,200 gal/min x 1440 min/day x30.5 days x 0.05)	9.2	million gallons
Month 10 (3,700 gal/min x 1440 min/day x30.5 days x 0.05)	8.1	million gallons
Month 11 (2,900 gal/min x 1440 min/day x30.5 days x 0.05)	6.4	million gallons
Month 12 (2,500 gal/min x 1440 min/day x30.5 days x 0.05)	5.5	million gallons
<b>Total Gallons Evaporated by Month</b>	<b>102.7</b>	<b>million gallons</b>
<b>POWER COSTS</b>		
Month 1 (12,000 gal/min x 100 ft head x 0.746 Hp/kWh x 0.06 \$/kwh x 24 hr/day x 30.5 day/mon)/(3960 x 0.75 pump eff. X 0.9 motor eff.)	14,709.01	
Month 2 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 3 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 4 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 5 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 6 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 7 (12,000 gal/min x 1440 min/day x30.5 days x 0.05)	14,709.01	
Month 8 (9,000 gal/min x 1440 min/day x30.5 days x 0.05)	11,031.76	
Month 9 (6,000 gal/min x 1440 min/day x30.5 days x 0.05)	7,354.51	
Month 10 (3,000 gal/min x 1440 min/day x30.5 days x 0.05)	3,677.25	
Month 11 (1,500 gal/min x 1440 min/day x30.5 days x 0.05)	1,838.63	
Month 12 (1,500 gal/min x 1440 min/day x30.5 days x 0.05)	1,838.63	
<b>Total Cost of Gallons Evaporated per Month</b>	<b>\$ 128,703.85</b>	
<b>Total Cost for Pumping</b>	<b>\$ 128,703.85</b>	
Labor: 365 days x 24 hrs/day x \$22/hr for technician <sup>1</sup>	192,720.00	
<b>TOTAL</b>	<b>\$ 321,423.85</b>	

1. Evaporation rates from pond sizing calculations - wetted surface area and PLS pond evaporation only.

2. Technician rate from AZ20030012 12/22/2006 AZ12 for Heavy Construction in Arizona.

**APPENDIX F**  
**MISCELLANEOUS DEMOLITION, CLEANUP, AND**  
**DISPOSAL COSTS**

**GENERAL DEMOLITION CREW AND EQUIPMENT FLEET  
UNIT COSTS**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE GENERAL DEMOLITION CREW MANPOWER</b>		
<b>CATEGORY</b>	<b>QUANTITY</b>	<b>\$/HOUR</b>
Foreman	1	75.00
General Laborer	4	74.64
Truck Driver	3	71.82
Backhoe/Excavator Operator	1	19.34
Mechanic	1	31.74
Loader Operator	1	32.77
Crane Operator	1	31.74
Ironworker	4	151.20
Welder	4	151.20
<b>TOTAL FOR DEMOLITION CREW MANPOWER</b>	<b>20</b>	<b>\$ 639.45</b>

<b>Augusta Resource Rosemont - LIFE OF MINE GENERAL DEMOLITION EQUIPMENT</b>		
<b>CATEGORY</b>	<b>QUANTITY</b>	<b>\$/HOUR</b>
4X4 3/4 Ton Pickup Truck	2	23.85
1 Ton Mechanics Truck	1	56.58
Crew Passenger Bus	1	14.97
Tool Cargo Trailer	2	44.03
771D Haul Truck	3	408.55
988F Loader (with forks)	1	234.00
235D Excavator (with shear and rammex)	1	252.57
150 Ton Crane	1	72.73
28 Ton Rough Terrain Crane	1	59.80
14 Ton Boom Truck	1	68.45
60 Foot Reach Man Lift	1	23.73
1 Ton Welding/Cutting Torch Rigs	4	323.56
20 kW Mobile Generator	1	20.46
<b>TOTAL FOR CLEANUP EQUIPMENT FLEET</b>	<b>20</b>	<b>\$ 1,603.27</b>

**DEMOLITION OF BUILDINGS, STRUCTURES, AND EQUIPMENT**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE DEMOLITION ESTIMATES<sup>1</sup></b>			
<b>CATEGORY</b>	<b>HOURS</b>	<b>CREW COST (\$)</b>	<b>EQUIPMENT COST (\$)</b>
<b>PLANT SITE</b>			
Brandenburg Bid for all Plant site thickeners, pipes, etc.		125,220.00	
Brandenburg Bid for all buildings, concrete, etc.		4,605,113.00	
<b>SUBTOTAL EDER CRUSHER AND CONVEYOR AREA</b>	<b>0</b>	<b>\$ 4,730,333.00</b>	<b>\$ -</b>
<b>WATER SUPPLY AND FIRE SYSTEM</b>			
Demolish buildings - 20'X20'X10' pre-engineered metal fire water pump house	40	25,578.00	64,130.65
Demolish process piping and related - 3000 feet of various diameter carbon steel pipe and connectors; 1650 feet of 2" HDPE pipe and connectors; 3500 feet of 3" HDPE pipe and connectors; 7800 feet of 10" HDPE pipe and connectors; 9200 feet of 12" HDPE pipe and connectors; 5200 feet of 8" HDPE pipe and connectors; approximately 30 control valves; 2 fire hydrants	80	51,156.00	128,261.30
Demolish mechanical equipment - 15 pumps and motors; 15 pressure tanks; diesel fire protection pump; fire water jockey pump; assorted controls and wiring; pipeline crossing	15	9,591.75	24,048.99
Demolish concrete foundations - approximately 450 cubic yards of foundations	20	12,789.00	32,065.33
<b>SUBTOTAL WATER SUPPLY AND FIRE SYSTEM</b>	<b>155</b>	<b>\$ 99,114.75</b>	<b>\$ 248,506.27</b>
<b>TOTAL COST FOR DEMOLITION OF BUILDINGS, STRUCTURES AND EQUIPMENT</b>	<b>155</b>	<b>\$ 4,829,447.75</b>	<b>\$ 248,506.27</b>

1. Demolition estimate for plant site facilities included in Brandenburg bid.

**GENERAL CLEANUP CREW AND EQUIPMENT FLEET  
UNIT COSTS**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE GENERAL CLEANUP CREW MANPOWER</b>		
<b>CATEGORY</b>	<b>QUANTITY</b>	<b>\$/HOUR</b>
General Laborer	2	37.32
Truck Driver	1	23.94
Backhoe/Excavator Operator	1	19.34
Excavator	1	31.77
Welder	1	37.80
<b>TOTAL FOR DEMOLITION CREW MANPOWER</b>	<b>6</b>	<b>\$ 150.17</b>

<b>Augusta Resource Rosemont COMPANY - LIFE OF MINE GENERAL CLEANUP EQUIPMENT</b>		
<b>CATEGORY</b>	<b>QUANTITY</b>	<b>\$/HOUR</b>
4X4 1/2 Ton Pickup Truck	1	12.37
24 CY Rear Dump Truck	1	61.56
Backhoe (710D or Equivalent)	1	83.27
235D Excavator (with shear and rammex)	1	252.57
1 Ton Welding/Cutting Torch Rigs	1	80.89
<b>TOTAL FOR CLEANUP EQUIPMENT FLEET</b>	<b>5</b>	<b>\$ 490.66</b>

1. A 24 CY dump truck used to transport materials offsite is run at \$75 per hour plus a 14% surcharge and the dump fee. The estimate on cleanup for disposal was assumed to be 3 hours - loading, unloading and dumping plus the 14% surcharge. Dump

## GENERAL CLEANUP OF DEMOLITION AREAS

Augusta Resource Rosemont PROJECT - LIFE OF MINE GENERAL CLEANUP CREW ESTIMATES				
CATEGORY	HOURS	CREW COST (\$)	EQUIPMENT COST (\$)	SUPPLIES (\$)
<b>PWTS POND AREA</b>				
General cleanup following demolition	8	\$ 1,201.36	\$ 3,925.31	
Fold pond embankment liners and haul sludge to leach pad	24	3,604.08	11,775.92	256.50
<b>SUBTOTAL PWTS POND AREA</b>	<b>32</b>	<b>\$ 4,805.44</b>	<b>\$ 15,701.22</b>	<b>\$ 256.50</b>
<b>PLS POND AREA</b>				
General cleanup following demolition	20	\$ 3,003.40	\$ 9,813.26	
Fold pond embankment liners and haul sludge to leach pad	40	6,006.80	19,626.53	256.50
<b>SUBTOTAL PLS POND AREA</b>	<b>60</b>	<b>\$ 9,010.20</b>	<b>\$ 29,439.79</b>	<b>\$ 256.50</b>
<b>RAFFINATE POND AREA</b>				
General cleanup following demolition	8	\$ 1,201.36	\$ 3,925.31	
Fold pond embankment liners and haul sludge to leach pad	20	3,003.40	9,813.26	769.50
<b>SUBTOTAL RAFFINATE POND AREA</b>	<b>28</b>	<b>\$ 4,204.76</b>	<b>\$ 13,738.57</b>	<b>\$ 769.50</b>
<b>STORMWATER POND AREA</b>				
General cleanup following demolition	4	\$ 600.68	\$ 1,962.65	
Fold pond embankment liners and haul sludge to leach pad	12	1,802.04	5,887.96	256.50
<b>SUBTOTAL STORMWATER POND AREA</b>	<b>16</b>	<b>\$ 2,402.72</b>	<b>\$ 7,850.61</b>	<b>\$ 256.50</b>
<b>PLANT SITE</b>				
General cleanup following demolition	6	\$ 901.02	\$ 2,943.98	\$ 1,282.50
<b>SUBTOTAL EDER CRUSHER AND CONVEYOR AREA</b>	<b>6</b>	<b>\$ 901.02</b>	<b>\$ 2,943.98</b>	<b>\$ 1,282.50</b>
<b>ADMINISTRATION AREA</b>				
General cleanup following demolition	6	\$ 901.02	\$ 2,943.98	
<b>SUBTOTAL ADMINISTRATION AREA</b>	<b>6</b>	<b>\$ 901.02</b>	<b>\$ 2,943.98</b>	<b>\$ -</b>
<b>SOLVENT EXTRACTION AREA</b>				
General cleanup following demolition	8	\$ 1,201.36	\$ 3,925.31	\$ 513.00
<b>SUBTOTAL SOLVENT EXTRACTION AREA</b>	<b>8</b>	<b>\$ 1,201.36</b>	<b>\$ 3,925.31</b>	<b>\$ 513.00</b>
<b>ELECTROWINNING AREA</b>				
General cleanup following demolition	8	\$ 1,201.36	\$ 3,925.31	\$ 2,565.00
<b>SUBTOTAL ELECTROWINNING AREA</b>	<b>8</b>	<b>\$ 1,201.36</b>	<b>\$ 3,925.31</b>	<b>\$ 2,565.00</b>
<b>REAGENT AREA</b>				
General cleanup following demolition	8	\$ 1,201.36	\$ 3,925.31	\$ 769.50
<b>SUBTOTAL REAGENT AREA</b>	<b>8</b>	<b>\$ 1,201.36</b>	<b>\$ 3,925.31</b>	<b>\$ 769.50</b>
<b>LABORATORY</b>				
General cleanup following demolition	6	\$ 901.02	\$ 2,943.98	\$ 1,282.50
<b>SUBTOTAL LABORATORY</b>	<b>6</b>	<b>\$ 901.02</b>	<b>\$ 2,943.98</b>	<b>\$ 1,282.50</b>
<b>WATER SUPPLY AND FIRE SYSTEM</b>				
General cleanup following demolition	60	\$ 9,010.20	\$ 29,439.79	
Remove equipment (10 loads additional)	10	1,501.70	4,906.63	2,565.00
<b>SUBTOTAL WATER SUPPLY AND FIRE SYSTEM</b>	<b>70</b>	<b>\$ 10,511.90</b>	<b>\$ 34,346.42</b>	<b>\$ 2,565.00</b>
<b>TOTAL COST FOR CLEANUP OF BUILDINGS, STRUCTURES, AND EQUIPMENTS</b>	<b>128</b>	<b>\$ 37,242.16</b>	<b>\$ 121,684.47</b>	<b>\$ 10,516.50</b>

**TANK DEMOLITION**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE COSTS FOR TANK DEMOLITION</b>							
<b>LOCATION</b>	<b>NAME</b>	<b>SIZE (gal)</b>	<b>CREW HOURS</b>	<b>LOADS</b>	<b>LABOR (\$)</b>	<b>EQUIPMENT (\$)</b>	<b>SUPPLIES (\$)</b>
Water Supply	Lift Station (start) - Tank	10,000	2	2	1,278.90	3,206.53	504.00
Water Supply	Lift Station (start) - Forebay	300,000	40	8	25,578.00	64,130.65	1,890.00
Water Supply	Lift Station (3310) - Tank	10,000	2	2	1,278.90	3,206.53	504.00
Water Supply	Lift Station (3310) - Forebay	300,000	40	8	25,578.00	64,130.65	2,016.00
Water Supply	Lift Station (3885) - Tank	10,000	2	2	1,278.90	3,206.53	504.00
Water Supply	Lift Station (3885) - Forebay	300,000	40	8	25,578.00	64,130.65	2,016.00
Water Supply	Lift Station (4460) - Tank	10,000	2	2	1,278.90	3,206.53	504.00
Water Supply	Lift Station (4460) - Forebay	300,000	40	8	25,578.00	64,130.65	2,016.00
Water Supply	Lift Station (5035) - Tank	10,000	2	2	1,278.90	3,206.53	504.00
Water Supply	Lift Station (5035) - Forebay	300,000	40	8	25,578.00	64,130.65	2,016.00
Brandenburg Bid for All Plant Site Facilities					159,500.00		
<b>TOTAL COST FOR DEMOLITION OF TANKS</b>			<b>210</b>		<b>\$ 293,784.50</b>	<b>\$ 336,685.91</b>	<b>\$ 12,474.00</b>

**CULVERT, GUARDRAIL, AND POWERLINE REMOVAL**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE CLEANUP OF CULVERTS, GUARDRAIL, AND POWERLINE</b>					
<b>RECLAMATION TASK</b>	<b>CREW HOURS</b>	<b>LOADS</b>	<b>LABOR (\$)</b>	<b>EQUIPMENT (\$)</b>	<b>SUPPLIES (\$)</b>
<b>CULVERT AND PIPELINE REMOVAL (45 LOADS)</b>	240	45	153,468.00	384,783.90	11,340.00
Approximately 17 miles of pipeline removal					
In-Plant culverts					
<b>POWER LINE AND POLE REMOVAL (30 LOADS)</b>	100	30	63,945.00	160,326.63	7,560.00
approximately 5 miles of powerline <sup>1</sup>					
40 power poles					
<b>TOTAL COST FOR DEMOLITION OF CULVERTS AND POWERLINES</b>	<b>340</b>		<b>\$ 217,413.00</b>	<b>\$ 545,110.53</b>	<b>\$ 18,900.00</b>

1. Assumes that much of the powerline will remain in place as part of agreements.

**MOBILIZATION AND DEMOBILIZATION OF EQUIPMENT**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE COSTS FOR MOBILIZATION AND DEMOBILIZATION OF EQUIPMENT</b>			
<b>Type of Equipment</b>	<b>Number of Units</b>	<b>Unit Cost (\$)</b>	<b>Total Cost (\$)</b>
<b>Updated 2005 Costing</b>			
4x4 1/2 ton Pickup Truck	1	NA	-
4x4 3/4 ton Pickup Truck	2	NA	-
1 Ton Mechanics Truck	1	NA	-
Tool Cargo Trailer	2	NA	-
Crew Passenger Bus	1	NA	-
24 CY Rear Dump Truck	1	NA	-
771 D Haul Truck <sup>1</sup>	3	465.00	1,395.00
777C Haul Truck <sup>1</sup>	8	1,880.00	15,040.00
Water Truck	1	255.00	255.00
988F Loader (with forks) <sup>1</sup>	2	1,880.00	3,760.00
992D Loader <sup>1</sup>	2	3,000.00	6,000.00
D10R/10U Dozer <sup>1</sup>	3	2,352.00	7,056.00
75D Challenger with Drill/Broadcast Seeder and Disc Harrower	1	1,320.00	1,320.00
14H Motor Grader	1	300.00	300.00
Padded Drum Compactor (CP-563C) <sup>1</sup>	1	375.00	375.00
Smooth Drum Compactor (CS-583-C) <sup>1</sup>	1	335.00	335.00
631 E Scraper	3	425.00	1,275.00
Backhoe (710D or equivalent)	1	195.00	195.00
235D Excavator (With shear and rammex)	2	350.00	700.00
14 Ton Boom Truck	1	300.00	300.00
150 Ton Crane	1	2,400.00	2,400.00
28 Ton Rough Terrain Crane	1	1,500.00	1,500.00
60 Foot Reach Man Lift	1	800.00	800.00
1 Ton Truck-mounted Welder/Cutting Torch	5	NA	-
20kW Mobile Generator	1	192.00	192.00
<b>TOTAL</b>	<b>47</b>		<b>\$ 43,198.00</b>

1. One way mob fees are based on Road Machinery quote

NA refers to small trucks, passenger trailers, etc. that can be driven to the site rather than delivered.

**MISCELLANEOUS RECLAMATION COSTS**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE ADDITIONAL MISCELLANEOUS RECLAMATION COSTS</b>	
<b>MONITORING AND PRODUCTION WELL ABANDONMENT:</b>	
ASSUMPTIONS	
1 3 Production Wells (assuming 1,000 feet deep)	
2 12 Monitoring Wells and Piezometers (assume 100 feet deep)	
3 14 days to complete	
Mobilization Fee	750.00
Labor, Per Diem and Rig Daily Costs: \$1,425/day	19,950.00
Production Wells: 3 @ 1,000 feet x \$6.70 /ft	20,100.00
Monitoring Wells and Piezometers: 12 @ 100 feet x \$1/ft	1,200.00
<b>Total Well Abandonment</b>	<b>\$ 42,000.00</b>
<b>POST-CLOSURE MONITORING</b>	
ASSUMPTIONS	
1 monitoring technician (\$65.00 per hour) for 2 weeks per month	
Analytical Cost = \$3,500 per month	
Monitoring: 3 yrs x 1040 hrs/yr x \$65.00	\$ 202,800.00
Analytical: \$3,500/month x 12 mo/yr x 3 yrs	144,000.00
<b>Total Cost for Post-Closure Monitoring</b>	<b>\$ 346,800.00</b>
<b>REMOVAL OF BULK CHEMICALS</b>	
COST TO REMOVE FROM PROPERTY (ASSUMING SOME RESIDUAL AMOUNT OF CHEMICALS)	
A Diesel - 2 truckloads	\$ 1,000.00
B Gasoline - 1 truckload	500.00
C Sulfuric Acid - 4 truckloads	2,000.00
D Diluent - 2 truckloads	1,000.00
<b>Total Cost to Remove Bulk Chemicals</b>	<b>\$ 4,500.00</b>
<b>TESTING OF FOUNDATION CONCRETE FOR HAZARDOUS CONSTITUENTS</b>	
Technician at \$65.00 per hour to test 20 sites (concrete foundation, sumps, and soils outside of sump area) at 3 hours per site	\$ 3,900.00
Additional costs for analytical tests	21,300.00
<b>Total Testing Cost</b>	<b>\$ 25,200.00</b>
<b>DISPOSAL OF WASH WATERS, CLEANING MATERIALS AND WASTES</b>	
Brandenburg Bid	205,520.00
<b>Total Testing Cost</b>	<b>\$ 205,520.00</b>
<b>PUMPING STATIONS</b>	
ASSUMPTION	
2 hrs for D10R/10U Dozer to regrade the surface area	
1 hr for the 75D Challenger to drill seed	
Mob/Demob cost to remote locations \$1500 per move	
<b>Mob/Demob for 5 locations both pieces of equipment and crews:</b>	<b>\$ 15,000.00</b>
<b>Dozer Cost for 5 Stations:</b>	
Equipment	\$ 2,277.54
Labor	306.60
	<b>\$ 2,584.14</b>
<b>Challenger Cost for 1 hour:</b>	
Equipment	\$ 972.39
Revegetation	\$ 538.00
Labor	153.30
	<b>\$ 1,663.69</b>
<b>Total Cost</b>	<b>\$ 19,247.83</b>

**MISCELLANEOUS RECLAMATION COSTS**

<b>Augusta Resource Rosemont PROJECT - LIFE OF MINE ADDITIONAL MISCELLANEOUS RECLAMATION COSTS</b>	
<b>MISCELLANEOUS DATA MANAGEMENT</b>	
Data management for reporting for monitoring and disposal 20 hours per month at \$150 per hour for 3 years	
<b>Total Cost</b>	\$ 108,000.00
<b>RECLAMATION SUPERVISION</b>	
ASSUMPTION	
12 months of reclamation x 160 hrs/mo x \$48/hr	
<b>Total Cost</b>	\$ 92,160.00
<b>TOTAL</b>	<b>\$ 843,427.83</b>

1) Technician rate from AZ20030012 12/22/2006 AZ12 for Heavy Construction in Arizona