

# Full Cost Security Calculation

Summit Pit - West Half Sec. 31 Twp. 26 Rge.3 W5M

## 1. Cost of Replacing Reclamation Materials

	Volume	Cost/m3	Total	Notes
Surveyed Topsoil Volume	0.0	\$ 2.50	\$ -	NA until 5 Year Report
Surveyed Subsoil Volume	0.0			NA until 5 Year Report
Surveyed Overburden Volume	0.0	\$ 2.50	\$ -	NA until 5 Year Report
Surveyed Reject Sand Volume	0.0	\$ 2.50	\$ -	NA until 5 Year Report
<b>TOTAL</b>			<b>\$ -</b>	

	Phase 1 Disturbed Area (m2)	Strata Depth (m)	Reject Factor	Volume (m3)	Cost/m3	Total	Notes
Estimated Topsoil Volume	76,026	0.25		19,006.5	\$ 2.50	\$ 47,516.25	Area (m2) includes Sub-Phase's A,B,C,and D
Estimated Subsoil Volume	76,026	0.20		15,205.2	\$ 2.50	\$ 38,013.00	Area (m2) includes Sub-Phase's A,B,C,and D
Estimated Overburden Volume	76,026	3.11		236,440.86	\$ 2.50	\$ 591,102.15	Area (m2) includes Sub-Phase's A,B,C,and D
Estimated Reject Sand Volume	0	0	15%	0	\$ 2.50	\$ -	To be surveyed and calculated at 5 Year Update Stage
	0	3.56		270,652.56	<b>Total</b>	<b>\$ 676,631.40</b>	

Total Stockpile Volume 270,652.6 m3  
 Cost to Replace Stockpile Volume per m3 \$ 2.50 m3  
**Total Cost \$ 676,631.40**

## 2. Cost to Remove Stockpile Area, Crash Banks, De-compact and Final Grading

	Equipment Type	Hours	Hourly Rate	Total Mobilization/ Demobilization	Total	Notes
Cost to Remove Stockpile Area and Stockpiles	John Deere 470 Excavator	20	\$ 261.00	\$ 4,000.00	\$ 9,220.00	2018 Road Builders
	CAT 740 Dump Truck	20	\$ 235.00	\$ 1,500.00	\$ 6,200.00	2018 Road Builders
	CAT 627G - Motor Scraper	20	\$ 401.00	\$ 3,500.00	\$ 11,520.00	2018 Road Builders
Cost to Crash Banks	CAT D8 Crawler Tractor	20	\$ 278.00	\$ 1,800.00	\$ 7,360.00	2018 Road Builders
Cost to De-Compact	CAT D8 Crawler Tractor	20	\$ 278.00	\$ -	\$ 5,560.00	See MOB/DEMOB Above 2016 Road Builders
Final Grading	CAT 140M Grader	20	\$ 192.00	\$ 1,500.00	\$ 5,340.00	2018 Road Builders
	<b>Total</b>	<b>120</b>			<b>\$ 45,200.00</b>	

## 3. Cost of Re-Seeding, Fertilizing, Maintaining Area

	Equipment Type	Hours	Hourly Rate (Equipment or Labour)	Seeding Rate (per acre)	Registered Area (acres)	Fertilizer Application Rate (per acre)	Pesticide Application Rate (per acre)	Fertilizer Cost (per acre)	Herbicide Cost (per acre)	Total
Seed Bed Preparation	Wheel Tractor (Group 2) with Harrow	12	\$ 85.00		18.78					\$ 1,020.00
Seeding Application	Air Seeder/Air Drill/Labour	12	\$ 40.00	\$ 35.00	18.78					\$ 1,794.60
Fertilization	Granular Fertilizer Application - Floater Truck/Labour	4	\$ 40.00		18.78			\$ 11.75		\$ 601.33
Maintenance (2 Years)	Granular Herbicide Application - Floater Truck/Labour		\$ 40.00		18.78				\$ 9.75	\$ 366.21
										<b>Total \$ 3,782.14</b>

Source : Custom Rates 2016 - Seeding (Alberta Agriculture Website)  
[www.agric.gov.ca](http://www.agric.gov.ca)

Cost per Acre \$ 201.39

## 4. Cost of Contingency/Administration and Removal of Pit Infrastructure (Scale, Scale House, Gates, Fuel Tanks)

Total Estimated Cost of Reclamation	\$ 725,613.54
Cost of Contingency	10%
<b>Total Cost of Contingency</b>	<b>\$ 72,561.35</b>

**5. Total Security To Be Provided \$ 798,174.89** via Letter of Credit

## Phase 1 Materials Calculations by Sub-Phase

	A	B	C	D	E	F	G	H	I	J	K	L
Basis of calculation	Calculated from models	Calculated from models	= A x 0.25	= A x 0.20	= B - (C+D)	=B/A	=E/A	Calculated from models	= H * 0.15	= H - I	= J x 2	=H/A
Sub-Phase (parts of phase 1)	3D Surface Area	TOTAL Stripping Volume (Overburden & Soils) (@0.25m)	TOPSOIL Stripping Volume (@0.25m)	SUBSOIL Stripping Volume (@0.20m)	REMAINING OVERBURDEN Stripping Volume (to top of gravel)	Average TOTAL Stripping thickness (incl. Soils)	Average NET Stripping thickness (excl. Soils)	Gross Mining Volume	Rejects (@15%)	Net Mining Volume	Net Mining Tonnes (@ 2t/m³)	Average Mining Thickness (to 1m above maximum groundwater)
A	12,864 m²	45,817 m³	3,216 m³	2,573 m³	40,028 m³	3.56 m	3.11 m	91,215 m³	13,682 m³	77,533 m³	155,066 t	7.09 m
B	17,705 m²	80,241 m³	4,426 m³	3,541 m³	72,274 m³	4.53 m	4.08 m	263,848 m³	39,577 m³	224,271 m³	448,542 t	14.90 m
C	12,970 m²	4,387 m³	3,242 m³	2,594 m³	0 m³	0.34 m	0.00 m	118,236 m³	17,735 m³	100,500 m³	201,001 t	9.12 m
D	32,487 m²	98,331 m³	8,122 m³	6,497 m³	83,711 m³	3.03 m	2.58 m	597,516 m³	89,627 m³	507,889 m³	1,015,777 t	18.39 m
E	30,366 m²	95,397 m³	7,592 m³	6,073 m³	81,732 m³	3.14 m	2.69 m	592,349 m³	88,852 m³	503,496 m³	1,006,993 t	19.51 m
F	22,032 m²	60,550 m³	5,508 m³	4,406 m³	50,636 m³	2.75 m	2.30 m	396,056 m³	59,408 m³	336,647 m³	673,294 t	17.98 m
<b>Total</b>	<b>128,424 m²</b>	<b>384,723 m³</b>	<b>32,106 m³</b>	<b>25,685 m³</b>	<b>328,382 m³</b>	<b>3.00 m</b>	<b>2.56 m</b>	<b>2,059,219 m³</b>	<b>308,883 m³</b>	<b>1,750,336 m³</b>	<b>3,500,673 t</b>	<b>16.03 m</b>