

SUMMARY OF COSTS

| CAPITAL COSTS | COMPONENT NAME | COST | LAND LIABILITY | WATER LIABILITY |
|---|-----------------------|---------------------|-----------------------|------------------------|
| OPEN PIT | | \$0 | \$0 | \$0 |
| UNDERGROUND MINE | | \$464,445 | \$0 | \$464,445 |
| TAILINGS FACILITY | | \$2,086,597 | \$0 | \$2,086,597 |
| ROCK PILE | | \$3,159,168 | \$0 | \$3,159,168 |
| BUILDINGS AND EQUIPMENT | | \$4,202,397 | \$0 | \$4,202,397 |
| CHEMICALS AND CONTAMINATED SOIL MANAGEMEN | | \$2,284,702 | \$0 | \$2,284,702 |
| SURFACE AND GROUNDWATER MANAGEMENT | | \$277,900 | - | \$277,900 |
| INTERIM CARE AND MAINTENANCE | | \$268,038 | - | \$268,038 |
| SUBTOTAL: Capital Costs | | \$12,743,247 | \$0 | \$12,743,247 |
| PERCENT OF SUBTOTAL | | | 0% | 100% |

| INDIRECT COSTS | | COST | LAND LIABILITY | WATER LIABILITY |
|--|-----|--------------------|-----------------------|------------------------|
| MOBILIZATION/DEMOBILIZATION | | \$4,829,258 | \$0 | \$4,829,258 |
| POST-CLOSURE MONITORING AND MAINTENANCE | | \$936,257 | \$0 | \$936,257 |
| ENGINEERING | 4% | \$509,730 | \$0 | \$509,730 |
| PROJECT MANAGEMENT | 5% | \$637,162 | \$0 | \$637,162 |
| HEALTH AND SAFETY PLANS/MONITORING & QA/QC | 0% | \$0 | \$0 | \$0 |
| BONDING/INSURANCE | 1% | \$127,432 | \$0 | \$127,432 |
| CONTINGENCY | 10% | \$1,274,325 | \$0 | \$1,274,325 |
| MARKET PRICE FACTOR ADJUSTMENT | 0% | \$0 | \$0 | \$0 |
| SUBTOTAL: Indirect Costs | | \$8,314,164 | \$0 | \$8,314,164 |

| | | | | |
|--------------------|--|---------------------|------------|---------------------|
| TOTAL COSTS | | \$21,057,411 | \$0 | \$21,057,411 |
|--------------------|--|---------------------|------------|---------------------|

| 1 Underground Mine Name | | UG Mine # 1 | | | | | | |
|--|-----------------------------|-------------|-------|------|-------------|-----------|------|------------|
| ACTIVITY/MATERIAL | Notes | Unit | Qty | Code | Unit Cost | Cost Land | Cost | Water Cost |
| CONTROL ACCESS | | | | | | | | |
| Fence | | m | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Signs | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Block roads | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Berm | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Concrete wall in portal | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Backfill portal #1 | Plug portal with waste rock | m3 | 940 | DSS | \$3.50 | \$3,290 | \$0 | \$3,290 |
| Backfill portal #2 | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Cap raise - 5 total | | m3 | 5 | RRSS | \$85,656.00 | \$428,280 | \$0 | \$428,280 |
| Cap raise #2 | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Cap shaft #1 | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Cap shaft #2 | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Backfill adits | Covered in portal backfill | m3 | 0 | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Backfill open stope | | m3 | 2,250 | DSS | \$3.50 | \$7,875 | \$0 | \$7,875 |
| Concrete cap over open stope | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Crown Pillar Study | | each | 1 | #N/A | \$25,000.00 | \$25,000 | \$0 | \$25,000 |
| REMOVE HAZARDOUS MATERIALS | | | | | | | | |
| Remove hazardous materials, U/G labor | | manhrs | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Remove/decontam. stationary & elect. equip | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Remove/decontam. mobile equipment | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Remove misc. haz. mat & explosives | | kg | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| INSTALL BULKHEADS | | | | | | | | |
| Bulkheads to control water flow | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Grout bulkhead | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| FLOOD MINE | | | | | | | | |
| Supply/install pump | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Supply/install piping system | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Operate pumps to flood workings | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| INSTALL GROUNDWATER COLLECTION SYSTEM | | | | | | | | |
| Excavate/install sumps | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install pumping wells | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install pumps/pipelines/power supply | | LS | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| SPECIALIZED ITEMS | | | | | | | | |
| Install water quality monitoring pipes | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install permanent pumping system | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Total | | | | | | \$464,445 | \$0 | \$464,445 |
| % of Total | | | | | | | 0% | 100% |

1 Tailings Impoundment Name:

Pond # 1

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | % Cost | Land Cost | Water Cost |
|--|--|-------|------------|------------------------|--------------|-------------|-----------|-------------|
| CONTROL ACCESS | | | | | | | | |
| Fence | | m | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Signs | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Berm | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Block roads | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| STABILIZE EMBANKMENT(S) | | | | | | | | |
| Toe buttress, drainage layer | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Toe buttress, bulk fill | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Rip rap | Dam M has been repaired at lower unit cost: | m3 | 15000 | RR1S | \$15.20 | \$228,000 | \$0 | \$228,000 |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Raise crest | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Flatten slopes | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| COVER TAILINGS | | | | | | | | |
| Grade/shape tailings surface | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Liner bedding | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Subgrade preparation - compact | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Supply geotextile/geosynthetic | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install geotextile/geosynthetic | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Soil cover | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Soil cover | | m3 | 209828 | SC4S | \$7.02 | \$1,472,993 | \$0 | \$1,472,993 |
| Vegetate | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Excavate and dispose of tailings from Cell 4 | | allow | 1 | #N/A | \$100,000.00 | \$100,000 | \$0 | \$100,000 |
| BURY PAG ROCK | | | | | | | | |
| Relocate PAG rock | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Place cover over PAG rock | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Raise crest of dam | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| STABILIZE DECANT SYSTEM | | | | | | | | |
| Excavate and replace | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Plug/backfill with concrete or clay | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| REMOVE TAILINGS DISCHARGE | | | | | | | | |
| Cyclones | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Pipe | | m3 | 8500 | PLRS | \$18.39 | \$156,315 | \$0 | \$156,315 |
| Remove reclaim barge | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| CONSTRUCT DIVERSION DITCHES | | | | | | | | |
| Excavate ditches -soil | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Excavate ditches -rock | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Rip rap in channel base | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| FLOOD TAILINGS | | | | | | | | |
| Doze tailings to final contour | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Raise crest of dam | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| UPGRADE SPILLWAY | | | | | | | | |
| Excavate channel, rock | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Excavate channel, soil | Spillway on Dam 1A and Dam J | m3 | 12350 | SB1L | \$4.30 | \$53,105 | \$0 | \$53,105 |
| Concrete | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Rip rap | Remove existing rip rap from dam slopes and use to cover the spillway invert and channel slopes to 2 m flow depth. | m3 | 936 | RR3L | \$7.00 | \$6,552 | \$0 | \$6,552 |
| Geotextile | Place under spillway rip rap. | m2 | 2800 | GSTL | \$3.44 | \$9,632 | \$0 | \$9,632 |
| CONSTRUCT SEEPAGE COLLECTION POND | | | | | | | | |
| Excavate seepage collection pond | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Doze & spread excavated material | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Vegetate spread material | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Bedding layer | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Supply geomembrane | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install geomembrane | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Erosion protection layer | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| INSTALL GROUNDWATER COLLECTION SYSTEM | | | | | | | | |
| Excavate/install sumps | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install pumping wells | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install pumps/pipelines/power supply | | LS | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| SPECIALIZED ITEMS | | | | | | | | |
| Install permanent instrumentation, supply & technician | | each | 1 | #N/A | \$30,000.00 | \$30,000 | \$0 | \$30,000 |
| Install permanent instrumentation, drilling | | each | 1 | #N/A | \$30,000.00 | \$30,000 | | \$30,000 |
| TREAT SEEPAGE - see "Water Management" and "Water Treatment" | | | | | | | | |
| TREAT SUPERNATANT | | | | | | | | |
| Pump water (to pit, U/G) | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Equipment maintenance and parts | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Supply reagents | | tonne | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| | Allowed for on "Water Management" sheet because it will be a one-time treatment just prior to closure. | | | Annual treatment costs | | \$0 | | |
| Number of years of treatment | | years | | Total treatment costs | | \$0 | | \$0 |
| | | | | Total | | \$2,086,597 | | \$2,086,597 |
| | | | % of Total | | | | 0% | 100% |

* for construction of passive treatment system refer to "Water Management"

1

Rock Pile Name:

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | % Cost Land | Land Cost | Water Cost |
|---|-------|--------|----------|-----------|-----------|-------------|-----------|-------------|
| STABILIZE SLOPES | | | | | | | | |
| Flatten slopes with dozer | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Flatten "bubble dump" areas | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Divert runoff, ditch mat'l A | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Divert runoff, ditch mat'l B | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Toe buttress, drain mat'l | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Toe buttress, fill mat'l A | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Toe buttress, fill mat'l B | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| COVER ROCK PILE | | | | | | | | |
| Subgrade preparation - doze surface | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Soil cover - excavate, haul, spread & compact | | m3 | 364,800 | SC4S | \$7.02 | \$2,560,896 | \$0 | \$2,560,896 |
| Rock cover - excavate, haul & spread | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Excavate downslope drainage channel & chute | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Rip rap drainage channel and chute | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| VERY LOW PERMEABILITY COVER (in addition to above) | | | | | | | | |
| Liner subgrade preparation - compact | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Supply geomembrane | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install geomembrane | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Protective cover - excavate, haul, spread & compact | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install infiltration/seepage instrumentation | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| CONSTRUCT DIVERSION DITCHES | | | | | | | | |
| Excavate ditches -soil | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Excavate ditches -rock | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Rip rap in channel base | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| CONSTRUCT SEEPAGE COLLECTION POND | | | | | | | | |
| Excavate seepage collection pond | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Doze & spread excavated material | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Vegetate spread material | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Bedding layer | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Supply geomembrane | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install geomembrane | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Erosion protection layer | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| INSTALL GROUNDWATER COLLECTION SYSTEM | | | | | | | | |
| Excavate/install sumps | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install pumping wells | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install pumps/pipelines/power supply | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| RELOCATE DUMPS | | | | | | | | |
| Load, haul, dump or doze | | m3 | 45,600 | RR4S | \$4.72 | \$215,232 | \$0 | \$215,232 |
| Add lime | | tonne | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Contour area of rock left in place | | m2 | 364,800 | DRL | \$1.05 | \$383,040 | \$0 | \$383,040 |
| Environmental Site Assessment | | allow | 0 | #N/A | \$200,000 | \$0 | \$0 | \$0 |
| SPECIALIZED ITEMS | | | | | | | | |
| Install permanent instrumentation | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install permanent instrumentation, drilling | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| TREAT ROCK PILE SEEPAGE - see "Water Management" | | | | | | | | |
| HEAP LEACH SEEPAGE TREATMENT - Cyanide Detox | | | | | | | | |
| Cyanide destruction water treatment pumping | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Reagents | | tonnes | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Electrician/mechanic to maintain treatment plant | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Equipment maintenance and parts | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Annual treatment costs | | | | | | \$0 | | |
| Number of years of treatment | | years | | | | | | |
| Total treatment costs | | | | | | \$0 | | \$0 |
| HEAP LEACH SEEPAGE TREATMENT - ARD/ML** | | | | | | | | |
| Upgrade/modify pumping system - report to WTP | | allow | | #N/A | \$0.00 | \$0 | | \$0 |
| Total | | | | | | \$3,159,168 | \$0 | \$3,159,168 |
| % of Total | | | | | | | 0% | 100% |

* For construction of passive treatment system refer to "Water Management". ARD/ML seepage treatment becomes post-closure water treatment cost

**Heap leach ARD/ML seepage treatment becomes post-closure water treatment cost

0 Chemicals/Soil Area Name:

Note: The procedures, equipment and packaging for clean up and removal of chemicals or contaminated soils are highly dependent on the nature of the chemicals and their existing state of containment. Government guidelines should be consulted on an individual chemical basis. Any estimate made here should be considered very rough unless specific evaluations have been conducted.

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | % Cost Land | Land Cost | Water Cost |
|--|---|---------|----------|-----------|--------------|-------------|-------------|-------------|
| HAZARDOUS MATERIALS AUDIT | | | | | | | | |
| Hazardous materials audit | | allow | 0 | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| BUILDING DECONTAMINATION & CONSOLIDATION OF HAZARDOUS MATERIALS | | | | | | | | |
| Environmental technician/coordinator | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Decontaminate: oil, fuel and glycol systems | | m2 | 8,490 | #N/A | \$22.80 | \$193,572 | \$0 | \$193,572 |
| Decontaminate maintenance shop | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Decontaminate power plant | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Decontaminate bulk fuel storage | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Decontaminate ANFO plant | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Decontaminate offices/warehouse/accom | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Removal of asbestos containing vinyl sheet flooring | | m2 | 941 | #N/A | \$140.00 | \$131,740 | \$0 | \$131,740 |
| Removal of asbestos containing vinyl floor tiles | | m2 | 218 | #N/A | \$54.00 | \$11,772 | \$0 | \$11,772 |
| Removal of asbestos containing mastic and caulking | | m | 1,943 | #N/A | \$26.00 | \$50,518 | \$0 | \$50,518 |
| HAZARDOUS MATERIALS REMOVAL | | | | | | | | |
| Waste oils | Assumed | litre | 1,000 | ORH | \$1.20 | \$1,200 | \$0 | \$1,200 |
| Waste fuel | | litre | 100,000 | ORL | \$0.43 | \$43,000 | \$0 | \$43,000 |
| Waste batteries | | kg | 500 | #N/A | \$25.00 | \$12,500 | \$0 | \$12,500 |
| Assay & environmental lab reagents | | kg | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Machine shop paints, solvents etc. | | liter | 5,000 | ORH | \$1.20 | \$6,000 | \$0 | \$6,000 |
| Glycol | | liter | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Process reagents | | kg | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Nuclear sources | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other hazardous materials | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| HAZARDOUS MATERIALS | | | | | | | | |
| Transportation to disposal facility | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Disposal fees | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| CONTAMINATED SOILS | | | | | | | | |
| Contam. soil investigation - Phase 1 | | each | 0 | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Contam. soil investigation - Phase 2 | Additional investigation of ARD drainage | each | 0 | CS1L | \$7,500.00 | \$0 | \$0 | \$0 |
| CONTAMINATED SOIL REMOVAL | | | | | | | | |
| Excavate and transport to onsite facility | | m3 | 0 | SC3S | \$7.21 | \$0 | \$0 | \$0 |
| Construct 4 additional landfarm cells | | LS | 1 | #N/A | \$180,000.00 | \$180,000 | \$0 | \$180,000 |
| Excavate treated soils and move to on-site landfill | | m3 | 0 | SC3S | \$7.21 | \$0 | \$0 | \$0 |
| Manage hydrocarbon remediation at facility | Type-1 heavy fuel and oil | m3 | 35,200 | CSRL | \$47.00 | \$1,654,400 | \$0 | \$1,654,400 |
| Type-2 | Arsenic "hotspots" will be covered in place | | 2,000 | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Type-3 | CN- and PbNO3 will be covered in place | | 800 | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Reagents/stabilizing agent | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Excavate and transport to offsite facility | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Contour decontaminated area | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| CONTAMINATED SOIL VERY LOW PERMEABILITY COVER | | | | | | | | |
| Supply geomembrane, HDPE, ES3, GCL | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Upper and lower bedding layers | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install geomembrane, HDPE, ES3, GCL | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Erosion protection layer | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Vegetate | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Install infiltration/seepage instrumentation | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| OTHER | | | | | | | | |
| | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Total | | | | | \$2,284,702 | \$0 | \$2,284,702 | |
| % of Total | | | | | | 0% | 100% | |

| Waste and Hazardous Waste Removed from Site | | | |
|---|--------|-----------------|---------|
| Year | Waste | Hazardous waste | Total |
| 2015 | 40,000 | 90,000 | 130,000 |
| May-16 | 1,100 | | 1,100 |
| Jun-16 | 2,000 | 90,000 | 92,000 |
| Jul-16 | 1,500 | 51,500 | 53,000 |
| Aug-16 | 3,500 | 27,000 | 30,500 |
| Oct-17 | - | 33,761 | 33,761 |
| Total | 48,100 | 292,261 | 340,361 |

| Building / Equip Name: | | | Bldg / Equip #: 1 | | | | | | |
|---|--|---------|-------------------|-----------|--------------|-------------|-----------|-------------|--|
| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | % Cost Land | Land Cost | Water Cost | |
| DISPOSE MOBILE EQUIPMENT | | | | | | | | | |
| Decontaminate and ship off-site | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Decontaminate and dispose on-site | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| REMOVE BUILDINGS - see note below | | | | | | | | | |
| Accomodation Complex | | m2 | 7,329 | BRS1L | \$45.00 | \$329,805 | \$0 | \$329,805 | |
| Hoist Room and Travel Ways | | m2 | 463 | BRCS | \$128.00 | \$59,264 | \$0 | \$59,264 | |
| Shaft House | | m2 | 1253 | BRCS | \$128.00 | \$160,384 | \$0 | \$160,384 | |
| Warehouse | | m2 | 4671 | BRCS | \$128.00 | \$597,888 | \$0 | \$597,888 | |
| Mill | | m2 | 2864 | BRCS | \$128.00 | \$366,592 | \$0 | \$366,592 | |
| Powerhouse | | m2 | 1645 | BRCS | \$128.00 | \$210,560 | \$0 | \$210,560 | |
| Headframe | | m2 | 413 | BRCS | \$128.00 | \$52,864 | \$0 | \$52,864 | |
| Airlock Building and Freshair Intake | | m2 | 366 | BRCS | \$128.00 | \$46,848 | \$0 | \$46,848 | |
| Pastefill Plant | Pastefill plant has already been removed. | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Cold Storage 2 buildings | | m2 | 1855 | BRS1L | \$45.00 | \$83,475 | \$0 | \$83,475 | |
| Surface Mobile Shop | | m2 | 1008 | BRCS | \$128.00 | \$129,024 | \$0 | \$129,024 | |
| Carpenter Shop | | m2 | 482 | BRS1L | \$45.00 | \$21,690 | \$0 | \$21,690 | |
| As Treatment Plant Building | | m2 | 177 | BRCS | \$128.00 | \$22,656 | \$0 | \$22,656 | |
| Pumphouse | | m2 | 74 | BRCS | \$128.00 | \$9,472 | \$0 | \$9,472 | |
| Explosives Storage | | m2 | 412 | BRCS | \$128.00 | \$52,736 | \$0 | \$52,736 | |
| Fire house | | m2 | 31 | BRCS | \$128.00 | \$3,968 | \$0 | \$3,968 | |
| Emergency Power House | | m2 | 117 | BRCS | \$128.00 | \$14,976 | \$0 | \$14,976 | |
| Weather Station and Storage Buildings | | m2 | 566 | BRS1L | \$45.00 | \$25,470 | \$0 | \$25,470 | |
| Shop | | m2 | 379 | BRCS | \$128.00 | \$48,512 | \$0 | \$48,512 | |
| Batch Plant | | m2 | 118 | BRCS | \$128.00 | \$15,104 | \$0 | \$15,104 | |
| ATV Building | | m2 | 172 | BRS1L | \$45.00 | \$7,740 | \$0 | \$7,740 | |
| Storage Facility at Laydown/Airstrip | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Fuel tanks | Tanks | m2 | 8,490 | BRS1S | \$91.57 | \$777,429 | \$0 | \$777,429 | |
| Fuel Tanks | Piping removal and disposal | m2 | 2,000 | PLRS | \$18.39 | \$36,780 | \$0 | \$36,780 | |
| Freshwater intake | | m2 | 225 | BRCS | \$128.00 | \$28,800 | \$0 | \$28,800 | |
| Reclaim pumps | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Outfall & Diffuser | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Airstrip lighting, navigation, electrician | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Airstrip lighting, navigation, mechanical | | mandays | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Break foundation slabs | Use hoe ram to puncture slabs (25,000 m2 @ 100 m2/hr.) Leave in place and cover. | hrs | 25 | exc-s | \$190.00 | \$4,750 | \$0 | \$4,750 | |
| Consolidate & dump boneyard debris | | m3 | 1 | #N/A | \$350,000.00 | \$350,000 | \$0 | \$350,000 | |
| Other | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| LANDFILL FOR DEMOLITION WASTE | | | | | | | | | |
| Place rock cover | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Place soil cover | | m3 | 0 | SB4L | \$5.50 | \$0 | \$0 | \$0 | |
| Operation of landfill | | LS | 1 | #N/A | \$450,000.00 | \$450,000 | \$0 | \$450,000 | |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| GRADE AND CONTOUR PADS | | | | | | | | | |
| Grade/Contour Entire Mine Site Area | Covered under "Rock Pile" tab | m2 | 0 | DRL | \$1.05 | \$0 | \$0 | \$0 | |
| Place 0.3 m granular fill over slabs | | m3 | 7,500 | SB4L | \$5.50 | \$41,250 | \$0 | \$41,250 | |
| Accomodation Complex | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Process Facilities | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Offices, Repair, Lab, Warehouse | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Storage Facilites | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Water and Wastewater Treatment Facilities | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| U/G Heating Plant | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Emulsion Plant | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Warehouse, Shops and Other | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Place rock cover | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Other | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| PUNCTURE LINED SUMPS | | | | | | | | | |
| Puncture liner and place soil cover | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| RECLAIM ROADS | | | | | | | | | |
| Remove culverts | | each | 22 | #N/A | \$500.00 | \$11,000 | \$0 | \$11,000 | |
| Remove bridges | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Scarify and install water breaks | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Scarify airstrip | Airstrip will stay in place | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Scarify laydown areas | Scarify roads and grade | ha | 12 | SCFYH | \$6,030.00 | \$72,360 | \$0 | \$72,360 | |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Other | Grade and counter esker borrow area | m3 | 180,000 | DSL | \$0.95 | \$171,000 | \$0 | \$171,000 | |
| SPECIALIZED ITEMS | | | | | | | | | |
| Dispose of misc. debris and laydown area refuse | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Total | | | | | | \$4,202,397 | \$0 | \$4,202,397 | |
| % of Total | | | | | | | 0% | 100% | |

Note: Unit costs are based on 3m high, single storey building. Scale larger building areas accordingly. E.g. 10m high building multiply area by 3.3 (10/3)

1 Capital Expenditures and Short Term Water Treatment identified in 'Instructions' worksheet

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|--|--------------------------------------|-------|----------|-----------|-------------|------------------|
| BREACH DYKE EMBANKMENT | | | | | | |
| Remove fill | | m3 | 0 | #N/A | \$0.00 | \$0 |
| Rip rap slope protection | | m3 | 0 | RR4L | \$7.60 | \$0 |
| Contour water intake area | | m3 | | #N/A | \$0.00 | \$0 |
| STABILIZE SEDIMENT PONDS/WATER MANAGEMENT PONDS | | | | | | |
| Place soil cover | | m3 | | #N/A | \$0.00 | \$0 |
| Doze & spread excavated material | | m3 | | #N/A | \$0.00 | \$0 |
| Vegetate spread material | | ha | | #N/A | \$0.00 | \$0 |
| Rip rap in channel base | | each | | #N/A | \$0.00 | \$0 |
| REDIRECT RUNOFF/CONSTRUCT DIVERSION DITCHES | | | | | | |
| Excavate ditches -soil | | m3 | | #N/A | \$0.00 | \$0 |
| Excavate ditches -rock | | m3 | | #N/A | \$0.00 | \$0 |
| Stabilize side slopes | | m3 | | #N/A | \$0.00 | \$0 |
| Rip rap in channel base | | m3 | | #N/A | \$0.00 | \$0 |
| BREACH DITCHES | | | | | | |
| Excavate breaches | | m3 | | #N/A | \$0.00 | \$0 |
| Backfill/recontour | | m3 | | #N/A | \$0.00 | \$0 |
| Install flow dissipation | | m3 | | #N/A | \$0.00 | \$0 |
| Vegetate remainder of ditch | | m2 | | #N/A | \$0.00 | \$0 |
| DECOMMISSION FRESH WATER SUPPLY | | | | | | |
| Breach embankment | Includes on Bldgs & Equipment | m | | #N/A | \$0.00 | \$0 |
| Remove pump | | LS | 1 | #N/A | \$10,000.00 | \$10,000 |
| Remove pipeline | Assumed leave pipeline left in place | m | 0 | #N/A | \$0.00 | \$0 |
| WATER CONTROL IN RECLAMATION QUARRY | | | | | | |
| Install pumping system | | LS | | #N/A | \$0.00 | \$0 |
| Remove pumping system | | LS | | #N/A | \$0.00 | \$0 |
| REMOVE PIPELINES | | | | | | |
| Remove pipes | | m | | #N/A | \$0.00 | \$0 |
| Concrete plug deep pipes | | m3 | | #N/A | \$0.00 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 |
| GROUNDWATER COLLECTION SYSTEM | | | | | | |
| Excavate/install sumps | | m3 | | #N/A | \$0.00 | \$0 |
| Install pumping wells | | m3 | | #N/A | \$0.00 | \$0 |
| Install pumps/pipelines/power supply | | LS | | #N/A | \$0.00 | \$0 |
| CONSTRUCT CONTAMINATED WATER STORAGE POND | | | | | | |
| Excavate pond | | m3 | | #N/A | \$0.00 | \$0 |
| Doze & spread excavated material | | m3 | | #N/A | \$0.00 | \$0 |
| Vegetate spread material | | ha | | #N/A | \$0.00 | \$0 |
| Bedding layer | | m3 | | #N/A | \$0.00 | \$0 |
| Supply geomembrane | | m2 | | #N/A | \$0.00 | \$0 |
| Install geomembrane | | m2 | | #N/A | \$0.00 | \$0 |
| Erosion protection layer | | m3 | | #N/A | \$0.00 | \$0 |
| CONSTRUCT PASSIVE TREATMENT SYSTEM (e.g. Constructed Wetland) | | | | | | |
| Construct access roads | | km | | #N/A | \$0.00 | \$0 |
| Install HDPE piping system from collection pond | | m | | #N/A | \$0.00 | \$0 |
| Inter-cell flow structures | | allow | | #N/A | \$0.00 | \$0 |
| Install liners | | m2 | | #N/A | \$0.00 | \$0 |
| Install growth media | | m3 | | #N/A | \$0.00 | \$0 |
| Wetland vegetation | | ha | | #N/A | \$0.00 | \$0 |
| CONSTRUCT WATER TREATMENT PLANT | | | | | | |
| Build treatment plant | | LS | | #N/A | \$0.00 | \$0 |
| Build sludge containment facility | | | | | | |
| Treatment Plant Operation | Lime treatment | m3 | 1786000 | TPOS | \$0.15 | \$267,900 |
| Total | | | | | | \$277,900 |

Water quality to be lime treated, estimated as follows: Pond 2 1000 x 700 m x 1.9 m and Pond 1 800 x 300 x 1.9 m. One time treatment only - not required after cover is completed.

For cost of long-term/post-closure water treatment see "WATER TREATMENT" Worksheet"

1 Post Closure Water Treatment - Identified as long term/post-closure in 'Instructions' worksheet

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|--|--|--------|----------|-------------------------------------|-----------|------|
| ADDITION OF REAGENTS TO WTP | | | | | | |
| H2O2 | | kg | | #N/A | \$0.00 | \$0 |
| lime | Covered under "Water Management" tab | kg | | #N/A | \$0.00 | \$0 |
| ferric sulphate | | kg | | #N/A | \$0.00 | \$0 |
| ferrous sulphate | | kg | | #N/A | \$0.00 | \$0 |
| flocculents | | kg | | #N/A | \$0.00 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 |
| LABOUR AND SUPPLIES | | | | | | |
| Annual fuel | | litres | | #N/A | \$0.00 | \$0 |
| Annual power | | kW-h | | #N/A | \$0.00 | \$0 |
| Electrician/mechanic to maintain treatment plant | | allow | | #N/A | \$0.00 | \$0 |
| Equipment maintenance and parts | | allow | | #N/A | \$0.00 | \$0 |
| Misc. supplies, hoses, tools | | allow | | #N/A | \$0.00 | \$0 |
| Communications | | allow | | #N/A | \$0.00 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 |
| WTP WATER SAMPLING AND ANALYSES | | | | | | |
| Sampling equipment | | allow | | #N/A | \$0.00 | \$0 |
| Analyses | | allow | | #N/A | \$0.00 | \$0 |
| Shipping to laboratory | | allow | | #N/A | \$0.00 | \$0 |
| Reporting | | allow | | #N/A | \$0.00 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 |
| SITE ACCESS | | | | | | |
| Road maintenance (incl. snow removal) | | allow | | #N/A | \$0.00 | \$0 |
| Winter road tariff | | allow | | #N/A | \$0.00 | \$0 |
| Truck rental | | allow | | #N/A | \$0.00 | \$0 |
| Air support | | allow | | #N/A | \$0.00 | \$0 |
| Cost of the mine treatment ponds | | | | | | |
| | ponds is provided in "Water Management" tab | | | Annual water treatment costs | | \$0 |
| Number of years of water treatment | Assumed water treatment is not required post-closure because the TCA is covered. | years | | | | |
| | | | | Total | | \$0 |

1 Interim Care and Maintenance

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|-------------------------------------|----------------------------------|-----------|----------|-------------------------|-----------|-----------|
| INTERIM CARE & MAINTENANCE | | | | | | |
| on-site caretaker | | manmonths | | #N/A | 0 | \$0 |
| Spring extra personnel | | manmonths | 3 | #N/A | 13194 | \$39,582 |
| -electrician | | manmonths | | #N/A | 0 | \$0 |
| -mechanic | | manmonths | 2 | #N/A | 11517 | \$23,034 |
| annual fuel | Available on site. | litre | | #N/A | 0 | \$0 |
| misc. supplies | Available on site. | allow | | #N/A | 0 | \$0 |
| pick-up truck | Available on site. | each | | #N/A | 0 | \$0 |
| small dozer | Available on site. | allow | | #N/A | 0 | \$0 |
| small excavator | Available on site. | allow | | #N/A | 0 | \$0 |
| snow machine | Available on site. | allow | | #N/A | 0 | \$0 |
| communications | | allow | 1 | #N/A | 25000 | \$25,000 |
| SNP/AEMP water sampling & reporting | From "PostClosure" sheet | each | 1 | #N/A | 12360 | \$12,360 |
| geotechnical assessment | From "PostClosure" sheet | each | 1 | #N/A | 22923.49 | \$22,923 |
| interim water treatment | Covered under "Water Management" | | | #N/A | | \$0 |
| Worker accomodations | | mandays | 150 | ACCMS | 74.13 | \$11,120 |
| | | | | Annual Interim C&M Cost | | \$134,019 |
| Number of years of ICM | | years | 2 | Total | | \$268,038 |

1 Post-Closure Monitoring & Maintenance:

| Post-Closure Monitoring & Maintenance | | | | Cost | | |
|--|----------------------|-------|----------|-----------|--------------|-----------|
| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
| MONITORING & INSPECTIONS | | | | | | |
| Annual geotechnical inspection | | each | 10 | #N/A | \$22,923.49 | \$229,235 |
| Survey inspection | | each | | #N/A | \$0.00 | \$0 |
| Monitoring years - 10 | Includes Maintenance | Year | 3 | LMI | \$100,000.00 | \$300,000 |
| Regulatory costs* | | each | | #N/A | \$0.00 | \$0 |
| Site water monitoring (AEMP and SNP) | Water sampling | each | 10 | #N/A | \$12,360.00 | \$123,600 |
| - Active closure and flooding | | each | | #N/A | \$0.00 | \$0 |
| - Post pit flooding | | each | | #N/A | \$0.00 | \$0 |
| Air Quality Monitoring Program (AQMP) | Not required | each | 0 | #N/A | \$0.00 | \$0 |
| Environmental Effects Monitoring (EEM) after 3 years | | each | 1 | #N/A | \$126,079.00 | \$126,079 |
| Wildlife Effects Monitoring Program (WEMP) Not required | | each | 0 | #N/A | \$0.00 | \$0 |
| Vegetation Monitoring | | each | | #N/A | \$0.00 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 |
| COVER MAINTENANCE | | | | | | |
| Repair erosion - infill gullies | | allow | | #N/A | \$0.00 | \$0 |
| Repair erosion - upgrade diversion ditches | | allow | | #N/A | \$0.00 | \$0 |
| Remove problem vegetation | | allow | | #N/A | \$0.00 | \$0 |
| Repair animal damage | | allow | | #N/A | \$0.00 | \$0 |
| Repair/upgrade access controls | | allow | | #N/A | \$0.00 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 |
| SPILLWAY MAINTENANCE | | | | | | |
| Repair erosion | | m3 | | #N/A | \$0.00 | \$0 |
| Clear spillway | | each | | #N/A | \$0.00 | \$0 |
| CWTS MAINTENANCE | | | | | | |
| Maintain flow, restore vegetation | | allow | | #N/A | \$0.00 | \$0 |
| POST-CLOSURE WATER TREATMENT | | | | | | |
| Annual water treatment cost, from "Water Treatment" | | | | | | \$0 |
| Subtotal for first 10 years, undiscounted | | | | | | \$778,914 |
| Discount rate for calculation of net present value of post-closure cost, % | | | | 3.00% | | |
| Number of years of post-closure activity | | | | 25 years | | |
| Net Present Value of payment stream | | | | | | \$936,257 |

*Regulatory costs - annual reporting, management plans, progress reports etc.

One time lime treatment allowed for in "Water Management". No further treatment will be required after the cover is completed.

Annual Discount

3%

| Year | Geotechnical and Water Sampling | | Monitoring and Maintenance | | EEM | | Total Yearly |
|--------------------|---------------------------------|-----------------|----------------------------|-----------------|----------|-----------------|--------------|
| | Cost | Discounted Cost | Every 3 years | Discounted Cost | One Time | Discounted Cost | |
| 1 | - | - | | - | | - | - |
| 2 | - | - | | - | | - | - |
| 3 | 35,283.5 | 32,289.4 | 100,000 | 91,514 | 126,079 | 115,380 | 239,184 |
| 4 | 35,283.5 | 31,348.9 | | - | | - | 31,349 |
| 5 | 35,283.5 | 30,435.8 | | - | | - | 30,436 |
| 6 | 35,283.5 | 29,549.4 | 100,000 | 83,748 | | - | 113,298 |
| 7 | 35,283.5 | 28,688.7 | | - | | - | 28,689 |
| 8 | 35,283.5 | 27,853.1 | | - | | - | 27,853 |
| 9 | 35,283.5 | 27,041.9 | 100,000 | 76,642 | | - | 103,684 |
| 10 | 35,283.5 | 26,254.2 | | - | | - | 26,254 |
| 11 | | - | | - | | - | - |
| 12 | | - | 100,000 | 70,138 | | - | 70,138 |
| 13 | | - | | - | | - | - |
| 14 | | - | | - | | - | - |
| 15 | 35,283.5 | 22,647.1 | 100,000 | 64,186 | | - | 86,833 |
| 16 | | - | | - | | - | - |
| 17 | | - | | - | | - | - |
| 18 | | - | 100,000 | 58,739 | | - | 58,739 |
| 19 | | - | | - | | - | - |
| 20 | | - | | - | | - | - |
| 21 | | - | 100,000 | 53,755 | | - | 53,755 |
| 22 | | - | | - | | - | - |
| 23 | | - | | - | | - | - |
| 24 | | - | 100,000 | 49,193 | | - | 49,193 |
| 25 | 35,283.5 | 16,851.6 | | - | | - | 16,852 |
| Net Present Value: | | 272,960.2 | | 547,916 | | 115,380 | 936,257 |

Costs for geotechnical and water sampling in years 1 and 2 are covered in 2 years of interim care and maintenance (see ICM sheet)

1 Mobilization/Demobilization:

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|---|-----------|----------------|-----------|-----------|--------------------|
| MOBILIZE HEAVY EQUIPMENT | | | | | | |
| Excavators | | each | 1 | #N/A | 150000 | \$150,000 |
| Dump trucks | | each | 1 | #N/A | 50000 | \$50,000 |
| Dozers | | each | 1 | #N/A | 150000 | \$150,000 |
| Demolition shears | | each | 2 | #N/A | 300000 | \$600,000 |
| Crane | | each | 1 | #N/A | 150000 | \$150,000 |
| Loader | | each | 1 | #N/A | 150000 | \$150,000 |
| Compactor | | each | | #N/A | 0 | \$0 |
| Light duty vehicles | | each | 3 | #N/A | 20000 | \$60,000 |
| MOBILIZE MISC. EQUIPMENT | | | | | | |
| Pump shipping | | each | | #N/A | 0 | \$0 |
| Pipe shipping | | m | | #N/A | 0 | \$0 |
| Minor tools and equipment | | allow | 1 | #N/A | 100000 | \$100,000 |
| Truck tires | | allow | | #N/A | 0 | \$0 |
| Other | | | | #N/A | 0 | \$0 |
| MOBILIZE CAMP | | | | | | |
| Reclamation activities | | allow | | #N/A | 0 | \$0 |
| Long term reclamation activities (eg pump flooding) | | allow | | #N/A | 0 | \$0 |
| MOBILIZE WORKERS | | | | | | |
| Reclamation activities - transport | Twin Otter flights | each | 48 MWL | | 4500.00 | \$216,000 |
| Reclamation activities - transport | Dash 7 flights | each | 20 MWH | | 9100.00 | \$182,000 |
| Reclamation activities - transport | Hercules flights | each | 5 #N/A | | 20000 | \$100,000 |
| Rotation over reclamation period | | manhours | 0 lab-sL | | 41 | \$0 |
| Reclamation activities - travel time | | manday | 0 ACCMH | | 175 | \$0 |
| Long term reclamation activities (eg pump flooding) - transport | | each | | #N/A | 0 | \$0 |
| Long term reclamation activities (eg pump flooding) - travel time | | each | | #N/A | 0 | \$0 |
| Monitoring Airfare | | each | | #N/A | 0 | \$0 |
| WORKER ACCOMMODATIONS | | | | | | |
| Reclamation activities | | mandays | 6,600 ACMMS | | 74.13 | \$489,258 |
| Long term reclamation activities (eg pump flooding) | | manmonths | | #N/A | 0 | \$0 |
| MOBILIZE FUEL | | | | | | |
| Fuel freight - reclamation activities | | liter | | #N/A | 0 | \$0 |
| Fuel freight - long term reclamation activities | | liter | | #N/A | 0 | \$0 |
| Fuel freight accommodations | | liter | | #N/A | 0 | \$0 |
| WINTER ROAD | | | | | | |
| Construction and operation | 366 km GK to site times 2 seasons | km | 732 WRCL | | 2000 | \$1,464,000 |
| Limited winter use | | km | | #N/A | 0 | \$0 |
| Winter road tariff | 20,000 tonnes x 220 km x 2 seasons | mtonne | 8,800,000 WRUS | | 0.11 | \$968,000 |
| DEMOLITIZE HEAVY EQUIPMENT | | | | | | |
| | Rental of equipment while on site is under "Mobilize". Mob/demob is under "Winter Road" | | | | | |
| Excavators | | km | | #N/A | 0 | \$0 |
| Dump trucks | | km | | #N/A | 0 | \$0 |
| Dozers | | km | | #N/A | 0 | \$0 |
| Demolition shears | | km | | #N/A | 0 | \$0 |
| Crane | | km | | #N/A | 0 | \$0 |
| Loader | | km | | #N/A | 0 | \$0 |
| Compactor | | each | | #N/A | 0 | \$0 |
| Light duty vehicles | | km | | #N/A | 0 | \$0 |
| Other | | km | | #N/A | 0 | \$0 |
| DEMOLITIZE WORKERS | | | | | | |
| crew travel time | | mandays | | #N/A | 0 | \$0 |
| crew transportation | | each | | #N/A | 0 | \$0 |
| Total | | | | | | \$4,829,258 |

Assumed the use of equipment on site, 2014 LMI estimation includes an additional 10 units of equipment will be brought in.

Time is covered in contractor's quote for demolition. Demob cost is covered in flights under "Mobilization"

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

| | | Filter by unit | | | | | |
|--------------------------------------|-----------------------------------|----------------|--------|----------|---------|--------------|---|
| ITEM | Detail | COST CODE | UNITS | LOW \$ | HIGH \$ | SPECIFIED \$ | COMMENTS |
| Accommodation | | ACCM | manday | 100.00 | 175.00 | 74.13 | From LMI costs of \$2225 / manmonth using existing camp |
| Buildings - Decontaminate | | BDA | m2 | 25.60 | 51.20 | | Low: removal of asbestos siding & flooring; High: removal of insulated pipes, friable asbestos |
| Buildings - Remove | | | | | | | Unit costs are based on 3m high, single storey building. Scale areas accordingly. |
| | Wood | BRW | m2 | 27.50 | 41.00 | | |
| | Concrete | BRC | m2 | 40.00 | 65.00 | 128.00 | Specified: puncture concrete foundation slabs |
| | Steel - teardown | BRS1 | m2 | 45.00 | 65.00 | 91.57 | |
| | Steel - for salvage | BRS2 | m2 | 67.00 | 100.00 | | |
| Concrete work | | | | | | | |
| | Small pour | CSF | m3 | 426.50 | 639.75 | | Low: YK; High=1.5xLow |
| | Large pour | CLF | m3 | 353.50 | 530.25 | 2,130.00 | Specified: concrete crown pillar |
| Contaminated Soils | | | | | | | |
| | ESA Phase 1 | CS1 | each | 7500.00 | | | Low: small, "clean" site |
| | ESA Phase 1 | CS2 | each | 50000.00 | | | Low: small, "clean" site |
| | Remediate on site | CSR | m3 | 47.00 | 146.00 | 60.17 | Low - 1 cell is complete and cost to construct 4 more cells is already allowed for. |
| Dozing | | | | | | | |
| | doze rock piles | DR | m3 | 1.05 | 2.40 | | Low cost: doze crest off dump |
| | doze overburden/soil piles | DS | m3 | 0.95 | 3.80 | 3.50 | Special rate. Ample rock is available near stopes. |
| Excavate Rock; Low Spec's and QA/QC | | | | | | | |
| | drill/blast/load/short haul | RB1 | m3 | 11.40 | 17.05 | | Low:quarry operations for bulk fill |
| | drill/blast/load/long haul | RB2 | m3 | 12.05 | 17.80 | | |
| | RB1 + spread and compact | RB3 | m3 | 12.05 | 17.80 | | |
| | RB2 + spread and compact | RB4 | m3 | 12.50 | 30.75 | | |
| | Specified activity | RBS | m3 | | | | |
| Excavate Rock; High Spec's and QA/QC | | | | | | | (e.g. ditch/spillway excavation) |
| | drill/blast/load/short haul | RC1 | m3 | 12.05 | 17.80 | | Low:foundation excavation;High:spillway excavation |
| | drill/blast/load/long haul | RC2 | m3 | 12.70 | 18.40 | | |
| | RC1 + spread and compact | RC3 | m3 | 12.70 | 18.40 | | e.g. cover construction |
| | RC2 + spread and compact | RC4 | m3 | 13.50 | 19.20 | | e.g. cover construction |
| | Specified activity | RCS | m3 | | | 175.00 | Specified-drift excavation |
| Excavate Rip Rap | | | | | | | |
| | drill/blast/load/short haul/place | RR1 | m3 | 13.50 | 17.75 | 15.20 | High: quarry & place rip rap in channel |
| | drill/blast/load/long haul/place | RR2 | m3 | 14.20 | 20.65 | | |
| | source is waste dump/short haul | RR3 | m3 | 7.00 | | | cost includes sorting |
| | source is waste dump/long haul | RR4 | m3 | 7.60 | | 4.72 | S - Based on LMI costs for 2016 haul from Ballpark to TCA and average cycle times to 3 locations. |
| | Specified activity | RRS | m3 | | | 85,656.00 | |
| Excavate Soil; Low Spec's and QA/QC | | | | | | | |
| | clear & grub | SBC | m2 | 3.40 | 5.00 | | |
| | excavate/load/short haul | SB1 | m3 | 4.30 | 5.90 | | |
| | excavate/load/long haul | SB2 | m3 | 4.60 | 7.30 | | |
| | SB1 + spread and compact | SB3 | m3 | 5.10 | 8.90 | | Low: non-engineered; High:engineered |
| | SB2 + spread and compact | SB4 | m3 | 5.50 | 11.00 | | Low: non-engineered; High:engineered |
| | Specified activity | SBS | m3 | 3.20 | 6.30 | | Low: rehandle waste rock dump by dozing; High:rehandle waste rock by hauling |
| | Tailings | SBT | m3 | 1.35 | 3.70 | 15.50 | High:contour surface - wet or frozen; Specified:haul/place wet infill |
| Excavate Soil, High Spec's and QA/QC | | | | | | | |
| | excavate/load/short haul | SC1 | m3 | 6.80 | 9.30 | | |
| | excavate/load/long haul | SC2 | m3 | 7.10 | 11.75 | | |
| | SC1 + spread and compact | SC3 | m3 | 8.90 | 14.20 | 7.21 | Low: non-engineered; High:engineered |
| | SC2 + spread and compact | SC4 | m3 | 9.30 | 23.20 | 7.02 | Low: non-engineered; High:engineered (e.g. complex covers, low volume dam construction) |
| | Specified activity | SCS | m3 | | | 18.80 | Backfill adit with waste rock |
| Fence | | FNC | m | 13.55 | 203.00 | | |
| Fuel and Electricity | | | | | | | |
| | Fuel cost - gas | FCG | litre | 1.05 | 1.40 | | |
| | Fuel cost - diesel | FCD | litre | 0.99 | 1.39 | | |
| | Fuel mobilization | FCM | litre | 0.22 | 0.42 | | High: winter road usage |
| | Electricity | FCE | kW-h | 0.17 | 0.19 | 0.49 | Low and High:Yellowknife; Specified:diesel generator |
| Geo-Synthetics | | | | | | | |
| | geotextile | GST | m2 | 3.44 | | | Supply and install |
| | geogrid | GSG | m2 | 5.75 | | | |
| | liner, HDPE | GSHDPE | m2 | 7.95 | | | Supply and install; large quantity |
| | liner, ES3 | GSES3 | m2 | 20.20 | | | FOB Yellowknife |
| | geosynthetic installation | GSI | m2 | 3.16 | 14.00 | | Low:geotextile; High:ES3 or HDPE |
| | bentonite soil ammendment | GSBA | tonne | 308.30 | 348.50 | | FOB Edmonton, add shipping & mixing |
| Grouting (/m3 of rock grouted) | | | | | | | |
| | | grout | m3 | 236.55 | 286.75 | | High: cement, FOB Yellowknife |
| Labour & Equipment Rates | | | | | | | |
| | Site manager | sman | \$/hr | 125.00 | 152.00 | | |
| | Supervisor | super | \$/hr | 52.00 | 91.84 | | |
| | Registered engineer | eng | \$/hr | 95.00 | 220.00 | | |
| | Environmental coordinator | envco | \$/hr | 74.16 | 130.00 | | |
| | Environmental technologist | envtech | \$/hr | 36.00 | | | |
| | Electrician | elec | \$/hr | 74.00 | 95.00 | | |
| | Journeyman - various | journey | \$/hr | 44.00 | 71.79 | | |
| | Labour - skilled | lab-s | \$/hr | 41.00 | 49.60 | | |

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

Filter by unit

| | | | | | |
|---|----------|----------|-----------|----------|---------|
| Labour - unskilled | lab-us | \$/hr | 31.00 | 43.98 | |
| Equipment operator | oper | \$/hr | 41.00 | 65.00 | |
| Heavy duty mechanic | mech | \$/hr | 49.00 | 72.85 | |
| Water treatment plant operator | oper-wt | \$/hr | 41.00 | 59.86 | |
| Security / first aid | safety | \$/hr | 36.00 | 66.97 | |
| Administrative staff | admin | \$/hr | 38.00 | 57.89 | |
| Equipment rates include operator and fuel | | | | | |
| Loader - 4 cu.yd (3.06m3) | load-s | \$/hr | 175.00 | | |
| Loader - 7 cu.yd (5.35m3) | load-l | \$/hr | 315.00 | | |
| Excavator - 26.76-30.84 tonnes | exc-s | \$/hr | 190.00 | | |
| Excavator - 68.95+tonnes | exc-l | \$/hr | 420.00 | | |
| Grader | grad | \$/hr | 190.00 | | |
| Dump truck off hwy 30-50 tonnes | truck-s | \$/hr | 225.00 | | |
| Dump truck off hwy 55-75 tonnes | truck-l | \$/hr | 300.00 | | |
| dozer, small | dozers | \$/hr | 205.00 | 260.00 | |
| dozer, large | dozerl | \$/hr | 490.00 | 565.00 | |
| smooth drum compactor | comp | \$/hr | 155.00 | | |
| scooptram, 6 yd3 bucket | scoop | \$/hr | 170.00 | | |
| flat bed truck with hiab | hiab | \$/hr | 155.00 | | |
| fuel truck | ftruck | \$/hr | 150.00 | | |
| water truck | wtruck | \$/hr | 58.00 | 150.00 | |
| Mobilize Heavy Equipment | | | | | |
| Road access | MHER | kmtonne | 3.40 | 10.25 | |
| Air access | MHEA | kmtonne | 12.00 | | |
| Mobilize Camp | | | | | |
| Road access | MCR | each | 50000.00 | | |
| Mobilize Workers | | | | | |
| flight | MW | each | 4500.00 | 9100.00 | |
| Oil Removal | | | | | |
| oil removal | OR | litre | 0.43 | 1.20 | |
| PCB Removal | | | | | |
| Remove from site | PCBR | litre | 40.20 | 46.90 | 7.21 |
| Pipes, small (<6in dia.) | | | | | |
| remove/dispose on site | PSR | m | 1.00 | 24.00 | |
| supply | PSS | m | 6.10 | 11.10 | |
| install | PSI | m | 25.00 | | |
| Pipes, large (>6in dia.) | | | | | |
| remove/dispose on site | PLR | m | 22.00 | 72.00 | 18.39 |
| supply | PLS | m | 129.00 | 143.00 | |
| install | PLI | m | 50.00 | | |
| Power Lines | | | | | |
| remove/dispose on site | POWR | m | 25.50 | | |
| Process Chemicals | | | | | |
| Remove from site | PCR | kg | 0.45 | 2.50 | |
| Pumps | | | | | |
| Pump capital cost | PC | each | 195000.00 | | |
| Pump shipping | PS | each | 2500.00 | | |
| Pump operating cost | POC | m3 | 0.12 | | |
| Pump maintenance | PM | allow | 25000.00 | | |
| Pump sand BackFill | | | | | |
| | PBF | m3 | 85.00 | 300.00 | |
| Scarify - road/mine site | | | | | |
| | SCFY | ha | 4300 | 6030 | 2150 |
| Shaft, Raise & Portal Closures | | | | | |
| Shaft & Raises | SR | m2 | 645.00 | 2132.00 | |
| Portals | POR | m3 | 18.80 | 250.00 | 1200.00 |
| Site Inspection Report | | | | | |
| | RPT | each | 10000.00 | 20000.00 | |
| SpillWay - Clear | | | | | |
| | SW | each | 3000.00 | 7000.00 | |
| Survey/Instrumentation | | | | | |
| | SI | each | 1800.00 | 3600.00 | |
| Treatment Plant - Construct | | | | | |
| Small (< 1000 m3/d) | TPS | lump sum | 9000000 | 15000000 | |
| Large (> 1000 m3/d) | TPL | lump sum | 15000000 | 46000000 | |
| Constructed Wetland | CWTS | ha | 200000 | 300000 | |
| Treatment Plant - Operate | | | | | |
| | TPO | m3 | 0.35 | 2.00 | 0.15 |
| Treatment Chemicals | | | | | |
| ferric sulphate | ferric | kg | 1.19 | | |
| ferrous sulphate | ferrous | kg | 1.32 | | |
| lime | lime | kg | 0.56 | | |
| hydrogen peroxide, 35% | hperox | kg | 1.50 | | |
| Sodium Metabisulfate | Nametab | kg | 1.18 | | |
| Caustic soda, 50% | caustic | kg | 0.74 | | |
| Sulfuric acid, 93% | sulfuric | kg | 0.31 | | |
| flocculant | flocc | kg | 6.00 | | |
| copper sulphate | copper | kg | | | |

cargo rate>500lb

refurbish existing camp

Low:e.g. 8 passenger; High: Dash 7

Low:waste oil heater; High: ship offsite

Low: shipping, handling & disposal from Yellowknife

Low: remove/dispose on site; High: remove/re-use

Low:supply; High:supply and ship

Low: remove/dispose on site; High: remove/re-use

Low:supply; High:supply and ship

Low: shipping, handling & disposal from Yellowknife

pump operating costs should be calculated based on pump capacity, fuel costs, etc.

Low:pre-cast concrete slabs, little site prep. Area=shaft+>1m all around

Low:unit cost code SCS;High:excavate & backfill collapsed portal;Spec: installed pressure plug

2 person crew

TPOS is from Lupin costs for most recent treatment (i.e. simple lime addition to raise pH to 8)

Unit Cost Table (for refining unit costs see "Estimator" worksheet)

Filter by unit

| | | | | | |
|--|----------|---------|----------|----------|-------|
| shipping | shipping | kg | 0.20 | | |
| Vegetation | | | | | |
| Hydroseed, Flat | VHF | ha | 4000.00 | | |
| Hydroseed, Sloped | VHS | ha | 4500.00 | | |
| Veg. blanket/erosion mat | VB | ha | 13000.00 | | |
| Tree planting | VT | ha | 2600.00 | 6000.00 | |
| Wetland species | VW | ha | | | 47.72 |
| Water Sampling/Analysis/Reporting | | | | | |
| | WS | each | 7000.00 | 10000.00 | |
| Winter Road | | | | | |
| Construction | WRC | km | 2000.00 | 11500.00 | |
| Usage | WRU | kmtonne | 0.29 | | 0.11 |
| LMI quote assuming shared use with diamond mines | | | | | |