

Appendix VIII

Updated RECLAIM Estimate

| Total | File Name | Description |
|---------------|--|---|
| \$128,284,831 | WLWB RECLAIM Estimate for DDMI_August 2014.xlsm | WLWB Approved |
| \$129,545,615 | WLWB RECLAIM Estimate for DDMI_August 2014 with A21.xlsm | WLWB Approved with addition of A21 open-pit |
| \$124,072,323 | DDMI RECLAIM Estimate 2016 V1.xlms | DDMI Proposed: a) NCRP till and rock volumes updated as per Golder (2016) Table 3 b) NCRP unit cost for rock cover set to GNWT recommended \$3.30 (Letter to WLWB Feb 17, 2016) c) PKC Cover reduced by \$1.10 to align with reduced remine unit costs from GNWT (see NCRP) d) updated A21 - one breach volume corrected to be a causeway excavation e) There has been a net removal of buildings since 2011 that has not been credited in this version f) NCRP Contingency to 10% to reflect level of engineering detail (AANDC Letter to WLWB Oct 23, 2012) |
| \$124,582,618 | DDMI RECLAIM Estimate 2016 V2.xlms | DDMI Proposed: a) added scarifying road/laydown area on A21 lease b) added A21 pipeline removal |

SUMMARY OF COSTS

| CAPITAL COSTS | COMPONENT NAME | COST | LAND LIABILITY | WATER LIABILITY |
|---|--------------------------------|---------------------|-----------------------|------------------------|
| OPEN PIT | A514,A418, A21 | \$3,034,738 | \$97,322 | \$2,937,416 |
| UNDERGROUND MINE | | \$1,402,419 | \$1,365,476 | \$36,943 |
| TAILINGS FACILITY | | \$22,097,261 | \$43,969 | \$22,053,292 |
| ROCK PILE | NCRP | \$24,793,065 | \$745,853 | \$24,047,213 |
| BUILDINGS AND EQUIPMENT | | \$17,294,274 | \$16,205,944 | \$1,088,330 |
| CHEMICALS AND CONTAMINATED SOIL MANAGEMEI | | \$3,557,553 | \$1,758,777 | \$1,798,777 |
| SURFACE AND GROUNDWATER MANAGEMENT | | \$1,280,539 | - | \$1,280,539 |
| INTERIM CARE AND MAINTENANCE | | \$0 | - | \$0 |
| | SUBTOTAL: Capital Costs | \$73,459,849 | \$20,217,339 | \$53,242,509 |
| | PERCENT OF SUBTOTAL | | 28% | 72% |

| INDIRECT COSTS | | COST | LAND LIABILITY | WATER LIABILITY |
|--|---------------------------------|---------------------|-----------------------|------------------------|
| MOBILIZATION/DEMOBILIZATION | | \$9,111,200 | \$2,507,550 | \$6,603,650 |
| POST-CLOSURE MONITORING AND MAINTENANCE | | \$19,508,597 | \$5,369,082 | \$14,139,515 |
| ENGINEERING | 5% | \$3,672,992 | \$1,010,867 | \$2,662,125 |
| PROJECT MANAGEMENT | 5% | \$3,672,992 | \$1,010,867 | \$2,662,125 |
| HEALTH AND SAFETY PLANS/MONITORING & QA/QC | 0.5% | \$367,299 | \$101,087 | \$266,213 |
| BONDING/INSURANCE | 0.5% | \$367,299 | \$101,087 | \$266,213 |
| CONTINGENCY | | | | |
| - Open Pit | 20% | \$606,947.57 | \$167,042 | \$439,906 |
| - Underground Mine | 20% | \$280,483.82 | \$77,194 | \$203,290 |
| - Tailings | 30% | \$6,629,178.19 | \$1,824,457 | \$4,804,721 |
| - Rock Pile | 10% | \$2,479,306.50 | \$682,345 | \$1,796,961 |
| - Buildings and Equipment | 20% | \$3,458,855 | \$951,933 | \$2,506,922 |
| - Chemicals and Soil Management | 20% | \$711,510.60 | \$195,819 | \$515,691 |
| - Water Management | 20% | \$256,107.80 | \$70,485 | \$185,623 |
| MARKET PRICE FACTOR ADJUSTMENT | 0% | \$0 | \$0 | \$0 |
| | SUBTOTAL: Indirect Costs | \$51,122,770 | \$14,069,814 | \$37,052,956 |

| | | | | |
|--------------------|--|----------------------|---------------------|---------------------|
| TOTAL COSTS | | \$124,582,618 | \$34,287,153 | \$90,295,465 |
|--------------------|--|----------------------|---------------------|---------------------|

Complete document can be found at:

Open Pit Name: A514,A418, A21 Pit # 1

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | % Cost Land | Land Cost | Water Cost |
|--|-------|-------|----------|-----------|--------------|----------------------|-----------|-------------|
| CONTROL ACCESS | | | | | | | | |
| Fence | | m | 450 | FNCH | \$203.00 | \$91,350 100% | \$91,350 | \$0 |
| Signs | | each | 4.5 | #N/A | \$37.08 | \$167 100% | \$167 | \$0 |
| Ditch, mat'l A | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| , mat'l B | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Berm | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Block roads | | m3 | 1350 | SB1L | \$4.30 | \$5,805 100% | \$5,805 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| STABILITY STUDY | | | | | | | | |
| Conduct stability and setback study | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| STABILIZE SLOPES | | | | | | | | |
| A154 | | | | | | | | |
| excavate 4 breaches in dike | | m3 | 48114 | SC1H | \$9.30 | \$447,460 | \$0 | \$447,460 |
| break concrete guides & wall | | m3 | 1288 | SC1H | \$9.30 | \$11,978 | \$0 | \$11,978 |
| construct fish habitat | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| A418 | | | | | | | | |
| excavate 3 breaches in dike | | m3 | 36086 | SC1H | \$9.30 | \$335,600 | \$0 | \$335,600 |
| break concrete guides & wall | | m3 | 1288 | SC1H | \$9.30 | \$11,978 | \$0 | \$11,978 |
| construct fish habitat | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| A21 | | | | | | | | |
| excavate 3 breaches in dike and 1 causeway | | m3 | 51086 | SC1H | \$9.30 | \$475,100 | \$0 | \$475,100 |
| break concrete guides & wall | | m3 | 1288 | SC1H | \$9.30 | \$11,978 | \$0 | \$11,978 |
| construct fish habitat | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| COVER/CONTOUR SLOPES | | | | | | | | |
| Place fill, mat'l A | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Place fill, mat'l B | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Rip rap | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Vegetate slopes | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Vegetate pit floor | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #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 SPILLWAY | | | | | | | | |
| Excavate channel | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Concrete | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Rip rap | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| RECLAIM QUARRIES | | | | | | | | |
| Contour slopes | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Place overburden | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Vegetate | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| FLOOD PIT-Captial | | | | | | | | |
| Remove stationary equipment (sump pumps) | | each | 4 | #N/A | \$5,618.00 | \$22,472 | \$0 | \$22,472 |
| Remove dewatering pipeline | | m | 21035 | PSRL | \$1.00 | \$21,035 | \$0 | \$21,035 |
| Remove power lines | | m | 11108 | POWRL | \$25.50 | \$283,254 | \$0 | \$283,254 |
| Construct diversion ditches | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| -Ditch, mat'l A | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| -Ditch, mat'l B | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Construct embankment/dam | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| siphon installation/operation | | each | 10 | #N/A | \$119,925.00 | \$1,199,250 | \$0 | \$1,199,250 |
| silt curtains | | each | 10 | #N/A | \$11,731.00 | \$117,310 | \$0 | \$117,310 |
| Remove pump post-closure | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Remove pipeline post-closure | | m | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| FLOOD PIT-Annual Cost | | | | | | | | |
| Operate pumps (power) | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Maintain pump/pipeline | | allow | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Labour:fuel management, comissioning/decom | | \$/h | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Chemical addition, _____ kg/m3 of water | | tonne | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Chemicals, purchase and shipping | | tonne | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Passive/biological additives | | \$/ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Passive additives purchase and shipping | | tonne | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 |
| | | | | | | Annual pumping costs | | \$0 |
| Number of years of pump flooding | | years | | | | Total pumping costs | | \$0 |
| | | | | | | Total | | \$3,034,738 |
| | | | | | | % of Total | | 3% |
| | | | | | | | | \$2,937,416 |
| | | | | | | | | 97% |

| 1 | | Underground Mine Name | | | UG Mine # 1 | | | | |
|--|-------|-----------------------|-------|---------|-------------------|-------------|-----------|----------------------|--|
| ACTIVITY/MATERIAL | Notes | Unit | Qty | Code | Unit Cost | Cost Land | Land Cost | Cost | |
| CONTROL ACCESS | | | | | | | | | |
| Fence | | m | 100 | FNCH | \$203.00 | \$20,300 | 100% | \$20,300 \$0 | |
| Signs | | each | 4 | #N/A | \$37.08 | \$148 | 100% | \$148 \$0 | |
| Block roads | | m3 | | #N/A | \$0.00 | \$0 | | \$0 \$0 | |
| Berm | | m3 | 300 | SB1L | \$4.30 | \$1,290 | 100% | \$1,290 \$0 | |
| Block adits | | m3 | 320 | CLFH | \$530.25 | \$169,680 | 100% | \$169,680 \$0 | |
| Cap shaft | | m3 | | #N/A | \$0.00 | \$0 | | \$0 \$0 | |
| Cap raises at A154/A418 | | m3 | 72 | SRL | \$645.00 | \$46,440 | 100% | \$46,440 \$0 | |
| Soil cover on raise caps | | m3 | 708 | SB1L | \$4.30 | \$3,044 | 100% | \$3,044 \$0 | |
| Cap raise at A21 | | m3 | | #N/A | \$0.00 | \$0 | | \$0 \$0 | |
| Soil cover on raise cap | | m3 | | #N/A | \$0.00 | \$0 | | \$0 \$0 | |
| Backfill adit A154 | | m3 | 100 | SCSS | \$18.80 | \$1,880 | 100% | \$1,880 \$0 | |
| Contour portal area, A154 | | m3 | 2,500 | SB1L | \$4.30 | \$10,750 | 100% | \$10,750 \$0 | |
| Backfill adit A21 | | m3 | | #N/A | \$0.00 | \$0 | | \$0 \$0 | |
| Contour portal area, A21 | | m3 | | #N/A | \$0.00 | \$0 | | \$0 \$0 | |
| Concrete bulkhead, pit portal, A154 | | allow | 1 | #N/A | \$75,000.00 | \$75,000 | 100% | \$75,000 \$0 | |
| Concrete bulkhead, pit portal, A21 | | allow | 0 | #N/A | \$75,000.00 | \$0 | | \$0 \$0 | |
| Backfill open stopes | | m3 | | #N/A | \$0.00 | \$0 | | \$0 \$0 | |
| Remove decline surface infrastructure | | allow | 1 | #N/A | \$1,000,000.00 | \$1,000,000 | 100% | \$1,000,000 \$0 | |
| REMOVE HAZARDOUS MATERIALS | | | | | | | | | |
| Remove hazardous materials, U/G labor | | manhours | 1,440 | lab-usH | \$43.98 | \$63,331 | 50% | \$31,666 \$31,666 | |
| Remove/decontam. stationary & elect. equip | | manhours | 240 | lab-usH | \$43.98 | \$10,555 | 50% | \$5,278 \$5,278 | |
| 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 | \$1,402,419 | | \$1,365,476 \$36,943 | |
| | | | | | % of Total | | | 97% 3% | |

1 Tailings Impoundment Name:

Pond # 1

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | % Cost | Land Cost | Water Cost |
|---|------------------------------|-------|----------|-----------|-----------|------------------------|--------------|--------------|
| CONTROL ACCESS | | | | | | | | |
| Fence | | m | 160 | FNCH | ##### | \$32,480 | 100% | \$32,480 |
| Signs | | each | 8 | #N/A | \$37.08 | \$297 | 100% | \$297 |
| Berm | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Block roads | | m3 | 1440 | SB1L | \$4.30 | \$6,192 | 100% | \$6,192 |
| Other | | | | #N/A | \$0.00 | \$0 | | \$0 |
| STABILIZE EMBANKMENT(S) | | | | | | | | |
| Toe buttress, drainage layer | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Toe buttress, bulk fill | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Rip rap | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 | | \$0 |
| Raise crest | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Flatten slopes | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | | \$0 |
| COVER TAILINGS | | | | | | | | |
| Coarse PK, doze to slurry sump | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Coarse PK, slurry pumping | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Rock for expelled water from N or S dump | | m2 | | #N/A | \$0.00 | \$0 | | \$0 |
| Rock for expelled water from roads | | m2 | | #N/A | \$0.00 | \$0 | | \$0 |
| Rock for expelled water from new quarry | | m2 | | #N/A | \$0.00 | \$0 | | \$0 |
| Soil cover, till | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Cover rock from N or S dump | | m3 | 2800000 | SBSH | \$5.40 | \$15,120,000 | | \$15,120,000 |
| geotextile/geogrid over shoreline | | m2 | 592000 | GSTS | \$9.37 | \$5,547,040 | | \$5,547,040 |
| Cover rock from new quarry | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Remove & treat pond/seepage | | m3 | 1791000 | OTPL | \$0.35 | \$626,850 | | \$626,850 |
| STABILIZE DECANT SYSTEM | | | | | | | | |
| Excavate and replace | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Plug/backfill with concrete or clay | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | | \$0 |
| REMOVE TAILINGS DISCHARGE | | | | | | | | |
| Cyclones | | allow | | #N/A | \$0.00 | \$0 | | \$0 |
| Pipe | | m | 5000 | PSRL | \$1.00 | \$5,000 | 100% | \$5,000 |
| Remove reclaim barge | | allow | | #N/A | \$0.00 | \$0 | | \$0 |
| CONSTRUCT DIVERSION DITCHES | | | | | | | | |
| Excavate ditches -soil | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Excavate ditches -rock | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Rip rap in channel base | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| FLOOD TAILINGS | | | | | | | | |
| Doze tailings to final contour | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Raise crest of dam | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Other | | | | #N/A | \$0.00 | \$0 | | \$0 |
| UPGRADE SPILLWAY | | | | | | | | |
| Excavate channel, dam | | m3 | 3240 | SC1L | \$6.80 | \$22,032 | | \$22,032 |
| Excavate channel, tailings | hydraulic mining of tailings | m3 | 136500 | SCSH | \$5.00 | \$682,500 | | \$682,500 |
| Concrete | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Rip rap channel to Lac de Gras | | m3 | 6500 | RR3L | \$7.00 | \$45,500 | | \$45,500 |
| Geotextile channel to Lac de Gras | | m2 | 1000 | GSTS | \$9.37 | \$9,370 | | \$9,370 |
| CONSTRUCT SEEPAGE COLLECTION POND | | | | | | | | |
| Excavate seepage collection pond | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Doze & spread excavated material | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Vegetate spread material | | ha | | #N/A | \$0.00 | \$0 | | \$0 |
| Bedding layer | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Supply geomembrane | | m2 | | #N/A | \$0.00 | \$0 | | \$0 |
| Install geomembrane | | m2 | | #N/A | \$0.00 | \$0 | | \$0 |
| Erosion protection layer | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| INSTALL GROUNDWATER COLLECTION SYSTEM | | | | | | | | |
| Excavate/install sumps | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Install pumping wells | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Install pumps/pipelines/power supply | | LS | | #N/A | \$0.00 | \$0 | | \$0 |
| SPECIALIZED ITEMS | | | | | | | | |
| Install permanent instrumentation, supply & technician | | each | | #N/A | \$0.00 | \$0 | | \$0 |
| Install permanent instrumentation, drilling | | each | | #N/A | \$0.00 | \$0 | | \$0 |
| TREAT SEEPAGE - see "Water Management" and "Water Treatment" | | | | | | | | |
| TREAT SUPERNATANT | | | | | | | | |
| Pump water (to pit, U/G) | | m3 | | #N/A | \$0.00 | \$0 | | \$0 |
| Equipment maintenance and parts | | allow | | #N/A | \$0.00 | \$0 | | \$0 |
| Supply reagents | | tonne | | #N/A | \$0.00 | \$0 | | \$0 |
| | | | | | | Annual treatment costs | | |
| Number of years of treatment | | | | | | years | | |
| | | | | | | Total treatment costs | | |
| | | | | | | Total | \$22,097,261 | \$43,969 |
| | | | | | | % of Total | 0% | \$22,053,292 |
| | | | | | | | 100% | |

Note #1

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

Note #1 Reduced by \$1.10 to align with reduced rock remine unit cost updated from (GNWT-6 Letter to WLWB Feb 17 re Ekati Sable)

| 1 Rock Pile Name: | | NCRP | | | | | | | |
|---|-------|--------|-----------|-----------|------------------------|--------------|-----------|------------|--------------|
| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | % Cost | Land Cost | Water Cost | |
| STABILIZE SLOPES | | | | | | | | | |
| Flatten slopes with dozer, rock pile, north | | m3 | 1501500 | DSL | \$0.95 | \$1,426,425 | 50% | \$713,213 | \$713,213 |
| Flatten slopes with dozer, till pile | | m3 | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Flatten slope with dozer, till pile, south | | m3 | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Divert runon, 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 | | | | | | | | | |
| Till on Type III rock areas | | m3 | 2,000,000 | SB3L | \$5.10 | \$10,200,000 | | \$0 | \$10,200,000 |
| Type I rock cover | | m3 | 3,980,000 | SB3S | \$3.30 | \$13,134,000 | | \$0 | \$13,134,000 |
| till on caribou ramps | | m3 | 6400 | SB3L | \$5.10 | \$32,640 | 100% | \$32,640 | \$0 |
| rock cover from roads etc. | | m3 | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Rip rap drainage channel and chute | | m3 | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Vegetate | | ha | 5,980,000 | #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 | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Add lime | | tonne | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Contour reclaimed area | | ha | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Other | | | | #N/A | \$0.00 | \$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 Treatment" | | | | | | | | | |
| collect and treat seepage | | m3 | 848206 | OTPL | \$0.35 | \$296,872 | | \$0 | \$296,872 |
| 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 | \$0 |
| | | | | | Total | \$24,793,065 | | \$745,853 | \$24,047,213 |
| | | | | | % of Total | | | 3% | 97% |

Note #1

* 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

Note #1 Volumes Updated from Final Design (Golder 2016 Table 3)
Unit cost updated from (GNWT-6 Letter to WLWB Feb 17 re Ekati Sable)

1 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 | Water | |
| HAZARDOUS MATERIALS INVENTORY | | | | | | | | | |
| Contaminated soil investigation ESA | | each | 1 | #N/A | \$68,393.00 | \$68,393 | 50% | \$34,197 | \$34,197 |
| Contaminated soil drilling and sampling | | each | 1 | #N/A | \$277,143.00 | \$277,143 | 50% | \$138,572 | \$138,572 |
| LABORATORY CHEMICALS | | | | | | | | | |
| load, manifest, ship & disposal fee | | pallet | 500 | #N/A | \$1,000.00 | \$500,000 | 50% | \$250,000 | \$250,000 |
| PCB hauling | | each | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| PCB disposal | | each | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| FUEL | | | | | | | | | |
| Tank decontamination | | allow | 1 | #N/A | \$223,737.00 | \$223,737 | 50% | \$111,869 | \$111,869 |
| Type 2 | | litre | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Type 3 | | litre | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| WASTE OIL | | | | | | | | | |
| Oils/lubricants - burn on site | | litre | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| Oils/lubricants - ship off-site | | litre | 650000 | ORH | \$1.20 | \$780,000 | 50% | \$390,000 | \$390,000 |
| Removal glycol | | litre | 20000 | ORH | \$1.20 | \$24,000 | 50% | \$12,000 | \$12,000 |
| remove batteries | | kg | 25000 | #N/A | \$0.50 | \$12,500 | 50% | \$6,250 | \$6,250 |
| remove paints | | litre | 1500 | #N/A | \$0.27 | \$405 | 50% | \$203 | \$203 |
| remove solvents | | litre | 7500 | #N/A | \$0.75 | \$5,625 | 50% | \$2,813 | \$2,813 |
| Oils/lubricants - disposal fee | | litre | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| PROCESS OR TREATMENT CHEMICALS | | | | | | | | | |
| Sulfuric acid transfer to tanker | | litre | 80000 | PCRH | \$2.50 | \$200,000 | 50% | \$100,000 | \$100,000 |
| Haul to disposal facility | | loads | 2 | #N/A | \$12,000.00 | \$24,000 | 50% | \$12,000 | \$12,000 |
| Disposal fee | | litre | 80000 | #N/A | \$1.00 | \$80,000 | 50% | \$40,000 | \$40,000 |
| Type 4 | | kg | | #N/A | \$0.00 | \$0 | | \$0 | \$0 |
| EXPLOSIVES | | | | | | | | | |
| | | allow | 1 | #N/A | \$10,000.00 | \$10,000 | 50% | \$5,000 | \$5,000 |
| CONTAMINATED SOILS | | | | | | | | | |
| Type 1, light fuel | | m3 | 5000 | CSRH | \$146.00 | \$730,000 | 50% | \$365,000 | \$365,000 |
| Type 2, heavy fuel and oil | | m3 | 2500 | CSRH | \$146.00 | \$365,000 | 50% | \$182,500 | \$182,500 |
| Type 3, metals | | m3 | 250 | CSRL | \$47.00 | \$11,750 | 50% | \$5,875 | \$5,875 |
| HAZARDOUS MAT. TESTING AND ASSESSMENT | | | | | | | | | |
| Technician and analyses | | each | 1 | #N/A | \$110,000.00 | \$110,000 | 50% | \$55,000 | \$55,000 |
| Drilling | | each | 1 | #N/A | \$75,000.00 | \$75,000 | 50% | \$37,500 | \$37,500 |
| Reporting | | each | 1 | #N/A | \$20,000.00 | \$20,000 | 50% | \$10,000 | \$10,000 |
| OTHER | | | | | | | | | |
| Remove nuclear densometers from mill | | each | 10 | #N/A | \$4,000.00 | \$40,000 | | \$0 | \$40,000 |
| Total | | | | | | \$3,557,553 | | \$1,758,777 | \$1,798,777 |
| % of Total | | | | | | | | 49% | 51% |

| 1 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, ship off-site | | km | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Decontaminate, dispose on-site | | each | 5000 | lab-sH | \$49.60 | \$248,000 | \$0 | \$248,000 | |
| DISPOSE STATIONARY EQUIPMENT | | | | | | | | | |
| Decontaminate, ship off-site | | km | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Decontaminate, dispose on-site | | each | 5000 | lab-sH | \$49.60 | \$248,000 | \$0 | \$248,000 | |
| DISPOSE ORE CONCENTRATION EQUIPMENT | | | | | | | | | |
| Decontaminate crushing plant | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Decontaminate tanks & plumbing | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Remove tanks & plumbing | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| DISPOSE WATER TREATMENT EQUIPMENT | | | | | | | | | |
| Decontaminate tanks & plumb. | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Remove tanks & plumbing | | each | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| DECONTAMINATE BUILDINGS & TANKS | | | | | | | | | |
| site wide allowance | | each | 1 | #N/A | \$75,000.00 | \$75,000 | 50% | \$37,500 | |
| clean explosives facility | | each | 1 | #N/A | \$50,000.00 | \$50,000 | 50% | \$25,000 | |
| MOTHBALL BUILDINGS | | | | | | | | | |
| Building 1 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Building 2 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Building 3 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Building 4 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Building 5 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Other | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| REMOVE BUILDINGS - areas are increased to account for height of buildings | | | | | | | | | |
| Process plant | | m2 | 61381 | BRS1H | \$65.00 | \$3,989,765 | 100% | \$3,989,765 | |
| Maintenance plant | | m2 | 27282 | BRS1H | \$65.00 | \$1,773,330 | 100% | \$1,773,330 | |
| Camp | | m3 | 15359 | BRS1H | \$65.00 | \$998,335 | 100% | \$998,335 | |
| Power /boiler house(s) | | m3 | 17810 | BRS1H | \$65.00 | \$1,157,650 | 100% | \$1,157,650 | |
| Ammonium nitrate fuel storage | | m2 | 9259 | BRS1H | \$65.00 | \$601,835 | 100% | \$601,835 | |
| Explosives/cap storage & mixing | | m3 | 600 | BRS1H | \$65.00 | \$39,000 | 100% | \$39,000 | |
| Remove boneyard waste | | each | 1 | #N/A | \$125,000.00 | \$125,000 | 100% | \$125,000 | |
| Crusher building | | m2 | 4633 | BRS1H | \$65.00 | \$301,145 | 100% | \$301,145 | |
| conveyors | | m2 | 2500 | BRS1H | \$65.00 | \$162,500 | 100% | \$162,500 | |
| south tank farm | | m2 | 0 | BRS1H | \$65.00 | \$0 | 100% | \$0 | |
| misc small buildings | | m2 | 0 | BRS1H | \$65.00 | \$0 | 100% | \$0 | |
| Paste Plant (new) | | m2 | 20735 | BRS1H | \$65.00 | \$1,347,775 | 100% | \$1,347,775 | |
| Mine Dry (new) | | m2 | 3259 | BRS1H | \$65.00 | \$211,835 | 100% | \$211,835 | |
| Lube Oil Storage | | m2 | 2914 | BRS1H | \$65.00 | \$189,410 | 100% | \$189,410 | |
| NIWTP Acid Storage | | m2 | 3705 | BRS1H | \$65.00 | \$240,825 | 100% | \$240,825 | |
| MAC E Wing | | m2 | 1283 | BRS1H | \$65.00 | \$83,395 | 100% | \$83,395 | |
| NIWTP | | m2 | 3150 | BRS1H | \$65.00 | \$204,750 | 100% | \$204,750 | |
| NIWTP Expansion | | m2 | 2796 | BRS1H | \$65.00 | \$181,740 | 100% | \$181,740 | |
| LDG Office | | m2 | 993 | BRS1H | \$65.00 | \$64,545 | 100% | \$64,545 | |
| Sewage Treatment Plant | | m2 | 1471 | BRS1H | \$65.00 | \$95,615 | 100% | \$95,615 | |
| UG Mine Dry | | m2 | 954 | BRS1H | \$65.00 | \$62,010 | 100% | \$62,010 | |
| Emulsion Plant | | m2 | 1413 | BRS1H | \$65.00 | \$91,845 | 100% | \$91,845 | |
| Surface Welding Shop | | m2 | 1098 | BRS1H | \$65.00 | \$71,370 | 100% | \$71,370 | |
| Surface Operations Building | | m2 | 1076 | BRS1H | \$65.00 | \$69,940 | 100% | \$69,940 | |
| Dorm 1 & 2 | | m2 | 2691 | BRS1H | \$65.00 | \$174,915 | 100% | \$174,915 | |
| North Construction Offices | | m2 | 547 | BRS1H | \$65.00 | \$35,555 | 100% | \$35,555 | |
| Pit Muster | | m2 | 485 | BRS1H | \$65.00 | \$31,525 | 100% | \$31,525 | |
| Mine Rescue Fire Hall | | m2 | 449 | BRS1H | \$65.00 | \$29,185 | 100% | \$29,185 | |
| LDG Muster | | m2 | 328 | BRS1H | \$65.00 | \$21,320 | 100% | \$21,320 | |
| LDG Offices | | m2 | 273 | BRS1H | \$65.00 | \$17,745 | 100% | \$17,745 | |
| AZ1 Offices | | m2 | 238 | BRS1H | \$65.00 | \$15,470 | 100% | \$15,470 | |
| Fuel Tanks 1-6 | | m2 | 27918 | BRS1H | \$65.00 | \$1,814,670 | 100% | \$1,814,670 | |
| Arctic corridors | | m2 | 6372 | BRS1H | \$65.00 | \$414,180 | 100% | \$414,180 | |
| Incinerator | | m2 | 1000 | BRS1H | \$65.00 | \$65,000 | 100% | \$65,000 | |
| BREAK BASEMENT SLABS | | | | | | | | | |
| Buildings - all | | m2 | 4500 | BRCL | \$40.00 | \$180,000 | 100% | \$180,000 | |
| Building 2 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Building 3 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Building 4 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Building 5 | | m2 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| REMOVE BURIED TANKS | | | | | | | | | |
| Tank 1, decontaminate | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| , excavate & dispose | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Tank 2, decontaminate | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| , excavate & dispose | | m3 | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Other | | | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| LANDFILL FOR DEMOLITION WASTE | | | | | | | | | |
| Place rock cover | | m3 | 187500 | SB3S | \$4.20 | \$787,500 | 50% | \$393,750 | |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| Landfill disposal fee | | tonne | | #N/A | \$0.00 | \$0 | \$0 | \$0 | |
| GRADE AND CONTOUR | | | | | | | | | |
| Grade mill area | | m2 | 30750 | SB3S | \$4.20 | \$129,150 | 50% | \$64,575 | |
| Place rock cover | | m3 | 34050 | SB3S | \$4.20 | \$143,010 | 50% | \$71,505 | |
| Rip rap on ditches | | 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 | |
| RECLAIM ROADS | | | | | | | | | |
| Haul roads, A 154 & A418 lease | | ha | 3.71 | SCFYL | \$4,300.00 | \$15,953 | 100% | \$15,953 | |
| Service roads, A154 & A418 lease | | ha | 1.6 | SCFYL | \$4,300.00 | \$6,880 | 100% | \$6,880 | |
| Haul roads, A21 lease | | ha | 15.2 | SCFYL | \$4,300.00 | \$65,360 | 100% | \$65,360 | |
| Service roads, A21 lease | | ha | 28.39 | SCFYL | \$4,300.00 | \$122,077 | 100% | \$122,077 | |
| Haul roads, PKC & dumps lease | | ha | 10.13 | SCFYL | \$4,300.00 | \$43,559 | 100% | \$43,559 | |
| Service roads, PKC & dumps lease | | ha | 23.2 | SCFYL | \$4,300.00 | \$99,760 | 100% | \$99,760 | |
| Haul roads, infrastructure lease | | ha | 14.85 | SCFYL | \$4,300.00 | \$63,855 | 100% | \$63,855 | |
| Service roads, infrastructure lease | | ha | 5.4 | SCFYL | \$4,300.00 | \$23,220 | 100% | \$23,220 | |
| Haul roads, airstrip lease | | ha | 0 | SCFYL | \$4,300.00 | \$0 | 100% | \$0 | |
| Service roads, airstrip lease | | ha | 2.9 | SCFYL | \$4,300.00 | \$12,470 | 100% | \$12,470 | |
| SPECIALIZED ITEMS | | | | | | | | | |
| Reclaim airstrip | | ha | 11 | SCFYL | \$4,300.00 | \$47,300 | 100% | \$47,300 | |
| Yellowknife landfill disposal fee | | allow | 1 | #N/A | \$250,000.00 | \$250,000 | 100% | \$250,000 | |
| | | | | | Total | \$17,294,274 | | \$16,205,944 | \$1,088,330 |
| | | | | | % of Total | | | 94% | 6% |

Added A21
Added A21

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

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|-------|-------|----------|-----------|--------------|--------------------|
| STABILIZE EMBANKMENT | | | | | | |
| Toe buttress, drain mat'l | | m3 | | #N/A | \$0.00 | \$0 |
| , fill mat'l A | | m3 | | #N/A | \$0.00 | \$0 |
| , fill mat'l B | | m3 | | #N/A | \$0.00 | \$0 |
| Rip rap | | m3 | | #N/A | \$0.00 | \$0 |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 |
| Raise crest | | m3 | | #N/A | \$0.00 | \$0 |
| UPGRADE SPILLWAY IN NORTH INLET BERM | | | | | | |
| Excavate channel | | m3 | 680 | SC1L | \$6.80 | \$4,624 |
| Place rip rap | | m3 | 190 | RR3L | \$7.00 | \$1,330 |
| STABILIZE SEDIMENT CONTAINMENT PONDS | | | | | | |
| Place soil cover | | m3 | | #N/A | \$0.00 | \$0 |
| Place geotextile | | m2 | | #N/A | \$0.00 | \$0 |
| Vegetate | | ha | | #N/A | \$0.00 | \$0 |
| BREACH EMBANKMENT | | | | | | |
| Remove fill | | m3 | | #N/A | \$0.00 | \$0 |
| COLLECTION PONDS | | | | | | |
| Breach 4 dams | | m3 | 2200 | SB1L | \$4.30 | \$9,460 |
| place geotextile, 4 by 15,000 m2 | | m2 | 60000 | #N/A | \$10.00 | \$600,000 |
| place rock over geotextile | | m3 | 60000 | SBSH | \$6.50 | \$390,000 |
| BREACH DITCHES | | | | | | |
| Excavate | | m3 | 7875 | SB1L | \$4.30 | \$33,863 |
| Backfill/recontour | | m3 | 2625 | SC1H | \$9.30 | \$24,413 |
| Vegetate | | ha | | #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 |
| Install pumps/pipelines/power supply | | LS | | #N/A | \$0.00 | \$0 |
| NORTH INLET EAST DIKE | | | | | | |
| Excavate/construct spillway | | m3 | 4500 | SC1H | \$9.30 | \$41,850 |
| Excavate & backfill | | m3 | | #N/A | \$0.00 | \$0 |
| COLLECT DRAINAGE FOR TREATMENT | | | | | | |
| Excavate collection ditches | | m3 | | #N/A | \$0.00 | \$0 |
| Rip rap ditches | | m3 | | #N/A | \$0.00 | \$0 |
| Pipes | | m | | #N/A | \$0.00 | \$0 |
| Pumps | | each | | #N/A | \$0.00 | \$0 |
| Collect'n pond, exc. mat'l A | | m3 | | #N/A | \$0.00 | \$0 |
| , exc. mat'l B | | m3 | | #N/A | \$0.00 | \$0 |
| Collect'n pond, fill mat'l A | | m3 | | #N/A | \$0.00 | \$0 |
| , fill mat'l B | | m3 | | #N/A | \$0.00 | \$0 |
| Collect'n pond, liner | | m2 | | #N/A | \$0.00 | \$0 |
| COLLECT DRAINAGE FOR TREATMENT | | | | | | |
| Remove and treat north inlet water | | m3 | 500000 | OTPL | \$0.35 | \$175,000 |
| SHORT TERM WATER TREATMENT* | | | | | | |
| Annual water treatment cost, from "Water Treatment" | | | | | | \$0 |
| | | | | | Total | \$1,280,539 |

1 Water Treatment

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|--|-------|--------|----------|-----------|-----------|------|
| ADDITION OF REAGENTS | | | | | | |
| H2O2 | | kg | | #N/A | \$0.00 | \$0 |
| lime | | 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 |
| 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 |
| Annual water treatment costs | | | | | | \$0 |
| Number of years of water treatment | | years | | | | |
| Total | | | | | | \$0 |

Note: Short term water treatment is intended to be included in "Water Management", whereas long term, or post-closure, water treatment is included in "Post-Closure Monitoring and Maintenance"

1 Post-Closure Monitoring & Maintenance:

| ACTIVITY/MATERIAL | Notes | Quantit | | Cost Code | Unit Cost | Cost |
|---|-------|---------|----|-----------|----------------|---------------------|
| | | Units | y | | | |
| MONITORING & INSPECTIONS | | | | | | |
| Annual geotechnical inspection | | each | 7 | RPTH | \$20,000.00 | \$140,000 |
| Survey inspection | | each | 7 | #N/A | \$50,000.00 | \$350,000 |
| Performance monitoring (water, dust, wildlife, etc.) | | each | 10 | #N/A | \$250,000.00 | \$2,500,000 |
| Reporting | | each | 10 | #N/A | \$100,000.00 | \$1,000,000 |
| person, labour, equipment, logistics, etc | | each | 1 | #N/A | \$6,237,680.00 | \$6,237,680 |
| INTERIM CARE AND MAINTENANCE | | | | | | |
| annual C&M | | yrs | 3 | #N/A | \$2,223,639.00 | \$6,670,917 |
| fish consumption advisory signage | | allow | 1 | #N/A | \$10,000 | \$10,000 |
| POST-CLOSURE EFFECTS MONITORING AND COMMUNITY ENGAGEMNT | | | | | | |
| Aquatic Effects Monitoring and Reporting | | yrs | 3 | #N/A | \$250,000 | \$750,000 |
| Wildlife Effects Monitoring and Reporting | | yrs | 3 | #N/A | \$50,000 | \$150,000 |
| Traditional Knowledge Monitoring and Review (at site) | | yrs | 10 | #N/A | \$120,000 | \$1,200,000 |
| Environmental Monitoring Advisory Board Unique to Diavik Environmental Agreemen | | yrs | | #N/A | | \$0 |
| Community Engagement (at communities) | | yrs | 10 | #N/A | \$50,000 | \$500,000 |
| Subtotal, Annual post-closure costs | | | | | | \$19,508,597 |
| Discount rate for calculation of net present value of post-closure cost, % | | | | 0.00% | | |
| Number of years of post-closure activity | | | | | years | |
| Present Value of payment stream | | | | | | \$19,508,597 |

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

Include water treatment cost from "Water Treatment" worksheet if treatment is considered long term, such as ARD/ML.

ANNUAL INTERIM CARE & MAINTENANCE

| | No. | hrs/yeal | Rate | Annual Cost |
|-----------------------------|------------|-------------|---------|-------------------------|
| Site supervisor | 1 | 3650 | \$61.20 | \$223,380 |
| laborers | 3 | 3650 | \$38.76 | \$141,474 |
| equipment operators | 2 | 3650 | \$56.10 | \$204,765 |
| mechanic | 1 | 3650 | \$61.20 | \$223,380 |
| electrician | 1 | 3650 | \$70.00 | \$255,500 |
| envir. coodinator | 1 | 3650 | \$61.20 | \$223,380 |
| | | | | \$1,271,879 total staff |
| Fuel, power & heat | | L/hr | mon/yr | fuel |
| | 50 | 3 | 108000 | |
| | 40 | 7 | 201600 | |
| | 25 | 2 | 36000 | |
| Fuel, mobile equipment | 15 | 12 | 129600 | |
| | | | 475200 | total fuel |
| air charter | flights/yr | cost/flight | | |
| | 52 | 4500 | | 234000 |
| camp costs | 108 | m-mont | 1320 | 142560 |
| misc. supplies, allowance | | | | 50000 |
| reagents | | | | 50000 |
| Total annual C&M | | | | \$2,223,639 |

1 Mobilization/Demobilization:

| ACTIVITY/MATERIAL | Notes | Units | Quantity | Cost Code | Unit Cost | Cost |
|---|--|-----------|----------|-----------|-----------|--------------------|
| MOBILIZE HEAVY EQUIPMENT | | | | | | |
| Excavators - 2 | | km | 4800 | MHERH | 10.25 | \$49,200 |
| Dump trucks - 15 | | km | 120000 | MHERH | 10.25 | \$1,230,000 |
| Dozers - 4 | | km | 16000 | MHERH | 10.25 | \$164,000 |
| Demolition shears - 2 | | km | 9600 | MHERH | 10.25 | \$98,400 |
| Crane - 2 | | km | 1600 | MHERH | 10.25 | \$16,400 |
| Loader - 2 | | km | 4800 | MHERH | 10.25 | \$49,200 |
| Compactor | | km | | MHERH | 10.25 | \$0 |
| Service vehicles - 10 | | km | 16000 | MHERH | 10.25 | \$164,000 |
| 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 | 500000 | \$500,000 |
| Truck tires | | allow | 1 | #N/A | 500000 | \$500,000 |
| Other | | | | #N/A | 0 | \$0 |
| MOBILIZE CAMP | | | | | | |
| Reclamation activities | | allow | 1 | #N/A | 150000 | \$150,000 |
| Long term reclamation activities (eg pump flooding) | | allow | | #N/A | 0 | \$0 |
| MOBILIZE WORKERS | | | | | | |
| Rotations over reclamation period | | manhours | 26000 | #N/A | 45 | \$1,170,000 |
| Reclamation activities - transport | | each | | #N/A | 0 | \$0 |
| Reclamation activities - travel time | | manhours | | #N/A | 0 | \$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 ACCOMODATIONS | | | | | | |
| Reclamation activities 20800 mandays | | mandays | 20800 | ACCML | 100 | \$2,080,000 |
| Long term reclamation activities (eg pump flooding) | | manmonths | | #N/A | 0 | \$0 |
| MOBILIZE FUEL | | | | | | |
| Fuel freight - reclamation activities | | litre | | #N/A | 0 | \$0 |
| Fuel freight - long term reclamation activities | | litre | 7000000 | FCMH | 0.42 | \$2,940,000 |
| Fuel freight accomodations | | litre | | #N/A | 0 | \$0 |
| WINTER ROAD | | | | | | |
| Construction and operation - 400km | once for C&M, twice for contractor mob/dem | km | | WRCH | 11500 | \$0 |
| Limited winter use | | km | | #N/A | 0 | \$0 |
| Winter road tarriff | | km | | #N/A | 0 | \$0 |
| DEMOBILIZE HEAVY EQUIPMENT | | | | | | |
| 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 |
| DEMOBILIZE CAMP | | | | | | |
| | | allow | | #N/A | 0 | \$0 |
| DEMOBILIZE WORKERS | | | | | | |
| crew travel time | | mandays | | #N/A | 0 | \$0 |
| crew transportation | | each | | #N/A | 0 | \$0 |
| WINTER ROAD | | | | | | |
| Construction and operation | | km | | #N/A | 0 | \$0 |
| Limited winter use | | km | | #N/A | 0 | \$0 |
| Winter road tarriff | | km | | #N/A | 0 | \$0 |
| Total | | | | | | \$9,111,200 |

tabled pending A21 pit development plans

| Equipment Mobilization | # of machines | loads/ | mach/ | round trip | total road |
|------------------------|---------------|--------|-------|------------|------------|
| | | ne | km | ne | mileage |
| excavator | | 2 | 3 | 800 | 4800 |
| dump trucks | | 15 | 10 | 800 | 120000 |
| dozers | | 4 | 5 | 800 | 16000 |
| demolition shears | | 2 | 6 | 800 | 9600 |
| front end loader | | 2 | 3 | 800 | 4800 |
| cranes | | 2 | 1 | 800 | 1600 |
| service vehicles | | 10 | 2 | 800 | 16000 |

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 |
| extra personnel | | manmonths | | #N/A | 0 | \$0 |
| -electrician | | manmonths | | #N/A | 0 | \$0 |
| -mechanic | | manmonths | | #N/A | 0 | \$0 |
| annual fuel | | litre | | #N/A | 0 | \$0 |
| misc. supplies | | allow | | #N/A | 0 | \$0 |
| pick-up truck | | each | | #N/A | 0 | \$0 |
| small dozer | | allow | | #N/A | 0 | \$0 |
| small excavator | | allow | | #N/A | 0 | \$0 |
| snow machine | | allow | | #N/A | 0 | \$0 |
| communications | | allow | | #N/A | 0 | \$0 |
| SNP/AEMP water sampling & reporting | | each | | #N/A | 0 | \$0 |
| geotechnical assessment | | each | | #N/A | 0 | \$0 |
| interim water treatment | | | | #N/A | | \$0 |
| other | | each | | #N/A | 0 | \$0 |
| | | | | Annual Interim C&M Cost | | \$0 |
| Number of years of ICM | | years | | Total | | \$0 |

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 | | |
| Buildings - Decontaminate | | | | | | | |
| | Asbestos | BDA | m2 | 25.60 | 51.20 | | Low: removal of asbestos siding & flooring; High: removal of insulated pipes |
| Buildings - Remove | | | | | | | |
| | Wood | BRW | m2 | 27.50 | 41.00 | | Unit costs are based on 3m high, single storey building. Scale areas accorc |
| | Concrete | BRC | m2 | 40.00 | 65.00 | 6.00 | |
| | Steel - teardown | BRS1 | m2 | 45.00 | 65.00 | | |
| | 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 | | |
| 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 | | High cost: push up to 300 m |
| 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 | | | | | | | |
| | drill/blast/load/short haul | RC1 | m3 | 12.05 | 17.80 | | (e.g. ditch/spillway excavation) |
| | drill/blast/load/long haul | RC2 | m3 | 12.70 | 18.40 | | Low:foundation excavation;High:spillway excavation |
| | 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 | | 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 | | | |
| | Specified activity | RRS | m3 | | | | |
| 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 | 4.20 | Low: non-engineered; High:engineered; specified 2011 \$3.96 adjusted for ir |
| | SB2 + spread and compact | SB4 | m3 | 5.50 | 11.00 | | Low: non-engineered; High:engineered |
| | Specified activity | SBS | m3 | 3.20 | 6.50 | | Low: rehandle waste rock dump by dozing; High:rehandle waste rock by ha |
| | 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 | | Low: non-engineered; High:engineered |
| | SC2 + spread and compact | SC4 | m3 | 9.30 | 23.20 | | Low: non-engineered; High:engineered (e.g. complex covers, low volume d |
| | Specified activity | SCS | m3 | | 5.00 | 18.80 | High:hydraulic mining; Specified: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 | | 9.37 | 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 |

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

Filter by unit

| | | | | | |
|---|---------|---------|-----------|---------|---|
| 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 | |
| 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 | | cargo rate>500lb |
| Mobilize Camp | | | | | |
| Road access | MCR | each | 50000.00 | | refurbish existing camp |
| Mobilize Workers | | | | | |
| flight | MW | each | 4500.00 | 9100.00 | Low:e.g. 8 passenger; High: Dash 7 |
| Oil Removal | | | | | |
| oil removal | OR | litre | 0.43 | 1.20 | Low:waste oil heater; High: ship offsite |
| PCB Removal | | | | | |
| Remove from site | PCBR | litre | 40.20 | 46.90 | Low: shipping, handling & disposal from Yellowknife |
| Pipes, small (<6in dia.) | | | | | |
| remove/dispose on site | PSR | m | 1.00 | 24.00 | Low: remove/dispose on site; High: remove/re-use |
| supply | PSS | m | 6.10 | 11.10 | Low:supply; High:supply and ship |
| install | PSI | m | 25.00 | | |
| Pipes, large (>6in dia.) | | | | | |
| remove/dispose on site | PLR | m | 22.00 | 72.00 | Low: remove/dispose on site; High: remove/re-use |
| supply | PLS | m | 129.00 | 143.00 | Low:supply; High:supply and ship |
| 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 | Low: shipping, handling & disposal from Yellowknife |
| Pumps | | | | | |
| Pump capital cost | PC | each | 195000.00 | | |
| Pump shipping | PS | each | 2500.00 | | |
| Pump operating cost | POC | m3 | 0.12 | | pump operating costs should be calculated based on pump capacity, fuel cc |
| 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 | | | | | |

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

| Filter by unit | | | | | | |
|--|----------|----------|----------|----------|---------|---|
| Shaft & Raises | SR | m2 | 645.00 | 2132.00 | | Low:pre-cast concrete slabs, little site prep. Area=shaft+>1m all around |
| Portals | POR | m3 | 18.80 | 250.00 | 1200.00 | Low:unit cost code SCS;High:excavate & backfill collapsed portal;Spec: inst |
| 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 | | 2 person crew |
| 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 | | | | | | |
| | OTP | m3 | 0.35 | 2.00 | | |
| 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 | | | |
| floculant | flocc | kg | 6.00 | | | |
| copper sulphate | copper | kg | | | | |
| 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 | Specified= /m3, Wetland Growth Media Substrate mixed and installed (sanc |
| Water Sampling/Analysis/Reporting | | | | | | |
| | WS | each | 7000.00 | 10000.00 | | |
| Winter Road | | | | | | |
| Construction | WRC | km | 2000.00 | 11500.00 | | |
| Usage | WRU | kmtone | 0.29 | | | |

Unit Cost Estimator

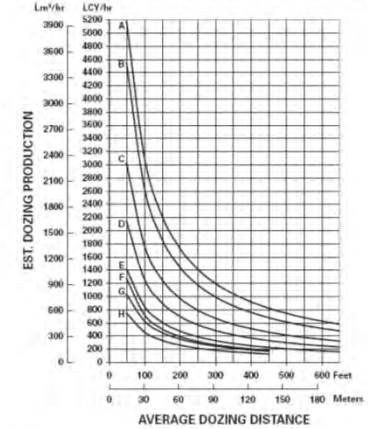
1 Equipment Productivity Figures and Graphs have been reproduced from Caterpillar Performance Handbook - Edition 42

| EXCAVATION | |
|--|----------------|
| Productivity | |
| Machine Cat 336EL | |
| bucket capacity | 3.16 m3 |
| fill factor | 75% % |
| cycle time | 45 seconds |
| operator skill | 80% % |
| machine availability | 83% % |
| altitude adjustment | 100% % |
| Hourly productivity | 125.89 m3/hr |
| Operating Costs | |
| - Contractor | |
| Contractor hourly rate | \$180.00 \$/hr |
| Excavation cost - contractor rate | 1.43 \$/m3 |
| - Owner | |
| ownership, daily | \$/day |
| maintenance | \$/hr |
| fuel | \$/hr |
| consumables (cutters, tires) | \$/hr |
| operator | \$/hr |
| Owner hourly rate | \$0.00 \$/hr |
| Excavation cost - owner rate | \$0.00 \$/m3 |
| Excavation cost - select contractor or owner rate (D22 or D31) | \$/m3 |

| HAUL AND DUMPING | |
|--|--------------------|
| Productivity | |
| Machine Cat 770 | |
| truck capacity | 25.1 m3 |
| fill factor | 80% % |
| load time | 6.0 min. |
| haul distance | 1.5 km |
| average velocity | 20.0 km/hr |
| haul time + return time | 9.0 min. |
| wait time | 0.5 min. |
| dump time | 1.0 min. |
| cycle time | 16.5 min. |
| machine availability | 83% % |
| altitude adjustment | 100% % |
| Hourly productivity | 13.7 ve. min/cycle |
| Hourly productivity | 88.0 m3/hr |
| Operating Costs | |
| - Contractor | |
| Contractor hourly rate | \$225.00 \$/hr |
| Haul and Dump - contractor rate | 2.56 \$/m3 |
| - Owner | |
| ownership, daily | \$/day |
| maintenance | \$/hr |
| fuel | \$/hr |
| consumables (cutters, tires) | \$/hr |
| operator | \$/hr |
| Owner hourly rate | \$0.00 \$/hr |
| Haul/Dumping Cost - owner rate | \$0.00 \$/m3 |
| Haul/Dumping Cost - select contractor or owner rate (I22 or I31) | \$/m3 |

| SPREADING/DOZING | |
|---|----------------|
| Productivity | |
| Machine Cat D8 | |
| Estimate production using example curves provided or equivalent from other supplier | 600 m3/hr |
| Correction factors (see table provided) | |
| operator skill | 0.75 |
| material type, see table | 0.80 |
| slot dozing | 1.00 |
| side by side dozing | 1.00 |
| visibility | 1.00 |
| job efficiency | 0.83 |
| altitude adjustment | 1.00 |
| slope adjustment | 1.00 |
| Hourly productivity | 298.8 m3/hr |
| Operating Costs | |
| - Contractor | |
| Hourly rate - contractor supplied | \$260.00 \$/hr |
| Dozing - contractor rate | 0.87 \$/m3 |
| - Owner | |
| ownership, daily | \$/day |
| maintenance | \$/hr |
| fuel | \$/hr |
| consumables (cutters, tires) | \$/hr |
| operator | \$/hr |
| Owner hourly rate | \$0.00 |
| Spreading/Dozing Cost - owner rate | \$0.00 \$/m3 |
| Spreading/Dozing Cost - select contractor or owner rate (N22 or N31) | \$/m3 |

ESTIMATED DOZING PRODUCTION • Universal Blades • D7G through D11T CD



KEY
 A - D11T CD
 B - D11T
 C - D10T
 D - D9T
 E - D8T
 F - D7E
 G - D7R Series 2
 H - D7G

NOTE: This chart is based on continuous field machine operation under varying job conditions. Refer to correction factors following these charts.

| Excavator | | | |
|--|---|-----------------|----------------|
| heaped bucket capacity, m3 | Cat 320 1.5 | Cat 325B 2.2 | Cat 375 5.4 |
| easy digging, shallow digging, small swing angle | Typical Cycle Times (seconds) | | |
| med. to hard digging, rocky soil, swing angle to 90 deg. | 16 | 18 | 20 |
| tough digging, sandstone, caliche, at max. machine depth, swing angle > 120 deg. | 23 | 23 | 25 |
| | 27 | 29 | 35 |
| Material | Fill Factor (% of heaped bucket capacity) | | |
| Moist loam or sandy clay | 100 - 110 | | |
| sand and gravel (not till) | 95 - 110 | | |
| hard tough clay | 80 - 90 | | |
| rock - will blasted | 60 - 75 | | |
| rock - poorly blasted | 40 - 60 | | |
| Operator Skill | poor | average | good |
| Correction factor | 0.6 | 0.75 | 1 |
| Machine availability | poor | average | good |
| Correction factor | 0.9 | 0.95 | 1 |

| Trucking | | | |
|-----------------------------|-------------------|------------------|-----------------|
| Truck capacity - heaped, m3 | Cat 771 D 27.5 | Cat 777D 60.5 | Cat 789C 137 |

| Dozing | |
|---|-----------|
| JOB CONDITION CORRECTION FACTORS | |
| TRACK-TYPE TRACTOR | |
| OPERATOR - | |
| Excellent | 1.00 |
| Average | 0.75 |
| Poor | 0.60 |
| MATERIAL - | |
| Loose stockpile | 1.20 |
| Hard to cut; frozen - | |
| with tilt cylinder | 0.80 |
| without tilt cylinder | 0.70 |
| Hard to drift, "dead" (dry, non-cohesive material) or very sticky material | 0.80 |
| Rock, ripped or blasted | 0.60-0.80 |
| SLOT DOZING | 1.20 |
| SIDE BY SIDE DOZING | 1.15-1.25 |
| VISIBILITY - | |
| Dust, rain, snow, fog or darkness | 0.80 |
| JOB EFFICIENCY - | |
| 50 min/hr | 0.83 |
| 45 min/hr | 0.67 |
| BULLDOZER* | |
| Adjust based on SAE capacity relative to the base blade used in the Estimated Dozing Production graphs. | |
| GRADES - See following graph. | |
| *NOTE: Angling blades and cushion blades are not considered production dozing tools. Depending on job conditions, the A-blade and C-blade will average 60-75% of straight blade production. | |

% Grade vs. Dozing Factor
 (-) Downhill
 (+) Uphill

