



Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

April 18, 2011

Mark Cliffe-Phillips
Executive Director
Wek'eezhii Land and Water Board
#1-4905 48th Street
Yellowknife, NT X1A 3S3

Dear Mr. Cliffe-Phillips,

Re: **INAC RECLAIM Cost Estimate (2011) - Diavik Diamond Mines Incorporated MV2007L2-0003 – Diavik Mine Site**

On February 22, 2011, the Wek'eezhii Land and Water Board (WLWB) requested that Indian and Northern Affairs Canada (INAC) prepare and submit a RECLAIM cost estimate for the total liability associated with the Diavik mine site. INAC responded on February 25, 2011, stating that although generation of a RECLAIM cost estimate prior to Board approval of the Interim Closure and Reclamation Plan (ICRP) is premature, it would meet the request as put forth by the WLWB.

Please find attached INAC RECLAIM cost estimate for the Diavik Mine Site. To assist in the preparation of this estimate the Department retained Mr. John Brodie of Brodie Consulting Limited (BCL). Mr. Brodie's technical memo dated April 15, 2011 is attached as Appendix A.

Although INAC is providing a RECLAIM cost estimate for the Board's consideration, as requested, INAC would like to reiterate that it does not support the approval of the December 2010 version of the ICRP. The Department continues to be concerned with deviations from previously approved versions of the closure plan.

I trust this information will be useful to the Board. Should you have any questions feel free to contact Mr. Robert Jenkins at (867) 669-2574 Robert.Jenkins@inac.gc.ca or the undersigned at (867) 669-2647 Teresa.Joudrie@inac.gc.ca

Sincerely,

Teresa Joudrie
Director – Renewable Resources and Environment

INDIAN AND NORTHERN AFFAIRS CANADA
RECLAIM COST ESTIMATE FOR THE DIAVIK DIAMOND MINE (2011)
MV2007L2-0003

Introduction

On February 22, 2011, the Wek'eezhii Land and Water Board (WLWB) requested that Indian and Northern Affairs Canada (INAC) prepare and submit a RECLAIM cost estimate for the total liability associated with the Diavik mine site. INAC responded on February 25, 2011, stating that although generation of a RECLAIM cost estimate prior to Board approval of the Interim Closure and Reclamation Plan (ICRP) is premature, it would meet the request as put forth by the WLWB.

To assist in the preparation of this estimate, INAC retained Brodie Consulting Limited (BCL). BCL's technical memo and cost estimate, upon which this submission is based, are attached as Appendices A and C.

After reviewing Diavik Diamond Mines Incorporated's (DDMI) revised Interim Closure and Reclamation Plan (ICRP) and associated reclamation cost estimate (December 2010), INAC forwarded two information requests to DDMI relevant to preparation of a RECLAIM estimate on March 3rd and April 8, 2011. DDMI responded on March 9, 2011 and April 8, 2011, respectively.

Using the information contained within the December 2010 version of the ICRP as well as the responses from information requests, INAC generated a reclamation cost estimate using the RECLAIM model, version 6.1. The estimate, as presented, is also developed in accordance with the "Mine Site Reclamation Policy for the Northwest Territories" (INAC, 2002). This Policy outlines Departmental principles with respect to sustainable resource development in the north, including:

1. Adequate security should be provided to ensure the cost of reclamation, including shutdown, closure and post-closure, is born by the operator of the mine rather than the Crown;
2. Following mine closure, mining companies or their future owners should continue to be responsible for the site, including the remediation of any additional environmental complications which develop;
3. Every mine should, at all times, have a mine closure and reclamation plan, which includes measures to be taken in the event of a temporary closure.
4. Estimates of reclamation costs, for the purposes of financial security should be based on the cost of having the necessary reclamation work done by a third party contractor if the operator defaults. The estimates should also include contingency factors appropriate to the particular work to be undertaken.

The Board should be cognisant of these principles as it reviews the current cost estimate developed for the Diavik Diamond Mine.

1999 and 2007 INAC RECLAIM Estimates – Diavik Diamond Mine Site

This submission is the third RECLAIM cost estimate for the Diavik Diamond mine site prepared by INAC. Previous estimates were provided in 1999 and 2007. These estimates were based on the following assumptions:

- The company goes bankrupt or abandons the property,
- No allowance for progressive reclamation until after it is completed,
- All work is based on independent contractor rates,
- All costs are 1999 or 2007 Canadian dollars, respectively,
- The cost estimate does not include revenue from recovery of assets,
- The mine is developed substantially as planned,
- The estimate does not include costs for catastrophic events such as failure of dams, dikes or dump slope

The 1999 RECLAIM estimate was prepared prior to the commencement of mining operations at the Diavik mine site. INAC provided security estimates for years 1, 5, 11 and 20 of the mine life. Reclamation costs estimated were as follows:

- Year 1 - \$66,310,198;
- Year 5 - \$164,709,801;
- Year 11 - \$184,129,465;
- Year 20 - \$187,129,150

In 2007, a re-assessment was conducted based on the same assumptions as provided above. Reclamation costs estimated were as follows:

- 2007 – \$131,472,279;
- 2022 - \$133,235,938

Major differences in the cost estimates between 1999 and 2007 (approximate \$50M decrease at end of mine) was largely attributed to adjustments in three areas:

1. Tailings

- Re-evaluation of unit costs as short-fall of inert rock has been precluded due to improved waste segregation and assumptions concerning methodology for placement of course PK.
- Major change is minus \$13.2 million

2. Rock Piles

- **Change in waste management leading to reduction in area to be covered with till and inert rock.**
- **Change in unit costs and reduction in area to be covered.**
- **Major change is minus \$36.1 million**

3. Contingency

- **Percentage reduced to 20% from 25% due to site development being conducted substantially as planned with only beneficial improvements (waste rock management).**
- **Net change is minus \$18.4 million.**

RECLAIM cost estimate summary tables for both the 1999 and 2007 estimates are attached as Appendix B.

2011 INAC RECLAIM Estimate - Methodology:

The RECLAIM model, version 6.1, was used in the preparation of this estimate. In addition, the most current unit cost information available to the Department was utilized. Unit costs are regularly updated, based upon third party cost information experienced at INAC-CARD sites, where possible.

It is important to note that the RECLAIM model is not a statistical model. It relies solely upon user entry values and does not manipulate those entry values other than to multiply or add the values for the user. Accordingly, a sound understanding and comprehension of the reclamation approach required at a site is required when preparing an estimate.

The RECLAIM model is broken down into a series of mine components (e.g. Open Pit), and then into a series of activities (i.e. "line items"). A unit value is entered within each line item, and then the user must decide the unit cost code which applies to that activity. The model will then multiply the unit value by the unit code for the user. The sum of the mine components is added to generate a subtotal, and as a final step, the user must decide values for project management, engineering, and contingency. These values are calculated as a percentage of the subtotal and then added to the subtotal.

The final calculation provides an estimate of the total reclamation security. This total reclamation security amount is the sum of the water related reclamation security and land related reclamation security. INAC maintains that only the water related reclamation security be posted within the Type A water licence. Land related reclamation security is to be posted appropriately within land use authorizations.

As identified above, INAC prepared a RECLAIM cost estimate in 1999 and 2007 for the Diavik mine site. It was determined that the most efficient and effective manner to generate a 2011 estimate is to "adjust" the 2007 estimate, incorporating any new or updated information and/or any approved deviations in the mine plan since 2007. Information sources for this review included the approved 2001 ICRP, the 2010 ICRP (as submitted but yet to be approved), as well as responses to INAC information requests dated March 4, and April 8, 2011.

The final estimate is provided as an "end of mine" liability. Similar to the 1999 and 2007 cost estimates, the following assumptions have been made:

- The company goes bankrupt or abandons the property,
- No allowance for progressive reclamation until after it is completed,
- All work is based on independent contractor rates,
- All costs are in present day Canadian dollars,

- The cost estimate does not include revenue from recovery of assets,
- The mine is developed substantially as planned,
- The estimate does not include costs for catastrophic events such as failure of dams, dikes or dump slope

In addition to these INAC has also assumed the following (see next section of document for rationale):

- A21 kimberlite pipe is not developed as originally planned and permitted
- Cover designs for the North Country Rock Pile (NCRP) and Processed Kimberlite Containment (PKC) facility remain as approved in the 2001 ICRP
- A quarry to acquire NPAG rock for cover of the NCRP and PKC is required until detailed information regarding the specific locations, volumes, and accessibility of Type I rock necessary to meet closure design criteria is provided by DDMI.

INAC would like to note that where possible information provided by the proponent is utilized, in an effort to minimize the need to make assumptions within the cost estimate. However, it must be clear that should insufficient information exist or the level of detail be lacking, INAC must follow a "precautionary approach" as described within the 2002 Mine Site Reclamation Policy. Should additional detailed information become available to the Department at a later date the estimate could be revisited.

2011 INAC RECLAIM Cost Estimate

INAC determined that the following adjustments were necessary to update the 2007 cost estimate. These include:

- Removal of market price factor adjustment,
- Adjustment of the RECLAIM unit cost table for inflation over 4 years
- Removal of reclamation tasks associated with the A21 development,
- Evaluation of DDMI proposed cover design changes for the NCRP,
- Evaluation of DDMI proposed cover design changes for the PKC,
- Addition of reclamation tasks to resolve issues associated with the availability of clean rock for reclamation activities.

These adjustments are described in more detail below. In addition to these major adjustments, INAC ensured that any applicable new or updated information from 2007 be incorporated. An example of this was the utilization of updated building areas provided by the proponent.

Market Factor Price Adjustment

One component of INAC's 2007 RECLAIM cost estimate for the Diavik Mine Site was the inclusion of a 20% "Market Factor Price Adjustment" (MFPA). This factor was included to reflect rising construction costs in northern Canada associated with increased industrial activity. It was acknowledged by INAC in the 2007 RECLAIM estimate that "Should there be a decline in economic activity, this factor may be reduced or eliminated in future assessments of reclamation security." INAC has not included the MFPA in the 2011 estimate as it does not feel it is warranted at this time.

Inflation

The Canadian Consumer Price Index (CPI) has increased about 8% since 2007. It is appropriate to ensure that costs/pricing is in "present day" dollars.

Removal of Reclamation Activities Associated with the A21 Kimberlite Pipe

Although the proponent is currently permitted to develop the A21 kimberlite pipe, DDMI has clearly stated on the record that it will not be proceeding with the A21 development at this time and this development is not included within the December 2010 ICRP (Page 3 –Dec ICRP Cover Letter). Accordingly, this estimate does not include costs associated with reclamation of the A21 open pit. Should this change in the future, this cost estimate must be revisited immediately to reflect any changes in liability.

Evaluation of DDMI proposed cover design changes for the NCRP

In the December 2010 version of the ICRP, DDMI has proposed significant deviations in its closure approach of the NCRP.

As stated within the December 2010 ICRP, page 84:

Closure plans for the waste rock pile have changed since the ICRP was approved in 2001. In 2001 the plan included a till cover to reduce infiltration, covered by a layer of low sulphur waste rock. Both materials were to be hauled directly from a planned A21 open pit. The A21 open pit is no longer within the current mine plan, resulting in a change to the waste rock closure plans in this ICRP.

DDMI is now proposing that the closure of the NCRP include the following (page 85, December 2010 ICRP):

Flatten top of waste rock pile to reduce snow accumulation and infiltration.

Place 3-m-thick Type I rock layer on outside slopes to reduce average sulphur content in thermal/hydrologic active zone.

Maintain side slopes as steep as possible to facilitate permafrost development.

DDMI also acknowledged on page 85 of the ICRP that:

The thermal, hydrological, and geochemical behaviour of the waste rock pile is complex and uncertain. The key uncertainties are the long-term quantity and quality of any post-closure seepage and any possible changes to the quality or quantity as a result of climate change.

INAC agrees fully with this statement and remains concerned with this deviation from the approved 2001 ICRP where a till and coarse Type I rock cover was to be placed over the entire NCRP. The objective of this cover was to prevent infiltration as well as facilitate permafrost aggradation throughout the NCRP. Such a design would prevent seepage through the underlying Type 3 (potentially acid generating) rock. In its March 3, 2011 information request to DDMI, INAC requested additional information from DDMI on how the proposed design change would modify the thermal and hydrologic conditions within the NCRP. In addition, information regarding any analyses on the expected quality of seepage from the pile was requested.

DDMI replied on March 9, 2011 to INAC's information request. Although DDMI identified that work to address these uncertainties is ongoing through reclamation

research, it is apparent from their response that many uncertainties remain with respect to the thermal and hydrologic conditions of the NCRP, as well as the quality and quantity of seepage emanating from the pile.

As a result, INAC cannot support the change in design as proposed by DDMI and has included provisions for a till and Type I rock cover over the entire area of the NCRP, as approved within the 2001 ICRP, within the 2011 RECLAIM cost estimate.

Evaluation of DDMI proposed cover design changes for the PKC

In the December 2010 version of the ICRP, DDMI has proposed significant deviations in its closure approach of the Processed Kimberlite Containment Facility.

As stated within the December 2010 ICRP, page 86:

The closure concept described here, an engineered outlet for accumulated water that will have come in contact with PK, is a change from the concept approved in the most recent ICRP (DDMI 2001b). The 2001 closure concept was a domed rock and till structure over the surface of the PK to shed water and prevent meteoric water contact with PK. A combination of significant technical design issues and a current expectation of adequate pool water quality guided this revision of the PKC design concept.

DDMI is now proposing that the closure of the PKC include the following (page 87, December 2010 ICRP):

Remove free water, treat and discharge towards end of operations.

Construct a post-closure drain during operations.

Install post-closure outlet/spillway connected to the drain

Cover facility with a 2-m-thick layer of Type I run-of-mine rock for wind/water erosion protection.

DDMI also acknowledged on page 86 of the ICRP that:

The design concept is preliminary and there are significant uncertainties that need to be investigated over the next five years. The uncertainties relate to the expected outlet water quality and the stability of the closed facility surface, particularly the pond shorelines.

INAC agrees with DDMI that significant uncertainties exist with respect to this design change and additional information must be collected to substantiate this change. To this end, within its March 3, 2011 information request to DDMI, INAC requested additional information from DDMI on expected post-closure behaviour of the PKC.

DDMI replied on March 9, 2011 to INAC's information request. It was identified that that research is being conducted at the PKC to address uncertainties and some information on the quality of water within the PKC is available through the water licence. However, no water balance and water quality scenarios have been modeled to date to predict the post-closure water quality in the overflow from the reclaimed tailings area.

As a result, INAC cannot support the change in design as proposed by DDMI as uncertainties with respect to magnitude and duration of post-closure water quality impacts remain. Accordingly, INAC has included provisions for a till and Type I rock cover over the entire area of the PKC, as approved within the 2001 ICRP, within the 2011 RECLAIM cost estimate.

Addition of reclamation tasks to resolve issues associated with the availability of clean rock for reclamation activities.

As identified above, INAC has included within its 2011 RECLAIM cost estimate closure of the NCRP and PKC as approved within the 2001 ICRP. The closure design for these facilities includes a cover comprised of till and coarse run-of-mine Type I rock.

DDMI identified within page 84 of the December 2010 ICRP that cover materials for the NCRP were to be direct hauled from the A21 development. As this development is no longer currently planned to occur, this source cannot be relied upon to provide till and Type I rock for closure. As a result, INAC raised concerns within its comments on the draft December 2010 ICRP and within its March 3, 2011 information request that a shortfall of NPAG rock for closure activities, including cover of the NCRP and PKC, may exist. Further, the Department identified that should such a shortfall exist, a quarry to acquire this material would have to be developed.

Table 6a and 6b within the March 9, 2011, DDMI response to INAC information requests identifies 36.8 Mt (~18.04 M m³) of Type I rock available for closure at end of mine. This material is contained within the following areas:

- NCRP – 23.7 Mt
- Type I Storage (Dump 12) – 1.8 Mt
- Roads, ROM, Laydown – 9.8 Mt

- **Collection Pond Dams – 1.5 Mt**

INAC has calculated that the total quantity of NPAG rock required for covering the NCRP and PKC (excluding till) is 9,383,000 m³ (see Appendix A). In DDMI's response, it is suggested that sufficient Type I rock is present onsite to place a cover upon the NCRP and PKC as outlined within the approved 2001 ICRP; however, this conclusion is contingent upon the material being practically recoverable for closure as well as being allocated for these closure activities. Within its April 8, 2011 response, DDMI provided the following details regarding the onsite Type I material, including:

- Assumed that material would be accessed by shovel, dozer and truck at each area.
- Assumed blasting will not be required at each area.
- Material is generally run-of-mine with layers of crush on any running surfaces.
- All areas are comprised entirely of Type I except North Haul Road.
- Assumed no stripping of the landscape is required to recover the material at each area.
- Table identifying the quantity of Type I rock located at 12 areas outside of the NCRP.

The information provided does not provide INAC the level of confidence required to assume that the 18.04 M m³ of Type I rock present on site is readily available and appropriate to meet design criteria as identified within the approved 2001 ICRP.

In order for INAC to fully assess the accessibility and appropriateness of this material for closure covers, more detail in this area is necessary. This includes, but may not be limited to:

1. Full delineation of the locations and volumes of Type I rock. Identifying that X amount of material is located in an area is not sufficient. INAC must be confident that the material is readily available at or near surface and that significant time and resources will not be required to delineate and/or separate the Type I material.
2. Identification of the size of the material (gauge) at each location. Identification of whether or not material of different size is mixed within each location.
3. Full details regarding the methods and specific equipment required to access the material at each location. Rationale supporting the assumption that no blasting is required must be provided for each area.
4. Details regarding whether or not this material has been modified in size since its placement. For example, rock which incorporates a high fines content (e.g. due to addition of road surfacing material, material

breakdown from haul truck traffic, addition of native sub-grade material) would be of low suitability for closure cover material. Should this material be used to achieve the closure criteria for the PKC and NCRP as outlined within the 2001 ICRP, it is expected that thicker layers of material would be required (i.e. > 3m cover material).

In the absence of this information and considering the timeframes put forth by the Board for preparation of this estimate, a precautionary approach has been taken by INAC with respect to the availability and accessibility of Type I rock for closure. A worst-case scenario would be to assume that the entire volume of material is unavailable for closure, as it may be too difficult to delineate and/or access, as compared to accessing this material elsewhere (i.e. quarry). Considering the significant differences in estimated liability should Type I rock not be accessible for closure, this approach would be justifiable. The Department must be assured that such rock is readily available and allocated for closure of the NCRP and PKC if necessary.

However, INAC has not assumed such a worst-case scenario. Based on the information provided, INAC has assumed that 1,346,000 m³ of the required 9,383,000 m³ is readily available. Details of this assumption are outlined within the April 3, 2011 Brodie Technical Memo (Appendix A). This leaves a shortfall of material in the amount of 8,037,000 m³. Within the estimate allocations for the quarrying of this material (6,122,000 m³ for the PKC and 1,915,000 m³ for the NCRP) are made. It is important to note that should additional clarity on this issue become available, the estimate will be revised accordingly.

Summary Table – 2011 RECLAIM Cost Estimate

INAC has estimated the end of mine (2022) liability for the Diavik Mine Site at approximately \$165 M. A summary of the costs estimated and the land/water split calculated is identified within the following table. Detailed RECLAIM entry sheets of the 2011 INAC estimate are provided in Appendix C.

SUMMARY OF COSTS				
COMPONENT TYPE	COMPONENT NAME	TOTAL COST	YEAR	
			Land Liability	Water Liability
OPEN PIT	A514,A418	\$1,760,097.76	\$60,658	\$1,699,440
UNDERGROUND MINE	0	\$1,381,493.06	\$1,162,073	\$189,421
TAILINGS	0	\$53,806,469.58	\$42,862	\$53,763,607
ROCK PILE	0	\$30,093,905.96	\$1,796,750	\$28,107,156
BUILDINGS AND EQUIPMENT	0	\$16,078,169.98	\$14,659,457	\$1,418,713
CHEMICALS AND SOIL MANAGEMENT	0	\$2,123,417.00	\$1,036,709	\$1,086,709
WATER MANAGEMENT	0	\$1,110,553.99	\$0	\$1,119,554
POST-CLOSURE SITE MAINTENANCE		\$0.00	\$0	\$0
	SUBTOTAL	\$107,263,107	\$18,788,507	\$88,474,600
		Percentages	17.5	82.5
MOBILIZATION/DEMOBILIZATION	0	\$10,332,540	\$1,809,877	\$8,522,663
MONITORING AND MAINTENANCE	0	\$16,845,117	\$2,950,638	\$13,894,479
Market Factor Price Adjustment	0 %	\$0	\$0	\$0
PROJECT MANAGEMENT	5 %	\$5,363,155	\$939,425	\$4,423,730
ENGINEERING	5 %	\$5,363,155	\$939,425	\$4,423,730
CONTINGENCY	20 %	\$21,452,621	\$3,757,701	\$17,694,920
	GRAND TOTAL - CAPITAL COSTS	\$166,619,696	\$29,185,574	\$137,434,122

The following table compares the results of the 2011 INAC estimate and 2011 DDMI estimate. From this table, it is apparent that key differences in estimated costs are associated with the following mine components:

- Tailings (~\$32M)
- Rock Pile (~\$26M)
- Mob/Demob (~\$10M)

Mine Component	2011 INAC	2011 DDMI
Open Pit	\$1,760,097.76	\$1,751,823.00
Underground Mine	\$1,381,493.06	\$1,182,098.00
Tailings	\$53,806,469.58	\$21,832,485.00
Rock Pile	\$30,993,905.96	\$4,443,660.00
Buildings and Equipment	\$16,078,169.98	\$14,984,746.00
Chemicals and Soils Management	\$2,123,417.00	\$1,492,549.00
Water Management	\$1,119,553.99	\$1,352,910.00
Post Closure Site Maintenance	\$0.00	\$0.00
Mobilization / Demobilization	\$10,332,540.00	\$277,196.00
Monitoring and Maintenance	\$16,845,117.00	\$16,741,292.00
Market Price Adjustment Factor (20%)	\$0.00	\$0.00
Project Management (5%)	\$5,363,155.00	\$2,352,014.00
Engineering (5%)	\$5,363,155.00	\$2,352,014.00
Contingency (20%)	\$21,452,621.00	\$9,408,054.00
Total	\$166,619,696.00	\$78,170,840.00

Concluding Remarks

INAC hopes that the WLWB find the information contained within this RECLAIM cost estimate useful in their decision-making process for establishing an appropriate reclamation security amount for the Diavik mine site. While reviewing this document, INAC urges the Board to keep in mind the principles contained within the INAC Mine Site Reclamation Policy (2002). It is with these principles in mind that INAC prepared its cost estimate.

With respect to the Board's ongoing deliberations on the December 2010 ICRP, it is important to note that approval of that plan should be based upon whether or not a sound closure strategy is provided within the Plan, and should not be influenced by a number contained within a cost estimate.

It will be apparent to the Board that the major difference between the 2011 DDMI and INAC cost estimates is associated with closure options for the PKC and NCRP, and uncertainties with respect to the availability and accessibility of suitable NPAG rock for closure of these facilities. DDMI is requesting a change to the approved closure design as presented in the 2001 ICRP. At this time, INAC does not support these changes and has requested that the Board reject the 2010 ICRP based on insufficient information to support these changes.

Despite this, it may be possible, in part or full, to clarify information and resolve issues associated with the availability and accessibility of suitable Type I material for closure of these facilities. As mentioned previously, should additional clarity be provided on this or any other issue, INAC is willing to revisit its 2011 RECLAIM cost estimate.

APPENDIX A – BRODIE CONSULTING LIMITED TECHNICAL MEMO
APRIL 15, 2011



MEMORANDUM

DATE: April 15, 2011

TO: Nathen Richea, Robert Jenkins INAC
CC:

FROM: John Brodie, P. Eng.

SUBJECT: Diavik Mine – Commentary on ICRP & Closure Cost Implications

In December 2010, DDMI submitted a revised closure plan (ICRP) for the Diavik Diamond Mine. Since that time, there has been one meeting between DDMI and INAC (with BCL). INAC requested additional information and clarification from DDMI on Mar 4, 2011, to which the company replied shortly thereafter.

BCL has assisted INAC in their evaluation of the 2010 ICRP and has provided draft commentary to INAC on Feb. 7 and 23, 2011. Comments presented there are not repeated here. Further to that correspondence, this memo presented an update of the 2007 reclamation security estimate (prepared by BCL for INAC). This updated estimate incorporates several adjustments which are identified throughout the memo.

DDMI has provided responses to INAC requests of Mar 4, 2011. Although those responses are useful in preparation of this updated reclamation liability estimate, two essential points must be highlighted:

1. DDMI has used the term “preferred” to describe the proposed changes to the covers for the Processed Kimberlite Containment Facility (PKC) and North Country Rock Pile (NCRP). For clarity, those changes are “proposed” by DDMI and have yet to be approved. Critical concerns regarding performance of covers on the PKC and NCRP remain outstanding and therefore should not be supported at this time.
2. In response to INAC information requests, DDMI has not provided any scientific or engineering evaluations to indicate that the proposed changes will be protective of water resources in the mine site area in the post-closure period. Further to this point, BCL is of

the opinion that the proposed changes will result in at least temporary and possibly long-term impairment of water quality.

Implications for Cost of Mine Reclamation

A reclamation cost estimate was prepared by BCL for INAC in 2007, and is presented as Table 1. At that time the estimated total reclamation liability was \$133M (\$26M land and \$107M water). The summary table from that estimate is presented. Several potential adjustments to that estimate should be made, including:

- Removal of market price factor adjustment,
- Adjustment of the RECLAIM unit cost table for inflation over 4 years
- Adjustment of the RECLAIM unit costs with more recent cost data (from the Colomac reclamation work),
- Addition of reclamation tasks to resolve issues associated with the availability of clean rock for reclamation activities,
- Assorted minor adjustments, mostly to cost items relating to building demolition and post-closure monitoring.

Market Price Factor

A 20% market price factor was included in the 2007 estimate. Without this the 2007 estimate would be: This reduces the potential reclamation liability by \$15.0 M.

Inflation since 2007

The Canada CPI has risen about 8% over the period 2007 to 2011. This increases the potential reclamation liability by \$6.0 M.

Demolition Costs

A detailed review of the demolition costs at Colomac is pending, however a very preliminary review suggests that the former RECLAIM unit costs for this work may be low by at least 50%. However, until the evaluation of new data is conducted, no changes to the unit costs for demolition activities the Diavik site are incorporated within in this estimate.

Short-Fall of Reclamation Material

Volume Required

Reclamation cover material, namely Type I or NPAG rock, is needed for closure of the North Country Rock Pile (NCRP) and the PKC in order to prevent post-closure water quality impacts. In order for this rock to be effective in creating a frozen perimeter, it is expected to be coarse run-of-mine waste rock. Rock which incorporates a high fines content (such as due to addition of road surfacing material, material breakdown from haul truck traffic, addition of native sub-grade material) is not suitable.

Based upon DDMI's figure of the NCRP (extracted from Dec 2010 Powerpoint presentation – shown below as Fig. 1), essentially all of the perimeter of the pile is composed of Type 2/3 rock. Without clarification from DDMI, it must be assumed that all of the interior of the pile is the same blend of rock types. Type I rock is estimated to be required over an area of 1,086,000 m² (a total of 3,258,000 m³, based upon a 3 m rock layer over a 1 m till layer).

From earlier assessments, the volume of rock required for the PKC is 6,122, 000 m³.

Volume Available

DDMI has provided information concerning the potential volume of reclamation Type 1 rock in recent replies to information requests and in their Dec 2010 Powerpoint presentation, ICRP v. 3.1 and Response to INAC Mar 4, 2011. That information is reproduced in Table 1, below.

Key in this regard, DDMI has indicated that the volume available in the NCRP is 18.5 M m³ (37M tonnes – Reply to IR # 6). However, no details on the specific location(s) and associated volumes of this material within the NCRP have been provided for review, although INAC understands that Type I rock may be stockpiled by DDMI within the NCRP. This is important as it is unclear how this material might be recovered from the NCRP and utilized during reclamation

activities. DDMI must demonstrate that the pile is not simply a blend of Type 2/3 rock. (see comments above concerning NCRP as shown in Figure 1) with pockets of Type I rock within it. (to which it has not been demonstrated that it could be extracted in a practical manner).

To this end, DDMI must fully delineate the locations, volumes, and methods required to access this geochemically suitable material to substantiate their claim that this material is readily available for reclamation. Further, DDMI must commit that this material is allocated for cover material of the NCRP and PKC, and not for some other purpose during operations or upon closure.

In the absence of such information, a precautionary approach would be to assume that that material is not available for closure, as it may be too difficult to delineate and/or access, as compared to accessing this material elsewhere (i.e. quarry). For the purposes of this evaluation, considering the absence of this information, such a precautionary approach has been followed. However, should clarity on this issue become available, the estimate will be revised accordingly.

DDMI's Dec 2010 Powerpoint presentation outlines some other potential sources of Type I rock. That table is reproduced below, with commentary as to why those sources may be unsuitable/unrecoverable for cover material, and an alternative estimate of the volume of Type I rock which may be recovered from those sources. Again, should clarity on this issue become available, the estimate will be revised accordingly.

As identified above, there may be a short-fall of construction materials (primarily waste rock) for use in reclamation of the Type III waste rock pile and the PKC area as originally proposed in 2001, due to the size (gauge) of the available material or due to impracticalities in accessing/extracting this material. If this is the case, it may be necessary to compensate for this by excavating appropriate material from a quarry on East Island. For the purpose of this preliminary evaluation of the closure plan, an estimate of the financial implications of this could be made as follows:

Total quantity of waste rock in PKC: 1, 875,000 m ³ + 4,247,000 m ³ =	6,122,000 m ³
<u>Total quantity of waste rock in Type III cover,:</u>	<u>3,258,000 m³</u>

Total quantity of NPAG rock (till in covers is in addition to this):

9,383,000 m³

From Table 1, below, the potentially available volume of Type I NPAG rock is: 1,346,000 m³

The short-fall which must be produced in a quarry operation: 8,037,000 m³

(For RECLAIM spreadsheet this is allocated 6,122,000 for PKC and 1,915,000 for NCRP)

- Unit cost for bulk quarry (drill, blast, load, short haul) of rock, from RECLAIM 6, unit cost RB1L) is \$9.35/m³. This cost is from quarry operations to produce rock fill for dam construction. The production of very large volume coarse rock fill for a permafrost mine waste cover is likely to be less costly than this rate. In addition, this cost includes loading and a short haul; both of these costs are already included in the cost provision for placing the cover material. Determination of an appropriate unit cost for the quarry operation for this scenario is beyond the scope of this preliminary cost estimate. However, it is certain that the cost would be much lower than the lowest unit cost in the RECLAIM unit cost data base for comparable activities. As a placeholder for the purpose of this estimate, a unit cost of 1/3 of the RECLAIM cost has been used.

This increases the potential reclamation liability by \$36.0 M.

Adjustments to building demolition and post-closure monitoring

DDMI's estimates had different costs for building demolition and post-closure monitoring. Their cost for building demolition showed greater detail regarding the number and size of buildings; and their values were assumed to be more representative of site conditions than earlier estimates by BCL. DDMI presented a total cost for post-closure monitoring. It is assumed that the company has a better knowledge of their current cost for this work than an estimated value from BCL. DDMI's value was used.

These adjustments increase the potential reclamation liability by \$9.4 M.

The effect of all of the above adjustments are shown in Table 3 below.

Conclusions & Recommendations

The following conclusions and recommended are presented for consideration by INAC:

- It is strongly recommended that INAC reject the 2010 ICRP because it does not present a substantiated approach for achieving an acceptable post-closure scenario for the Diavik mine site.
- An updated reclamation cost estimate which includes provisions for a potential short fall in reclamation cover material suggests that the end of mine reclamation liability could be in the range of:

Total reclamation liability was \$166.6M (\$29.2 M land and \$137.4 M water)

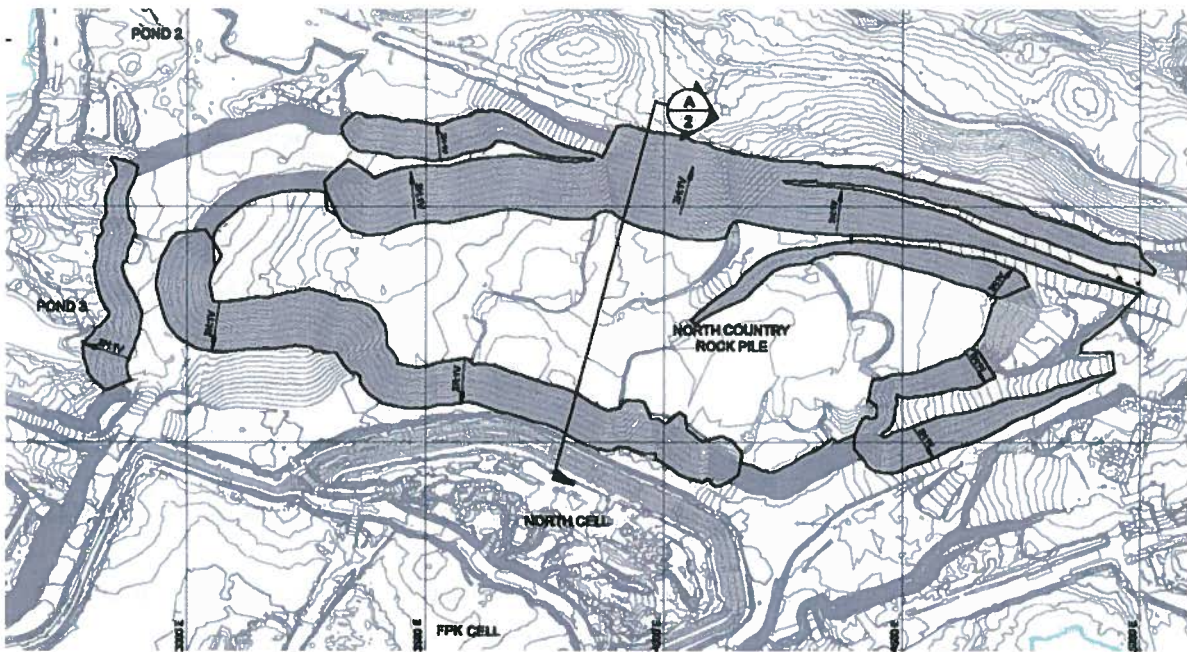


Fig. 1 extracted from Dec 2010 Powerpoint presentation

Table 1 Summary Table from 2007 Reclamation Liability Estimate (BCL 2007)

SUMMARY OF COSTS

COMPONENT TYPE	COMPONENT NAME	TOTAL COST	YEAR	
			Land Liability	Water Liability
OPEN PIT	A514,A418,A21	\$477,787.04	\$0	\$477,787
UNDERGROUND MINE	0	\$632,183.78	\$457,764	\$174,420
TAILINGS	0	\$32,117,360.00	\$5,100	\$32,112,260
ROCK PILE	0	\$24,287,602.00	\$1,796,750	\$22,490,853
BUILDINGS AND EQUIPMENT	0	\$15,697,151.08	\$12,715,974	\$2,981,177
CHEMICALS AND SOIL MANAGEMENT	0	\$837,430.00	\$0	\$837,430
WATER MANAGEMENT	0	\$1,114,934.85	\$0	\$1,114,935
POST-CLOSURE SITE MAINTENANCE		\$0.00	\$0	\$0
SUBTOTAL		\$75,164,449	\$14,975,588	\$60,188,861
		Percentages	19.9	80.1
MOBILIZATION/DEMobilIZATION	0	\$10,260,412	\$2,044,260	\$8,216,151
MONITORING AND MAINTENANCE	0	\$10,228,853	\$2,037,973	\$8,190,880
Market Factor Price Adjustment	20 %	\$15,032,890	\$2,995,118	\$12,037,772
PROJECT MANAGEMENT	5 %	\$3,758,222	\$748,779	\$3,009,443
ENGINEERING	5 %	\$3,758,222	\$748,779	\$3,009,443
CONTINGENCY	20 %	\$15,032,890	\$2,995,118	\$12,037,772
GRAND TOTAL - CAPITAL COSTS		\$133,235,938	\$26,545,614	\$106,690,323

Table 2

Potentially Reclaimable Mine Site Material					
Description	Data supplied by DMMI		reclaimable (%)	Estimated volume revised by Brodie Consulting Ltd.	
	m3	tonnes (x2.04)		reclaimable m3	Rational
1 Runway/apron/airport road	906,330	1,848,913	0%	0	air strip needed
2 Ring road	1,577,150	3,217,386	0%	0	access for seep monitoring
3 North haul road	1,771,090	3,613,024	0%	0	within NCRP - contains Type 2/3?
4 Dump 7 area	646,200	1,318,248	50%	323,100	
5 N3 laydown	223,350	455,634	50%	111,675	
6 Pit access road	73,060	149,042	0%	0	unsuitable material - rock contains excess fines
7 Pond 14	430,940	879,118	50%	215,470	
8 UG portal road	326,520	666,101	25%	81,630	appears to be thin veneer in this area
9 South haul road	213,360	435,254	0%	0	unsuitable material - rock contains excess fines
10 A21 causeway	1,229,220	2,507,609	50%	614,610	
11 AN storage/DWE road	185,180	377,767	0%	0	appears to be thin veneer in this area
12 Pond 2 dam	622,630	1,270,165	0%	0	dam needed for post closure water management
Total	8,205,030	16,738,261		1,346,485	m3

Notes:

- % reclaimable is projected to be less than 100% because of:
 - impurities (sub-grade, addition of road topping),
 - breakdown of rock due to heavy truck traffic, and
 - impracticality of recovering all of the material in any given location, especially where it is a thin veneer of rock over original ground.

Table 3 Summary Table from 2011 End-of- Mine (2022) Reclamation Liability Estimate

SUMMARY OF COSTS				
COMPONENT TYPE	COMPONENT NAME	TOTAL COST	YEAR	
			Land Liability	Water Liability
OPEN PIT	A514,A418	\$1,760,097.76	\$60,658	\$1,699,440
UNDERGROUND MINE	0	\$1,381,493.06	\$1,192,073	\$189,421
TAILINGS	0	\$53,806,469.58	\$42,862	\$53,763,607
ROCK PILE	0	\$30,993,905.98	\$1,796,750	\$29,197,156
BUILDINGS AND EQUIPMENT	0	\$16,078,169.98	\$14,659,457	\$1,418,713
CHEMICALS AND SOIL MANAGEMENT	0	\$2,123,417.00	\$1,036,709	\$1,086,709
WATER MANAGEMENT	0	\$1,119,553.99	\$0	\$1,119,554
POST-CLOSURE SITE MAINTENANCE		\$0.00	\$0	\$0
	SUBTOTAL	\$107,263,107	\$18,788,507	\$88,474,600
		Percentages	17.5	82.5
MOBILIZATION/DEMOBILIZATION	0	\$10,332,540	\$1,809,877	\$8,522,663
MONITORING AND MAINTENANCE	0	\$16,845,117	\$2,950,838	\$13,894,479
Market Factor Price Adjustment	0 %	\$0	\$0	\$0
PROJECT MANAGEMENT	5 %	\$5,363,155	\$939,425	\$4,423,730
ENGINEERING	5 %	\$5,363,155	\$939,425	\$4,423,730
CONTINGENCY	20 %	\$21,452,621	\$3,757,701	\$17,694,920
	GRAND TOTAL - CAPITAL COSTS	\$166,619,696	\$29,185,574	\$137,434,122

RECLAIM Cost Estimate Summary Table - 1999

Estimated Reclamation Liability - Diavik Diamond Mine				
Component	Year 1	Year 5	Year 11	Year 20
Open Pits	\$1,309,665	\$3,418,863	\$6,487,938	\$7,546,259
Underground	\$0	\$0	\$95,000	\$120,000
PKC	\$13,545,410	\$41,672,78	\$47,840,475	\$48,628,500
Rock Dumps	\$8,791,143	\$48,131,901	\$55,624,000	\$10,397,469
Buildings & Equipment	\$10,357,293	\$10,365,720	\$10,365,720	\$10,365,720
Chemicals & Contam. Soil	\$2,320,511	\$2,320,511	\$2,320,511	\$2,320,511
Water Management	\$5,085,001	\$6,065,001	\$4,088,001	\$4,065,001
Mob./Demob.	\$8,754,086	\$13,282,836	\$13,282,836	\$13,282,836
sub-total	\$50,143,109	\$125,257,310	\$140,081,481	\$142,371,927
Project Management	\$1,504,293	\$3,757,719	\$4,202,444	\$4,271,158
Engineering	\$1504,293	\$3,757,719	\$4,202,444	\$4,271,158
Contingency	\$12,535,777	\$31,314,328	\$35,020,370	\$35,592,982
Total Capital Costs	\$65,687,473	\$164,087,076	\$183,506,740	\$186,507,225
Monitoring & Maintenance (Incl. contingency)	\$622,725	\$622,725	\$622,725	\$622,725
Grand Total	\$66,310,198	\$164,709,801	\$184,129,465	\$187,129,950

RECLAIM Cost Estimate Summary Table - 2007

SUMMARY OF COSTS

			YEAR	
			2022	
COMPONENT TYPE	COMPONENT NAME	TOTAL COST	Land Liability	Water Liability
OPEN PIT	A514,A418,A21	\$477,787.04	\$0	\$477,787
UNDERGROUND MINE	0	\$632,183.78	\$457,764	\$174,420
TAILINGS	0	\$32,117,360.00	\$5,100	\$32,112,260
ROCK PILE	0	\$24,287,602.00	\$1,796,750	\$22,490,853
BUILDINGS AND EQUIPMENT	0	\$15,697,151.08	\$12,715,974	\$2,981,177
CHEMICALS AND SOIL MANAGEMENT	0	\$837,430.00	\$0	\$837,430
WATER MANAGEMENT	0	\$1,114,934.85	\$0	\$1,114,935
POST-CLOSURE SITE MAINTENANCE		\$0.00	\$0	\$0
SUBTOTAL		\$75,164,449	\$14,975,588	\$60,188,861
		Percentages	19.9	80.1
MOBILIZATION/DEMOBILIZATION	0	\$10,260,412	\$2,044,260	\$8,216,151
MONITORING AND MAINTENANCE	0	\$10,228,853	\$2,037,973	\$8,190,880
Market Factor Price Adjustment	20 %	\$15,032,890	\$2,995,118	\$12,037,772
PROJECT MANAGEMENT	5 %	\$3,758,222	\$748,779	\$3,009,443
ENGINEERING	5 %	\$3,758,222	\$748,779	\$3,009,443
CONTINGENCY	20 %	\$15,032,890	\$2,995,118	\$12,037,772
GRAND TOTAL - CAPITAL COSTS		\$133,235,938	\$26,545,614	\$106,690,323

**APPENDIX C – 2011 RECLAIM COST ESTIMATE (DIAVIK)
ENTRY SHEETS**

SUMMARY OF COSTS

COMPONENT TYPE	COMPONENT NAME	TOTAL COST	YEAR	End of Mine
			Land Liability	Water Liability
OPEN PIT	A514,A418	\$1,760,097.76	\$60,658	\$1,699,440
UNDERGROUND MINE	0	\$1,381,493.06	\$1,192,073	\$189,421
TAILINGS	0	\$53,806,469.58	\$42,862	\$53,763,607
ROCK PILE	0	\$30,993,905.96	\$1,796,750	\$29,197,156
BUILDINGS AND EQUIPMENT	0	\$16,078,169.98	\$14,659,457	\$1,418,713
CHEMICALS AND SOIL MANAGEMENT	0	\$2,123,417.00	\$1,036,709	\$1,086,709
WATER MANAGEMENT	0	\$1,119,553.99	\$0	\$1,119,554
POST-CLOSURE SITE MAINTENANCE		\$0.00	\$0	\$0
	SUBTOTAL	\$107,263,107	\$18,788,507	\$88,474,600
		Percentages	17.5	82.5
MOBILIZATION/DEMOBILIZATION	0	\$10,332,540	\$1,809,877	\$8,522,663
MONITORING AND MAINTENANCE	0	\$16,845,117	\$2,950,638	\$13,894,479
Market Factor Price Adjustment	0 %	\$0	\$0	\$0
PROJECT MANAGEMENT	5 %	\$5,363,155	\$939,425	\$4,423,730
ENGINEERING	5 %	\$5,363,155	\$939,425	\$4,423,730
CONTINGENCY	20 %	\$21,452,621	\$3,757,701	\$17,694,920
GRAND TOTAL - CAPITAL COSTS		\$166,619,696	\$29,185,574	\$137,434,122

1 Open Pit Name: A514,A418 Pit # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost
A OBJECTIVE: CONTROL ACCESS							
Fence	m	300 fh		187.27	\$56,182	100%	\$56,182 \$0
Signs	each	3 sh		37.08	\$111	100%	\$111 \$0
Ditch, mat'l A	m3		#N/A	0	\$0		\$0 \$0
, mat'l B	m3		#N/A	0	\$0		\$0 \$0
Berm	m3		#N/A		\$0		\$0 \$0
B Block roads							
Other	m3	900 sb1h		4.85	\$4,365	100%	\$4,365 \$0
			#N/A	0	\$0		\$0 \$0
			#N/A	0	\$0		\$0 \$0
			#N/A	0	\$0		\$0 \$0
. OBJECTIVE: STABILIZE SLOPES							
excavate 4 breaches in dike	m3	48114 sc1h		8.5958	\$413,578		\$0 \$413,578
break concrete guides & wall	m3	1288 sc1h		8.5958	\$11,071		\$0 \$11,071
construct fish habitat	m3		#N/A	0	\$0		\$0 \$0
A 418	m3		#N/A	0	\$0		\$0 \$0
C excavate 3 breaches in dike							
break concrete guides & wall	m3	1288 sc1h		8.5958	\$11,071		\$0 \$11,071
construct fish habitat	m3		#N/A	0	\$0		\$0 \$0
A21	m		#N/A	0	\$0		\$0 \$0
excavate 2 breaches in dike	m3		#N/A	0	\$0		\$0 \$0
break concrete guides & wall	m3		#N/A	0	\$0		\$0 \$0
construct fish habitat	m3		#N/A	0	\$0		\$0 \$0
	kWh		#N/A	0	\$0		\$0 \$0
Other			#N/A	0	\$0		\$0 \$0
. OBJECTIVE: COVER/CONTOUR SLOPES							
Fill, mat'l A	m3		#N/A	0	\$0		\$0 \$0
, mat'l B	m3		#N/A	0	\$0		\$0 \$0
Rip rap	m3		#N/A	0	\$0		\$0 \$0
Vegetate	ha		#N/A	0	\$0		\$0 \$0
E Other							
			#N/A	0	\$0		\$0 \$0
. OBJECTIVE: SPILLWAY							
Excavate channel, mat'l A	m3		#N/A	0	\$0		\$0 \$0
, mat'l B	m3		#N/A	0	\$0		\$0 \$0
Concrete	m3		#N/A	0	\$0		\$0 \$0
Rip rap	m3		#N/A	0	\$0		\$0 \$0
Other			#N/A	0	\$0		\$0 \$0
F							
. OBJECTIVE: FLOOD PIT							
Ditch, mat'l A	m3		#N/A	0	\$0		\$0 \$0
, mat'l B	m3		#N/A	0	\$0		\$0 \$0
Embankment, mat'l A	m3		#N/A	0	\$0		\$0 \$0
H , mat'l B							
siphon installation/operation	each	6	#N/A	119925	\$719,550		\$0 \$719,550
silt curtains	each	6	#N/A	11731	\$70,386		\$0 \$70,386
remove pumps	each	4	pll	5618.2	\$22,473		\$0 \$22,473

1 Open Pit Name: A514,A418 Pit # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	
remove pipelines	m	9590	ppll	1.12	\$10,741	\$0	\$10,741	
remove power lines, etc	m	5552	powrl	23.484	\$130,383	\$0	\$130,383	
make milk of lime, meter into pit	tonne		#N/A	0	\$0	\$0	\$0	
	tonne		ilmh	556.61	\$0	\$0	\$0	
	km		#N/A	0	\$0	\$0	\$0	
OBJECTIVE: BACKFILL PIT			#N/A	0	\$0	\$0	\$0	
Fill, mat'l A	m3		#N/A	0	\$0	\$0	\$0	
, mat'l B	m3		#N/A	0	\$0	\$0	\$0	
Other			#N/A	0	\$0	\$0	\$0	
			#N/A	0	\$0	\$0	\$0	
OBJECTIVE: DEVELOP WETLAND			#N/A	0	\$0	\$0	\$0	
Earthworks, mat'l A	m3		#N/A	0	\$0	\$0	\$0	
, mat'l B	m3		#N/A	0	\$0	\$0	\$0	
Vegetate	ha		#N/A	0	\$0	\$0	\$0	
Other			#N/A	0	\$0	\$0	\$0	
			#N/A	0	\$0	\$0	\$0	
SPECIALIZED ITEMS			#N/A	0	\$0	\$0	\$0	
			#N/A	0	\$0	\$0	\$0	
Subtotal					\$1,760,098	3%	\$60,658	\$1,699,440
					Total Pits	Percent Total	Total	Total
						Land	Land	Water

1 Underground Mine Name _____ UG Mine # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost		Cost % Land	Land Cost	Water Cost	
			Code	Unit Cost				
A OBJECTIVE: CONTROL ACCESS								
Fence	m	100	fh	187.272	\$18,727	100%	\$18,727 \$0	
Signs	each	4	sh	37.079856	\$148	100%	\$148 \$0	
Ditch, mat'l A	m3		#N/A	0	\$0		\$0 \$0	
mat'l B	m3		#N/A	0	\$0		\$0 \$0	
Berm	m3	300	sb1h	5.238	\$1,571	100%	\$1,571 \$0	
Block adits	m3	320	clfh	460.68912	\$147,421		\$0 \$147,421	
Cap shaft	m3		#N/A	0	\$0		\$0 \$0	
Cap raises at A154/A418	m3	72	SRL	595.52496	\$42,878	100%	\$42,878 \$0	
soil cover on raise cap	m3	708	SB1L	3.1212	\$2,210	100%	\$2,210 \$0	
Cap raises at A 21	m3	0	SRL	595.52496	\$0	100%	\$0 \$0	
soil cover on raise cap	m3	0	SB1L	3.1212	\$0	100%	\$0 \$0	
Backfill adit A154	m3	100	SCSS	17.3502	\$1,735	100%	\$1,735 \$0	
Contour portal area, A154	m3	2500	SB1L	3.1212	\$7,803	100%	\$7,803 \$0	
Backfill adit, A21	m3	0	SCSS	17.3502	\$0	100%	\$0 \$0	
Contour portal area, A21	m3	0	SB1L	3.1212	\$0	100%	\$0 \$0	
concrete bulkhead, pit portal, A154	allow	1	#N/A	75000	\$75,000	100%	\$75,000 \$0	
concrete bulkhead, pit portal, A21	allow	0	#N/A	75000	\$0	100%	\$0 \$0	
Backfill open stopes	m3		#N/A	0	\$0		\$0 \$0	
remove decline surface infrastructure	allow	1	#N/A	1000000	\$1,000,000	100%	\$1,000,000 \$0	
B OBJECTIVE: STABILIZE GROUND SURFACE								
Backfill mine	m3		#N/A	0	\$0		\$0 \$0	
Collapse crown pillar	m3		#N/A	0	\$0		\$0 \$0	
Contour, mat'l A	m3		#N/A	0	\$0		\$0 \$0	
mat'l B	m3		#N/A	0	\$0		\$0 \$0	
Maintain dewatering (see "MONITORING/MAINTENANCE" c			#N/A	0	\$0		\$0 \$0	
Other			#N/A	0	\$0		\$0 \$0	
C OBJECTIVE: FLOOD MINE								
Plug adits	m3		#N/A	0	\$0		\$0 \$0	
Plug drillholes to surface	each		#N/A	0	\$0		\$0 \$0	
Grouting	m3		#N/A	0	\$0		\$0 \$0	
Lime addition, kg/m3 of water	tonne		#N/A	0	\$0		\$0 \$0	
Lime, purchase and shipping	tonne		#N/A	0	\$0		\$0 \$0	
D OBJECTIVE: HAZARDOUS MATERIALS								
remove hazardous materials, LABOUR	each	1440	lab-usl	50	\$72,000	50%	\$36,000 \$36,000	
remove/decontam. Equipment, electrical	each	240	lab-usl	50	\$12,000	50%	\$6,000 \$6,000	
Other			#N/A	0	\$0		\$0 \$0	
E SPECIALIZED ITEMS								
			#N/A	0	\$0	0%	\$0 \$0	
Subtotal					\$1,381,493	86%	\$1,192,073	\$189,421
					Total U/G	Percent Land	Total Land	Total Water

1 lings Impoundment Name: Impoundment # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	% Land	Land Cost	Water Cost
A OBJECTIVE: CONTROL ACCESS								
Fence	m	160 ft		187.27	\$29,964	100%	\$29,964	\$0
Signs	each	8 sh		37.08	\$297	100%	\$297	\$0
Ditch, mat'l A	m3		#N/A	0	\$0		\$0	\$0
, mat'l B	m3		#N/A	0	\$0		\$0	\$0
Berm	m3		#N/A	0	\$0		\$0	\$0
Block roads	m3	1440 sb1h		4.85	\$6,984	100%	\$6,984	\$0
Other			#N/A	0	\$0		\$0	\$0
B								
OBJECTIVE: STABILIZE EMBANKMENT								
breach east dam	m3		#N/A	0	\$0		\$0	\$0
, fill mat'l A	m3		#N/A	0	\$0		\$0	\$0
, fill mat'l B	m3		#N/A	0	\$0		\$0	\$0
Rip rap	m3		#N/A	0	\$0		\$0	\$0
Vegetate	ha		#N/A	0	\$0		\$0	\$0
Raise crest	m3		#N/A	0	\$0		\$0	\$0
Flatten slopes	m3		#N/A	0	\$0		\$0	\$0
C Other								
			#N/A	0	\$0		\$0	\$0
			#N/A	0	\$0		\$0	\$0
OBJECTIVE: COVER TAILINGS								
coarse PK, doze to slurry sump	m3	2625000 DSL		0.8764	\$2,300,637		\$0	\$2,300,637
coarse PK - slurry pumping	m3	2625000		0.5	\$1,312,500		\$0	\$1,312,500
Rock for expelled water from N or S durr	m3	1875000	#N/A	3.6	\$6,750,000		\$0	\$6,750,000
D								
Rock for expelled water from roads	m3		#N/A					
Rock for expelled water from new quarry	m3		#N/A	8.25	\$0		\$0	\$0
Soil cover, till	m3	1416000	#N/A	4.46	\$6,315,360		\$0	\$6,315,360
Cover rock from N or S dump	m3	4247000	#N/A	3.6	\$15,289,200		\$0	\$15,289,200
Cover rock from roads	m3		#N/A		\$0		\$0	\$0
E								
Cover rock from new quarry	m3		#N/A					
Remove & treat supernatant	m3	270000 otpl		0.25	\$67,500		\$0	\$67,500
OBJECTIVE: FLOOD TAILINGS								
Ditch, mat'l A	m3		#N/A	0	\$0		\$0	\$0
, mat'l B	m3		#N/A	0	\$0		\$0	\$0
F								
Raise crest	m3		#N/A	0	\$0		\$0	\$0
Other			#N/A	0	\$0		\$0	\$0
			#N/A	0	\$0		\$0	\$0
OBJECTIVE: DEVELOP WETLAND								
Earthworks, mat'l A	m3		#N/A	0	\$0		\$0	\$0
Vegetate	ha		#N/A	0	\$0		\$0	\$0
G								
Other								
			#N/A	0	\$0		\$0	\$0
			#N/A	0	\$0		\$0	\$0
OBJECTIVE: UPGRADE SPILLWAY								
Excavate channel, mat'l A	m3	18000 sc3h		10.6	\$190,800		\$0	\$190,800
H								
, mat'l B	m3		#N/A	0	\$0		\$0	\$0
Concrete	m3		#N/A	0	\$0		\$0	\$0
Rip rap	m3	13000	#N/A	5.65	\$73,450		\$0	\$73,450
geotextile over ice rich soil	m2	2500	#N/A	10	\$25,000		\$0	\$25,000
I								
			#N/A	0	\$0		\$0	\$0

1 Impoundment Name: _____ Impoundment # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	% Cost			
					Land	Land	Water	
OBJECTIVE: STABILIZE DECANT SYSTEM			#N/A	0	\$0		\$0	\$0
Remove	m3		#N/A	0	\$0		\$0	\$0
Plug/backfill	m3		#N/A	0	\$0		\$0	\$0
Other			#N/A	0	\$0		\$0	\$0
			#N/A	0	\$0		\$0	\$0
OBJECTIVE: REMOVE TAILINGS DISCHARGE			#N/A	0	\$0		\$0	\$0
Cyclones	m3		#N/A	0	\$0		\$0	\$0
Pipe	m	5000	PPLL	1.1236	\$5,618	100%	\$5,618	\$0
Other			#N/A	0	\$0		\$0	\$0
			#N/A	0	\$0		\$0	\$0
quarry shortfall of rock for cover	m3	6122000	rb1l	3.502	\$21,439,161		\$0	\$21,439,161
			#N/A	0	\$0		\$0	\$0
Subtotal					\$53,806,470	0.0	\$42,862	\$53,763,607
				Total		nt		
				Tailings		Land	Total Land	Total Water

1 Rock Pile Name: _____ Rock Pile #: 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost	Cost %	Land Cost	Water Cost
A OBJECTIVE: STABILIZE SLOPES								
Flatten slopes with dozer, rock pile, north	m3	1501500	dsl	0.71	\$1,066,065.00	50%	\$533,033	\$533,033
Flatten slopes with dozer, till pile	m3	479000	dsl	0.71	\$340,090.00	100%	\$340,090	\$0
Flatten slopes with dozer, till pile, south	m3	234000	dsl	0.71	\$166,140.00	100%	\$166,140	\$0
Toe buttress, drain mat'l	m3		#N/A	0	\$0.00		\$0	\$0
, fill mat'l A	m3		#N/A	0	\$0.00		\$0	\$0
, fill mat'l B	m3		#N/A	0	\$0.00		\$0	\$0
Other			#N/A	0	\$0.00		\$0	\$0
B								
OBJECTIVE: COVER DUMP								
till on biotite schist	m3	1031000	#N/A	4.82	\$4,969,420.00		\$0	\$4,969,420
rock on mixed rock & biotite schist	m3	4290000	#N/A	3.96	\$16,988,400.00		\$0	\$16,988,400
till on caribou ramps	m3	6400	#N/A	4.82	\$30,848.00	100%	\$30,848	\$0
rock cover from roads, etc.	m3	0	#N/A	5.65	\$0.00		\$0	\$0
C rock cover from new quarry								
rock cover on 2.5:1 slopes, incr. cost	m3	0	#N/A	0.15	\$0.00		\$0	\$0
till islands for reveg.	m3	93300	#N/A	4.82	\$449,706.00	100%	\$449,706	\$0
till islands for reveg., south dump	m3	46650	#N/A	4.82	\$224,853.00	100%	\$224,853	\$0
OBJECTIVE: UNDERWATER DISPOSAL								
			#N/A		\$0.00		\$0	\$0
D Move material								
Add lime	m3		#N/A	0	\$0.00		\$0	\$0
E Add crushed limestone								
Other	m3		#N/A	0	\$0.00		\$0	\$0
			#N/A	0	\$0.00		\$0	\$0
OBJECTIVE: COLLECT AND TREAT								
See "ONGOING TREATMENT" costing component			#N/A	0	\$0.00		\$0	\$0
F								
OBJECTIVE: DEVELOP WETLAND								
Earthworks, mat'l A	m3		#N/A	0	\$0.00		\$0	\$0
, mat'l B	m3		#N/A	0	\$0.00		\$0	\$0
Vegetate, till pile	ha	31	vhsl	1680	\$52,080.00	100%	\$52,080	\$0
Other			#N/A	0	\$0.00		\$0	\$0
			#N/A	0	\$0.00		\$0	\$0
quarry shortfall of rock for cover	m3	1915000	rb1l	3.502	\$6,706,304		\$0	\$6,706,304
					\$0.00		\$0	\$0
			#N/A	0	\$0.00		\$0	\$0
Subtotal					\$30,993,906	5.8%	\$1,796,750	\$29,197,156
					Total for Rock Pile	Percent Total Land	Land	Total Water

1 Building / Equip Name: _____ Bldg / Equip #: 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land	Land Cost	Water Cost
A OBJECTIVE: DISPOSE MOBILE EQUIPMENT								
Decontaminate and ship off-site	km		#N/A	0	\$0	50%	\$0	\$0
Decontaminate, dispose on-site	each	5000	lab-sl	55	\$275,000		\$0	\$275,000
Other	each		#N/A	0	\$0		\$0	\$0
B OBJECTIVE: DISPOSE STATIONARY EQUIPMENT								
Decontaminate and ship off-site	km		#N/A	0	\$0	50%	\$0	\$0
Decontaminate, dispose on-site	each	5000	lab-sl	55	\$275,000		\$0	\$275,000
Other	each		#N/A	0	\$0		\$0	\$0
C OBJECTIVE: DISPOSE ORE CONCENTRATION EQUIPMENT								
Decontaminate crushing plant	each		#N/A	0	\$0		\$0	\$0
Decontaminate tanks & plumb.	each		#N/A	0	\$0		\$0	\$0
Remove tanks & plumbing	each		#N/A	0	\$0		\$0	\$0
Other			#N/A	0	\$0		\$0	\$0
D OBJECTIVE: DISPOSE WATER TREATMENT EQUIPMENT								
Decontaminate tanks & plumb.	each		#N/A	0	\$0		\$0	\$0
Remove tanks & plumbing	each		#N/A	0	\$0		\$0	\$0
Other			#N/A	0	\$0		\$0	\$0
E OBJECTIVE: DECONTAMINATE BUILDINGS & TANKS								
site wide allowance	each	1	#N/A	75000	\$75,000	50%	\$37,500	\$37,500
clean explosives facility	each	1	#N/A	50000	\$50,000	50%	\$25,000	\$25,000
	each		#N/A	0	\$0		\$0	\$0
	each		#N/A	0	\$0		\$0	\$0
	each		#N/A	0	\$0		\$0	\$0
	each		#N/A	0	\$0		\$0	\$0
	each		#N/A	0	\$0		\$0	\$0
F OBJECTIVE: MOTHBALL BUILDINGS								
Building 1	m2		#N/A	0	\$0		\$0	\$0
Building 2	m2		#N/A	0	\$0		\$0	\$0
Building 3	m2		#N/A	0	\$0		\$0	\$0
Building 4	m2		#N/A	0	\$0		\$0	\$0
Building 5	m2		#N/A	0	\$0		\$0	\$0
Other	m2		#N/A	0	\$0		\$0	\$0
G OBJECTIVE: REMOVE BUILDINGS - areas are increased to account for height of buildings								
1 Process plant	m2	61381	brs1h	59.328	\$3,641,598	100%	\$3,641,598	\$0
2 Maintenance plant	m2	27282	brs1h	59.328	\$1,618,580	100%	\$1,618,580	\$0
3 Camp	m3	15359	brs1h	59.328	\$911,215	100%	\$911,215	\$0
5 Power /boiler house(s)	m3	17810	brs1h	59.328	\$1,056,628	100%	\$1,056,628	\$0
6 Ammonium nitrate fuel storage	m2	9259	brs1h	59.328	\$549,316	100%	\$549,316	\$0
7 Explosives/cap storage & mixing	m3	600	brs1h	59.328	\$35,597	100%	\$35,597	\$0
8 Remove boneyard waste	each	1		125000	\$125,000	100%	\$125,000	\$0
9 Crusher building	m2	4633	brs1h	59.328	\$274,866	100%	\$274,866	\$0
# conveyors	m2	2500	brs1h	59.328	\$148,319	100%	\$148,319	\$0
# south tank farm	m2	0	brs1h	59.328	\$0	100%	\$0	\$0
# mixc small buildings	m2	0	brs1h	59.328	\$0	100%	\$0	\$0
Paste Plant (new)	m2	20735	brs1h	59.328	\$1,230,161	100%	\$1,230,161	\$0
Mine Dry (new)	m2	3259	brs1h	59.328	\$193,349	100%	\$193,349	\$0
Lube Oil Storage	m2	2914	brs1h	59.328	\$172,881	100%	\$172,881	\$0
NIWTP Acid Storage	m2	3705	brs1h	59.328	\$219,809	100%	\$219,809	\$0

1 Building / Equip Name: _____ Bldg / Equip #: 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land	Land Cost	Water Cost
MAC E Wing	m2	1283	brs1h	59.328	\$76,118	100%	\$76,118	\$0
NIWTP	m2	3150	brs1h	59.328	\$186,882	100%	\$186,882	\$0
NIWTP Expansion	m2	2796	brs1h	59.328	\$165,880	100%	\$165,880	\$0
LDG Office	m2	993	brs1h	59.328	\$58,912	100%	\$58,912	\$0
Sewage Treatment Plant	m2	1471	brs1h	59.328	\$87,271	100%	\$87,271	\$0
UG Mine Dry	m2	954	brs1h	59.328	\$56,599	100%	\$56,599	\$0
Emulsion Plant	m2	1413	brs1h	59.328	\$83,830	100%	\$83,830	\$0
Surface Welding Shop	m2	1098	brs1h	59.328	\$65,142	100%	\$65,142	\$0
Surface Operations Building	m2	1076	brs1h	59.328	\$63,837	100%	\$63,837	\$0
Dorm 1 & 2	m2	2691	brs1h	59.328	\$159,651	100%	\$159,651	\$0
North Construction Offices	m2	547	brs1h	59.328	\$32,452	100%	\$32,452	\$0
Pit Muster	m2	485	brs1h	59.328	\$28,774	100%	\$28,774	\$0
Mine Rescue Fire Hall	m2	449	brs1h	59.328	\$26,638	100%	\$26,638	\$0
LDG Muster	m2	328	brs1h	59.328	\$19,460	100%	\$19,460	\$0
LDG Offices	m2	273	brs1h	59.328	\$16,196	100%	\$16,196	\$0
A21 Offices	m2	238	brs1h	59.328	\$14,120	100%	\$14,120	\$0
Fuel Tanks 1-6	m2	27918	brs1h	59.328	\$1,656,313	100%	\$1,656,313	\$0
Arctic corridors	m2	6372	brs1h	59.328	\$378,038	100%	\$378,038	\$0
Incinerator	m2	1000	brs1h	59.328	\$59,328	100%	\$59,328	\$0

H OBJECTIVE: BREAK BASEMENT SLABS

. Buildings - all	m2	4500	brcl	37.08	\$166,859		\$0	\$166,859
. Building 2	m2		#N/A	0	\$0		\$0	\$0
. Building 3	m2		#N/A	0	\$0		\$0	\$0
. Building 4	m2		#N/A	0	\$0		\$0	\$0
. Building 5	m2		#N/A	0	\$0		\$0	\$0
. Other			#N/A	0	\$0		\$0	\$0

I OBJECTIVE: REMOVE BURIED TANKS

. Tank 1, decontaminate	m3		#N/A	0	\$0		\$0	\$0
. , excavate & dispose	m3		#N/A	0	\$0		\$0	\$0
. Tank 2, decontaminate	m3		#N/A	0	\$0		\$0	\$0
. , excavate & dispose	m3		#N/A	0	\$0		\$0	\$0
. Other			#N/A	0	\$0		\$0	\$0

J OBJECTIVE: LANDFILL FOR DEMOLITION WASTE

. Place rock cover	m3	187500	#N/A	5.65	\$1,059,375	50%	\$529,688	\$529,688
. Vegetate	ha		#N/A	0	\$0		\$0	\$0
. Landfill disposal fee	tonne		#N/A	0	\$0		\$0	\$0

K OBJECTIVE: GRADE AND CONTOUR

. Grade mill area	m2	30750	dsl	0.8764	\$26,950	50%	\$13,475	\$13,475
. Place rock cover	m3	34050	#N/A	5.65	\$192,383	50%	\$96,191	\$96,191
. Rip rap on ditches	m3		#N/A	0	\$0		\$0	\$0
. Vegetate	ha		#N/A	0	\$0		\$0	\$0
. Other			#N/A	0	\$0		\$0	\$0

L OBJECTIVE: RECLAIM ROADS

Haul roads, A 154 & A418 lease	ha	3.71	scfyl	3960.8	\$14,695	100%	\$14,695	\$0
Service roads, A154 & A418 lease	ha	1.6	scfyl	3960.8	\$6,337	100%	\$6,337	\$0
Haul roads, A21 lease	ha	0	scfyl	3960.8	\$0	100%	\$0	\$0

1 Building / Equip Name: _____ Bldg / Equip #: 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land	Land Cost	Water Cost
Service roads, A21 lease	ha	1.65	scfyl	3960.8	\$6,535	100%	\$6,535	\$0
Haul roads, PKC & dumps lease	ha	10.13	scfyl	3960.8	\$40,123	100%	\$40,123	\$0
Service roads, PKC & dumps lease	ha	23.2	scfyl	3960.8	\$91,891	100%	\$91,891	\$0
Haul roads, infrastructure lease	ha	14.85	scfyl	3960.8	\$58,818	100%	\$58,818	\$0
Service roads, infrastructure lease	ha	5.4	scfyl	3960.8	\$21,388	100%	\$21,388	\$0
Haul roads, airstrip lease	ha	0	scfyl	3960.8	\$0	100%	\$0	\$0
Service roads, airstrip lease	ha	2.9	scfyl	3960.8	\$11,486	100%	\$11,486	\$0
			#N/A	0	\$0	100%	\$0	\$0
K SPECIALIZED ITEMS								
RECLAIM AIRSTRIP	ha	11	SCFYI	3960.8	\$43,569	100%	\$43,569	\$0
YELLOWKNIFE LANDFILL DISPOSAL FEE		1		250000	\$250,000	100%	\$250,000	\$0
			#N/A	0	\$0		\$0	\$0
Subtotal					\$16,078,170	91.2%	\$14,659,457	\$1,418,713
				Total Buildings		Percent Land	Total Land	Total Water

Chemicals and Soil Contamination:

1

1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	
<p>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.</p>								
<p>Hazardous Materials Inventory</p>								
. Contaminated soil investigation ESA		1	#N/A	68393		50%	\$34,197	\$34,197
. Contaminated Soil drilling and sampling		1	#N/A	277143		50%	\$138,572	\$138,572
A LABORATORY CHEMICALS	km						\$0	
. load, manifest, ship & disposal fee	pallet	500	#N/A	1000		50%	\$250,000	\$250,000
B PCB, hauling	litre		#N/A	0			\$0	\$0
. PCB, disposal	litre		#N/A	0			\$0	\$0
C FUEL							\$0	\$0
. Tank decontamination	ls	1	#N/A	223737		50%	\$111,869	\$111,869
. Type 2	kg		#N/A	0			\$0	\$0
. Type 3	kg		#N/A	0			\$0	\$0
D WASTE OIL								
. Oils/lubricants - burn on-site	litre		#N/A	0			\$0	\$0
. Oils/lubricants - ship off-site	litre	650000	#N/A	0.027		50%	\$8,775	\$8,775
. removal glycol	litre	20,000		1.25		50%	\$12,500	\$12,500
E remove batteries	kg	25,000		0.5		50%	\$6,250	\$6,250
. remove paints	litre	1500		0.27		50%	\$203	\$203
. remove solvents	litre	7500		0.75		50%	\$2,813	\$2,813
. Oils/lubricants - disposal fee	litre		#N/A	0			\$0	\$0
<p>PROCESS OR TREATMENT CHEMICALS</p>								
F Sulfuric Acid Transfer to tanker	litres	80000	pcrl	0.38		50%	\$15,200	\$15,200
Haul to disposal facility	loads	2	#N/A	12000		50%	\$12,000	\$12,000
Disposal fee	litres	80000	#N/A	1		50%	\$40,000	\$40,000
Type 4	kg		#N/A	0			\$0	\$0
EXPLOSIVES	kg							
	allow	1	#N/A	10000			\$0	\$10,000
<p>CONTAMINATED SOILS</p>								
. Type 1, light fuel	m3	5000	csrh	134.84		50%	\$337,100	\$337,100
G Type 2, heavy fuel and oil	m3	2500	#N/A	100		50%	\$125,000	\$125,000
. Type 3, metals	m3	250	#N/A	100		50%	\$12,500	\$12,500
. Haz. Mat. testing & assessment						50%		
. Technician and analyses	each	1	#N/A	110000		50%	\$55,000	\$55,000
H Drilling	each	1	#N/A	75000		50%	\$37,500	\$37,500
. Reporting		1		20000		50%	\$10,000	\$10,000
. Other			#N/A	0			\$0	\$0
<p>OTHER</p>								
. remove nuclear densometers from mill	each	10	#N/A	4000			\$0	\$40,000
Subtotal							\$2,123,417	\$1,086,709
						48.8%	\$1,036,709	\$1,086,709

1 Chemicals and Soil Contamination: 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Land		Water Cost	
					Cost %	Total Land Cost		
					Total Chemical	Percent Total Land	Total Land	Total Water

1 /ater Management Project: _____ Project # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost
A OBJECTIVE: STABILIZE EMBANKMENT							
Toe buttress, drain mat'l	m3		#N/A	0	\$0	\$0	\$0
, fill mat'l A	m3		#N/A	0	\$0	\$0	\$0
, fill mat'l B	m3		#N/A	0	\$0	\$0	\$0
Rip rap	m3		#N/A	0	\$0	\$0	\$0
Vegetate	ha		#N/A	0	\$0	\$0	\$0
Raise crest	m3		#N/A	0	\$0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0
B OBJECTIVE: UPGRADE SPILLWAY							
Excavate channel	m3	680 dsh		2.83	\$1,924	\$0	\$1,924
Place rip rap	m3	190	#N/A	5.65	\$1,074	\$0	\$1,074
Excavate channel	m3	14400 dsh		2.83	\$40,752	\$0	\$40,752
Place rip rap	m3	10400	#N/A	5.65	\$58,760	\$0	\$58,760
Other			#N/A	0	\$0	\$0	\$0
C OBJECTIVE: STABILIZE SEDIMENT CONTAINMENT PONDS							
Place soil cover	m3		#N/A	0	\$0	\$0	\$0
Place geotextile	m2		#N/A	0	\$0	\$0	\$0
Vegetate	m3		#N/A	0	\$0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0
D OBJECTIVE: BREACH EMBANKMENT							
Remove Fill	m3		#N/A	0	\$0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0
E OBJECTIVE: COLLECTION PONDS							
Breach 4 dams	m3	2200 dsh		2.83	\$6,226	\$0	\$6,226
place geotextile, 4 by 15,000 m2	m2	60000	#N/A	10	\$600,000	\$0	\$600,000
place rock over geotextile	m3	60000	#N/A	5.65	\$339,000	\$0	\$339,000
Other			#N/A	0	\$0	\$0	\$0
F OBJECTIVE: BREACH DITCHES							
Excavate	m3	7875 dsh		3.4945	\$27,519	\$0	\$27,519
Backfill/recontour	m3	2625 sc1h		8.5958	\$22,564	\$0	\$22,564
Vegetate	ha		#N/A	0	\$0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0
G OBJECTIVE: REMOVE PIPELINES							
Remove pipes	m		#N/A	0	\$0	\$0	\$0
Concrete plug deep pipes	m3		#N/A	0	\$0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0
H OBJECTIVE: NORTH INLET EAST DIKE							
Excavate/construct spillway	m3	4500 sb3h		4.83	\$21,735	\$0	\$21,735
Excavate & backfill	m3		#N/A	0	\$0	\$0	\$0
Other			#N/A	0	\$0	\$0	\$0
I OBJECTIVE: COLLECT DRAINAGE FOR TREATMENT							
Excavate collection ditches	m3		#N/A	0	\$0	\$0	\$0
Rip rap ditches	m3		#N/A	0	\$0	\$0	\$0
Pipes	m		#N/A	0	\$0	\$0	\$0
Pumps	each		#N/A	0	\$0	\$0	\$0
Collect'n pond, exc. mat'l A	m3		#N/A	0	\$0	\$0	\$0
, exc. mat'l B	m3		#N/A	0	\$0	\$0	\$0
Collect'n pond, fill mat'l A	m3		#N/A	0	\$0	\$0	\$0

1 /ater Management Project: _____ Project # 1 _____

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost
, fill mat'l B	m3		#N/A	0	\$0	\$0	\$0
Collect'n pond, liner	m2		#N/A	0	\$0	\$0	\$0
J OBJECTIVE: TREAT DRAINAGE (see "ONGOING TREATMENT" for operating costs)							
Build treatment plant	lump sum		#N/A	0	\$0	\$0	\$0
			#N/A	0	\$0	\$0	\$0
Subtotal					\$1,119,554	0.0%	\$0 \$1,119,554
				Total	Percent Total	Land	Total
				Water	Land	Land	Water

1 Mobilization Name: _____ Mob # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost
A MOBILIZE HEAVY EQUIPMENT					
Equipment to regional centre					
. 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
Equipment, regional centre to site					
. Excavators - 2	km	4800	MHERH	8.42	\$40,416
. Dump trucks - 15	km	120000	MHERH	8.42	\$1,010,400
. Dozers - 4	km	16000	MHERH	8.42	\$134,720
. Demolition shears - 2		9600	MHERH	8.42	\$80,832
. Front end loader 2		4800	MHERH	8.42	\$40,416
. cranes - 2		1600	MHERH	8.42	\$13,472
. service vehicles -10		16000	MHERH	8.42	\$134,720
. km					
B MOBILIZE CAMP					
. allowance		1	#N/A		\$150,000
C MOBILIZE WORKERS					
. rotations over reclamatio period	m-hrs	26000	#N/A	45	\$1,170,000
D MOBILIZE MISC. SUPPLIES					
. Fuel	litre	7000000	#N/A	0.78	\$5,460,000
. Minor tools and equipment	owance	1	#N/A	0	\$500,000
. Truck tires	owance	1	#N/A	0	\$500,000
E MOBILIZE & HOUSE WORKERS person days					
. 20800 man-days	month	740	accml	1483.2	\$1,097,564
F WINTER ROAD					
. Full winter use	km		#N/A	0	\$0
. Limited winter use	km		#N/A	0	\$0
. km			#N/A	0	\$0
F BONDING lump sum					
. km			#N/A		\$0
G TAXES lump surr					
. km			#N/A		\$0
H INSURANCE lump sum					
. km			#N/A		\$0
Subtotal					\$10,332,540
					Total Mob.

Equipment Mobilization	# of machines	loads/machine	mach round trip	total road 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 Monitoring & Maintenance Mon / Mtce # 1

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost
A OBJECTIVE: POST-CLOSURE INSPECTIONS					
Annual geotechnical insp.	each	7	rpth	\$12,360	\$86,520
Survey inspection	each	7	#N/A	\$50,000	\$350,000
Water sampling (surface and groundwater)	ys	10	#N/A	\$250,000	\$2,500,000
Reporting	ys	10	#N/A	\$100,000	\$1,000,000
person, labour, equipment, logistics, etc. allowan		1	#N/A	\$6,237,680	\$6,237,680
B OBJECTIVE: INTERIM CARE & MAINTENANCE					
annual C&M	ys	3	#N/A	\$2,223,639	\$6,670,917
	month		accml		\$0
	month		#N/A	\$0	\$0
	each		#N/A	\$0	\$0
	allowance		#N/A		\$0
Subtotal					\$16,845,117
					Total Mon./Maint.

ANNUAL INTERIM CARE & MAINTENANCE

	No.	hrs/year	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. coordinator	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-months		1320	142560
misc. supplies, allowance				50000
reagents				50000
			Total annual C&M	\$2,223,639

1 Post-Closure Site Maintenance

ACTIVITY/MATERIAL	Units	Quantity	Cost Code	Unit Cost	Cost %	Land Cost	Water Cost	
A WATER TREATMENT								
Total annual cost, unit cost from Ongoing Water Treatment				0	\$0	\$0	\$0	
B Cover Maintenance								
Repair erosion, remove trees	ha		#N/A	0	\$0	\$0	\$0	
C Spillway Maintenance								
Repair erosion	m3		#N/A	0	\$0	\$0	\$0	
Clear spillway	each		#N/A	0	\$0	\$0	\$0	
Other			#N/A	0	\$0	\$0	\$0	
D Other								
						\$0	\$0	
						\$0	\$0	
Subtotal, Annual post-closure costs					\$0	\$0	\$0	
Discount rate for calculation of net present value of post-clos				3.00%		\$0		
Number of years of post-closure activity				0 years		\$0		
Present Value of payment stream					\$0	#DIV/0!	\$0	
					Total Post closure	Percent Land	Total Land	Total Water