SteveJan Consultants Inc.
405 – 9 Adams Rd.
Campbell River, BC V9W1R9
Tel/Fax: 250-926-6094
Cell: 250-850-9002

MEMORANDUM

DATE: **February 28, 2014**

TO: Mr. Bob Holmes
Director
Minerals Development Branch
Yukon Energy, Mines and Resources

FROM: Mr. Steve Januszewski
Principal
SteveJan Consultants Inc.

RE: Review of Capstone's Reclamation and Closure Plan Closure Costing Spreadsheet Version 4.1 for the Minto Mine dated February 2014 and Preparation of an Independent Closure Cost Estimate

1. INTRODUCTION

SJCI has undertaken a high level review of the Minto Mine Phase IV Reclamation and Closure Plan Revision 4.1 (RCP4.1) costing tables and an accompanying narrative memorandum, dated February 12, 2014 and an accompanying narrative memorandum prepared by Access Consulting. The files were submitted electronically by Mr. Martin Haefele of Minto Explorations Ltd. to Ms. Julie Houle, Acting Mine Licensing Officer-Mineral Resources for the Yukon Government's Department of Energy Mines and Resources (YG EMR). These were forwarded to SJCI on Feb. 18, 2013 for review and preparation of an independent closure cost estimate for the end of Phase IV of mining.

The last version of the RCP, Revision 4.0 dated September 2013 was reviewed by SJCI and a draft letter report was issued to YG EMR along with an accompanying costing tables dated October 30, 2013. A copy of the package was forwarded to the Company for their review. A follow-up teleconference was held on Nov. 28, 2013 to discuss the review report. A number of changes were agreed to be made in the next iteration of the closure costing tables by the Company and by SJCI as a result of that discussion. The SJCI changes are outlined in Section 2.0 - Overview and Assumptions (see below). There have been no follow-up meetings or discussions with Capstone involving SJCI since the above teleconference. The author has not been provided information concerning any comments on the RCP that may have provided on Versions 4.0 or 4.1 of the RCP by others. SJCI has also not been made aware of any additional supporting information that may have been prepared in support of the RCP.

Revision 4.0 of the RCP was provided as a condition of the Quartz Mine Licence (QML-0001) and specifically Section 9.2 of the License that required submission of a reclamation and closure

plan be submitted by June 1, 2013 (later amended to September 16, 2013) as well as Clause 103 of Water Use Licence QZ96-006 that required submission of an updated detailed Reclamation and Closure Plan (RCP) to the Yukon Water Board by September 16, 2013.

The Reclamation and Closure Plan was prepared by Access Consulting for Capstone's Minto Mine.

The names of 'Minto Exploration Limited' ('MEL'), 'Capstone' and the 'Company' are used interchangeably throughout this report.

This is the Company's most recent closure plan and costing for the Minto mine site and addresses measures required to fully reclaim and close the site after cessation of mining at the end of Phase IV mining which is being forecast to occur in mid-2014. Concurrently, the mine is providing with further continuation of the mining operation with a Phase V & VI of mining presently in the permitting process and a review by YESAB. This letter report focuses on the closure costs provided in the RCP package for the end of of Phase IV mining (expected to occur mid-2014). Comments are also provided on major uncertainties with the RCP as submitted.

The SJCI work was authorized by Ms. Joule Houle–Acting Mine Licensing Officer of YG EMR in an e-mail to the author on September 17, 2013.

The author has reviewed closure plans and closure cost estimates for a number of mines and mine development projects in the Yukon under contracts to YG EMR and Yukon Environment since 2004. He has been involved in reviews of the closure plans for the Minto Mine since 2007 and was last on the site in September 2013 and previously in July 2012 and September 2009.

The latest version incorporates confirmation of time frames for short and long-term costs, changes to some of the unit rates used, areas for reclamation, indirect cost provisions, as well as a more consistent use of inflation for short term costs and discounted costs for long term costs, and reducing the number of closure costing spreadsheet worksheets in the package.

Current financial security for the site is at $23,928,905 as per a November 23, 2012 directive letter from YG EMR. It is based on the September 30, 2012 Closure Cost Estimate Update for the Minto Mine, by Capstone and in consideration of the YG independent third party review and comments and consultation with the Selkirk First Nation. There have been a number of developments at the site since late 2012 and an updated RCP has been issued. A review of the updated closure plan and setting of an appropriate financial security for the end of the Phase IV mining phase is required.

Over the past several years Capstone has engaged a number of consulting firms to undertake a wide range of studies to fill in details of the ongoing mine development and closure planning but more specifically as part of the Company's current application process for expanding the mine into a new Phase V/VI. A number of the studies may apply to a possible closure of the site after Phase IV mining is completed but they are intended for the next phase of active mining and its eventual closure after that.

Preparation of this letter report includes a more thorough evaluation of the RCP. This has involved a review of the supporting studies currently underway (as was mentioned in the previous paragraph, which were mostly undertaken in support of the Phase V/VI expansion) that were included with the RCP as appendices. However, the author finds that the additional detailed

costing support information (as required by the QML and WUL) has not been provided in the RCP Revision 4.0. The basis of many of the numbers provided in the Company's costing tables cannot be fully evaluated. In several cases this report has had to make a number of conservative assumptions in lieu of the appropriate amount of rationale and details for the costing numbers provided.

A review of the costing tables shows that a number of the tasks in Revision 4.1 of the RCP are using the previously agreed-to work effort estimates for the individual tasks from Revision 3.2 of the RCP. In some cases this may be valid, however, a number of the tasks have grown over the 4 years since Revision 3.2 of the RCP was issued as well as a number of the unit costs have also risen. Most have been adjusted by the Company in the latest iteration of the costing tables. Where these were not adjusted in RCP4.1 they have been changed as considered appropriate by the author in this report.

2. OVERVIEW AND ASSUMPTIONS

Revised surface areas of disturbances requiring reclamation at the mine have been revised in agreement with those provided in the Costing Narrative document to the RCP4.1 costing tables. These numbers have changed since RCP4.0, which were the same as RCP3.2.

Changes agreed to be made in the costing tables by SJCI after a November 28, 2013 teleconference with the parties where the closure cost tables by Capstone & SJCI were compared include:

- Split the difference in the proposed Custom Unit Rates (Table 2);
- Drop the provision for a capillary break in a soil cover over the DSTSF (Table 3);
- Leave the costs in for relocating waste rock materials to underground (Table 3); and
- Remove the need for seeding and fertilizing the surface of the mine access road. Work should include scarification only (Table 12).

A number of additional elements included in the SJCI October 30, 2013 draft review report have been incorporated into the RCP4.1 costing tables.

Other major differences in elements included in this report versus those proposed by Minto in RCP4.1 include:

- Covering of the Mid-Grade Waste Area of the South West Dump with a low-permeability engineered cover due to concerns of long term neutral metals leaching from the pile, similar as is being proposed for the High-Grade Waste Area within the same dump; and
- Inclusion of passive water treatment provision –this includes the capital cost as well as operating and maintenance/replacement costs for a total of 20 years, specifically for years 5-25 from mine closure. No provision for passive treatment has been included in the Minto RCP

A number of additional tasks were identified as being required for mine closure in an independent review of Revision 3.2 of the Minto DRP (re-named to a RCP in Revision 4.0) and cost estimate that was prepared by Kuipers& Associates, LLC, dated June 25, 2012, for the Selkirk First Nation. SJCI provided comments on their report in a July 3, 2012 memorandum that was submitted to YG EMR. This review also considers any additional tasks, including those proposed by Kuipers. SJCI had been expecting RCP 4.0 and then Rev4.1 to address many of the issues presented in the Kuipers report and those previously pointed out by SJCI in its review reports as

well as from other reviewers including other agencies such as Yukon Environment and local stakeholders such as the SFN. One major item that Kuipers added was the need for engineered low-permeability covers over the waste rock dumps (due to historic non-separation of higher grade wastes from the start of mining in October 2007 until July 2011 when separation practices were implemented) and DSTSF similar to what is now being required for consideration and costing for the South West Dump. An engineered low-permeability cover over all the facilities has been considered by the author. However, this report considers adequate alternate mitigative measures to have been included to make covering all of the facilities with such engineered covers un-necessary. Low permeability covers over the HGW and MGW areas of the South West Dump are proposed. The concern of neutral metal leaching from these areas has been mentioned in a number of supporting documents as a possibility and should therefore be included as part of a conservative evaluation of potential cost requirements. Basic soil covers are being costed for the other facilities. If further monitoring results and/or modeling studies indicate it is a likely requirement to reduce metal loadings downstream, the appropriate conditions can be added to the Water Use Licence amendment. There it will be reviewed in the near future and/or the Quartz Mining Licence, and on an ongoing basis to ensure these issues are addressed.

Both passive and active water treatments are proposed in the RCP4.0 text (see Sec. 6.13). However, the costing tables in RCP 4.1 only include costing for the active treatment system. The rationale for this exclusion of a passive system as a contingency component in the overall RCP is unknown. This report includes the cost to install a passive system as well as for subsequent operating costs, maintenance and replacement of components making up the system as required, for a period of 20 years beginning in Year 6 after it is estimated that contaminant levels in site runoff water will have dropped sufficiently and active treatment can cease. However, a provision for ongoing active treatment has been retained until Year 10, due to the uncertainty of if and when loading levels may drop sufficiently for passive treatment alone to meet water quality criteria.

3. REVIEW OF UNIT COSTS AND DETAILED COSTING TABLES

This report has utilized the costing tables provided in the RCP4.1 as a foundation on which to generate an independent third party closure cost estimate. The use of the same set of worksheets enables simplified comparisons between the two sets of closure cost estimates.

This report considers a total of 30 years of treatment (10 years active and 20 years of passive including a 5 year overlap) as a reasonable starting point supplemented with 35 years of post-closure water quality monitoring. Additional work is required by Capstone to optimize long term post closure site effluent water treatment.

The individual cost estimates were provided in the RCP costing tables and have been rolled into the Summary Table as part of this report.

The accompanying costing tables (Appendix 1) show mark-ups made as part of this review with yellow highlighting used to identify the specific items where changes have been made by the author.

Table 2 Unit Rates

Equipment rental rates were determined using the latest Yukon Highways Third Party Equipment Rental Rates book (e-version) produced in April 2013. The specific pieces of equipment to be utilized at the mine were sourced from the Mayo area in the book and the average price of a given piece of equipment (1990 or newer) was then used in the costing tables.

Personnel unit rates used in RCP4.1 have been accepted by the author.

The RCP has expanded the list of custom rates for moving materials around the site for closure work. A number of the custom rates (old and new) have been adjusted based on the experience of the author. The individual custom rates used in this report are based on the average of those proposed by SJCI in the Oct.30, 2013 review of RCP4.0 and those proposed by Capstone in RCP4.1.

Table 3 Waste Rock and Overburden Dumps

The SRK report that undertook a ML/ARD assessment and post-closure water quality prediction (SRK 2010) identified the risk of mixing the different waste rock materials in the waste dumps. It states that mixing of the mineralized rock with bulk waste as has been done in the dumps, the mineralized waste rock would represent a minor risk for development of ARD and a more substantial risk for release of elevated concentrations of trace elements over the long term. Continued monitoring of the seepage water quality will be required to confirm water quality remains acceptable and that no further mitigative measures are required. The currently in-place active treatment system will remain for a period after mine closure as the primary means of post source-control to reduce downstream effects.

The previous RCP introduced the idea of establishing soil cover test plots to evaluate the effectiveness of various cover systems and modeling would have indicated what degree of source control should be implemented. It had been anticipated that preliminary results of those tests would have enabled a better estimation of what system should be included in a closure cost estimation. However, no such results have been presented to date.

Main Waste Dump:
No specific comments.

South West Dump:
RCP4.0 text discusses the incorporation of a very low-permeability cover over the High Grade Waste Area of the dump. And Section 6.1.2 states that this is currently proposed to be a bituminous geomembrane cover and that costing has been provided for it. The SRK report (2010) discusses potential neutral metal leaching as a geo-chemical concern. This report has provided provision for a longer period of active and passive treatments to accommodate a longer period for loadings from the dumps to be reduced. It is expected that these systems along with appropriate covers should be able to treat runoffs from the mine area including the waste rock dumps. For the purposes of being conservative and due to a lack of final modeling indicating a very low permeability cover is not required, this report includes the provision of placing a very low permeability cover over the area of High Grade Waste (HGW) and Mid-Grade Waste(MGW) areas to improve source control. This amounts to a total area of 29.5 ha. The RCP costing of $\$20/m^2$ (all-inclusive) for installing a geo-membrane liner over the selected areas of the SWD is accepted.

Ice Rich Overburden Deposit:

No specific comments.

Reclamation Overburden Deposit:
No specific comments.

Low Grade Ore Stockpile Pad:
The quantity of low-grade ore currently in the stockpile is not mentioned in the RCP. There is a concern the stockpile pad may still contain low-grade ore at the time of mine closure. This is the more likely material to be left behind at the time of mine closure (i.e., low-grade waste is less likely to be put through the mill than the high-grade ore).

High Grade Ore Stockpile Pad:
There is a concern the stockpile pad may still contain high-grade ore at the time of mine closure. The costing assumes most of the material will have been removed to the mill for processing or to the pit for disposal.

Grade Bin Disposal Area:
No longer applicable

Contractors Shop and Work Area:
No specific comments.

Mill Valley Fill:
This area is now considered to have been completed and as a result is no longer included in tasks to be completed being built. Closure of the facility is now considered in combination with the DSTSF.

Table 4 Open Pit and Haul Roads

Area 118 Pit has been added to the areas for inclusion as it will be developed during Phase IV mining, based on text provided in the RCP text.

No dimensions are provided for the underground features to be sealed at closure, including the portal and ventilation raise.

Table 5 Primary Water Conveyance Structures

Appendix B of RCP4.0 discusses closure hydrology. It also states the design of all the water conveyance structures is at a conceptual level to be able to provide a +/- 30% cost estimate for construction of the closure works.

RCP4.0 introduced the use of a plastic erosion confinement system for use in a number of the surface conveyance ditches on the site. The product is called Presto Geoweb and is marketed as a cellular Confinement System for slope and channel protection, load support and earth retention. There is no mention in the RCP text of the rationale for why this system is now being considered. It has not been introduced in earlier versions of the RCP. It may be included in the costing tables as an alternative to the traditional use of filters or liners and surface erosion (often riprapping) with which to construct surface drainage channels. The use of this technology and the quantity estimates provided in RCP4.1 have been accepted by the author.

Secondary ditching for the various facilities is covered in the costing tables for those elements (e.g., Table3 for Waste Rock and Overburden Dumps, and Table 6 for DSTSF and MVFE).

Tertiary ditching is to consist mostly of minor swales. No preliminary designs have been prepared for these elements yet.

Table 6 DSTSF and MVFE

No specific comments.

Table 7 Water Storage Pond

No specific comments.

Table 8 Mill and Ancillary Facilities

A quotation was solicited for removal of contaminated materials in 2009 and included in recent RCPs including RCP4.1. In lieu of having a recent quotation, a 20% markup has been added to the quotation estimate to make it more reflective of a price to be expected 4 years hence.

Table 9 Mill Water Pond

No specific comments.

Table 10 Main Access Road

A provision has been added to undertake a contamination survey for possible spills and other contamination likely to be found along the roadway corridor, as per section 6.10 of RCP4.0.

Table 11 Miscellaneous Site and Facilities

A provision has been added for removal of the above-ground sewage treatment plant, replacing a cost estimate for a septic sewage system which has now been decommissioned.

It is unknown how close to the permitted capacity of $700m^3$ of hydrocarbon contaminated soil is already in the LTF and therefore how much remaining space there is. It is also unclear whether metal contaminated soils (due to ore and/or concentrate spills) are also being relocated to the LTF. No additional provisions have been added at this time although these items should be checked.

Table 12 Reclamation Research and Revegetation

The surface areas for revegetation are as per the new numbers provided in Closure Costing Narrative which accompanied RCP4.1

Scarification of the full length of the main access road surface has been added, replacing a previous provision for seeding and fertilizing the road surface.

Table 13 Short Term Site Management and Monitoring

No specific comments.

Table 14 Long Term Site Management and Monitoring

A number of adjustments were made to the Onsite Management section to accommodate the on-site period (including active treatment) lasting 10 years post-closure, versus the 5 years shown in RCP4.1.

The number of man days in camp have been reduced to a significantly lower value than proposed in RCP4.1. It appears as though the number used in that table was a duplication of those used in the Short Term On-Site Management component.

Provision has been added for a passive treatment system. It includes a capital cost in Year 5, and 20 years of operation, maintenance and capital replacement.

Water Quality monitoring has been extended to 35 years post-closure to include the full duration of passive treatment as well as a period of 10 years after the passive treatment system is considered to be no longer required, to confirm water quality criteria are being met.

Table 15 Supporting Studies

Provisions have been added for the installation of some additional instrumentation for monitoring the stability of the waste rock dumps and the DSTSF and their foundations. Only small provisions have been added as it is understood that there have been a number of new instruments installed recently and that this area of concern is currently under active investigation.

4. DISCUSSION OF OUTSTANDING MAJOR UNCERTAINTIES

There are a number of outstanding major uncertainties that may have an effect of the site's closure liability. These include:

- Geo-technical stability of constructed structures
- Water management
- Surface diversions
- Need for engineered soil covers
- Quantity and quality of available soil materials for use in site reclamation

Geotechnical Stability of Constructed Structures:

There is a significant issue of ground stability and specifically the foundations of a number of structures at the site that may be unstable due to the permafrost zones within them. Movement of several site features has been observed and has required the implementation of significant mitigative measures and now requires on-going monitoring with appropriate Adaptive Management Plans. This includes the DSTSF, the Southwest Dump and the Main Pit south wall. There is also the possibility of further mitigative measures being required to arrest movement of these structures as well as for any new structures that may be built as part of the mining operation.

This stability issue is currently being investigated as Minto and SFN have jointly retained professional consultants to study the issue and issue recommendations. The project consists of an independent third party geotechnical review. The structures they are evaluating include the dry stack tailings storage facility, Main Pit South Wall, Southwest Dump and proposed Main Pit Dam. A site visit was undertaken on the same date as this author was there on September 10, 2013. The author has not been involved in this project and is not apprised of any preliminary results of the study and their potential significant impact on future mine development plans as well as closure planning and therefore on its possible effects on closure liability. The terms of reference for the project suggest the review should be completed within 10 weeks of project commencement and a final report was due to be delivered and presented to the parties within 30days thereafter (i.e., ~beginning of December 2013).

Water Management:

Downstream water quality requirements are being investigated and will likely be the focus of Water Board Hearings which may be held to amend the current Water Use License for the site. Knowledge of the applicable water quality criteria is a fundamental requirement to enable determination of treatment requirements and to then be able to cost them. Depending on what the requirements will be, active and/or passive treatment systems may be required. Estimates of how long the treatment systems will need to be operated are also required.

The Closure Adaptive Management Plan (App. D of RCP4.0) recommends that additional water quality monitoring stations nearer to the site features should be established and used to more quickly identify the source of any problems. Identifying where contaminated waters are coming from will be critical to developing appropriate mitigative strategies.

Constructed wetlands are being considered as one option for long-term passive treatment. However, there are no conceptual designs yet, nor any small scale field trial units set up yet. The Company has yet to determine the effects of the current plans to have wetlands sized so that they will not be able to handle freshets and flooding events and as a result bypassing systems will be utilized. The effects of building structures to these standards on downstream water quality will also need to be assessed.

Surface Diversions:

Keeping clean surface run-off waters separated from mine disturbed areas' runoffs as the waters flow across the site is vitally important to reduce the volume of water required for treatment in order to meet downstream water quality criteria. These systems should be installed and fully operational now during operations. Having them in place now would demonstrate their effect on managing water around the site and their effect on downstream water quality, as well as providing confidence in the proposed diversions systems for the post-closure phase.

Need for Engineered Soil Covers:

Source controls are being proposed for several facilities, including basic soil covers on the waste rock dumps and DSTSF, and bituminous geomembrane areas on portions of the South West Dump. It is the author's understanding that no test plots have been established atop of the DSTSF to evaluate alternate cover designs for the facility. This is contrary to the April 23, 2010 letter from B. Holmes-EMR to S. Quin-Minto and later repeated in a September 9, 2011 from B. Holmes-EMR to G. Bush-Minto.

Quantity and Quality of Available Soil Materials for Use in Site Reclamation:

The Company has undertaken some inventorying of available soil materials on the site. SRK has undertaken initial work on the issue (2013). More effort is required to identify the materials available as this could have a significant effect on closure options that are selected and their respective costs. Also, it is unclear what performance standards are being utilized to evaluate the various soil areas around the site for the various requirements during final site reclamation. Also, the Closure AMP suggests that a 100,000 m^3 shortfall in material inventory will trigger action. It is suggested a significantly smaller shortfall trigger should be utilized and that these materials be further confirmed during operations.

5. CONCLUSIONS AND RECOMMENDATIONS

A first order review of Capstone's closure cost estimate for Minto Mine has been completed and a revised interim total closure liability cost estimate has been generated. Due to the uncertainties involved with a number of the closure tasks, the lack of detailed supporting information for the proposed work, a conservative approach has been taken in itemizing all of the closure tasks and in determining appropriate provisions and contingencies.

A revised total closure cost of $52.0M has been determined compared with $40.9M estimated by the Company, both with a 15% contingency allowance. This represents an increase in the total closure cost estimate of approximately 27 % over what was estimated by Capstone. However, the author has found a small number of significant changes and a larger number of minor changes were required to the RCP cost estimate. The closure cost estimate determined in this report is considered reasonable based on the information available to the author as of the date of this report.

As the Company moves towards continued mine operation with proposed Phase V/VI mining, it is further recommended that the Company be tasked with completing a comprehensive closure plan with cost estimates along with detailed supporting information as is required by the Quartz Mining License and the Water Use License. The current RCP does not comply with that requirement.

In addition, results of work currently underway including the stability assessment, cover test trials, borrow materials inventorying, as well as revised discharge water quality criteria in a new/revised Water Use Licence, and resultant water treatment options should be monitored carefully by YG as they may warrant a subsequent review and updating of the closure cost estimate.

APPENDIX 1

DETAILED COSTING TABLES

Table 1

Summary Table of Estimated Closure Costs - 2014

Description of Cost	Estimated Cost			
	Existing Security September 2012	Capstone Proposed Sept 2013	Capstone Proposed Feb 2014	SJCI Proposed Feb 2014
Short-Term Reclamation and Closure Costs (years 1-5)				
Waste Dumps	$8,286,594	$6,332,223	$7,445,302	$13,277,571
Pit and Haul Roads	$460,668	$271,268	$358,420	$1,126,876
Primary Water Conveyance Structures		$741,863	$753,981	$753,981
Tailings & MVFE	$2,615,559	$1,481,569	$1,347,844	$1,441,231
Main Dam	$615,033	$590,958	$645,029	$661,347
Mill and Facilities	$801,633	$802,356	$1,269,419	$1,307,456
Mill Pond	$177,524	$177,524	$199,084	$199,084
Access Road	$253,906	$253,906	$264,579	$286,122
Miscellaneous	$307,385	$383,373	$559,965	$585,978
Revegetation	$1,557,900	$1,557,900	$1,649,997	$1,789,277
Site Management [4]	$1,234,660	$1,626,160	$942,160	$1,003,540
Supporting Studies	$510,500	$510,500	$510,500	$532,500
Reclamation and Closure Research Program		$1,450,000	$1,450,000	$1,450,000
Capital Costs				
Active Treatment		$2,000,000	$2,000,000	$2,000,000
Active Treatment Capital Replacement		$240,000	$300,000	$300,000
Passive Treatment	$202,658	$0	$0	$0
Passive Treatment Capital Replacement		$0	$0	$0
Operating Costs (total years 1-5)				
Active Treatment	$3,115,680	$3,115,680	$3,115,680	$3,115,680
Passive Treatment		$0	$0	$0
Site Access and Maintenance[1,2]	$391,500	$0	$0	$0
Monitoring[1,5]	$790,500	$710,500	$567,500	$562,500
Sub-total	$21,321,701	$22,245,778	$23,379,460	$30,393,141
Indirect Costs (%)	12%	18%	18%	18%
Indirect Costs	$2,607,204.06	$4,004,240.12	$4,208,302.80	$5,470,765.35
Cost Inflation [3]	$0	$2,362,502	$1,655,266	$2,151,834
Total Short Term Costs	**$23,928,905**	**$28,612,520**	**$29,243,029**	**$38,015,741**
Long-Term Reclamation and Closure Costs				
Reclamation and Closure Research Program		$750,000	$750,000	$750,000
Capital Costs				
Active Treatment		$0	$0	$0
Active Treatment Capital Replacement		$300,000	$300,000	$300,000
Passive Treatment (yr 5)		$0	$0	$300,000
Passive Treatment Capital Replacement (yrs 6-25)		$0	$0	$600,000
Operating Costs				
Active Treatment (years 6-10)		$3,750,000	$3,750,000	$3,750,000
Passive Treatment (years 6-25)		$0	$0	$500,000
Site Access and Maintenance[6]		$2,400,000	$942,300	$632,500
Monitoring[7] (yrs 6-35)		$120,000	$658,000	$787,500
Sub-Total		$7,320,000	$6,400,300	$7,620,000
Sub-Total NPV (2.5% DROR)		$6,135,101	$5,357,799	$6,119,300
Indirect Costs (%)		18%	18%	18%
Indirect Costs		$1,104,318	$964,404	$1,101,474
Total (NPV)		$7,239,419	$6,322,203	$7,220,774
Total Financial Security (18% Indirect Costs)	**$23,928,905**	**$35,851,940**	**$35,565,231**	**$45,236,515**
Contingency Allowance	**0%**	**0%**	**15%**	**15%**
Contingency Amount	**$0**	**$0**	**$5,334,785**	**$6,785,477**
Total Financial Security (Plus Contingency)	**$23,928,905**	**$35,851,940**	**$40,900,016**	**$52,021,992**

[1] Existing FnclSecurity includes maintenance and monitoring costs for years 6-15, these are now in long term costs

[2] Site Access and Maintenance costs for years 1-5 are included in the Site Management line item

[3] The February 2014 proposal uses a 2% rate of inflation.

[4] Site Management for Years 1 - 5 include items 13.1 Onsite Management and 13.2 Transport Costs

[5] Monitoring for Years 1 - 5 include items 13.4 Water Quality Monitoring, 13.5 Post Closure Maintenance - Water Storage Pond Dam, and 13.6 Ultimate removal of wells and instrumentation

[6] Long term Site Access and Maintenance includes items 14.1 Onsite Management and 14.2 Transport Costs

[7] Long term Monitoring includes items 14.5 Water Quality Monitoring, and 14.6 Post Closure Maintenance - Water Storage Pond Dam

Table 2
Minto Mine Closure Unit Rates for 2014

Equipment Rates		
Equipment	**Unit Rates**	**Per Unit**
D9H Dozer	$350	per hr
D6D Dozer	$225	per hr
Haul Truck D250E	$250	per hr
Tandem Haul Truck	$150	per hr
Cat 235 Excavator	$250	per hr
Cat 235 Excavator w hammer	$275	per hr
Cat 16H grader	$300	per hr
988B Loader	$250	per hr
Tractor Trailer (lowbed)	$180	per hr
30 ton Crane	$190	per hr
Hiab Flatdeck truck	$160	per hr
Cat 950 loader	$170	per hr
Vibratory Roller	$180	per hr
Pickup Truck	$2,500	per mo
Personnel Rates		
Personnel	**Unit Rates**	**Per Unit**
Blaster	$68	per hr
General Labourer	$52	per hr
Trades Labourer	$91	per hr
Site Supervisor	$110	per hr
Design Engineer	$149	per hr
Environmental Scientist	$110	per hr
Project Manager	$10,670	per mo
Camp Labourer	$4,400	per mo
Site Caretaker	$6,710	per mo
Environmental Monitor	$5,500	per mo
Revegetation Rates	**Unit Rates**	**Per Unit**
Revegetation Seed Mix	$17.50	per kg
Revegetation Seed Mix - 50kg/ha	$875	per ha
Fertilizer	$1.10	per kg
Fertilizer - 250kg/ha	$275	per ha
Tree Seedlings (1,000 seedlings per ha)	$2,000	per ha
Seed/Fertilizer Application	$1,700	per ha
Erosion Barrier	$3	per sq.m
Revegetation cost per ha. Including application cost	**$2,850.00**	**per ha**
Contractor Unit Rates & Camp Costs	**Unit Rates**	**Per Unit**
Custom Rate A (Load, haul, place soil cover ROD-MWD)	$4.63	per cu.m
Custom Rate B (Load, haul, place soil cover ROD-SWD)	$4.63	per cu.m
Custom Rate C (Load, haul, place soil cover ROD-MWD / LGO)	$5.00	per cu.m
Custom Rate D (Load, haul, place soil cover ROD-MWD / HGO)	$5.00	per cu.m
Custom Rate E (Load, haul, place soil cover ROD-CSA)	$4.38	per cu.m
Custom Rate F (Load, haul, place soil cover ROD-MVFE)	$4.63	per cu.m
Custom Rate G (Load, haul, place soil cover ROD-DSTF)	$4.63	per cu.m
Custom Rate H (Load, haul, place fill SWD - MVFE)	$4.63	per cu.m
Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	$4.75	per cu.m
Custom Rate J (Push from WSP Dam - U/S WSP Dam)	$2.35	per cu.m
Load, haul & place mat'l underground	$10.00	per cu.m
Produce rip-rap	$15.00	per cu.m
Load, haul and place rip-rap	$15.00	per cu.m
Deliver and install geosynthetic membrane on prepared foundation	$20.00	per sq.m
Unit Basis (footing burial)	$5.00	each
GeoWeb - GW30V3	$5.60	per sq.m
GeoWeb - GW30V4	$7.10	per sq.m
GeoWeb - GW30V6	$10.60	per sq.m
Freight run to Whitehorse	$1,000.00	per load
Camp Cost	$80.00	per day per person
Power and Heat	$5,500.00	per month
Employee Transport Costs	$3,000.00	per month
Barge Operating Cost	$10,000.00	per month

Notes:

1) Custom Rates A through J developed specifically for Minto Mine, taking into account such factors as haul distance, grade, machinery req`d, time reqd, etc.

2) Unit rates for GeoWeb materials are provided by a licensed vendor and are considered conservative costs which include delivery and installation.

Table 3

Waste Rock and Overburden Dumps, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
	WASTE ROCK AND OVERBURDEN DUMPS						
3.1	**Main Waste Dump (s 6.1.1) (42.34 ha)**						
	Roll crest and recontour	D9H Dozer	hrs	500	$350	$175,000	$175,000
	Additional compaction, as req'd	Vibratory Roller	hrs	100	$180	$18,000	$18,000
	Haul & place overburden for revegetation - Bench area (0.8 m thickness) (27.05 ha)	Custom Rate A (Load, haul, place soil cover ROD-MWD)	cu.m.	216,400	$4.63	$1,000,850	$1,000,850
	Haul & place overburden for revegetation - Slope area (1.0 m thickness) (15.29 ha)	Custom Rate A (Load, Haul, place soil cover ROD-MWD)	cu.m.	152,900	$4.63	$707,163	$707,163
	Project Management & Engineering	7% of Total Cost	%		7.00%	$133,071	$133,071
	Sub-Total						**$2,034,083**
3.1.1	**Main Waste Dump - Ditching Option 1 - Rip-rap**						
	Contour secondary ditching (1840 m)	Cat 235 Excavator	hrs	92	$250.00	$23,000	$23,000
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	6,510	$15.00	$97,650	$97,650
		Load, haul and place rip-rap	cu.m.	6,510	$15.00	$97,650	$97,650
	Contour tertiary ditching (490 m)	Cat 235 Excavator	hrs	25	$250.00	$6,125	$6,125
	Sedimentation Pond	Misc.	l.s.	1	$100,000.00	$100,000	$100,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$22,710	$22,710
	Sub-Total						**$347,135**
3.1.2	**Main Waste Dump - Ditching Option 2 - GeoWeb**						
	Contour secondary ditching (1840 m)	Cat 235 Excavator	hrs	92	$250.00	$23,000	$23,000
	Provision for ditching erosion protection	Produce rip-rap	cu.m.	1,870	$15.00	$28,050	$28,050
		Load, haul and place rip-rap	cu.m.	1,870	$15.00	$28,050	$28,050
	GeoWeb	GeoWeb - GW30V4	sq.m	18,400	$7.10	$130,640	$130,640
	Contour tertiary ditching (490 m)	Cat 235 Excavator	hrs	25	$250.00	$6,125	$6,125
	Sedimentation Pond	Misc.	l.s.	1	$100,000.00	$100,000	$100,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$22,111	$22,111
	Sub-Total						**$337,976**
3.2	**Southwest Dump**						
	SWD Excluding Area of High Grade Waste (47.4 ha)						
	Roll crest and recontour	D9H Dozer	hrs	449	$350	$157,145	$157,145
	Additional compaction, as req'd	Vibratory Roller	hrs	96	$180	$17,318	$17,318
	Haul & place overburden for revegetation - Bench area (0.8 m thickness) (41.6 ha)	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	332,800	$4.63	$1,539,200	$1,539,200
	Haul & place overburden for revegetation - Slope area (1.0 m thickness) (5.8 ha)	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	58,000	$4.63	$268,250	$268,250
	Project Management & Engineering	7% of Total Cost	%		7.00%	$138,734	$138,734
	Area of High Grade Waste (3 ha) & Mid-Grade Waste (26.5 ha)						
	Roll crest and recontour	D9H Dozer	hrs	250	$350	$87,500	$87,500
	Additional compaction, as req'd	Vibratory Roller	hrs	50	$180	$9,000	$9,000
	Placement of bedding layer (e.g., 0.1m OVB)	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	26,500	$4.63	$122,563	$122,563
	Installation of geosynthetic membrane (e.g. BGM)	Deliver and install geosynthetic membrane on prepared foundation	sq.m.	265,000	$20	$5,300,000	$5,300,000
	Haul & place overburden for revegetation - Bench area (0.8 m thickness)	Custom Rate B (Load, haul, place soil cover ROD-SWD)	cu.m.	212,000	$4.63	$980,500	$980,500
	Project Management & Engineering	7% of Total Cost	%		7.00%	$454,969	$454,969
	Sub-Total						**$9,075,179**
3.2.1	**Southwest Dump - Ditching Option 1 - Rip-rap**						
	Contour secondary ditching (1980 m)	Cat 235 Excavator	hrs	99	$250.00	$24,750	$24,750
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	6,990	$15.00	$104,850	$104,850
		Load, haul and place rip-rap	cu.m.	6,990	$15.00	$104,850	$104,850
	Contour tertiary ditching (1830 m)	Cat 235 Excavator	hrs	92	$250.00	$22,875	$22,875
	Sedimentation Pond	Misc.	l.s.	1	$100,000.00	$100,000	$100,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$25,013	$25,013
	Sub-Total						**$382,338**
3.2.2	**Southwest Dump - Ditching Option 2 - GeoWeb**						
	Contour secondary ditching (1980 m)	Cat 235 Excavator	hrs	99	$250.00	$24,750	$24,750
	Provision for ditching erosion protection	Produce rip-rap	cu.m.	2,010	$15.00	$30,150	$30,150
		Load, haul and place rip-rap	cu.m.	2,010	$15.00	$30,150	$30,150
	GeoWeb	GeoWeb - GW30V4	sq.m	19,800	$7.10	$140,580	$140,580
	Contour tertiary ditching (1830 m)	Cat 235 Excavator	hrs	92	$250.00	$22,875	$22,875
	Sedimentation Pond	Misc.	l.s.	1	$100,000.00	$100,000	$100,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$24,395	$24,395
	Sub-Total						**$372,900**
3.3	**Ice-Rich Overburden Dump (s 6.1.3) (3.01 ha)**						
	Roll crest of berm and recontour	D9H Dozer	hrs	16	$350	$5,600	$5,600
	Excavate material for placement on berm	Cat 235 Excavator	hrs	40	$250	$10,000	$10,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$1,092	$1,092
	Sub-Total						**$16,692**
3.4	**Reclamation Overburden Dump (s 6.1.4) (33.08 ha)**						
	Blade pad after removal of material during reclamation	D6D Dozer	hrs	90	$225	$20,250	$20,250
	Project Management & Engineering	7% of Total Cost	%		7.00%	$1,418	$1,418
	Sub-Total						**$21,668**
3.2.1	**Reclamation Overburden Dump - Ditching Option 1 - Rip-rap**						
	Contour secondary ditching (3480 m)	Cat 235 Excavator	hrs	174	$250.00	$43,500	$43,500
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	12,290	$15.00	$184,350	$184,350
		Load, haul and place rip-rap	cu.m.	12,290	$15.00	$184,350	$184,350
	Contour tertiary ditching (1900 m)	Cat 235 Excavator	hrs	95	$250.00	$23,750	$23,750
	Sedimentation Pond	Misc.	l.s.	1	$100,000.00	$100,000	$100,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$37,517	$37,517
	Sub-Total						**$573,467**
3.2.2	**Reclamation Overburden Dump - Ditching Option 2 - GeoWeb**						
	Contour secondary ditching (3480 m)	Cat 235 Excavator	hrs	174	$250.00	$43,500	$43,500
	Provision for ditching erosion protection	Produce rip-rap	cu.m.	3,510	$15.00	$52,650	$52,650
		Load, haul and place rip-rap	cu.m.	3,510	$15.00	$52,650	$52,650
	GeoWeb	GeoWeb - GW30V4	sq.m	34,800	$7.10	$247,080	$247,080
	Contour tertiary ditching (1900 m)	Cat 235 Excavator	hrs	95	$250.00	$23,750	$23,750
	Sedimentation Pond	Misc.	l.s.	1	$100,000.00	$100,000	$100,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$36,374	$36,374
	Sub-Total						**$556,004**
3.5	**Low Grade Ore Stockpile and Pad (s 6.2) (3.9 ha)**						
	Recontour Stockpile and Pad	D9H Dozer	hrs	40	$350	$13,825	$13,825
	Haul and place overburden for revegetation	Custom Rate C (Load, haul, place soil cover ROD-MWD / LGO)	cu.m.	19,500	$5.00	$97,500	$97,500
	Removal of bottom layer of material, move to pit.	Misc.	l.s.	1	$5,000	$5,000	$5,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$8,143	$8,143
	Sub-Total						**$124,468**
3.6	**High Grade Ore Stockpile Pad (s 6.2) (5.14 ha)**						
	Recontour stockpile and pad	D9H Dozer	hrs	54	$350	$18,900	$18,900
	Haul and place overburden for revegetation	Custom Rate D (Load, haul, place soil cover ROD-MWD / HGO)	cu.m.	25,700	$5.00	$128,500	$128,500
	Removal of bottom layer of material, move to pit.	Misc.	l.s.	1	$7,500	$7,500	$7,500
	Project Management & Engineering	7% of Total Cost			7.00%	$10,843	$10,843
	Sub-Total						**$165,743**
3.7	**Grade Bin Disposal Area**						
	Does not apply						
	Sub-Total						**$0**
3.8	**Contractor's Shop and Work Area (s 6.9.7)**						
	Remove salvageable equipment	General Labourer	hrs	75	$52	$3,900	$3,900
		Haul Truck D250E	hrs	25	$250	$6,250	$6,250
		Trades Labourer	hrs	60	$91	$5,460	$5,460
	Dismantle buildings	General Labourer	hrs	60	$52	$3,120	$3,120
		30 ton Crane	hrs	13	$190	$2,375	$2,375
		Cat 235 Excavator	hrs	38	$250	$9,375	$9,375
	Haul building pieces off site - equipment	Tractor Trailer (lowbed)	hrs	25	$180	$4,500	$4,500
	Scrap haul to site landfill	Haul Truck D250E	hrs	25	$250	$6,250	$6,250
		Cat 235 Excavator	hrs	25	$250	$6,250	$6,250
	Excavate & haul contaminated materials to site LTF	Misc.	l.s.	1	$6,250	$6,250	$6,250
	Bury footings - haul and place fill, locally sourced	Unit Basis (footing burial)	each	3,125	$5	$15,625	$15,625
	Recontour	D9H Dozer	hrs	19	$350	$6,563	$6,563
	Project Management & Engineering	7% of Total Cost	%		7.00%	$5,314	$5,314
	Sub-Total						**$81,232**
3.9	**Main Pit Buttress (16.33 ha)**						
	Roll crest and recontour	D9H Dozer	hrs	250	$350	$87,500	$87,500
	Additional compaction, as req'd	Vibratory Roller	hrs	30	$180	$5,400	$5,400
	Haul & place overburden for revegetation - (0.5 m thickness) (16.33 ha)	Custom Rate E (Load, haul, place soil cover ROD-CSA)	cu.m.	81,650	$4.38	$357,219	$357,219
	Contour tertiary ditching (800 m)	Cat 235 Excavator	hrs	40	$250.00	$10,000	$10,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$31,508	$31,508
	Sub-Total						**$491,627**
Total Estimated Cost in Reclaiming Overburden and Waste Rock Dumps							
	Option 1 - assuming use of rip-rap lined ditches						**$13,313,630**
	Option 2 - assuming use of GeoWeb lined ditches						**$13,277,571**
Note:							

Table 4
Open Pits and Haul Roads, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
	OPEN PIT, UNDERGROUND AND HAUL ROADS						
4.1	**Main Pit**						
	Remove pit pumps and pipe column/general cleanup	General Labourer	hrs	80	$52	$4,160	
		Trades Labourer	hrs	20	$91	$1,820	
		Support equipment	l.s.	1	$1,000	$1,000	$6,980
	Secure pit access - boulder placement	Cat 235 Excavator	hrs	20	$250	$5,000	
		Haul Truck D250E	hrs	20	$250	$5,000	
	Highwall perimeter safety berm/trench (~1km)	Cat 235 Excavator	hrs	40	$250	$10,000	$20,000
	Construct inflow spillway from upgradient of pit	Cat 235 Excavator	hrs	40	$250	$10,000	
		Haul Truck D250E	hrs	20	$250	$5,000	
		Produce rip-rap	cu.m	200	$15	$3,000	
		Load, haul and place rip-rap	cu.m	200	$15	$3,000	$21,000
	Construct exit channel into Mill Pond system	Cat 235 Excavator	hrs	20	$250	$5,000	
		Produce rip-rap	cu.m	200	$15	$3,000	
	rip-rap shoulder exiting pit-spillway	Load, haul and place rip-rap	cu.m	200	$15	$3,000	
		General Labourer	hrs	10	$52	$520	$11,520
	Project Management & Engineering	7% of Total Cost	%		7.00%	$4,165	$4,165
	Sub-Total						**$63,665**
4.2	**Area 2 Pit**						
	Remove pit pumps and pipe column/general cleanup	General Labourer	hrs	60	$52	$3,120	
		Trades Labourer	hrs	15	$91	$1,365	
		Support equipment	l.s.		$1,000	$1,000	$5,485
	Secure pit access - boulder placement	Cat 235 Excavator	hrs	20	$250	$5,000	
		Haul Truck D250E	hrs	20	$250	$5,000	$10,000
	Construct exit channel into Mill Pond system	Cat 235 Excavator	hrs	40	$250	$10,000	
	rip-rap shoulder exiting pit	Load, haul and place rip-rap	cu.m	50	$15	$750	
		Produce rip-rap	cu.m	50	$15	$750	
	Exit Spillway construction	General Labourer	hrs	40	$52	$2,080	
		Produce rip-rap	cu.m	250	$15	$3,750	
		Load, haul and place rip-rap	cu.m	250	$15	$3,750	$21,080
	Project Management & Engineering	7% of Total Cost	%		7.00%	$2,560	$2,560
	Sub-Total						**$39,125**
4.3	**Area 118 Pit**						
	Remove pit pumps and pipe column/general cleanup	General Labourer	hrs	45	$52	$2,340	
		Trades Labourer	hrs	11.25	$91	$1,024	
		Support equipment	l.s.	1	$750	$750	$4,114
	Secure pit access - boulder placement	Cat 235 Excavator	hrs	15	$250	$3,750	
		Haul Truck D250E	hrs	15	$250	$3,750	$7,500
	Construct exit channel into Mill Pond system	Cat 235 Excavator	hrs	30	$250	$7,500	
		Produce rip-rap	cu.m	30	$15	$450	
	rip-rap shoulder exiting pit	Load, haul and place rip-rap	cu.m	37.5	$15	$563	
	Exit Spillway construction	General Labourer	hrs	30	$52	$1,560	
		Produce rip-rap	cu.m	188	$15	$2,813	
		Load, haul and place rip-rap	cu.m	187.5	$15	$2,813	$15,698
	Haul and place overburden for revegetation	Load, Haul and place soil cover	cu.m.	8250	$4.25	$35,063	$35,063
	Project Management & Engineering	7% of Total Cost	%		7.00%	$4,366	$4,366
	Sub-Total						**$66,740**
4.4	**Haul Roads (s 6.5) (15 ha)**						
	Remove culverts and haul away	General Labourer	hrs	55	$52	$2,860	
		Cat 235 Excavator	hrs	28	$250	$7,000	
		Haul Truck D250E	hrs	28	$250	$7,000	$16,860
	Recontour slopes	D9H Dozer	hrs	208	$350	$72,800	$72,800
	Scarify surfaces	Cat 16H grader	hrs	208	$300	$62,400	
		General Labourer	hrs	28	$52	$1,456	$63,856
	Stabilize slopes - erosion barriers - material	Unit Cost Basis	sq.m	2,800	$3	$8,400	$8,400
	- enviro-matting	Unit Cost Basis	sq.m	2,800	$3	$8,400	$8,400
	Project Management & Engineering	7% of Total Cost	%		7.00%	$11,922	$11,922
	Sub-Total						**$182,238**
4.5	**Underground (s 6.4)**						
	Recontour slopes	D9H Dozer	hrs	20	$350	$7,000	$7,000
	Backfill underground waste	Load, haul & place mat'l undergroun	cu. m.	70,000	$10	$700,000	$700,000
	Seal off underground portal		l.s.	1	$10,000	$10,000	$10,000
	Seal off ventilation raise		l.s.	1	$5,000	$5,000	$5,000
	Scarify road	Cat 16H grader	hrs	8	$300	$2,400	$2,400
	Project Management & Engineering	7% of Total Cost	%		7.00%	$50,708	$50,708
	Sub-Total						**$775,108**
Total Estimated Cost in Reclaiming Open Pit and Haul Roads							**$1,126,876**

Note:
Linear disturbances to be scarified / decompacted and allowed to naturally revegetate

Table 5

Primary Water Conveyance Structures, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
5.1	**Decomission 100 Surface Drainage Channel**						
	Remove redundant infrastructure	Misc.	l.s.	1	$25,000	$25,000	$25,000
	Upgrade for final closure	Misc.	l.s.	1	$50,000	$50,000	$50,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$5,250	$5,250
	Sub-Total						**$80,250**
5.2.1	**200 Surface Drainage Channel (1120 m length) - Ditching Option 1 - Rip-rap**						
	Contour ditching (1120 m)	Cat 235 Excavator	hrs	56	$250.00	$14,000	$14,000
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	3,960	$15.00	$59,400	$59,400
		Load, haul and place rip-rap	cu.m.	3,960	$15.00	$59,400	$59,400
	Project Management & Engineering	7% of Total Cost	%		7.00%	$9,296	$9,296
	Sub-Total						**$142,096**
5.2.2	**200 Surface Drainage Channel (1120 m length) - Ditching Option 2 - GeoWeb**						
	Contour secondary ditching (1120 m)	Cat 235 Excavator	hrs	56	$250.00	$14,000	$14,000
	Provision for ditching erosion protection	Produce rip-rap	cu.m.	1,700	$15.00	$25,500	$25,500
		Load, haul and place rip-rap	cu.m.	1,700	$15.00	$25,500	$25,500
	GeoWeb	GeoWeb - GW30V6	sq.m	11,200	$10.60	$118,720	$118,720
	Project Management & Engineering	7% of Total Cost	%		7.00%	$12,860	$12,860
	Sub-Total						**$196,580**
5.3.1	**300 Surface Drainage Channel (370 m length) - Ditching Option 1 - Rip-rap**						
	Contour ditching (370 m)	Cat 235 Excavator	hrs	19	$250.00	$4,625	$4,625
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	1,310	$15.00	$19,650	$19,650
		Load, haul and place rip-rap	cu.m.	1,310	$15.00	$19,650	$19,650
	Project Management & Engineering	7% of Total Cost	%		7.00%	$3,075	$3,075
	Sub-Total						**$47,000**
5.3.2	**300 Surface Drainage Channel (370 m length) - Ditching Option 2 - GeoWeb**						
	Contour secondary ditching (370 m)	Cat 235 Excavator	hrs	19	$250.00	$4,625	$4,625
	Provision for ditching erosion protection	Produce rip-rap	cu.m.	560	$15.00	$8,400	$8,400
		Load, haul and place rip-rap	cu.m.	560	$15.00	$8,400	$8,400
	GeoWeb	GeoWeb - GW30V6	sq.m	3,700	$10.60	$39,220	$39,220
	Project Management & Engineering	7% of Total Cost	%		7.00%	$4,245	$4,245
	Sub-Total						**$64,890**
5.4.1	**350 Surface Drainage Channel (510 m length) - Ditching Option 1 - Rip-rap**						
	Contour ditching (510 m)	Cat 235 Excavator	hrs	26	$250.00	$6,375	$6,375
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	1,800	$15.00	$27,000	$27,000
		Load, haul and place rip-rap	cu.m.	1,800	$15.00	$27,000	$27,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$4,226	$4,226
	Sub-Total						**$64,601**
5.4.2	**350 Surface Drainage Channel (510 m length) - Ditching Option 2 - GeoWeb**						
	Contour secondary ditching (510 m)	Cat 235 Excavator	hrs	26	$250.00	$6,375	$6,375
	Provision for ditching erosion protection	Produce rip-rap	cu.m.	780	$15.00	$11,700	$11,700
		Load, haul and place rip-rap	cu.m.	780	$15.00	$11,700	$11,700
	GeoWeb	GeoWeb - GW30V6	sq.m	5,100	$10.60	$54,060	$54,060
	Project Management & Engineering	7% of Total Cost	%		7.00%	$5,868	$5,868
	Sub-Total						**$89,703**
5.5	**400 - Surface Drainage Channel Over MVFE (1380 m length)**						
	Contour secondary ditching (1380 m)	Cat 235 Excavator	hrs	69	$250.00	$17,250	$17,250
	Provision for ditching rip-rap (1060 m)	Produce rip-rap	cu.m.	1,610	$15.00	$24,150	$24,150
		Load, haul and place rip-rap	cu.m.	1,610	$15.00	$24,150	$24,150
	Concrete	Poured concrete	cu.m.	120	$500.00	$60,000	$60,000
	Insertion of baffles	General Labourer	hrs	20	$52.00	$1,040	$1,040
	GeoWeb	GeoWeb - GW30V6	sq.m	10,600	$10.60	$112,360	$112,360
		GeoWeb - GW30V3	sq.m	1,500	$5.60	$8,400	$8,400
	Project Management & Engineering	7% of Total Cost	%		7.00%	$17,315	$17,315
	Sub-Total						**$264,665**
5.6.1	**450 Surface Drainage Channel (330 m length) - Ditching Option 1 - Rip-rap**						
	Contour ditching (330 m)	Cat 235 Excavator	hrs	17	$250.00	$4,125	$4,125
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	1,170	$15.00	$17,550	$17,550
		Load, haul and place rip-rap	cu.m.	1,170	$15.00	$17,550	$17,550
	Project Management & Engineering	7% of Total Cost	%		7.00%	$2,746	$2,746
	Sub-Total						**$41,971**
5.6.2	**450 Surface Drainage Channel (330 m length) - Ditching Option 2 - GeoWeb**						
	Contour secondary ditching (330 m)	Cat 235 Excavator	hrs	17	$250.00	$4,125	$4,125
	Provision for ditching erosion protection	Produce rip-rap	cu.m.	500	$15.00	$7,500	$7,500
		Load, haul and place rip-rap	cu.m.	500	$15.00	$7,500	$7,500
	GeoWeb	GeoWeb - GW30V6	sq.m	3,300	$10.60	$34,980	$34,980
	Project Management & Engineering	7% of Total Cost	%		7.00%	$3,787	$3,787
	Sub-Total						**$57,892**
Total Estimated Cost in Constructing Primary Drainage Ditches							

Option 1 - assuming use of rip-rap lined ditches **$640,582**

Option 2 - assuming use of GeoWeb lined ditches **$753,981**

Note:

Table 6
DSTSF and MVFE, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
	DSTSF						
6.1	**Dry Stacked Tailings Storage Facility (20.94 ha)**						
	Roll crest of starter bench and recontour	D9H Dozer	hrs	50	$350	$17,500	$17,500
	Haul and place overburden for revegetation (0.5 m thickness)	Custom Rate G (Load, haul, place soil cover ROD-DSTF)	cu.m	104,700	$5	$484,238	$484,238
	Project Management & Engineering	7% of Total Cost	%		7.00%	$35,122	$35,122
	Sub-Total						**$536,859**
6.2.1	**Dry Stacked Tailings - Ditching Option 1 - Rip-rap**						
	Contour secondary ditching (720 m)	Cat 235 Excavator	hrs	70	$250.00	$17,500	$17,500
	Provision for ditching rip-rap	Produce rip-rap	cu.m.	2,540	$15.00	$38,100	$38,100
		Load, haul and place rip-rap	cu.m.	2,540	$15.00	$38,100	$38,100
	Impervious barrier	Impervious liner	sq.m	4,320	$20.00	$86,400	$86,400
	Contour tertiary ditching (780 m)	Cat 235 Excavator	hrs	39	$250.00	$9,750	$9,750
	Project Management & Engineering	7% of Total Cost	%		7.00%	$13,290	$13,290
	Sub-Total						**$203,140**
6.2.2	**Dry Stacked Tailings - Ditching Option 2 - GeoWeb**						
	Contour secondary ditching (720 m)	Cat 235 Excavator	hrs	70	$250.00	$17,500	$17,500
	Provision for ditching erosion protection	Produce rip-rap	cu.m.	730	$15.00	$10,950	$10,950
		Load, haul and place rip-rap	cu.m.	730	$15.00	$10,950	$10,950
	GeoWeb	GeoWeb - GW30V4	sq.m	7,200	$7.10	$51,120	$51,120
	Impervious barrier	Impervious liner	sq.m	4,320	$20.00	$86,400	$86,400
	Contour tertiary ditching (780 m)	Cat 235 Excavator	hrs	39	$250.00	$9,750	$9,750
	Project Management & Engineering	7% of Total Cost	%		7.00%	$13,067	$13,067
	Sub-Total						**$199,737**
6.3	**South Diversion Ditch (length cut by 50%)**						
	Widen south diversion ditch	D9H Dozer	hrs	50	$350	$17,500	$17,500
		Cat 235 Excavator	hrs	20	$250	$5,000	$22,500
		Produce rip-rap	cu.m	1,200	$15	$18,000	$18,000
	Haul and place rip-rap	Load, haul and place rip-rap	cu.m	1,200	$15	$18,000	$18,000
	Construct spillway into Area 2 Pit	Cat 235 Excavator	hrs	40	$250	$10,000	$10,000
		Haul Truck D250E	hrs	20	$250	$5,000	$5,000
		Produce rip-rap	cu.m	200	$15	$3,000	$3,000
		Load, haul and place rip-rap	cu.m	200	$15	$3,000	$21,000
	HDPE liner	Unit rate	sq.m	2,400	$10	$24,000	$24,000
		General Labourer	hrs	80	$52	$4,160	$4,160
	Project Management & Engineering	7% of Total Cost	%		7.00%	$7,536	$7,536
	Sub-Total						**$150,696**
6.4	**Mill Valley Fill DSTSF Front Face (s. 6.7) (22.55 ha)**						
	Roll crest and recontour perimeter slopes to <4:1.	D9H Dozer	hrs	60	$350	$21,000	$21,000
	Install a stilling basin at toe of MVFE spillway into Ditch 400	Misc.	ls.	1	$10,000	$10,000	$10,000
	Haul and place overburden for revegetation (0.5 m thickness)	Custom Rate F (Load, haul, place soil cover ROD-MVFE)	cu.m.	112,750	$4.63	$521,469	$521,469
	Project Management & Engineering	7% of Total Cost			7.00%	$1,470	$1,470
	Sub-Total						**$553,939**
Total Estimated Cost in Reclaiming Tailings Area							
	Option 1 - assuming use of rip-rap lined ditches						**$1,444,634**
	Option 2 - assuming use of GeoWeb lined ditches						**$1,441,231**

Note:

Table 7
Water Storage Pond Dam, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
	WATER STORAGE POND DAM						
7.1	**Reclaim System**						
	Remove salvageable equipment - pipeline/pumps	General Labourer	hrs	48	$52	$2,496	
		Trades Labourer	hrs	98	$91	$8,918	$11,414
	Remove pipeline	Haul Truck D250E	hrs	100	$250	$25,000	
		Cat 235 Excavator	hrs	100	$250	$25,000	
		General Labourer	hrs	200	$52	$10,400	$60,400
	Dismantle Building	Cat 235 Excavator	hrs	16	$250	$4,000	
		Trades Labourer	hrs	10	$91	$910	
		General Labourer	hrs	20	$52	$1,040	$5,950
	Misc. Supplies & Tools	Misc.	l.s.	1	$1,000	$1,000	$1,000
	Recontour alignment	D9H Dozer	hrs	16	$350	$5,600	$5,600
	Project Management & Engineering	7% of Total Cost	%		7.00%	$5,905	$5,905
	Sub-Total						**$90,269**
7.2	**Water Storage Pond Dam**						
	Pump down impounded water, over spillway (using reclaim pumps)	General Labourer	hrs	96	$52	$4,992	$4,992
	Misc. Supplies & Tools	Misc.	l.s.	1	$5,000	$5,000	$5,000
	Engineering design for final structure include appropriate flow determination, channel designs, etc.	Misc.	l.s.	1	$20,000	$20,000	$20,000
	Build coffer dam and install pump-around system Operate system until new structure is ready	Misc.	l.s.	1	$10,000	$10,000	$10,000
	Stockpile rip-rap from downstream shell	Unit Cost Basis	cu.m	10,000	$10	$100,000	$100,000
	Breach Dam: push material using dozer into new areas	Custom Rate J (Push from WSP Dam - U/S WSP Dam)	cu.m	25,000	$2.35	$58,750	
	and load, haul & dump and contour material in new area	Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	cu.m	31,000	$4.75	$147,250	
		Environmental Scientist	hrs	60	$110.00	$6,600	$212,600
	Construct stream channel at original grade - load, haul & place rip-rap (salvage from old WSP Dam stockpile)	Load, Haul and Place rip-rap	cu.m	1,125	$15.00	$16,875	$16,875
	Load, haul, place & contour overburden on slopes of new area u/s of WSP Dam	Custom Rate I (Load, haul, place soil cover ROD-WSP Dam)	cu.m	15,000	$4.75	$71,250	$71,250
	Stabilize slopes with erosion barriers	Silt curtains	sq. m	15,000	$3	$45,000	$45,000
		Enviro matting	sq. m	15,000	$3	$45,000	$45,000
	Misc. Supplies & Tools	Misc.	l.s.		$3,000	$3,000	$3,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$37,360	$37,360
	Sub-Total						**$571,077**
Total Estimated Cost in Reclaiming Water Dam							**$661,347**

Notes:

Table 8
Mill & Ancillary Facilities, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
	MILL AND ANCILLARY FACILITIES						
7.1	**Mill Building**						
	Remove salvageable equipment	General Labourer	hrs	550	$52	$28,600	
		Trades Labourer	hrs	600	$91	$54,600	
		30 ton Crane	hrs	40	$190	$7,600	$90,800
	Decontaminate Building-hosing and clean-up	Trades Labourer	hrs	160	$91	$14,560	$14,560
	Dismantle Building	General Labourer	hrs	1000	$52	$52,000	
		Trades Labourer	hrs	600	$91	$54,600	
		Cat 235 Excavator w hammer	hrs	120	$275	$33,000	
		30 ton Crane	hrs	60	$190	$11,400	$151,000
	Concrete Demolition	Blaster	hrs	40	$68	$2,720	
		Cat 235 Excavator	hrs	20	$250	$5,000	
		D9H Dozer	hrs	30	$350	$10,500	$18,220
	Misc. Supplies & Tools	Misc.	l.s.	1	$11,000	$11,000	$11,000
	Scrap haul to solid waste facility	Cat 235 Excavator	hrs	50	$250	$12,500	
		Haul Truck D250E	hrs	100	$250	$25,000	$37,500
	Project Management & Engineering	7% of Total Cost	%		7.00%	$22,616	$22,616
	Subtotal:						**$345,696**
8.2	**Other Mill Area Buildings**						
	Remove salvageable equipment	General Labourer	hrs	275	$52	$14,300	
		Trades Labourer	hrs	275	$91	$25,025	$39,325
		30 ton Crane	hrs	25	$190	$4,750	
	Salvage and remove powerline and poles		l.s.	1	$27,500	$27,500	$32,250
	Dismantle Buildings	General Labourer	hrs	180	$52	$9,360	
		Trades Labourer	hrs	90	$91	$8,190	
		Cat 235 Excavator w hammer	hrs	45	$275	$12,375	
		30 ton Crane	hrs	35	$190	$6,650	$36,575
	Concrete Demolition	Blaster	hrs	45	$68	$3,060	
		Cat 235 Excavator	hrs	20	$250	$5,000	
		Cat 235 Excavator w hammer	hrs	30	$275	$8,250	
		D9H Dozer	hrs	22	$350	$7,700	$24,010
	Misc. Supplies & Tools	Misc.	l.s.	1	$10,000	$10,000	$10,000
	Scrap haul to solid waste facility	Cat 235 Excavator	hrs	11	$250	$2,750	
		Haul Truck D250E	hrs	22	$250	$5,500	$8,250
	Project Management & Engineering	7% of Total Cost	%		7.00%	$10,529	$10,529
	Subtotal:						**$160,939**
8.3	**Fuel Storage Area**						
	Cleanout tanks-remove sludge, pressure wash	General Labourer	hrs	60	$52	$3,120	
		Removal to Licensed facility	l.s.	1	$10,000	$10,000	$13,120
	Remove bulk fuel storage and piping facilities	General Labourer	hrs	100	$52	$5,200	
		Trades Labourer	hrs	120	$91	$10,920	
		30 ton Crane	hrs	30	$190	$5,700	
		Support Equipment	l.s.	1	$2,500	$2,500	
		Cat 235 Excavator	hrs	40	$250	$10,000	
		General Labourer	hrs	40	$52	$2,080	
		Tractor Trailer (lowbed)	hrs	30	$180	$5,400	$41,800
	Fold and Bury Liner	Cat 235 Excavator	hrs	20	$250	$5,000	
		D9H Dozer	hrs	100	$350	$35,000	$40,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$6,644	$6,644
	Subtotal:						**$101,564**
8.4	**Mill Reagents**						
	Load and return extra reagents/chemicals	General Labourer	hrs	100	$52	$5,200	
		Support Equipment	l.s.	1	$2,500	$2,500	
		Disposal Cost-bulk materials	l.s.	1	$5,000	$5,000	
		Disposal Cost-lab pacs	pallets	2	$2,000	$4,000	$16,700
	Removal of drums, steel, oils, glycol & batteries, as per 09July quote from General Waste Management to MEL	Contractor quote, adjusted	l.s.		$61,080	$61,080	$61,080
	Project Management & Engineering	7% of Total Cost	%		7.00%	$5,445	$5,445
	Subtotal:						**$83,225**
8.5	**Reclaim Entire Mill Site Area including Fuel Storage and Crusher Area (10.5 ha)**						
	Test soils for contamination	Environmental Scientist	hrs	35	$110	$3,850	
		Analytical Costs	l.s.	1	$6,000	$6,000	$9,850
	Haul any contaminated soils to Land Treatment Facility	Cat 235 Excavator	hrs	20	$250	$5,000	
		Haul Truck D250E	hrs	20	$250	$5,000	$10,000
	Haul any ore/concentrate contaminated soils to u/g	Load, haul & place mat'l underground	cu.m.	200	$10	$2,000	$2,000
	Re-contour area and slopes to bury footings and establish drainage	D9H Dozer	hrs	200	$350	$70,000	$70,000
	Haul and place overburden cap (0.5m thickness)	Unit Rate	cu.m	52500	$5.50	$288,750	$288,750
	Project Management & Engineering	7% of Total Cost	%		7.00%	$26,642	$26,642
	Subtotal:						**$407,242**
8.6	**Laydown Area (7.53 ha)**						
	Re-contour area and slopes to establish drainage	D9H Dozer	hrs	60	$350	$21,000	$21,000
	Haul and place overburden cap (0.5m thickness)	Custom Rate G (Load, haul, place soil cover ROD-DSTF)	cu.m	37650	$4.63	$174,131	$174,131
	Project Management & Engineering	7% of Total Cost	%		7.00%	$13,659	$13,659
	Subtotal:						**$208,790**
Total Estimated Cost in Reclaiming Mill and Ancillary Facilities							**$1,307,456**

Table 9
Mill Water Pond, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
	MILL POND						
9.1	**Reclaim Mill Pond**						
	Remove upstream culvert	General Labourer	hrs	10	$52	$520	
		Cat 235 Excavator	hrs	10	$250	$2,500	$3,020
	Construct channel	Cat 235 Excavator	hrs	100	$250	$25,000	
		D9H Dozer	hrs	20	$350	$7,000	$32,000
		Produce rip-rap	cu.m	5,000	$15	$75,000	$75,000
		Load, haul and place rip-rap	cu.m	5,000	$15	$75,000	$75,000
		General Labourer	hrs	20	$52	$1,040	$1,040
	Project Management & Engineering	7% of Total Cost	%		7.00%	$13,024	$13,024
	Subtotal:						**$199,084**
Total Estimated Cost in Reclaiming Mill Pond							**$199,084**

Note:

Table 10
Main Access Road, Estimated Closure Costs - 2014

Scenario 1 - No Road Deactivation

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
10.1	**NO ROAD DECOMMISSIONING REQUIRED**						
10.1.1	**Road Surface**						
	Install road barrier at west side of Minto Creek	Misc	l.s.	1	$2,000	$2,000	$2,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$140	$140
	Subtotal:						
Total Estimated Cost for Access Road Closure (Scenario 1)							**$2,140**

Scenario 2 - Decommission Access Road From Minto Creek to Mine Site (11 KM)

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total Adjusted
10.2	**ACCESS ROAD - 11 KM SECTION**						
10.2.1	**Road Surface**						
	Scarify - 11 km	Cat 16H grader	hrs	70	$300	$21,000	$21,000
	Recontour slopes and drainages	D9H Dozer	hrs	25	$350	$8,750	$8,750
	Project Management & Engineering		%		7.00%	$2,083	$2,083
	Subtotal:						**$31,833**
10.2.2	**Culverts**						
	Culvert excavation (40 small culverts)	Cat 235 Excavator	hrs	100	$250	$25,000	$25,000
	Culvert removal	General Labourer	hrs	140	$52	$7,280	
		Haul Truck D250E	hrs	100	$250	$25,000	$32,280
	Minto Creek Culvert Removal & Streambank Restoration	Trades Labourer	hrs	40	$91	$3,640	
		General Labourer	hrs	75	$52	$3,900	
		Cat 235 Excavator	hrs	40	$250	$10,000	$17,540
	Recontour slopes and drainage	D9H Dozer	hrs	70	$350	$24,500	$24,500
	Stabilize slopes	General Labourer	hrs	200	$52	$10,400	
	Erosion barriers	Erosion Barrier	per sq. m	500	$3	$1,500	$11,900
	Project Management & Engineering	7% of Total Cost	%		7.00%	$7,785	$7,785
	Subtotal:						**$119,005**
Total Estimated Cost for Access Road Closure (Scenario 2)							**$150,838**

Scenario 3 - Decommission Entire Access Road (27 KM)

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total Adjusted
10.3	**ACCESS ROAD - 27 KM SECTION**						
10.3.1	**Road Surface**						
	Scarify - 27 km	Cat 16H grader	hrs	150	$300	$45,000	$45,000
	Recontour slopes and drainage	D9H Dozer	hrs	50	$350	$17,500	$17,500
	Contamination survey - along corridor	Misc.	l.s.	1	$10,000	$10,000	$10,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$5,075	$5,075
	Subtotal:						**$77,575**
10.3.2	**Big Creek Bridge**						
	Remove bridge decking and span	General Labourer	hrs	50	$52	$2,600	
		30 ton Crane	hrs	40	$190	$7,600	
		Cat 235 Excavator	hrs	40	$250	$10,000	
		Haul Truck D250E	hrs	10	$250	$2,500	
		Tractor Trailer (lowbed)	hrs	20	$180	$3,600	$26,300
	Cut off piles	General Labourer	hrs	50	$52	$2,600	$2,600
	Re-contour	Cat 235 Excavator	hrs	30	$250	$7,500	
		D9H Dozer	hrs	30	$350	$10,500	$18,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$3,283	$3,283
	Subtotal:						**$50,183**
10.3.3	**Barge Ramps**						
	Remove all gravel	Cat 235 Excavator	hrs	20	$250	$5,000	$5,000
		Haul Truck D250E	hrs	10	$250	$2,500	$2,500
	Re-countour areas and scarify	D9H Dozer	hrs	30	$350	$10,500	$10,500
	Shoreline restoration	Misc.	l.s.		$5,000	$5,000	$5,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$1,610	$1,610
	Subtotal:						**$24,610**
10.3.4	**Culverts**						
	Culvert excavation (45 small culverts)	Cat 235 Excavator	hrs	115	$250	$28,750	$28,750
	Culvert removal	General Labourer	hrs	150	$52	$7,800	
		Haul Truck D250E	hrs	115	$250	$28,750	$36,550
	Minto Creek Culvert Removal & Streambank Restoration	Trades Labourer	hrs	40	$91	$3,640	
		General Labourer	hrs	75	$52	$3,900	
		Cat 235 Excavator	hrs	40	$250	$10,000	$17,540
	Recontour slopes and drainage	D9H Dozer	hrs	70	$350	$24,500	$24,500
	Stabilize slopes	General Labourer	hrs	200	$52	$10,400	
	Silt Curtains ($20m^2$ per crossing)	Erosion Barrier	sq. m.	900	$3	$2,700	$13,100
	Enviro matting ($15m^2$ per crossing)	Enviro matting	sq. m.	680	$3	$2,040	$4,740
	Project Management & Engineering	7% of Total Cost	%		7.00%	$8,574	$8,574
	Subtotal:						**$133,754**
Total Estimated Cost for Access Road Closure (Scenario 3)							**$286,122**

Note:

Table 11
Miscellaneous Sites and Facilities, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
	MISCELLANEOUS SITES AND FACILITIES						
11.1	**Airstrip**						
	Scarify airstrip and adjacent laydown areas	Cat 16H Grader	hrs	40	$300	$12,000	$12,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$840	$840
	Subtotal:						**$12,840**
11.2	**Mine Camp and Related Infrastructure (Expanded) (5.1 ha)**						
	Disconnect Services	Trades Labourer	hrs	150	$91	$13,650	$13,650
	Remove salvageable equipment	General Labourer	hrs	1200	$52	$62,400	$62,400
	Dismantle buildings	General Labourer	hrs	2000	$52	$104,000	
		Cat 235 Excavator	hrs	200	$250	$50,000	$154,000
	Haul scrap to Solid Waste Facility	Haul Truck D250E	hrs	40	$250	$10,000	
		Cat 235 Excavator	hrs	20	$250	$5,000	$15,000
	Remove above ground sewage treatment system	Misc.	l.s.	1	$1,000	$1,000	$1,000
	Site Clean-Up	General Labourer	hrs	1000	$52	$52,000	$52,000
	Haul and place overburden for revegetation (0.5 m thickness)	Custom Rate F (Load, haul, place soil cover ROD-MVFE)	cu.m.	25500	$5	$117,938	$117,938
	Project Management & Engineering	7% of Total Cost	%		7.00%	$29,119	$29,119
	Subtotal:						**$445,107**
11.3	**Explosives Plant Site**						
	Remove salvageable equipment	General Labourer	hrs	100	$52	$5,200	
		Trades Labourer	hrs	50	$91	$4,550	$9,750
	Dismantle buildings	General Labourer	hrs	200	$52	$10,400	
		Cat 235 Excavator	hrs	30	$250	$7,500	$17,900
	Disconnect Services	Trades Labourer	hrs	20	$91	$1,820	$9,320
	Crane services	30 ton Crane	hrs	5	$190	$950	$2,770
	Haul scrap to Solid Waste Facility	Haul Truck D250E	hrs	30	$250	$7,500	
		Cat 235 Excavator	hrs	10	$250	$2,500	$10,000
	Project Management & Engineering	7% of Total Cost	%		7.00%	$2,829	$2,829
	Subtotal:						**$52,569**
11.4	**Exploration Sites and Trails**						
	Natural revegetation	n/a	n/a				
	Subtotal:						**$0**
11.5	**Land Treatment Facility**						
	Prepare and submit closure plan	Misc	l.s.		$2,000	$2,000	$2,000
	Characterize final soil hydrocarbon concentrations	Misc	l.s.		$4,000	$4,000	$4,000
	Recontour	D9H Dozer	hrs	3	$350	$1,050	$1,050
	Haul and place coverburden cover from nearby	Cat 235 Excavator	hrs	20	$250	$5,000	
		Haul Truck D250E	hrs	20	$250	$5,000	
		D9H Dozer	hrs	6	$350	$2,100	$12,100
	Project Management & Engineering	7% of Total Cost	%		7.00%	$1,341	$1,341
	Subtotal:						**$20,491**
11.6	**Solid Waste Facility**						
	Prepare detailed closure plan	Misc	l.s.		$2,000	$2,000	$2,000
	Characterize final waste area	Misc	l.s.		$2,000	$2,000	$2,000
	Remove recyclables and special waste materials	Tractor Trailer (lowbed)	hrs	40	$180	$7,200	$7,200
	Recontour	D9H Dozer	hrs	2	$350	$700	$700
	Haul and cover with adjacent fill and place overburden cap	Cat 235 Excavator	hrs	20	$250	$5,000	
		Haul Truck D250E	hrs	20	$250	$5,000	
	Compaction of cover	D9H Dozer	hrs	12	$350	$4,200	$14,200
	Project Management & Engineering	7% of Total Cost	%		7.00%	$1,827	$1,827
	Subtotal:						**$27,927**
11.7	**Site Roads**						
	Recontour	Cat 235 Excavator	hrs	37.5	$250	$9,375	$9,375
	Scarify	Cat 16H Grader	hrs	50	$300	$15,000	$15,000
	Erosion Barriers	Erosion Barrier	sq. m.	300	$3	$900	$900
	Project Management & Engineering	7% of Total Cost	%		7.00%	$1,769	$1,769
	Subtotal:						**$27,044**
Total Estimated Cost in Reclaiming Miscellaneous Sites and Facilities							**$585,978**

Note:

Table 12

Reclamation Research and Revegetation, Estimated Closure Costs - 2014

Item No.	Work Item Description	Units	Quantity	Unit Rates	Cost	Total
12.1	**REVEGETATION ACTIVITIES**					
12.1.0	**Determination of Revegetation Plan for Current Site**					
	Issuance of a plan for all site areas for regulatory review and approval	Misc	1		$20,000	$20,000
	Sub-Total					**$20,000**
12.1.1	**Main and Southwest Dumps (total surface area of 119.24 ha)**					
	Seed and fertilize w/ labour	ha	119.2	$2,850	$339,834	
	Re-seed and fertilize (1/2 of total area)	ha	59.6	$2,850	$169,917	
	Re-forest	ha	119.2	$2,000	$238,480	$748,231
	Sub-Total					**$748,231**
12.1.2	**Ice-Rich Overburden Dump (toe berm surface area of 3.01 ha)**					
	Seed and fertilize w/ labour	ha	3.0	$2,850	$8,579	
	Re-seed and fertilize (1/2 of total area)	ha	1.5	$2,850	$4,289	
	Re-forest	ha	3.0	$2,000	$6,020	$18,888
	Sub-Total					**$18,888**
12.1.3	**Reclamation Overburden Dump (total surface area of 33.08 ha)**					
	Seed and fertilize w/ labour	ha	33.1	$2,850	$94,278	
	Re-seed and fertilize (1/2 of total area)	ha	16.5	$2,850	$47,139	
	Re-forest	ha	33.1	$2,000	$66,160	$207,577
	Sub-Total					**$207,577**
12.1.4	**Ore Stockpiles and Pads (final total surface area of 9.04 ha)**					
	Seed and fertilize w/ labour	ha	9.0	$2,850	$25,764	
	Re-seed and fertilize (1/2 of total area)	ha	4.5	$2,850	$12,882	
	Re-forest	ha	9.0	$2,000	$18,080	$56,726
	Sub-Total					**$56,726**
12.1.5	**Mill Valley Fill and DSTF Front Face (disturbed area of 22.55 ha)**					
	Seed and fertilize w/ labour	ha	22.6	$2,850	$64,268	
	Re-seed and fertilize (1/2 of total area)	ha	11.3	$2,850	$32,134	
	Re-forest	ha	22.6	$2,000	$45,100	$141,501
	Sub-Total					**$141,501**
12.1.6	**Contractor's Shop and Office Area (disturbed area of 2.5 ha)**					
	Seed and fertilize w/ labour	ha	2.5	$2,850	$7,125	
	Re-seed and fertilize (1/2 of total area)	ha	1.3	$2,850	$3,563	
	Re-forest	ha	2.5	$2,000	$5,000	$15,688
	Sub-Total					**$15,688**
12.1.7	**Tailings Surface Area (20.94 ha)**					
	Seed and fertilize w/ labour	ha	20.9	$2,850	$59,565	
	Re-seed and fertilize (1/2 of total area)	ha	10.5	$2,850	$29,783	
	Re-forest	ha	20.9	$2,000	$41,800	$131,148
	Sub-Total					**$131,148**
12.1.8	**Water Storage Pond Dam (total dam surface area 6.0 ha)**					
	Seed and fertilize w/ labour	ha	6.0	$2,850	$17,100	
	Re-seed and fertilize (1/2 of total area)	ha	3.0	$2,850	$8,550	
	Re-forest	ha	6.0	$2,000	$12,000	$37,650
	Sub-Total					**$37,650**
12.1.9	**Mill Area (total surface area of 4.17 ha)**					
	Seed and Fertilize w/ labour	ha	4.2	$2,850	$11,885	
	Re-seed and fertilize (1/2 of total area)	ha	2.1	$2,850	$5,942	
	Re-forest	ha	4.2	$2,000	$8,400	$26,227
	Subtotal:					**$26,227**
12.1.10	**Haul Road (total surface area of 15 ha)**					
		ha	15.0	$2,850	$42,750	**$42,750**
12.1.11	**Underground Portal Excavation (total surface area of 9.31 ha)**					
	Seed and Fertilize w/ labour	ha	9.3	$2,850	$26,534	
	Re-seed and fertilize (1/2 of total area)	ha	4.7	$2,850	$13,267	
	Re-forest	ha	9.3	$2,000	$18,620	$58,420
	Subtotal:					**$58,420**
12.1.12	**Miscellaneous Sites - Camp, Airstrip, Waste Facilities, Explosives Site (area for reclamation of 14 ha)**					
	Seed and fertilize w/ labour	ha	14.0	$2,850	$39,900	
	Re-seed and fertilize (1/2 of total area)	ha	7.0	$2,850	$19,950	
	Re-forest	ha	14.0	$2,000	$28,000	$87,850
	Subtotal:					**$87,850**
12.1.13	**Access Road**					
	Scenario 1 - No Deactivation					
	No revegetation					
	Subtotal:					**$0**
	Scenario 2 - Deactivate from Minto Creek to Mine Site (11 km)					
	Revegetate and fertilize banks at culvert excavations, including labour	ha	2.0	$2,850	$5,700	$5,700
	Subtotal:					**$5,700**
	Scenario 3 - Deactivate Entire Road (27 km)					
	Hydroseed roadside banks & slopes (~0.25ha per km of road, along 50% of its length)	ha	3.4	$4,000	$13,600	$13,600
	Scarify road surface (8m width) Cat D16H Grader	hrs	54.0	$300	$16,200	$16,200
	Revegetate and fertilize banks at culvert excavations, including labour	ha	6.0	$2,850	$17,100	$17,100
	Subtotal:					**$46,900**
12.1.14	**Main Pit Buttress (total surface area of 16.33 ha)**					
	Seed and fertilize w/ labour	ha	16.3	$2,850	$46,541	
	Re-seed and fertilize (1/2 of total area)	ha	8.2	$2,850	$23,270	
	Re-forest	ha	16.3	$2,000	$32,660	$102,471
	Subtotal:					**$102,471**
12.1.15	**Laydown Area (total surface area of 7.53 ha)**					
	Seed and Fertilize w/ labour	ha	7.5	$2,850	$21,461	
	Re-seed and fertilize (1/2 of total area)	ha	3.8	$2,850	$10,730	
	Re-forest	ha	7.5	$2,000	$15,060	$47,251
	Subtotal:					**$47,251**
Total Estimated Cost for Reclamation Research and Revegetation						
	Scenario 1 - No Access Road Deactivation					**$1,742,377**
	Scenario 2 - Deactivate Access Road from Minto Creek to Mine Site					**$1,748,077**
	Scenario 3 - Deactivate Entire Access Road					**$1,789,277**

Note:

Table 13
Short Term Site Management and Monitoring, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
	SITE MANAGEMENT						
13.1	**Onsite Management**						
	Project Management and Engineering - Included in PME Costs in each Closure Component						
	Pickup truck (2 trucks, 5 months per year, 5 years)	Light truck	monthly	50	$2,500	$125,000	$125,000
	Sundry equipment maintenance	Unit Cost Basis	annually	5	$5,000	$25,000	$25,000
	Power and heat (5 months per year, 5 years)	Unit Cost Basis	monthly	25	$5,500	$137,500	$137,500
	General Administrative expenses (5 months per year, 5 years)	Unit Cost Basis	monthly	25	$2,000	$50,000	$50,000
	Camp Costs (5 year period)	Unit Cost Basis	man-day	6,138	$80	$491,040	$491,040
	Subtotal:						**$828,540**
13.2	**Transport Costs**						
	Employee transport costs (5 months per year, 5 years)	Unit Cost Basis	monthly	25	$3,000	$75,000	$75,000
	Barge operating costs (2 months per year, 5 years)	Unit Cost Basis	monthly	10	$10,000	$100,000	$100,000
	Subtotal:						**$175,000**
13.3	**Water Treatment**						
	Active Treatment						
	Labour - Water Treatment Operators (5 years @ 4 mo/yr)	Unit Cost Basis	monthly	20	$31,584	$631,680	$631,680
	Cost per cubic metre of compliant water (5 years @ 360,000 m3/yr)		cu.m	1,800,000	$1.38	$2,484,000	$2,484,000
	Active Treatment Capital Costs		l.s.	1	$2,000,000	$2,000,000	$2,000,000
	Active Treatment Capital Replacement Costs (5 years)		annually	5	$60,000	$300,000	$300,000
	Passive Treatment						
	Labour - Water Treatment Operators (5 years @ 4 mo/yr)	Unit Cost Basis	monthly	-	$0	$0	$0
	Cost per cubic metre of compliant water (5 years @ 360,000 m3/yr)		cu.m	-	$0.00	$0	$0
	Passive Treatment Capital Costs		l.s.			$0	$0
	Passive Treatment Capital Replacement Costs (5 years)		annually	-		$0	$0
	Subtotal:						**$5,415,680**
13.4	**Short Term Water Quality Monitoring (Post Mine Closure) (50:50 sampling labour/analyses costs split) & Reporting**						
	Water Quality Monitoring Years 1-5 (monthly, 6 month open season)	Misc.	each	30	$4,000	$120,000	$120,000
	Disbursements (non-labour/non-analytical)	Misc.	annually	5	$4,000	$20,000	$20,000
	LTF Monitoring and Maintenance (years 1-5)	Misc.	annually	5	$4,000	$20,000	$20,000
	Enhanced Groundwater/Foundation monitoring below DSTF and Waste Rock Dumps	Misc.	annually	5	$15,000	$75,000	$75,000
	Geo-technical Inspections (annually yrs 1-5)	Misc.	annually	5	$15,000	$75,000	$75,000
	Reclamation Inspections (annually yrs 1-5)	Misc.	annually	5	$7,500	$37,500	$37,500
	Biological Monitoring - Closure implementation	Misc.	l.s.	1	$10,000	$10,000	$10,000
	Years 1-5 (annually)	Misc.	annually	5	$5,000	$25,000	$25,000
	Subtotal:						**$382,500**
13.5	**Post Closure Maintenance - Water Storage Pond Dam**						
	Monitoring of piezometers, thermistors						
	Years 1-5 (quarterly)	Misc.	each	20	$2,500	$50,000	$50,000
	Annual Inspection + report	Misc.	annually	5	$3,000	$15,000	$15,000
	Carry out inspection recommendations/maintenance	Misc.	annually	5	$10,000	$50,000	$50,000
	Misc. maintenance work related to the site after closure (yrs 1-5)	Misc.	annually	5	$10,000	$50,000	$50,000
	Subtotal:						**$165,000**
13.6	**Ultimate Removal of wells and instrumentation**	Misc.	unit basis		$15,000		**$15,000**
Total Estimated Cost for Short Term Post Closure Site Management							**$6,981,720**

Note:

Table 14
Long Term Site Management and Monitoring, Estimated Closure Costs - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	NPV (2.5% DROR)
	SITE MANAGEMENT						
14.1	**Onsite Management**						
	Project Management and Engineering - Included in PME Costs in each Closure Component						
	Pickup truck or alternate (1 vehicle, 5 months per year, 10 years)	Light truck	monthly	50	$2,500	$125,000	
	Sundry equipment maintenance	Unit Cost Basis	annually	5	$5,000	$25,000	
	Power and heat (5 mo/yr @ 50% of time, 10 years)	Unit Cost Basis	monthly	25	$5,500	$137,500	
	General Administrative expenses (5 mo/yr @ 50% of time, 10 years)	Unit Cost Basis	monthly	25	$2,000	$50,000	
	Camp Costs (2 men 5mo/yr @50% of time avg over yr, 10 year period)	Unit Cost Basis	man-day	1,500	$80	$120,000	
	Subtotal:					$457,500	**$362,749**
14.2	**Transport Costs**						
	Employee transport costs (5 mo/yr @ 50% of time, 10 years)	Unit Cost Basis	monthly	25	$3,000	$75,000	
	Barge operating costs (2 mo/yr @ 50% of time, 10 years)	Unit Cost Basis	monthly	10	$10,000	$100,000	
	Subtotal:					$175,000	**$138,756**
14.3	**Water Treatment Costs**						
	Active Treatment (yrs 6-10)						
	Capital Costs	Short Term Cost Item	annually	-	$0	$0	$0
	Capital Replacement Costs	Unit Cost Basis	annually	5	$60,000	$300,000	$252,533
	Operating Costs	Unit Cost Basis	annually	5	$750,000	$3,750,000	$3,156,668
	Passive Treatment (yrs 6-25)						
	Capital Cost (yr 6)	Unit Cost Basis	annually	1	$300,000	$300,000	$265,156
	Capital Replacement Costs	Unit Cost Basis	annually	20	$30,000	$600,000	$413,356
	Operating Costs	Unit Cost Basis	annually	20	$25,000	$500,000	$344,464
	Subtotal:					$5,450,000	**$4,432,178**
14.4	**Reclamation & Closure Research Plan (Long Term Funding)**						
	Reclamation & Closure Research Plan	Unit Cost Basis	annually	5	$150,000	$750,000	$631,334
	Subtotal:					$750,000	**$631,334**
14.5	**Long Term Monitoring & Reporting**						
	Water Quality Monitoring						
	Years 6-10 (quarterly - spring/summer/fall)	Unit Cost Basis	each	15	$4,000	$60,000	$50,507
	Years 11-35 (once annually - post spring freshet)	Unit Cost Basis	annually	25	$4,000	$100,000	$60,697
	Disbursements (non-labour/non-analytical)	Unit Cost Basis	annually	10	$4,000	$40,000	$31,716
	Enhanced Groundwater/Foundation monitoring below DSTF and Waste Rock Dumps	Unit Cost Basis	annually	10	$15,000	$150,000	$118,934
	Geo-technical Inspections (annually yrs 6-10, then bi-annually yrs 11-15)	Unit Cost Basis	each	8	$15,000	$120,000	$70,817
	Reclamation Inspections (annually yrs 6-10, then bi-annually yrs 11-15)	Unit Cost Basis	each	8	$7,500	$60,000	$35,409
	Biological Monitoring:	Unit Cost Basis					
	Years 6-10 (annually)	Unit Cost Basis	annually	5	$5,000	$25,000	$21,044
	Years 11-15 (every two years)	Unit Cost Basis	each	3	$5,000	$15,000	$10,976
	Subtotal:					$570,000	**$381,217**
14.6	**Post Closure Maintenance - Water Storage Pond Dam**						
	Monitoring of piezometers, thermistors						
	Years 6-10 (twice yearly)	Unit Cost Basis	each	10	$2,500	$25,000	$21,044
	Years 11-15 (annually)	Unit Cost Basis	annually	5	$2,500	$12,500	$9,300
	Annual Inspection + report	Unit Cost Basis	annually	10	$3,000	$30,000	$23,787
	Carry out inspection recommendations/maintenance	Unit Cost Basis	annually	10	$10,000	$100,000	$79,289
	Misc. maintenance work related to the site after closure (yrs 6-15)	Unit Cost Basis	annually	10	$5,000	$50,000	$39,645
	Subtotal:					$217,500	**$173,065**

Total Estimated Cost for Post Closure Site Management	**$7,620,000**	**$6,119,300**

Note:

Table 15
Supporting Studies - 2014

Item No.	Work Item Description	Equipment / Labour	Units	Quantity	Unit Rates	Cost	Total
15.1	**Permafrost Foundation Monitoring**						
15.1.1	Enhanced subsurface monitoring program in and below waste rock dumps (WRD)						
	Preparing detailed monitoring program	Misc.	l.s.	1	$8,000	$8,000	
	Installation of required instrumentation	Misc.	l.s.	1	$5,000	$5,000	
	Enhanced Adaptive Management Plan for WRD	Misc.	l.s.	1	$8,000	$8,000	$21,000
15.1.2	Enhanced subsurface monitoring program in and below DSTSF						
	Preparing detailed monitoring program	Misc.	l.s.	1	$4,000	$4,000	
	Installation of required instrumentation	Misc.	l.s.	1	$5,000	$5,000	
	Enhanced Adaptive Management Plan for DSTSF	Misc.	l.s.	1	$4,000	$4,000	$13,000
	Sub-Total						**$34,000**
15.2	**Kinetic Tailings and Waste Rock Materials Testing**						
15.2.1	Monitoring program and field test to enhance long term water quality prediction related to drystack tailings facility and materials in WRDs						
	preparing composite sample over several months of production	Misc.	l.s.	1	$5,000	$5,000	
	undertaking field test	Misc.	l.s.	1	$12,000	$12,000	
	initiate parallel laboratory analysis	Misc.	l.s.	1	$10,000	$10,000	
	monitoring field apparatus (columns)	Misc.	l.s.	1	$4,000	$4,000	
	reporting	Misc.	l.s.	1	$5,000	$5,000	$36,000
	Sub-Total						**$36,000**
15.3	**Other Adaptive Management Plans Required**						
	Changes in WTP input water quality or quantity	Misc.	l.s.	1	$22,500	$22,500	$22,500
	Sludge Management Plan - for material from WTP	Misc.	l.s.	1	$15,000	$15,000	$15,000
	Site testing ML ARD	Misc.	l.s.	1	$45,000	$45,000	$45,000
	Groundwater Management Plan	Misc.	l.s.	1	$15,000	$15,000	$15,000
	Long term reclamation of contaminated soils	Misc.	l.s.	1	$22,500	$22,500	$22,500
	Physical Monitoring program - prior to closure	Misc.	l.s.	1	$60,000	$60,000	$60,000
	Modeling of pit lake water qualities prior to flooding	Misc.	l.s.	1	$22,500	$22,500	$22,500
	Sub-Total						**$202,500**
15.4	**Closure Specific Studies and Field Trials**						
	Main Site Discharge Channel Geotechnical Design and Stability Evaluation	Engineering/Design	l.s.	1	$30,000	$30,000	$30,000
	Passive Treatment Evaluations	Engineering/Design	l.s.	1	$100,000	$100,000	$100,000
	Engineered Cover Evaluations	Engineering/Design	l.s.	1	$75,000	$75,000	$75,000
	Site contamination surveys (pre $35K, post $20K)		l.s.	1	$55,000	$55,000	$55,000
	Sub-Total						**$260,000**
15.5	**Reclamation & Closure Research Plan (Short Term Funding)**						
	Year 0 (2013)	Misc.	l.s.	1	$350,000	$350,000	$350,000
	Year 1 (2014)	Misc.	l.s.	1	$350,000	$350,000	$350,000
	Year 2 (2015)	Misc.	l.s.	1	$350,000	$350,000	$350,000
	Year 3 (2016)	Misc.	l.s.	1	$200,000	$200,000	$200,000
	Year 4 (2017)	Misc.	l.s.	1	$200,000	$200,000	$200,000
	Sub-Total						**$1,450,000**
Total Estimated Cost for Supporting Studies							**$1,982,500**

Note:

Minto MIne Long Term Net Present Value (NPV) Calculations (4 pages)
Phase IV Financial Security Estimate

Discount Rate	2.50%	Water Treatment Costs												
													Total NPV	$4,432,178
Year (Year 0 = 2013)														
No.	Calendar	Active Treatment Capital Costs	NPV	Active Treatment Capital Replacement Costs	NPV	Active Treatment Operating Costs[1]	NPV	Passive Treatment Capital Costs	NPV	Passive Treatment Capital Replacement Costs	NPV	Passive Treatment Operating Costs	NPV	**Total Annual NPV**
5	2018			$60,000	$53,031	$750,000	$662,891	$300,000	$265,156					$981,078
6	2019			$60,000	$51,738	$750,000	$646,723			$30,000	$25,869	$25,000	$21,557	$745,887
7	2020			$60,000	$50,476	$750,000	$630,949			$30,000	$25,238	$25,000	$21,032	$727,694
8	2021			$60,000	$49,245	$750,000	$615,560			$30,000	$24,622	$25,000	$20,519	$709,946
9	2022			$60,000	$48,044	$750,000	$600,546			$30,000	$24,022	$25,000	$20,018	$692,630
10	2023									$30,000	$23,436	$25,000	$19,530	$42,966
11	2024									$30,000	$22,864	$25,000	$19,054	$41,918
12	2025									$30,000	$22,307	$25,000	$18,589	$40,896
13	2026									$30,000	$21,763	$25,000	$18,136	$39,898
14	2027									$30,000	$21,232	$25,000	$17,693	$38,925
15	2028									$30,000	$20,714	$25,000	$17,262	$37,976
16	2029									$30,000	$20,209	$25,000	$16,841	$37,049
17	2030									$30,000	$19,716	$25,000	$16,430	$36,146
18	2031									$30,000	$19,235	$25,000	$16,029	$35,264
19	2032									$30,000	$18,766	$25,000	$15,638	$34,404
20	2033									$30,000	$18,308	$25,000	$15,257	$33,565
21	2034									$30,000	$17,862	$25,000	$14,885	$32,746
22	2035									$30,000	$17,426	$25,000	$14,522	$31,948
23	2036									$30,000	$17,001	$25,000	$14,167	$31,168
24	2037									$30,000	$16,586	$25,000	$13,822	$30,408
25	2038									$30,000	$16,182	$25,000	$13,485	$29,666
26	2039													$0
27	2040													$0
28	2041													$0
29	2042													$0
30	2043													$0
31	2044													$0
32	2045													$0
33	2046													$0
34	2047													$0
35	2048													$0
Totals		$0	$0	$300,000	$252,533	$3,750,000	$3,156,668	$300,000	$265,156	$600,000	$413,356	$500,000	$344,464	$4,432,178
Years 6-10 Totals		$0	$0	$300,000	$252,533	$3,750,000	$3,156,668	$300,000	$265,156	$120,000	$99,751	$100,000	$83,126	$3,857,235
Years 11-35 Totals		$0	$0	$0	$0	$0	$0	$0	$0	$480,000	$111,601	$400,000	$261,338	$574,943

NOTES:

1 Costs drop to $20,000 after active treatment ends to maintain treatment plant to keep ready for operation if necessary

2 Annual onsite management costs and transport costs are broken down as a five year cost in Table 14, Long Term Site Management.

3 Three water quality monitoring events per year in years 5-9, and one monitoring event per year in years 6-14. Each monitoring event costs $4,000.

4 Biological monitoring occurs annually in years 5-9 ($4000 per event) and every two years in years 6-14 ($3500 per event).

5 Monitoring of piezometers and thermistors occurs twice annually in years 5-9 ($3000per event) and once annually in years 6-14 ($2500 per event)

Minto MIne Long Term Net Present Value (NPV) Calculations (4 pages)
Phase IV Financial Security Estimate

Discount Rate	2.50%	Reclamation & Closure Research Plan		Site Access and Maintenance				
		Total NPV	**$631,334**	**Total NPV**				**$501,505**
Year (Year 0 = 2013)								
No.	Calendar	Reclamation & Closure Research Plan	**Total Annual NPV**	Onsite Management[2]	NPV	Transport Costs[2]	NPV	**Total Annual NPV**
5	2018	$150,000	$132,578	$45,750	$40,436	$17,500	$15,467	$55,904
6	2019	$150,000	$129,345	$45,750	$39,450	$17,500	$15,090	$54,540
7	2020	$150,000	$126,190	$45,750	$38,488	$17,500	$14,722	$53,210
8	2021	$150,000	$123,112	$45,750	$37,549	$17,500	$14,363	$51,912
9	2022	$150,000	$120,109	$45,750	$36,633	$17,500	$14,013	$50,646
10	2023			$45,750	$35,740	$17,500	$13,671	$49,411
11	2024			$45,750	$34,868	$17,500	$13,338	$48,206
12	2025			$45,750	$34,018	$17,500	$13,012	$47,030
13	2026			$45,750	$33,188	$17,500	$12,695	$45,883
14	2027			$45,750	$32,379	$17,500	$12,385	$44,764
15	2028							$0
16	2029							$0
17	2030							$0
18	2031							$0
19	2032							$0
20	2033							$0
21	2034							$0
22	2035							$0
23	2036							$0
24	2037							$0
25	2038							$0
26	2039							$0
27	2040							$0
28	2041							$0
29	2042							$0
30	2043							$0
31	2044							$0
32	2045							$0
33	2046							$0
34	2047							$0
35	2048							$0
Totals		$750,000	$631,334	$457,500	$362,749	$175,000	$138,756	$501,505
Years 6-10 Totals		$750,000	$631,334	$228,750	$192,557	$87,500	$73,656	$266,212
Years 11-35 Totals		$0	$0	$228,750	$170,192	$87,500	$65,101	$235,293

NOTES:

1 Costs drop to $20,000 after active treatment ends to maintain treatment plant to keep ready for operation if necessary

2 Annual onsite management costs and transport costs are broken down as a five year cost in Table 14, Long Term Site Management.

3 Three water quality monitoring events per year in years 5-9, and one monitoring event per year in years 6-14. Each monitoring event costs $4,000.

4 Biological monitoring occurs annually in years 5-9 ($4000 per event) and every two years in years 6-14 ($3500 per event).

5 Monitoring of piezometers and thermistors occurs twice annually in years 5-9 ($3000per event) and once annually in years 6-14 ($2500 per event)

Minto MIne Long Term Net Present Value (NPV) Calculations (4 pages)
Phase IV Financial Security Estimate

Discount Rate	2.50%	Long Term Monitoring & Reporting												
													Total NPV	**$381,217**
Year (Year 0 = 2013)														
No.	Calendar	Water Quality Monitoring[3]	NPV	Disbursements	NPV	Enhanced Groundwater/Foundation monitoring below DSTF and Waste Rock Dumps	NPV	Geotechnical Inspections	NPV	Reclamation Inspections	NPV	Biological Monitoring[4]	NPV	**Total Annual NPV**
5	2018	$12,000	$10,606	$4,000	$3,535	$15,000	$13,258	$15,000	$13,258	$7,500	$6,629	$5,000	$4,419	**$51,705**
6	2019	$12,000	$10,348	$4,000	$3,449	$15,000	$12,934					$5,000	$4,311	**$31,043**
7	2020	$12,000	$10,095	$4,000	$3,365	$15,000	$12,619	$15,000	$12,619	$7,500	$6,309	$5,000	$4,206	**$49,214**
8	2021	$12,000	$9,849	$4,000	$3,283	$15,000	$12,311					$5,000	$4,104	**$29,547**
9	2022	$12,000	$9,609	$4,000	$3,203	$15,000	$12,011	$15,000	$12,011	$7,500	$6,005	$5,000	$4,004	**$46,843**
10	2023	$4,000	$3,125	$4,000	$3,125	$15,000	$11,718							**$17,968**
11	2024	$4,000	$3,049	$4,000	$3,049	$15,000	$11,432	$15,000	$11,432	$7,500	$5,716	$5,000	$3,811	**$38,488**
12	2025	$4,000	$2,974	$4,000	$2,974	$15,000	$11,153							**$17,102**
13	2026	$4,000	$2,902	$4,000	$2,902	$15,000	$10,881	$15,000	$10,881	$7,500	$5,441	$5,000	$3,627	**$36,634**
14	2027	$4,000	$2,831	$4,000	$2,831	$15,000	$10,616	$15,000	$10,616	$7,500	$5,308	$5,000	$3,539	**$35,740**
15	2028	$4,000	$2,762											**$2,762**
16	2029	$4,000	$2,694											**$2,694**
17	2030	$4,000	$2,629											**$2,629**
18	2031	$4,000	$2,565											**$2,565**
19	2032	$4,000	$2,502											**$2,502**
20	2033	$4,000	$2,441											**$2,441**
21	2034	$4,000	$2,382											**$2,382**
22	2035	$4,000	$2,323											**$2,323**
23	2036	$4,000	$2,267											**$2,267**
24	2037	$4,000	$2,212											**$2,212**
25	2038	$4,000	$2,158											**$2,158**
26	2039	$4,000	$2,105											**$2,105**
27	2040	$4,000	$2,054											**$2,054**
28	2041	$4,000	$2,004											**$2,004**
29	2042	$4,000	$1,955											**$1,955**
30	2043	$4,000	$1,907											**$1,907**
31	2044	$4,000	$1,860											**$1,860**
32	2045	$4,000	$1,815											**$1,815**
33	2046	$4,000	$1,771											**$1,771**
34	2047	$4,000	$1,728											**$1,728**
35	2048	$4,000	$1,685											**$1,685**
Totals		$164,000	$111,204	$40,000	$31,716	$150,000	$118,934	$90,000	$70,817	$45,000	$35,409	$40,000	$32,021	$400,100
Years 6-10 Totals		$60,000	$50,507	$20,000	$16,836	$75,000	$63,133	$45,000	$37,888	$22,500	$18,944	$25,000	$21,044	$208,352
Years 11-35 Totals		$104,000	$60,697	$20,000	$14,880	$75,000	$55,801	$45,000	$32,929	$22,500	$16,465	$15,000	$10,976	$191,749

NOTES:

1 Costs drop to $20,000 after active treatment ends to maintain treatment plant to keep ready for operation if necessary

2 Annual onsite management costs and transport costs are broken down as a five year cost in Table 14, Long Term Site Management.

3 Three water quality monitoring events per year in years 5-9, and one monitoring event per year in years 6-14. Each monitoring event costs $4,000.

4 Biological monitoring occurs annually in years 5-9 ($4000 per event) and every two years in years 6-14 ($3500 per event).

5 Monitoring of piezometers and thermistors occurs twice annually in years 5-9 ($3000per event) and once annually in years 6-14 ($2500 per event)

Minto MIne Long Term Net Present Value (NPV) Calculations (4 pages)
Phase IV Financial Security Estimate

Discount Rate	2.50%	Post Closure Maintenance - Water Storage Pond Dam								
									Total NPV	**$173,065**
Year (Year 0 = 2013)										
No.	Calendar	Monitoring of piezometers, thermistors[5]	NPV	Annual Inspection & report	NPV	Carry out inspection recommendations /maintenance	NPV	Misc. maintenance work related to the site after closure	NPV	**Total Annual NPV**
5	2018	$5,000	$4,419	$3,000	$2,652	$10,000	$8,839	$5,000	$4,419	**$20,329**
6	2019	$5,000	$4,311	$3,000	$2,587	$10,000	$8,623	$5,000	$4,311	**$19,833**
7	2020	$5,000	$4,206	$3,000	$2,524	$10,000	$8,413	$5,000	$4,206	**$19,349**
8	2021	$5,000	$4,104	$3,000	$2,462	$10,000	$8,207	$5,000	$4,104	**$18,877**
9	2022	$5,000	$4,004	$3,000	$2,402	$10,000	$8,007	$5,000	$4,004	**$18,417**
10	2023	$2,500	$1,953	$3,000	$2,344	$10,000	$7,812	$5,000	$3,906	**$16,015**
11	2024	$2,500	$1,905	$3,000	$2,286	$10,000	$7,621	$5,000	$3,811	**$15,624**
12	2025	$2,500	$1,859	$3,000	$2,231	$10,000	$7,436	$5,000	$3,718	**$15,243**
13	2026	$2,500	$1,814	$3,000	$2,176	$10,000	$7,254	$5,000	$3,627	**$14,871**
14	2027	$2,500	$1,769	$3,000	$2,123	$10,000	$7,077	$5,000	$3,539	**$14,508**
15	2028									
16	2029									
17	2030									
18	2031									
19	2032									
20	2033									
21	2034									
22	2035									
23	2036									
24	2037									
25	2038									
26	2039									
27	2040									
28	2041									
29	2042									
30	2043									
31	2044									
32	2045									
33	2046									
34	2047									
35	2048									
Totals		$37,500	$30,345	$30,000	$23,787	$100,000	$79,289	$50,000	$39,645	**$173,065**
Years 6-10 Totals		$25,000	$21,044	$15,000	$12,627	$50,000	$42,089	$25,000	$21,044	**$96,805**
Years 11-35 Totals		$12,500	$9,300	$15,000	$11,160	$50,000	$37,200	$25,000	$18,600	**$76,261**

NOTES:

1 Costs drop to $20,000 after active treatment ends to maintain treatment plant to keep ready for operation if necessary

2 Annual onsite management costs and transport costs are broken down as a five year cost in Table 14, Long Term Site Management.

3 Three water quality monitoring events per year in years 5-9, and one monitoring event per year in years 6-14. Each monitoring event costs $4,000.

4 Biological monitoring occurs annually in years 5-9 ($4000 per event) and every two years in years 6-14 ($3500 per event).

5 Monitoring of piezometers and thermistors occurs twice annually in years 5-9 ($3000per event) and once annually in years 6-14 ($2500 per event)