

SCREENING REPORT

MINTO EXPLORATIONS LTD.

Prepared by:
Development Assessment Branch

30 March 2005



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Yukon's Environmental Assessment Act (EAA) Screening Report

1. Environmental Assessment File Information

File Number	5110-20-24
Proponent Name	Minto Exploration Ltd.
Contact Information	1150 North 7 th Avenue P.O. Box 5747 Tucson Arizona 85703 USA
Project Title	Quartz and Water Licence Extension
Physical Work or Activity	Yes – Mine development
Multiple Activity(ies)	N/A
E. A. Start Date	29 November 2004
E. A. Finish Date	
E. A. Determination	
Subject Descriptor	Mining
Project Category Code	Linear, areal and point

2. Responsible Authority Identification

Lead Responsible Authority	Executive Council Office
Other Responsible Authorities	Energy, Mines and Resources
Date EAA coordination regs triggered	N/A
R. A. Contact Information	DAP Branch, ECO A310 Box 2703 Whitehorse, Yukon Y1A 2C6
Project Trigger	Water Use Licence, Quartz Mining Licence
Lead Type of Approval	N/A
Status of Approval	Current Licences exist, application for extension
Integrated Screening	YES – ECO&EMR
Other Triggers	N/A
Other Types of Approval	N/A
Project File Location	DAP Branch Public Registry - Whitehorse

3. Project Location

Region	Central Yukon		
NTS Map #	115 I11	Quadrant	__NE __SE __SW __NW
Geographic Location Name	Minto		
Latitude and Longitude or UTM Coordinates	62° 35' North, 137° 15' West		
Watershed and Drainage Region			
Nearest Community(s)	Name: Pelly Crossing	Distance from project:	approx 35 km
	Name: Carmacks	Distance from project:	75 km
First Nation Traditional Territory(s)	Selkirk First Nation		
Surrounding Land Status	First Nations settlement (R6A) and Commissioners		
Special Designation(s)	N/A		

3.1 Project Description

3.1.1 General Overview

The Minto Project is a copper-gold-silver project located southwest of Pelly Crossing in the central Yukon. The project consists of an open pit and underground operation, overburden and waste rock dumps, tailings storage and conventional copper flotation mill on an area of 141 ha.

After project licencing (see 3.1.2 below), Minto Explorations began the process of constructing the mine infrastructure and access. However, a downturn in copper prices in the late 1990s meant that the full construction and commissioning of the mine was suspended pending more favourable market conditions. To date, the mine has not been commissioned. The access road is still in place, as are some foundations for mine infrastructure, a trailer camp and septic system.

Minto Explorations Ltd. Applied for amendments to their Quartz Mining and Water Use Licences on October 27th, 2004.

Amendments currently sought include:

1. Modification to Licensee contact information.
2. An extension of the licence expiration date through to June 2016.
3. Modifications to the monitoring and temporary closure aspects of the project (Water Use Licence only).

Amendment three above would revise clause 76(b) of the Water Use Licence to require the monitoring requirements of the Care and Maintenance & Interim Closure Plan, which was submitted to the Water Board in November of 2003, rather than the full monitoring provisions of the licence.

3.1.2 Overview of Project Assessment and Licencing

The project was subject to environmental assessment pursuant to the *Environmental Assessment and Review Process Guidelines Order* (EARPGO) in the 1990s. The DIAND Environment Directorate completed a screening, with a 12C recommendation rendered in April of 1997:

- 12C: “The potentially adverse environmental effects that may be caused by the proposal are insignificant or mitigable with known technology, in which case the proposal may proceed or proceed with mitigation, as the case may be.”

A ‘Type A’ Water Use Licence was issued by the Yukon Territory Water Board for the project in January of 1997.

Changes to the *Yukon Quartz Mining Act* and regulations that took effect on June 16, 1999 required that all quartz mines in the Yukon be licenced. Minto Explorations Ltd. Applied for a Quartz Mining Licence soon after the requirement for one was in effect. DIAND determined that the 1997 EARPGO screening adequately scoped quartz mining activities with the exception of cumulative effects. Minto

Explorations Ltd. then submitted a Cumulative Effects Assessment. DIAND determined that the cumulative effects submission adequately addressed the matter and Yukon Quartz Mining Licence QLM-9902 was subsequently issued in October of 1999.

On April 1st, 2003, the responsibility for water and mine management devolved from DIAND to the Yukon Government. Since then, all water use and quartz licencing requirements for this project are the responsibility of the Yukon Executive Council Office and the department of Energy, Mines and Resources respectively.

This current screening is being conducted exclusively pursuant the (Yukon) *Environmental Assessment Act*. The provisions of the *Yukon Environmental and Socio-economic Assessment Act* do not apply because the amendment applications that triggered this assessment were submitted prior to November 13th, 2004.

4. Project Scoping

4.1 Project Scope

The scope of the project refers to the various component of the proposed undertaking or activity that will be considered as the project for the purposes of the environmental assessment.

Subsection 11(1) of the EAA requires RAs to determine the scope of the project in relation to which an environmental assessment is to be conducted. Subsection 11(3) of the EAA requires that where a project is in relation to a physical work (a mine in this case):

“...an environmental assessment shall be conducted in respect of every construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work that is proposed by the proponent or that is, in the opinion of the responsible authority...likely to be carried out in relation to that physical work.”

The scope of the project includes the construction, operation, care and maintenance, closure and post closure or any undertaking in relation to the project. This includes:

- Site access and transportation of materials;
- Acid rock drainage and metal leaching (including open pit, waste rock, tailings, ore stockpiles, and concentrates);
- Site physical stability (all components of the site, including open pit);
- Thickened tailings disposal;
- Tailings effluent treatment;
- Tailings/mill water storage dam;
- Stream diversions;
- Waste Rock dumps;
- Other solid and liquid waste;
- Water (use and deposit of waste);
- Fish and aquatic resources
- Fuel handling/spill contingency;
- Heritage resources;
- Wildlife;
- Decommissioning; and,
- Financial Security.

4.2 Scope of Assessment

Subsection 12(1) of the EAA requires that environmental assessments consider the following factors:

1. the environmental effects of the project, including the environmental effects of malfunctions or accidents
2. Cumulative effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out
3. Measures that are technically or economically feasible and that would mitigate any significant adverse environmental effects of the project
4. The significance of the environmental effects
5. Comments from the public that are received in accordance with EAA
6. Any other matter that the RA(s) consider relevant

In relation to #6 above, the RAs have not included any additional matters within the scope of the assessment.

5. Consultation/Referral List

The amendment applications were referred to the Yukon Environmental Review Committee (YERC) for review on 29 November 2004 with comments due on 22 December 2004. A draft of this screening was referred to YERC review on 09 March 2005, with comments due on 24 March 2005.

Contact	Organization	Response Date
DFO - Sandra Orban	Can	None Received
DIAND - Laura Spicer	Can	None Received
DOE - Benoit Godin	Can	15 Dec. 2004
Parks Canada - Mike Walton	Can	None Received
Council of Yukon First Nations	FN	None Received
Selkirk First Nation	FN	None Received
Client Service and Inspection - Carmacks	GY	None Received
Public Registry	GY	None Received
Environment – Environmental Affairs V-8	GY-EAA	22 December 2004
Community Services - Eric Magnuson C-9	GY-EAA	14 March 2005
Economic Development - Terry Hayden F-4	GY-EAA	None Received
Education - Gordon DeBruyn E-1	GY-EAA	None Received
EMR - Bryony McIntyre K-320	GY-EAA	None Received
EMR - David Murray K-320	GY-EAA	None Received
EMR - Diane Brent K-6	GY-EAA	None Received
EMR - Judy St. Amand K-9	GY-EAA	None Received
EMR - Karen Pelletier K-10	GY-EAA	None Received
EMR - Ken Galambos K-10	GY-EAA	None Received

EMR - Marg White K-320	GY-EAA	None Received
EMR - Myles Thorp K-918	GY-EAA	None Received
EMR - Richard Corbett K-12	GY-EAA	None Received
Health - Violet Van Hees H-1	GY-EAA	None Received
Highways - Florian Vedress W-13	GY-EAA	None Received
Justice - Laurie Henderson J-2A	GY-EAA	None Received
Tourism - Cathryn Paish L-1	GY-EAA	None Received
Tourism - Ruth Gotthardt L-2A	GY-EAA	None Received
Yukon Water Board, A-419	GY-EAA	None Received
Canadian Parks & Wilderness Society	Public	None Received
Yukon Chamber of Mines	Public	None Received
Yukon Conservation Society	Public	None Received
Yukon Fish and Wildlife Management Board	Public	None Received
Yukon River Intertribal Watershed Council	Public	None Received
Yukon Salmon Committee	Public	None Received
Fritz Mueller	YERC - DOE	None Received
Wendy Nixon	YERC - DOE	None Received
Terry Bidniak, Community Development, C-9	YERC - GY	None Received
Al Beaver, Protective Services, C-19	YERC - GY	None Received
Dan Boyd, Protective Services, C-19	YERC - GY	None Received
Fred Jennex, Protective Services, C-19	YERC - GY	None Received
Allan Nixon, Transportation Engineering, W-13	YERC - GY	None Received
Fred Privett, EMR, K-235	YERC - GY	None Received
Mark Zrum, CSI, K-325	YERC - GY	None Received
Marg Crombie, AAM, K-419	YERC - GY	None Received
Naresh Prasad, YWHSB Dan Cornett, Access Consulting Group (acting on behalf of Minto Explorations Ltd.)	YERC - GY Proponent	None Received 24 March 2005

6. Summary of Responses from Referral List

Respondent	Identified Concern	Environmental Effect	Suggested Mitigation Measures
1. Environment Canada	Amended Metal Mine Effluent Regulations (MMER) pursuant to the <i>Fisheries Act</i> should be reflected in the amended Water Use Licence.	None specifically, however amended MMER contains numerous requirements for enhanced monitoring.	Subsection 13(5) of the <i>Waters Act</i> prohibits the Water Board from issuing a Water Use Licence with conditions less stringent than regulations made pursuant to 36(5) of the <i>Fisheries Act</i> , including MMER. Provisions of MMER have been considered in subsection 7.3.18 of this screening.
2. YG Environment	Erosion Concerns (re-vegetation; road and barge landings)	Sedimentation of Water courses.	Amended Quartz Mining Licence is expected to contain conditions on the physical stability of the road and associated infrastructure, which will mitigate erosion concerns.

	Security	Security should be reviewed for adequacy in light of ten-year licence extension.	7.3.17 of this screening addresses security.
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7. Managing the Potential Environmental Effects of the Project

7.1 *Potential Adverse Effects on the Environment*

Subsection 20(1) of the EAA requires RAs to use previously conducted environmental assessment "...to whatever extent is appropriate for the purpose of complying with section 14 or 17."

The RAs take the view that the original 1997 EARPGO Screening and the 1999 Cumulative Effects assessment adequately scoped the project for the purposes of complying with the EAA.

7.2 *Cumulative Environmental Effects*

None identified based on the current licence amendments sought. Overall cumulative effects resulting from the mine development addressed in the 'Minto Project Cumulative Effects Assessment' (Access Consulting Group, 1999).

7.3 *Required Mitigation Measures*

As noted in section 7.1 above, the RAs are of the view that, in general, the mitigation identified in the 1997 EARPGO Screening adequately addressed the environmental risks that the project posed. No substantive modifications to the project have been proposed in the current amendment requests. Due to subsections 13(5) and 13(7) of the *Waters Act*, the RAs have considered the environmental effects of amending QZ96-006 to meet the minimum requirements of the MMER (2002).

The extension of the licence term for a period of ten years can be viewed as an increase in the temporal scope of the project, thereby extending the environmental effects of the mine for a longer period of time. The RAs view is that since the mine has not been constructed, the extent of any environmental effects is largely limited to the access road to the site. Due to the fact that the access road is subject to regular inspections and maintenance, the RAs are of the view that any associated environmental effects are not likely to be significant. Wildlife concerns associated with the road are mitigated due to the fact that the road is largely inaccessible due to its remoteness and the fact that there is no barge in place to cross the Yukon River.

The amendment to clause 76 (b) of the Water Use Licence QZ96-006 sought by the proponent would modify monitoring requirements to those identified in the November, 2003 Care and Maintenance & Interim Closure Plan. The RAs view is that under the present circumstances,

this amendment proposal is not likely to result in significant adverse environmental effects. Because the mine has not been constructed, the monitoring proposed is adequate. ***However, it must be specified that the current wording of clause 76 (b) must be implemented at any time after the mine has been constructed, or development on the site progresses to the point that such development may otherwise result in changes to water chemistry or sedimentation levels.***

Due to devolution, government reorganization and statutory amendments, some aspects of the 1997 EARPGO mitigation require updating to reflect the current legislative context. The following is a summary of the 1997 mitigation as listed in 1997 report with required updates. The following repeats the mitigations previously listed as ‘RERC¹ Recommendations’ and ‘Government agency(ies) responsible to address recommendation(s)’ in the 1997 EARPGO – there are no changes to the proponent’s proposed mitigations, and these will therefore not be repeated in this screening report. For clarity, all references to ‘RERC Recommendation(s)’ are amended to refer instead to the Responsible Authorities.

It must be noted that Minto Explorations Ltd. has complied with the sections below where a reference to a plan, report or design was required to be submitted with the original Water Licence application. Where a plan, report or design is required to be submitted prior to closure, the proponent is expected to submit the required material with their Comprehensive Decommissioning and Reclamation Plan², which is currently a requirement of Water Use Licence QZ96-006, and may be a requirement of an amended Quartz Mining Licence, at the discretion of the Chief, Yukon Minerals Management Branch, EMR.

7.3.1 Site Access and Transportation of Materials

RERC Recommendations:

“The RERC recommends that a detailed Spill Contingencies and Emergencies Response Plan be submitted with the water licence application for review and approval”

“Government agency(ies) responsible to address recommendation(s)

1. *Yukon Territory Water Board”*

Update required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.2 Acid Rock Drainage

RERC Recommendations:

“The RERC recognizes that it is not possible to predict with absolute certainty that all waste rock generated will not have an ARD potential. There is also a need to confirm that exposed rock in the open pit does not, or will not generate acid. Therefore, the RERC recommends

¹ RERC stands for Regional Environmental Review Committee, a government and First Nation committee that assisted in the environmental assessment of major projects. RERC became YERC at devolution.

² Minto Explorations Ltd. submitted a ‘Care and Maintenance & Interim Closure Plan’ to the Water Board in November, 2003. Final ‘Comprehensive Decommissioning and Reclamation Plan’ must be submitted to Water Board no later than the second anniversary of the mine start-up date under Water Use Licence QZ96-006.

that a waste rock and open pit monitoring and management plan be submitted with the water licence application. The Plan should include but not be limited to the following:

- i. A description of an operational ARD sampling, testing and reporting program to confirm waste rock characterization prior to disposal. Further ARD testing should include petrographic and mineralogic descriptions of representative samples to determine spatial, textural, and paragenic relationships between minerals;*
- ii. Plans for identification, sampling and reporting on lithological units that may be encountered during mining that have not previously been identified or sampled in drill core;*
- iii. Sampling of waste rock peripheral to the starter pit that will be extracted later in the mine life and has not as yet been adequately characterized;*
- iv. A description of the criteria to determine the suitability of waste rock for any construction purposes (foundations, rock drains, tailings dam, roads, diversion ditches, etc.), or for disposal in waste dumps or low grade ore stockpiles;*
- v. A waste rock disposal plan and schedule;*
- vi. A water quality monitoring plan for waste dumps and open pit;*
- vii. Triggers and actions in the event that monitoring indicates poor quality runoff from the waste dumps and open pit.*
- viii. Plans for monitoring of the physical and chemical stability of the waste rock dumps and open pit in the event of a temporary shutdown of operations.*
- ix. Criteria and timing for conducting kinetic (humidity cell) testing of any units that will remain exposed on surface in waste dumps, or the pit walls that may have the potential to generate acid or release metals in the long term;*
- x. Contingencies for the mitigation of acid generation or metal release in any units in the exposed pit walls that testing has indicated may be problematic;*
- xi. The waste rock management plan should include provisions for updating the water quality modelling of pit water, and waste rock runoff, as new information becomes available and the ultimate pit design is refined; and*
- xii A description of the information that will be reported to the Water Board, and the frequency of reporting.”*

“Government agency(ies) responsible to address recommendation(s)

- 1. Yukon Territory Water Board”*

Update Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.3 Tailings

RERC Recommendations:

“As with the waste rock, it is not possible to predict with certainty that the tailings will not develop ARD. Therefore, the RERC recommends that Minto Explorations Ltd. submit with the water licence application a plan for the ongoing monitoring of tailings for ARD leaching potential. The Plan should include but not be limited to the following:

- i. A proposal for the ongoing sampling and testing of tailings for ARD potential;*
- ii. Triggers and contingencies in the event that testing indicates ARD potential; and*
- iii. A description of the information that will be reported to the Water Board, and the frequency of reporting.”*

“Government agency(ies) responsible to address recommendation(s)

- 1. Yukon Territory Water Board”*

Update Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.4 Ore Stockpiles

RERC Recommendations:

“Since there is the potential for some leaching of copper, and since Minto Explorations Ltd. will need to monitor quality and quantity of water inputs into the tailings area in case treatment of the tailings water may be needed, the RERC recommends Minto Explorations Ltd. submit with the water licence application a ore stockpile water quality monitoring and action plan which should include but not be limited to the following:

- i. The location, method, frequency and parameters to be monitored from the ore stockpiles (including high, intermediate, low grade and oxide stockpiles);*
- ii. Triggers and actions for the treatment of leachate from any of the stockpiles, and for the restoration and abandonment of any or all of the stockpile such that the long term leaching will not pose a problem. This should include a consideration of disposing ore stockpile back into the open pit in the event that effluent quality or physical stability becomes a problem*
- iii. A description of how stockpiles will be addressed during periods of temporary suspension of mining activities; and*
- iv. A description of the information that will be reported to the Water Board and the frequency of reporting.”*

“Government agency(ies) responsible to address recommendation(s)

1. *Yukon Territory Water Board”*

Update Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.5 Concentrate

RERC Recommendations:

“The RERC recommends that Minto Explorations Ltd. submit with the water licence application plans for monitoring the runoff from the concentrate stockpile. This plan should include but not be limited to the following:

- i. *The location, method, frequency and parameters to be monitored; and*
- ii. *A description of the information that will be reported to the Water Board and the frequency of reporting.”*

“Government agency(ies) responsible to address recommendation(s)

1. *Yukon Territory Water Board”*

Update Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.6 Thickened Tailings Disposal

RERC Recommendations:

“The RERC recommends that Minto Explorations Ltd. submit with its water licence application a Tailings Management Plan. The Plan should include but not be limited to the following:

- i. *Final detailed designs for the thickener and other related structures of the tailings facility;*
- ii. *A confirmation of the commitment that no unthickened tailings (<67.5% solids by weight) will be deposited into the tailings disposal area;*
- iii. *The location, method, frequency and parameters to be monitored, including a twice annual tailings slope survey program;*
- iv. *Triggers for deciding when to make operational changes and confirmation that no tailings will be deposited in the tailings basin when water storage capacity is reduced to 160,000m³;*
- v. *A description of the information that will be reported to the Water Board and the frequency of reporting. This information should include but not be limited to:*

- a. *the results of the monitoring done pursuant to the tailings management plan;*
- b. *an evaluation of the performance of the thickened tailings system, including available storage capacity; and*
- c. *whether any contingencies were triggered in the past year, or are projected to be triggered in the coming year.”*

“Government agency(ies) responsible to address recommendation(s)

1. *Yukon Territory Water Board”*

Update Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.7 Tailings Effluent Treatment

RERC Recommendations:

“The RERC recommends that Minto Explorations Ltd. submit with the water licence application a tailings effluent treatment plan. The Plan should include but not be limited to the following items:

- i. *Detailed design for the lime treatment plant and polishing pond;*
- ii. *The parameters to be monitored and their location, sampling methodology, and frequency;*
- iii. *A detailed action plan for effluent treatment including effluent standards, triggers, actions and scheduling. A key objective should be the initiation of treatment well before there is the potential for the release of waters which exceed licence standards;*
- iv. *A plan for the evaluation of any treatment sludge which may be generated to determine its composition and stability. The results of the evaluation of the treatment sludge generated shall be considered in the method proposed for abandoning the sludge. The proposed method of abandoning the sludge should be described in a sludge disposal plan submitted to the Water Board for review and approval before any sludge is disposed of.*
- v. *A description of the information that will be reported to the Water Board and the frequency of reporting.”*

“Government agency(ies) responsible to address recommendation(s)

1. *Yukon Territory Water Board”*

Update Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.8 Tailings/Mill Water Storage Dam

RERC Recommendations:

“The RERC recommends that Minto Explorations Ltd. prepare and submit final designs for the dam and related structures with its water licence application. The final designs should include, but not be limited to the following:

- i. Material specifications including gradation, durability, permeability, and densities;*
- ii. Rip-rap and downstream shell material specifications including size, gradation, soundness and durability, specific gravity, and freeze-thaw durability;*
- iii. Criteria for the selection of the above specifications in light of maximum design flowrates over the spillway, and operations during freezing conditions;*
- iv. Details of the stability analysis on the final dam design including a stability analysis of the downstream shell considering an elevated phreatic surface within the dam and the impact of flows discharging from the downstream shell;*
- v. Appropriate factors of safety, which meet or exceed the Canadian Dam Safety Guidelines;*
- vi. Construction Quality Assurance/Construction Quality Control (CQA/CQC) documents, detailing all aspects of construction and material specifications and testing, foundation preparation procedures, grouting and shotcreting criteria, instrumentation, construction supervision, and reporting, etc. Minto has proposed that the criteria for the cutoff between ice rich and ice poor should be a frozen bulk density of 1.7 Mg/m³ and this should be reflected in the QA/QC manual. The QA/QC monitoring and reporting should be done by the design engineer.*

The submission with the water licence application should be accompanied by a monitoring and contingency plan that should include but not be limited to the following:

- i. Details of the dam crest settlement monitoring program including frequency and reporting methods, and plans for periodic third party assessment of the structures;*
- ii. Plans to monitor seepage and possibilities of piping. Triggers and contingencies in case seepage detrimental to dam stability is detected should be discussed;*
- iii. Plans for the installation of thermistors to monitor the performance of the granulite during the mine life; and*
- iv. A description of the information that will be reported to the Water Board and the frequency of reporting.*

All design drawings and specifications should be signed and stamped by an appropriate engineering professional.

Prior to closure Minto Explorations Ltd. Must upgrade the dam to provide long term stability of the dam. The tailings dam and spillway should be upgraded so that it will pass PMF and be able to withstand MCE. As the DAM will require modifications to meet these criteria, engineered detailed designs will be submitted to the Water Board for approval, prior to abandonment and prior to upgrading the tailings dam or associated structures. Post closure monitoring plans shall also be provided to ensure the continued integrity of the structures.”

“Government agency(ies) responsible to address recommendation(s)

1. Yukon Territory Water Board”

Update Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.9 Stream Diversion

RERC Recommendations:

“The RERC recommends that Minto Explorations Ltd. Prepare and submit with it’s water licence application final designs for the diversion ditches. The final designs for the diversion ditch shall include, but not be limited to the following:

- i. Designs for the diversion ditches including location of diversions, cross-sections, size, gradient, flowrates, velocities, riprap, and filter specifications and construction details; and*
- ii. The QA/QC manual should outline the investigation program that will be undertaken to determine the permeabilities of the ditch subgrade and the mitigation that will be undertaken in areas where the permeabilities do not meet specified criteria.*

The RERC recommends that prior to closure Minto Explorations Ltd. Should submit final designs for decommissioning the diversion ditches. These designs should include but not be limited to the following:

- i. An evaluation of the long term stability of the diversion ditch.”*

“Government agency(ies) responsible to address recommendation(s)

1. Yukon Territory Water Board”

Update Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.10 Waste Rock Dumps

RERC Recommendations:

"The RERC recommends that Minto Explorations Ltd. Provide with the water licence:

- i. As a condition of the water licence, the results of the foundation investigations conducted in 1997 and the geotechnical analysis. The designs should be submitted for review and approval.*
- ii. Location, tonnages, configuration and scheduling of the waste and overburden dumps, along with the criteria for acceptance and location of placement of any overburden that will be placed within the main dump;*
- iii. Minto shall ensure that all dumps will be constructed on thaw stable ground;*
- iv. Details of short and long term stability analysis conducted on all dumps shall be submitted. The analysis should consider adverse impacts on stability due to the inclusion of overburden material in the main dump;*
- v. Discussion of stability results and the implications to the dump design, and consequences of any dump failures during operations or after closure;*
- vi. Design criteria, final design drawings, and material specifications for rock drains through the dumps, or diversion ditches or berms around the dumps;*
- vii. Identification of alternative dump areas if the primary dump site's foundation investigations and stability evaluations indicate potential unsatisfactory performance;*
- viii. The CQA/CQC document should include the criteria for acceptance and location of placement of any overburden that will be placed within the main dump, along with criteria that will define stable dump foundation conditions.*

All design drawings and specifications shall be signed and stamped by an appropriate engineering professional.

The Water Licence submission should also include a waste rock dump operational monitoring and inspection plan. This plan should include but not be limited to:

- i. Dump foundation parameters that will be monitored (pore pressures, temperatures, etc.), their locations, and frequency of monitoring;*
- ii. Waste rock parameters that will be monitored during operations (material quality, loading rates, movement rates, etc.) their method of monitoring, frequency, and reporting procedure; and*
- iii. Remedial plans if a failure occurs during operations.*

A description of the information that will be reported to the Water Board and the frequency of reporting. This information should include, but not be limited to the following:

- i. the results of the monitoring done on the waste rock dumps.*
- ii. an evaluation of the performance of the waste dumps.*

- iii. *whether any contingencies were triggered in the past year, or are projected to be triggered in the coming year; and*
- iv. *revisions to the waste disposal plans including provision for review and approval of the revisions.*

“Government agency(ies) responsible to address recommendation(s)

1. *Yukon Territory Water Board”*

Amendments Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.11 Other Solid and Liquid Waste

RERC Recommendations:

“The RERC advises Minto Explorations Ltd. That pursuant to section 139 of the Yukon Quartz Mining Act, Minto Explorations Ltd. Will be required to obtain a Mine Development and Production Licence when amendments to the Yukon Quartz Mining Act come into force. It is anticipated that solid waste management will be covered under a Development Production Licence. The RERC recommends that Minto Explorations Ltd., after consultation with Selkirk First Nation, submit to the Mineral Resources Division, Department of Indian Affairs and Northern Development, a solid waste management plan for review, prior to disposing of any solid waste onsite.

If a surface lease is applied for under the Territorial Lands Act a solid waste management plan should be submitted as part of the surface lease application.”

“Government agency(ies) responsible to address recommendation(s)

1. *Mineral Resources Division, INAC”*

Amendments Required: References to the *Yukon Quartz Mining Act* are hereby amended to the *Quartz Mining Act*; references to the Mineral Resources Division of the Department of Indian Affairs and Northern Development are hereby amended to the Minerals Management Branch of EMR, Government of Yukon.

7.3.12 Water

RERC Recommendations:

1. *The RERC recommends that during filling of the water storage pond, Minto Explorations Ltd. be required to monitor the flows in lower Minto Creek to ensure that no impacts to fisheries are occurring. In the event that monitoring indicates that there may be impacts to the fisheries, then Minto Explorations Ltd. should be required to release sufficient flows to sustain the fisheries in this area.*
2. *The RERC recommends that Minto Explorations Ltd. submit with the water licence application a plan for the monitoring of the flows in lower Minto Creek, including triggers and action plans, to ensure no impacts to the fish from filling of the water*

storage pond. This plan should include a description of the information that will be reported to the Water Board and the frequency of reporting.”

“Government agency(ies) responsible to address recommendation(s)

1,2. Yukon Territory Water Board”

Amendments Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board. No further changes required. (For further discussion for amendments necessary to effluent discharge standards in the Water Use Licence in the context of the Metal Mine Effluent Regulations, refer to 7.3.18 of this screening.)

7.3.13 Fuel Handling/Spill Contingency

RERC Recommendations:

“1. The RERC recommends that Minto Explorations Ltd. submit a updated and detailed Emergency Response and Spill Contingency Plan with the water Licence application.”

“Government agency(ies) responsible to address recommendation(s)

1,2. Yukon Territory Water Board”

Amendments Required: Reference to ‘Yukon Territory Water Board’ amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief.

7.3.14 Heritage

RERC Recommendations:

“The RERC recommends that Minto Explorations Ltd. should immediately report to the Heritage Branch, Department of Tourism, Yukon Territorial Government (403) 667-5983 if any heritage resources are discovered during construction of the mine/mill or associated infrastructure.”

“Government agency(ies) responsible to address recommendation(s)

Heritage Branch, Department of Tourism, YTG.

Amendments Required: ‘Heritage Branch’ amended to ‘Heritage Resources Branch’, Department of Tourism and Culture. Contact area code amended to (867). No further amendments required.

7.3.15 Fish and Wildlife

All subsections on Wildlife from the 1997 EARPGO screening are included in this section.

RERC Recommendations:

1. “The RERC recommends that Minto Explorations Ltd. implement it’s bear management policy as proposed.”

2. *"The RERC recommends that Minto Explorations Ltd. employ a Selkirk First Nation member as a environmental coordinator as proposed."*

("Government agency(ies) responsible to address recommendation(s)

1. *Renewable Resources, YTG*
2. *Selkirk First Nation.)*

3. *"The RERC recommends that Minto Exploration Ltd. establish a fisheries and wildlife monitoring program in conjunction with Renewable Resources, YTG, and the Selkirk First Nation."*

("Government agency(ies) responsible to address recommendation(s)

1. *Renewable Resources, YTG, DFO, Selkirk First Nation")*

4. *"The RERC recommends that Minto Resources Ltd. post speed limits and identify well used wildlife crossings with road signs, and in areas of recognized wildlife crossings and snow berms from plowing to be knocked down to allow for animals to escape traffic."*

("Government agency(ies) responsible to address recommendation(s)

1. *Renewable Resources, YTG.)*

5. *"The RERC agrees with Minto Explorations Ltd.'s commitment to forbid firearms to all employees and contractors in camp and on the minesite and to post no hunting signs around the minesite for safety reasons and to advise the general public. Minto Explorations Ltd.'s compliance with the Wildlife Act will mitigate potential environmental impacts."*

("Government agency(ies) responsible to address recommendation(s)

1. *Renewable Resources, YTG (can ensure compliance with general hunting provisions).")*

Amendments Required: References to 'Renewable Resources, YTG' amended to Department of Environment, Government of Yukon. References to 'fisheries' are amended to 'fish'. Recommendation 5 above clarified; all employees and contractors forbidden to possess firearms on site, however camp supervisor may possess a firearm on site for bear deterrent purposes.

7.3.16 Decommissioning Plan

RERC Recommendations:

"The RERC recommends that Minto Explorations Ltd. submit with the water licence application a closure reclamation plan which should include but not be limited to the following:

- i. *Details on methods to abandon and restore the facilities including provisions for PMF and MCE;*
- ii. *Details on expected closure and post-closure monitoring and maintenance;*

- iii. *Details on methods for temporary closure;*
- iv. *A reclamation research program; and*
- v. *A proposed schedule for the implementation of the reclamation research program, and which identifies when a detailed final and temporary closure reclamation plan will be submitted.*

Prior to mine closure, and in accordance with the schedule identified in Item v. above and as approved by the Water Board, Minto Explorations Ltd. should submit to the Water Board for review and approval, a final closure and reclamation plan. This plan should contain specific reclamation details, designs for closure of the dam, spillway, and diversion ditches, and shall reflect the results of the research program, commitments made in the preliminary closure plan, and other monitoring programs done during the life of the operation."

"Government agency(ies) responsible to address recommendation(s)

1. *Yukon Territory Water Board"*

Update Required: Reference to 'Yukon Territory Water Board' amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief. The above mitigation on decommissioning is further amended to include the requirement for decommissioning plan implementation upon regulatory approval of the plan.

7.3.17 Security Deposit

RERC Recommendations:

1. *Adequate financial security must be provided by Minto Explorations Ltd. to cover the environmental liability associated with the Minto project and to cover costs for abandonment including dam upgrades, diversion upgrades, and reclamation work.*
2. *DIAND, Selkirk First Nations and the Yukon Territory Water Board should periodically review the amount of financial security to ensure that there is adequate financial security available for reclamation.*
3. *The security should be in place within a reasonable, specified time after issuance of the water licence but in any case security must be in place to abandon the site at any stage of the operations. Security should be a term and condition of the water licence."*

"Government agency(ies) responsible to address recommendation(s)

1. *Yukon Territory Water Board"*

Update Required: Reference to 'Yukon Territory Water Board' amended to Yukon Water Board; this provision expanded to include the Yukon Minerals Management Branch of EMR at the discretion of the Chief. Regulatory function to set security limited to the Water Board and EMR. Management and refund of security held is the function of the Yukon Department of Environment (if security held pursuant to *Waters Act*) and by EMR (if security held pursuant to the *Quartz Mining Act*). Other interested parties, including other government agencies and the Selkirk First Nation will be involved in discussions concerning management of security.

Reference to DIAND deleted. DIAND's function to manage mines devolved to the Government of Yukon on 01 April 2003; the former role of DIAND has become the responsibility of the Government of Yukon.

7.3.18 Metal Mine Effluent Regulations (Canada)

In light of s.13(5) and 13(7) of the *Waters Act*, the RAs have considered whether inclusion of any conditions as specified in the *Metal Mine Effluent Regulations* (MMER) would affect the decision of a RA pursuant to s.16(1) of the *Environmental Assessment Act* following completion of the screening. Note that in undertaking this action the RAs are not making any determination as to whether or not the MMER do or will apply to the project. However, if the MMER do ultimately apply, as determined by application of s.2(1) of the MMER, any modifications required to the Water Use Licence by virtue of s.13(5) and/or 13(7) of the *Waters Act* will have been considered in this assessment.

As a result of conducting this review, the RAs have divided the MMER conditions into two groups. The first group involves those conditions of Water Use Licence QZ96-006 that are already more stringent than the comparable requirement provided for in the MMER. The second group are those conditions of the MMER that either are not addressed in the Water Use Licence or are more stringent than existing provisions in the Water Use Licence. Because there has been no request by the proponent to lessen conditions of the Water Use Licence, where the Water Use Licence condition is more stringent, the RAs have not considered the MMER requirement with respect to determining if a significant adverse environmental effect may result if that condition is imposed as the Water Use Licence already includes a more stringent condition. With regards to conditions in the MMER that are not addressed in the Water Use Licence or that are more stringent than conditions in the Water Use Licence, the RAs have concluded that incorporation of these conditions into the Water Use Licence will not cause a significant adverse environmental effect.

7.4 Residual Effects

The implementation of the mitigation identified above, including decommissioning plan submission and implementation requirements, as well as financial security requirements, will ensure that any residual effects of this mine development are mitigated.

7.5 Significance of Effects

The Minto Mine development was subject to a detailed screening in 1997 which concluded that the potentially adverse environmental effects of the development were mitigable with known technology. Implicit in the EARP GO recommendation is that the environmental effects of this project are not significant with the implementation of mitigation. No changes have been proposed to the project that, in the view of the RAs, prompt a reconsideration of the significance of the effects this project may have on the environment after mitigation is implemented.

7.6 Likelihood of Occurrence

Significant adverse environmental effects are not likely with the implementation of mitigation.

8. EAA Determination

EAA 16(1)a:

“...where taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, the project is not likely to cause significant adverse environmental effects, the responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out and shall ensure that any mitigation measures that the Responsible Authority considers appropriate are implemented;”

9. Authorization

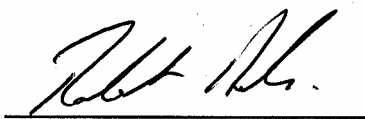
Prepared by:



April 1, 2005
Date

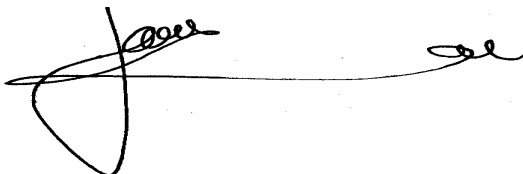
Manager, Development Assessment
DAP Branch
Executive Council Office

Authorized by:



April 1, 2005
Date

Robert Holmes
Director, Minerals Management
Energy, Mines and Resources



April 1, 2005
Date

Jeff O'Farrell
Director, DAP Branch
Executive Council Office

