



08 August 2005

Mr. Todd Burlingame, Chair
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Ave.
P.O. Box 2130
Yellowknife, NT, X1A 2P6

Dear Mr. Burlingame:

Re: DDMI License Renewal Application - N7L2-1645

Enclosed is the application of Diavik Diamond Mines Inc. to renew Water License N7L2-1645.

The specific timing of this submission was discussed with MVLWB Staff. DDMI's Water License expires in August 2007. The application is being submitted at this time to allow sufficient opportunity for review and to enable the renewed Water License to be issued before January 2007. DDMI is requesting an effective renewal date earlier than the August 2007 expiration date. The reason for this is that in the first quarter of 2007, DDMI will have completed the Underground Mining Feasibility Study and expects to seek investor approval to proceed with this next phase of mining. The renewed Water License would accompany the investor approval request. DDMI understands that MVLWB Staff have drafted a "Work Plan" that can achieve this timeline, and provide ample opportunity for discussions with reviewers and DDMI.

DDMI discussed an earlier submission date with MVLWB Staff but it was agreed that it would be best to wait until after the promulgation of the Tlicho Agreement. While this application is made to the MVLWB, DDMI understands that the MVLWB may make a determination under section 103(4) of the MVRMA as to whether the application falls within the duties of the MVLWB or, alternatively, the Wek'eezhii Land and Water Board. We understand that, in any event, the MVLWB will process this application during the transitional period provided for under the Tlicho Land Claims and Self-Government Act. We would appreciate being kept informed of any decisions in this regard.

This Renewal Application contains the following, in addition to this cover letter:

- Part 1 - Completed *Application Form*.
- Part 2 - Completed *Mining Industry Questionnaire* with three CDs* containing reference documents.
- Part 3 - Consultation Summary.
- Part 4 - Overview and status of N7L2 -1645 Water License.
- Part 5 - Copy of N7L2 -1645 Water License

* CD contains copies of documents already available on either the MVLWB or DIAND Public Registries

In this Renewal Application, DDMI is not requesting any changes to the Water License other than a change in the term of the license. DDMI is requesting a 15 year term to coincide with the expected duration of the operation. The N7L2-1645 Water License has been included with the Renewal Application as it is proposed that the current License be used as Draft #1 of the Renewed Water License.

Thank you in advance for your earliest consideration of this Application. DDMI staff are available and expecting to contribute, with MVLWB staff and reviewers, in a cooperative effort to complete this Renewal.

Yours truly,

A handwritten signature in black ink, appearing to read "Mark Anderson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Mark Anderson
President

Attachments

Part 1

Water License Application Form



Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

APPLICATION FOR A NEW WATER LICENCE, AMENDMENT OF LICENCE, OR RENEWAL OF LICENCE.

Application/Licence No: N7L2-1645
 (amendment or renewal only)

<p>1. Name and Mailing Address of Applicant</p> <p><u>Diavik Diamond Mines Inc (DDMI)</u> <u>5007 - 50th Ave</u> <u>P.O. Box 2498</u> <u>Yellowknife, NT X1A 2P8</u> <u>ph: 867-669-6500</u> <u>fax: 867-669-9058</u></p>	<p>2. Address of Head Office in Canada if Incorporate</p> <p><u>Same as in #1</u></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Telephone: _____</p> <p>Fax: _____</p>
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3. Location of Undertaking (describe and attach a map, indicating watercourses and location of any proposed waste deposits).

The Diavik Diamonds Project is located on and adjacent to the east island located on the eastern side of Lac de Gras, which is approximately 300 kilometers northeast of Yellowknife.



Latitude 64 degrees 31 min. north Longitude 110 degrees 20 min. west

4. Description of Undertaking (describe and attach plans)

In brief, the undertaking involves the dewatering of inland lakes, the construction of dikes adjacent to the east island, transferring of water, followed by open pit mining and possibly later underground mining to excavate kimberlite from four identified economical kimberlite pipes.

The kimberlite will be processed to extract diamonds. Mined country rock will be placed on the east island with a considerable amount of the material being utilized in dike construction. All other infrastructure associated with the undertaking (including processed kimberlite containment (PKC) area) will be located on the east island.

The *Comprehensive Study Report* (see attached Reference # 23) provides a more complete description.

5. Type of Undertaking.

- | | | | |
|-----------------------|--------------|------------------|-------|
| 1. Industrial | _____ | 5. Agriculture | _____ |
| 2. Mining and Milling | <u> X </u> | 6. Conservation | _____ |
| 3. Municipal | _____ | 7. Recreation | _____ |
| 4. Power | _____ | 8. Miscellaneous | _____ |

6. Water Use

- | | | | |
|--|--------------|--------------------------------------|--------------|
| To obtain water | <u> X </u> | Flood control | _____ |
| To cross a watercourse | _____ | To divert water | <u> X </u> |
| To modify the bed or bank of a watercourse | <u> X </u> | To alter the flow of, or store water | <u> X </u> |

Other (describe): _____

7. Quantity of water involved (litres per second, litres per day or cubic meter per year), including both quantity to be used and quality to be returned to source.

The mine operations use water from Lac de Gras as make-up water to supplement recycle water for ore processing. DDMI's current and proposed future Water License state a maximum annual withdrawal rate of 1.28 Mm³. Additionally an estimated 2.5 Mm³ will be pumped for A418 pool dewatering, 11.4 Mm³ for A21 pool dewatering and 3.5 Mm³ during in lake dredging operations.

8. Waste deposited (quantity, quality, treatment and disposal)

This information is included in the Mine Industry Questionnaire included with this application.

9. Other persons or properties affected by this Undertaking (give name, mailing address and location). Attach a list if necessary.

The *Comprehensive Study Report* (see attached Reference # 23) includes descriptions of potentially affected parties.

10. Predicted environmental impacts of Undertaking and proposed mitigation.

The *Comprehensive Study Report* (see attached Reference # 23) includes descriptions of predicted environmental impacts and proposed mitigations.

11. Contractors and sub-contractors (names, addresses and functions). Attach a list if necessary.

Over the past 10 years, Diavik has retained a number of contractors in order to complete the environmental baseline studies, the impact assessment studies, engineering studies and environmental monitoring programs. Listed below are the key consultants involved in the areas related to the water license:

- i) Bryant Environmental Consulting Ltd/Acres International
Yellowknife, N.T. X1A 2N9
(Function - Baseline data collection in 1994 and 1995)
- ii) Golder Associates

- Yellowknife, NT
(Function - Baseline data collection for water quality, fisheries, hydrology, EA document, monitoring studies, Geotechnical and Hydrogeological investigations)
- iii) Vista Engineering
Yellowknife, N.T. X1A 2P5
(Function - Baseline data collection and air quality)
- iv) Sala Groundwater Inc
Dr. David Blowes
University of Waterloo
Waterloo, Ontario
(Function - Baseline geochemistry program)
- v) Geochemica
Mr. Mark Logsdon
Ojai, California
(Function - baseline geochemistry program)
- vi) Jacques Whitford Consulting Engineers and Environmental Consultants
Yellowknife, NT
(Function - Collection of meteorological/climate baseline data, environmental monitoring studies)
- vii) Cirrus Consultants
Vancouver, B.C. V6B 4M9
(Function - Impact analysis for air quality - 1998)
- viii) EBA Engineering Consultants Ltd
Edmonton, Alberta T5L 2M7
(Function - Geotechnical/foundation investigations)
- ix) Acres International Engineering Ltd
Calgary, Alberta T2W 4X9
(Function – Design Engineering)
- xi) Nishi-Khon / SNC Lavalin
Calgary, Alberta
(Function – Design Engineering)
- xii) Rescan Environmental Services Ltd
Yellowknife, NT
(Function – Environmental monitoring studies)
- xiii) Dillon Consulting Ltd.
Yellowknife, NT
(Function – Environmental monitoring studies)
- xiv) Canadian Rivers Institute and University of Manitoba
Winnipeg, Manitoba
(Function – Environmental monitoring studies)
- xv) Rae Band
(Function – fish salvage programs)
- xvi) Kitikmeot Inuit Association
(Function – fish salvage programs)
- xvii) University of Alberta
Edmonton, Alberta
(Function – Environmental monitoring studies)
- xviii) University of British Columbia
Vancouver, B.C.
(Function – Environmental monitoring studies)
- xix) University of Waterloo
Waterloo, Ontario
(Function – Environmental monitoring studies)
- xx) University of Saskatchewan
Saskatoon, Saskatchewan
(Function – Environmental monitoring studies)
- xxi) Environmental Monitoring Advisory Board
Yellowknife, NT
(Function – Community Based monitoring programs)

12. Studies undertaken to date. Attach a list if necessary.

In addition to the baseline studies completed in support of the Environmental Assessment and DDMI's original Water License Application in 1999, The following is a list of related environmental studies or reports:

DDMI 2005. <i>Dust Deposition Monitoring Program 2004.</i>
DDMI 2004. <i>Dust Deposition Monitoring Program 2003.</i>
DDMI 2003. <i>2002 Dust Deposition Monitoring Program.</i>
DDMI 2002. <i>2001 Dust Deposition Monitoring Program.</i>
DDMI. 2005. <i>2004 Aquatic Effects Monitoring Program Technical Report.</i>
DDMI. 2004. <i>Type A Water License N7L2-1645 2003 Annual Report.</i>
DDMI. 2004. <i>2003 Aquatic Effects Monitoring Program Technical Report.</i>
DDMI. 2004. <i>2003 Water Intake Report.</i>
DDMI. 2003. <i>Year 1 Results Lakebed Sediment, Water Quality and Benthic Invertebrate Study, Version #1. Appendix N of: Type A Water Licence N7L2-1645 2003 Annual Report.</i>
DDMI. 2003. <i>2003 Winter Dissolved Oxygen Survey. Appendix J of: 2003 AEMP.</i>
DDMI. 2003. <i>Fish Palatability and Texture Study.</i>
DDMI. 2003. <i>Sediment Deposition Compilation Report.</i>
DDMI. 2002. <i>Sediment Deposition Study Dike - A154. Appendix K of: 2001 Water License Annual Report.</i>
DDMI. 2002. <i>Type A Water License N7L2-1645 2001 Annual Report.</i>
DDMI. 2001. <i>Lake Sediment Water Quality and Benthic Invertebrate Baseline Study. A154 Dike. Mine Water Discharge. Version 1.</i>
DDMI. 2001. <i>Type A Water License N7L2-1645 2000 Annual Report.</i>
Dillon Consulting Limited. 2002. <i>Lake Trout Habitat Utilization Study, 2001 Technical Report – Final. November 2002.</i>
Dillon Consulting Limited. 2002. <i>Slimy Sculpin Baseline Metals Study Technical Report – Final. Appendix H of: 2001 Water License Annual Report.</i>
Faulkner, S. 2004. <i>Effects of Explosives on Incubating Eggs of Lake Trout in the Canadian Arctic (Blasting Effects Study) – Biological Component. Summary Update provided to DDMI.</i>
Golder Associates Ltd. 2002. <i>Inland Lakes Fish-Out Study Results. Prepared for DDMI, Yellowknife, NT.</i>
Gray, M. K. Munkittrick, K., Palace, V. and C. Baron. 2005. <i>Final report: Assessment of slimy sculpin (Cottus cognatus) collected from East Island, Lac de Gras, NWT. Prepared for Diavik Diamond Mines Inc.</i>
Jacques Whitford Environmental Limited. 2002. <i>Dike A154 Fish Salvage Project. Appendix L of: 2002 Water License Annual Report. Revised September 2003. Prepared for Diavik Diamond Mines Inc.</i>
Jacques Whitford Environment Limited. 2001. <i>Final Report North Inlet Salvage Project. Appendix I of: 2001 Water License Annual Report. Prepared for Diavik Diamond Mines Inc.</i>
Rescan Environmental Services Ltd. 2001. <i>A154 Dike Monitoring Program Report. Appendix B of: 2001 Water License Annual Report. Vancouver</i>
Welz, M. and D. Schmitt. 2004. <i>Effects of Explosives on Incubating Eggs of Lake Trout in the Canadian Arctic (Blasting Effects Study) – Geophysical Component. Summary Update provided to DDMI.</i>

13. Proposed time schedule.

Start date: 2000

Completion date: 2020-2025

Name (print): Mark Anderson

Signature:



Title (print): President and COO

Date: August 8, 2005

Please make all cheques payable to "Receiver General of Canada"

FOR OFFICE USE ONLY

Application Fee Amount: \$ _____

Receipt No: _____

Water Use Deposit Amount: \$ _____

Receipt No: _____

Part 2

Mining Industry Questionnaire

Mining Industry Questionnaire to Accompany
Water License Applications to the Mackenzie
Valley Land and Water Board



Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

Regulating the use of land and waters and the deposit of waste, and enabling residents to participate in the management of resources to provide optimum benefit to the residents of the settlement areas and of the Mackenzie Valley and to all Canadians.

October 2003

Mining Industry Questionnaire

The purpose of this questionnaire is to solicit supplemental information from an applicant to support his/her application for a water licence (or renewal). It is anticipated that the completion of this questionnaire will reduce delays arising from the Board having to solicit additional information after an application has already been submitted. This information will also be useful during the pre-screening of your application, which must be undertaken prior to development and approval of a water licence to determine if the project needs to be referred to the Environmental Impact Review Board.

The applicant should complete the questionnaire to the best of his/her ability, recognizing that some questions may not be relevant to the project under consideration. For questions that do not relate to his/her operation, the applicant is requested to indicate "N/A" (Not Applicable).

If any questions arise while completing the questionnaire, the applicant may wish to contact the Mackenzie Valley Land and Water Board at (867) 669-0506.

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Mining Industry Questionnaire

PLEASE PRINT OR TYPE YOUR RESPONSES

NOTE If space is insufficient for any of the responses on this questionnaire, use the back of the sheet or an attachment.

SECTION 1 – GENERAL

Date: August 8, 2005

1.1 Applicant Diavik Diamond Mines Inc 669-6500
(company, corporation, owner) **(telephone no.)**
Box 2498 5007 50 Ave. Yellowknife NT X1A 2P8
(postal address)

Property Name: Lac de Gras

Closest Community: Wekweti (formerly Snare Lakes)

Latitude/Longitude: N64° 11' 26" W114° 04' 32"

1.2 Environmental Contact: Gord Macdonald 669-6500
(name) **(telephone no.)**
Manager Sustainable Development
(title)

1.3 Indicate the status of the mine and/or mill on the date of application. (check the appropriate space)

	Mine	Mill
Design	_____	_____
Under construction	_____	_____
In operation	<u> X </u>	<u> X </u>
Suspended	_____	_____
Abandoned	_____	_____

1.4 If a change in the status of the mine or mill is expected, indicate the nature and anticipated date of such change.

1.5 Indicate the present (or proposed) mine/mill operating schedule.

	Mine	Mill
hours per day	<u> 24 </u>	<u> 24 </u>
days per week	<u> 7 </u>	<u> 7 </u>
weeks per year	<u> 52 </u>	<u> 52 </u>
shift periods	<u> 12 h </u>	<u> 12 h </u>
number of employees	<u> 100 (+181 contract) </u>	<u> 102 (+157 contract) </u>

Mining Industry Questionnaire

- 1.6 Attach a detailed map drawn to scale showing the relative locations of the (proposed) mine, mill, water treatment facilities, sewage and solid waste facilities, and tailings areas. The plan should include the water intake and pumphouse, fuel and chemical storage facilities, any existing and proposed concentrate, ore and waste rock storage piles, any existing and proposed drainage controls, piping distribution systems, gas, electric and water utility route locations, and transportation access routes around the site. The map also should include elevation contours, waterbodies and an indication of drainage patterns for the area.**

Attached are the following figures:

Ref # 1 – Mine Location

Ref # 2 – General Site Layout

Ref # 3 – Site General Electrical Layout

Ref # 4 – Site General Water Pipeline Layout

Ref # 5 – Drainage Basins

- 1.7 If applicable, provide a brief history of property development which took place before the present company gained control of the site. Include shafts, adits, mills (give rated capacity, etc.), waste dumps, chemical storage areas, tailings disposal areas and effluent discharge locations. Make references to the detailed map.**

Not Applicable

- 1.8 Give a short description of the proposed or current freshwater intake facility, the type and operating capacity of the pumps used and the intake screen size.**

The water intake is a wet well contained within a constructed jetty. The intake is 1m in diameter with a maximum pumping rate of 0.195 m³/s. The screen has slot size of 2.54 mm and is approximately 1.7 m in diameter and 1.9 m in length.

Ref # 6 – *Water Intake Structure – August 1999* provides design details.

- 1.9 At the rate of intended water usage for operations, explain water balance inputs and outputs in terms of estimated maximum draw down and recharge capability of the river or lake from which fresh water will be drawn.**

The mine operations uses water from Lac de Gras as make-up water to supplement recycle water for ore processing. DDML's current and proposed future Water License state a maximum annual withdrawal rate of 1.28 Mm³. The changes to outflows from Lac de Gras or water levels in Lac de Gras as a result of this water withdrawal, are not measurable.

- 1.10 Will any work be done that penetrates regions of permafrost?**

Yes _____ **X** _____ No _____

- 1.11 If "Yes" above, is the permafrost continuous or discontinuous?**

Continuous (on land).

- 1.12 Were (or will) any old workings or waterbodies (be) dewatered in order to bring the present property into production?**

Yes _____ **X** _____ No _____

Mining Industry Questionnaire

1.13 If "Yes", above, indicate the name of the waterbody, the total volume of water to be discharged and the chemical characteristics of that water.

Waterbody Lac de Gras

Total Volume 2.5 Mm³ for A418 Pool Dewatering

11.4 Mm³ for A21 Pool Dewatering

3.5 Mm³ during in lake dredging operations

Receiving Watercourse Lac de Gras

Dewatering Flow Rate into above 1.5 cubic meters/sec

Chemical Characteristics of Discharge:

Mean A154 pool water (1645-39) - before dewatering. N=28

T/Pb	<u>0.001</u>	mg/L	Total Cyanide	<u>na</u>	mg/L
T/Cu	<u>0.002</u>	mg/L	Total Ammonia	<u>0.007</u>	mg/L
T/Al	<u>0.303</u>	mg/L	Suspended solids	<u>6.4</u>	mg/L
T/Hg	<u>na</u>	mg/L	Specific conductivity	<u>21.2</u>	uhmo/cm
T/Zn	<u>0.005</u>	mg/L	pH	<u>6.9</u>	
T/Cd	<u><0.0002</u>	mg/L	Oil and Grease	<u><1</u>	mg/L
T/As	<u>0.0007</u>	mg/L			
T/Ni	<u>0.002</u>	mg/L			
T/Mn	<u>0.046</u>	mg/L			

(Sampling locations should be clearly identified and described on maps and drawings.)

Sampling locations are defined as SNP 1645-40 (A418 pool water) and 1645-41 (A21 pool water)

1.14 Was (or will) the above discharge (be) treated chemically?

Yes Yes, if concentrations exceed discharge limits. No

If "Yes" above, describe the applied treatment.

Chemically assisted clarification in the North Inlet Water Treatment Plant.

Ref # 7 North Inlet Water Treatment Plant Operations Plan – May 2001 submitted to MVLWB under Water License N7L2-1645, provides a more complete description.

SECTION 2 -- GEOLOGY AND MINERALOGY

- 2.1 Physiography: Provide an analysis and interpretation of the geologic and hydrologic environment in the immediate vicinity of the mine or plant. The investigation should extend from ground surface downward to the base of the glacial drift. Include large scale topographic map(s) covering the area where the mine, mill and waste disposal basin are (or are to be) located. The map(s) should provide information on groundwater patterns and permafrost variations in the area.**

Ref # 8 – Environmental Effect Report Fish and Water – Volumes 1 and 2 – September 1998 provide a summary of the local and regional hydrology (Section 3.3) and groundwater (Section 3.2).

Ref # 9 – Baseline Data of Climate and Surface Water Hydrology for the Diavik Diamond Mine EIA – August 1997 provides information for the hydrologic design basis for the mine facilities.

Ref # 10 – Stratigraphic Delineation Program - Vol 1 (September 2000) and Volume 2 (February 2002) - submitted to MVLWB under Water License N7L2-1645, provides maps with the results of specific investigations of subsurface conditions along the alignments of waste and water management facilities on the east island.

Ref # 14 – Updated Processed Kimberlite Design Report – Vol 1 and 2. April 2001 – submitted to MVLWB under Water License N7L2-1645, includes information on subsurface conditions associated with this facility.

Ref # 11 – Diavik Hydrogeologic Numerical Model December 2004 Re-calibration – February 2005 submitted to MVLWB under Water License N7L2-1645, provides the most current understanding of the hydrogeologic conditions at the mine site.

- 2.2 Briefly describe the physical nature of the orebody, including known dimensions and approximate shape.**

The Mine's geologic resource is made up of four kimberlite pipes:

- the A154 South (A154S) and A154 North (A154N) pipes
- the A418 pipe; and,
- the A21 pipe.

The kimberlite material is contained in steep-walled, cone shaped pipes (diatremes) within the crystalline basement rocks. The pipes are small by world diamond industry standards with surface areas of less than 2 hectares. The pipes taper with depth and are known to extend at least 400m down. The total resource is estimated at 37.4 Mt of kimberlite. The average grade is estimated at 3.25 carats per tonne, with A154S, A154N, and A418, having estimated grades of 4.5, 2.1, and 3.4 carats per tonne, respectively

- 2.3 Briefly describe the country rock in the general vicinity of the orebody (from the surface to the orebody).**

The country rock associated with the mine development is generally granitic in nature with small amounts of pegmatite, diabase and biotite schist lithologies. The granite, pegmatite and diabase rocks account for approximately 80-85% of the total rock mass.

- 2.4 Provide a geological description of the ore minerals of the deposit. (If possible include the percentage of metals.)**

The kimberlites are ultramafic rocks and include variable amounts of olivine in a matrix of serpentine, clays and calcite. No asbestiform serpentines have been identified. Several minerals in the kimberlite suite contain Ni, Cr and other transition metals. The kimberlite contains up to several percent CO₂ as calcite and are acid consuming. The kimberlite pipes intruded not only the Archaean country rocks, but also Cretaceous mudstones and siltstones that covered the Shield rocks at the time of intrusion.

Mining Industry Questionnaire

The Cretaceous sediments do not exist as discrete geologic units. Rather, portions of the mudstone and siltstone were incorporated as megascopic to microscopic xenoliths, but some sedimentary material seems also to have behaved as a paste that was assimilated into the kimberlite matrix.

Ref # 12 – *Diavik Geochemistry Baseline Report – September 1998* contains data on whole rock percent metals for the kimberlites.

2.5 Describe the geochemical tests which have been (or will be) performed on tailings solids and different geological units of ore, country rock and waste rock to determine their relative acid generation and contaminant leaching potential. Outline methods used (or to be used) and provide test results in an attached report (i.e., static, kinetic tests).

The geochemistry baseline program evaluated the expected environmental behaviour of country rock, kimberlites, construction material and lake-bed sediments. For each material, samples were obtained to provide a spatial (lateral and vertical) distribution of samples and the complete range of lithological characteristics. The program included 185 samples of country rock, 75 samples of kimberlite, 41 samples of construction materials and 11 samples of lakebed sediments. Samples were evaluated in terms of mineralogy (by optical, x-ray and microscopic methods). Static testing procedures included whole-rock chemical analyses, acid-base accounting, and static leach testing using the B.C. Special Waste Extraction Procedure. Based on the results of the mineralogy and static testing, samples were selected for kinetic column-leach testing simulating both subaerial and sub aqueous disposal methods. In 2004 DDMI began construction of research test piles to evaluate the behaviour of the country rock at a field scale.

Ref # 12 – *Diavik Geochemistry Baseline Report – September 1998* contains the results the baseline geochemical tests results.

Ref # 13 – *Country Rock Research Test Pile Annual Update – March 2005* submitted to MVLWB under Water License N7L2-1645, contains a description of the test pile program.

2.6 Estimate the percentage of sulphides in the orebody:

Sulphide contents in the tested kimberlites ranged from 0.01 wt. % sulphide-S to 5.07 wt. % sulphide-S with a mean of 0.34 wt. % sulphide-S. Mudstone rich samples tend to have higher sulphide contents. The mineralogy and laboratory testing programs indicate that the volcanogenic portions of the kimberlite contain very low quantities of sulphide minerals and an excess of carbonate, principally as calcite. The fragments of sedimentary material contain a greater mass of sulphide minerals, principally as framboidal pyrite. The sulphide minerals contained in the siltstone and mudstone fragments are the primary potential source of dissolved metals and sulphate associated with the kimberlite material.

Ref # 12 – *Diavik Geochemistry Baseline Report – September 1998* contains all the baseline sulphide analysis results.

SECTION 3 -- THE MINE

3.1 Indicate the type of mining method to be used on the property.

Open Pit	_____ X _____
Underground	_____ X _____
Strip Mining	_____ _____

Other mining activity? Explain.

Mining Industry Questionnaire

3.2 Outline any possible operational changes and when they might occur (i.e., open pit to underground).

Projected Mine Schedule*

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
A154 Open-Pit																			
A418 Open-Pit																			
A154/A418 Underground																			

Note: A21 pending further resource evaluation
 * mine schedule subject to change due to market conditions, further resource evaluation, continued mine planning, etc.

3.3 Describe the type(s) of explosives to be used in mining operations.

ANFO and emulsion.

3.4 Indicate the number of shafts or other openings that are presently on the property. Signify whether or not the openings are presently in use: (submit measurements in metres)

Shaft (name or number)	Present depth	Proposed depth
_____	_____	_____
_____	_____	_____

Audit (name or number)	Present depth	Proposed depth
Exploration Decline	El. 260 m	(not in use)
A154/418 Decline	El. 410 m	Lower than El. 0 m
A21 Exploration Decline	not started	Sample depth El. 250 m
_____	_____	_____

Open Pit (name)	A154
Present surface length	902 m
Maximum future surface length	902 m
Present surface width	816 m
Maximum future surface width	816 m
Present depth	El. 300 m

Mining Industry Questionnaire

Maximum future Depth El. 130 m

Open Pit

Waste rock dump North Country Rock Area
(name)

Area occupied 165 (to July 31, 2005) hectares

Height 495 m elevation (to July 31, 2005)

3.5 Are any entrances to shafts, adits, etc. below groundwater level?

No

3.6 Are permafrost conditions expected?

Yes X No

3.7 Indicate the expected life of the mine.

16-22 Years

3.8 Indicate the present average rate of production from all ore sources on the property.

2.0 million (2004 actual) tonnes ore/year

3.9 Indicate the expected maximum rate of production from all ore sources on the property.

2.0 – 2.5 million tonnes ore/year

3.10 Outline all water usage in the mine, indicating the source and volume of water for each use.

	Source	Use	Volume (m³/day)
1.	<u>Lac de Gras</u>	<u>Drills</u>	<u>16 (2004 average)</u>
2.	<u>Lac de Gras</u>	<u>Domestic</u>	<u>139 (2004 average)</u>
3.	<u>Lac de Gras</u>	<u>Process Plant & Dust</u>	<u>3035 (2004 average)</u>

3.11 Indicate the volume of natural groundwater presently gaining access to the mine workings.

15,000 m³/day

3.12 Outline methods used (planned) underground to decrease minewater flow. (i.e., recycling)

Mining Industry Questionnaire

The decline in country rock and kimberlite pipes below the permafrost and under the lake will be probe drilled prior to excavation. Accordingly, 45% of the total excavation will be probe drilled prior to excavation. Probe drilling consists of a four-hole drill program drilled through packers and extended up to 35 m ahead of the advancing face. If water is found by probe drilling, additional holes are drilled through packers. A scissor lift and grout plant is set up to grout to a predetermined pressure and let the grout set. Once set, the holes are drilled out to check if the water is sealed and grouting is repeated in holes still making water. This process is repeated until all measurable flows are stopped. The 1996 decline experience showed that country rock grouting is generally required as the decline nears the kimberlite pipe and is not difficult to grout off; the kimberlite itself is far more difficult to grout and takes more material to arrest water inflow.

With the implementation of an aggressive grouting program, the estimated total underground water inflows during the exploration decline will be managed. Water will be removed using skid-mounted dewatering tanks and pumps feeding a permanent underground pumping station during development of the two declines; fed by submersible pumps at the mining face.

3.13 Indicate the average daily volume of water to be discharged from the mine during normal operations.

15,000 to 38,000 m³/day

3.14 If a mill will be operating on the property in conjunction with mining, will all minewater (underground, open pit, etc.) be directed to the mill for reuse?

No

3.15 If not, indicate the proposed point and volume of discharge for the minewater.

Point of discharge N 7153495 E 535840

Volume of discharge 15,000 to 38,000 m³/day

3.16 What are the chemical and physical characteristics of the preceding minewater?

Mean - January 2004 to May 2005 - 1645-49 - N=36

T/Cu 0.056 mg/L Total Ammonia 6.5 mg/L

T/Pb 0.014 mg/L Suspended solids 80.1 mg/L

T/Zn 0.101 mg/L Specific conductivity 684 uhmo/cm

T/Ag 0.0006 mg/L pH 8.0

T/Mn 0.712 mg/L Oil and Grease <1 mg/L

T/As 0.005 mg/L

Mining Industry Questionnaire

T/Hg	<u>0.0003</u>	mg/L	<u>Other</u>
T/Cr	<u>0.157</u>	mg/L	_____
T/Cd	<u>0.0004</u>	mg/L	_____
T/Ni	<u>0.375</u>	mg/L	_____
T/Fe	<u>35.1</u>	mg/L	_____

3.17 Are there any treatment plans for minewater and will any chemicals be used in such treatment? Explain.

The mine water is treated in the North Inlet Water Treatment Plant. Water is subjected to a chemically enhanced clarification. Chemicals used in this process include:

- Alum
- Lime
- Coagulant
- Flocculant

The treatment plant also has the capability to reduce the pH of the final effluent with the addition of sulphuric acid.

SECTION 4 -- THE MILL

4.1 Attach a copy of the (proposed) mill flow sheet. Indicate the points of addition of all the various reagents (chemicals) that are (or will be) used.

Ref # 24 – Process Plant Flow Sheet

4.2 If milling is in progress on the property at the present time, indicate the rate of milling.

_____ not applicable (check) OR 1.9 million (2004 actual) tonnes/year

4.3 What is the present (or proposed) maximum capacity of the mill?

2.0 – 2.5 million tonnes/year

4.4 List the types and quantities of all reagents used in the mill process (in kg/tonne ore milled).

Reagent	Kg/Tonne Ore Milled
<u>ferro silicone</u>	<u>0.16</u>
<u>flocculant</u>	<u>0.028</u>
<u>coagulant</u>	<u>0.0035</u>

Mining Industry Questionnaire

4.5 Is the (proposed) milling circuit based on autogenous grinding?

Yes _____ No X Partially _____

4.6 Indicate the amount(s) of concentrate(s) produced in the mill.

Recovery concentrate		Diamond concentrate	
<u>100,000</u> _____	kg/day	<u>5.4</u> _____	kg/day
_____	kg/day	_____	kg/day

4.7 Will fresh water undergo treatment prior to use in the mill process? Explain.

No

4.8 Indicate all uses of water in the mill. Include the quantity and source of the water for each use.

	Use	Source	Volume (m³/day)
i.	<u>scrubber wash</u> _____	<u>recycle/fresh</u> _____	<u>4200</u> _____
ii.	<u>screen sprays</u> _____	<u>recycle/fresh</u> _____	<u>700</u> _____
iii.	<u>cone crusher</u> _____	<u>recycle/fresh</u> _____	<u>400</u> _____
iv.	<u>secondary scrubber</u> _____	<u>recycle/fresh</u> _____	<u>2200</u> _____
v.	<u>recovery</u> _____	<u>fresh</u> _____	<u>700</u> _____
vi.	<u>pump gland</u> _____	<u>fresh</u> _____	<u>100</u> _____
vii.	<u>clean up</u> _____	<u>recycle/fresh</u> _____	<u>200</u> _____
viii.	_____	_____	_____
ix.	_____	_____	_____
x.	_____	_____	_____

4.9 Indicate the total volume of water discharged from the mill.

8500 _____ m³/day

4.10 Of the preceding volume, what quantity is (will be) recycled to other areas on the property (mine, mill, etc)? Indicate location of use and quantity.

<u>Location</u>		
<u>Process plant</u> _____	<u>6800</u> _____	m ³ /day
_____	_____	m ³ /day

Mining Industry Questionnaire

m³/day

- 4.11 Based on yearly production, indicate the average quantity of tailings (dry weight) discharged from the mill.

1.6 million (fine) 0.3 million (coarse) tonnes/year

- 4.12 What is the average liquid solid ratio of tailings leaving the mill?

By weight _____ : _____ By volume 60 : 40
Liquid : solid liquid : solid

- 4.13 If applicable, identify any chemical treatment applied to the liquid phase before being discharged to the tailings area. (Attach flow sheet if available.)

Not applicable

- 4.14 Based on present production or bench test results, describe the chemical and physical characteristics of liquid mill wastes directed to the tailings area.

Mean - January 2004 to May 2005 - 1645-16 - N=16

T/Cu	<u>0.004</u>	mg/L	Total Ammonia	<u>1.2</u>	mg/L
T/Pb	<u>0.0005</u>	mg/L	Suspended solids	<u>43</u>	mg/L
T/Zn	<u>0.011</u>	mg/L	Specific conductivity	<u>580</u>	uhmo/cm
T/Ag	<u>0.0004</u>	mg/L	Alkalinity	<u>102</u>	CaCO ₃ /L
T/Mn	<u>0.060</u>	mg/L	Hardness	<u>131</u>	mg/L
T/Ni	<u>0.097</u>	mg/L	pH	<u>9.02</u>	
T/Fe	<u>2.73</u>	mg/L	Total Cyanide	<u>na</u>	mg/L
T/Hg	<u>0.0002</u>	mg/L	Oil and Grease	<u>na</u>	mg/L
T/Cr	<u>0.026</u>	mg/L			
T/Cd	<u>0.0004</u>	mg/L			
T/As	<u>0.003</u>	mg/L			

- 4.15 Provide a geochemical description of the solid fraction of the tailings.

Cu	<u>0.0336</u>	mg/g	Al	<u>14.2</u>	mg/g
Pb	<u>0.0041</u>	mg/g	Fe	<u>25.6</u>	mg/g
Zn	<u>0.0481</u>	mg/g	Hg	<u>0.000007</u>	mg/g

Mining Industry Questionnaire

Ag	<u>0.0001</u>	mg/g	Ni	<u>1.39</u>	mg/g
Mn	<u>1.1</u>	mg/g	As	<u>0.00146</u>	mg/g
Cr	<u>0.79</u>	mg/g	CN	<u>na</u>	mg/g
Cd	<u><0.00005</u>	mg/g			

Ref # 12 – *Diavik Geochemistry Baseline Report – September 1998* contains all the baseline kimberlite whole rock analysis results.

4.16 Identify the current source of power production.

Diesel generators.

4.17 Other properties (or will the mill be handling any in the future)?

Not applicable

4.18 If so, specify ore characteristics and describe any mill processes which will change as a result.

4.19 If tailings are being recovered in the mill or elsewhere for use as backfill (etc.) in the mine (etc.), indicate the quantity of solid tails (tonnes/day) recovered from the mill process.

Processed kimberlite is being evaluated for use as underground backfill as part of the current underground feasibility study. Quantities are not yet known.

4.20 Will exits be bermed to prevent spills from escaping the mill?

The process plant was constructed with a spill capture system within the building.

4.21 Will all sumps for process tanks have the required 110% holding capacity of the largest tank?

Yes

SECTION 5 -- THE TAILINGS AREA

5.1 Is the tailings containment area (being) designed for total containment?

Yes

5.2 Attach detailed scale plan drawings of the proposed (or present) tailings area. The drawings must include the following:

- (a) details of pond size and elevation;

Mining Industry Questionnaire

- (b) precise details of all retaining structures (length, width, height, materials of construction, etc.);
- (c) details of the drainage basin, and existing and proposed drainage modifications;
- (d) details of all decant, siphon mechanisms etc, including water treatment plant facilities;
- (e) the plan for tailings deposition and final tailings configuration;
- (f) details with regard to the direction and route followed by the flow of wastes and/or waste waters from the area; and
- (g) indications of the distance to nearby major watercourses.

NOTE: Individual detailed large scale drawings of any facility (dam, decant system, ditch, dike, water treatment plant, etc.) (to be) constructed must be attached. Specific details with regard to the methods of construction, materials (to be) used, etc., are required.

Ref # 14 – Updated Processed Kimberlite Design Report – Vol 1 and 2. April 2001 – submitted to MVLWB under Water License N7L2-1645, contains the information requested above.

5.3 Explain your choice of location for the tailings pond design by rationalizing rejection of other options. Consider the following criteria in your comparisons: subsurface strata permeability, abandonment of tailings, recycling/reclaiming waters, and assessment of runoff into basins. Attach a brief summation.

Three locations were initially considered for the PKC facility:

- T-Lake, a natural topographic feature on the mainland.
- The central valley on the east island.
- Lac de Gras, between the east and west islands

While the Lac de Gras option was preferred from a geochemical and closure perspective, early consultation with communities indicated that this option would not be acceptable. Communities also provided direction to keep the footprint as small as possible. This guided Diavik's decision for placing the PKC on the east island over using T-Lake on the mainland.

5.4 The total area for the existing tailings basin is about 110 hectares and for any proposed tailings area is about 155 hectares.

5.5 The average depth of the tailings basin is 3-4 m of pond water.

5.6 Indicate the total capacity for the existing tailings area by using water balance and stage volume calculations and curves. (Attach a description of inputs and outputs along with volume calculations).

The current total capacity is 5 Mt.

Ref # 14 – Updated Processed Kimberlite Design Report – Vol 1 and 2. April 2001 – submitted to MVLWB under Water License N7L2-1645, provides the basis for the capacity..

5.7 Indicate the total capacity for any proposed tailings area by using water balance and stage volume calculations and curves. (Attach a description of inputs and outputs along with volume calculations).

The total proposed capacity is 25.6 Mt to El. 460m and 38 Mt to El. 470m.

Ref # 14 – Updated Processed Kimberlite Design Report – Vol 1 and 2. April 2001 – submitted to

Mining Industry Questionnaire

MVLWB under Water License N7L2-1645, provides the basis for the capacities.

5.8 Will the present tailings area contain the entire production from the mine mill complex for the life of the project?

The present PKC area is adequate to contain the entire production for the mine reserves that have been defined to date. This will require the planned raises to the containment dams.

5.9 If “No” above, or if production output increases tailings volumes, indicate what plans have been made for future tailings disposal on the property.

5.10 Has any land in the immediate area been identified as native or crown land or withdrawn pending Native Claim Settlement?

All of the land in the immediate footprint of the mine are held in Lease by DDMI as follows:

- 76 D/9-5-2
- 76 D/8-6-2
- 76 D/8-5-2
- 76 D/8-7-2
- 76 D/9-9-2

5.11 Do the tailings area and all related treatment facilities lie on company held claims?

Yes

5.12 If not, indicate mine claim boundaries (and owners) on tailings area plan map (see Q.58). Also, attach a copy of all pertinent agreements signed with the owners of the claims not held by the Company.

5.13 Will the proposed tailings area engulf or otherwise disturb any existing watercourse?

Yes _____ No X

The existing PKC facility included an existing water body, lake E10. The water body was dewatered under the existing Water License N7L2-1645. The proposed facility would not engulf any additional watercourses.

5.14 If “Yes”, attach all pertinent details (name of watercourse, present average flow, direction of flow, proposed diversions, etc.).

5.15 If any natural watercourse will gain access to the proposed tailings area, what methods will be used to decrease the amount of runoff water entering the containment area? Indicate the volume of water which will enter the tailings area from the source(s) in question and attach all pertinent details of proposed diversions.

	Name of source	Volume (m ³ /day)
1.	<u>Not Applicable</u>	_____

Nature of Diversion(s):

Mining Industry Questionnaire

- 5.16** Indicate on the tailings area plan drawing (see Q.5.2) all sources of seepage presently encountered in the vicinity of the tailings area, the volume of each seepage flow (m³/day), and the direction of each flow.

Not applicable

- 5.17** Are the seepage flows from the property presently being treated chemically? If so, describe how.

Any runoff or seepage from the PKC is collected in engineered collection ponds and seasonally pumped to the PKC.

- 5.18** If not, explain.

- 5.19** Please attach a conceptual Abandonment and Restoration Plan for all tailings areas being developed. Describe the measures that have been (or will be) taken to contain and stabilize the tailings area(s) against leaching and seepage after operations on the property cease.

Ref # 14 – *Updated Processed Kimberlite Design Report – Vol 1 and 2. April 2001* – submitted to MVLWB under Water License N7L2-1645, includes a description of the closure plan for this facility.

- 5.20** Describe the proposed or present operation, maintenance and monitoring of the tailings area.

Ref # 15 – *Processed Kimberlite Containment Facility Operations Plan – July 2001* submitted to MVLWB under Water License N7L2-1645, contains the requested information.

SECTION 6 -- WATER TREATMENT

- 6.1** Describe the methods of chemical treatment that are presently being used and/or will be used to control the quality of the tailings effluent. Attach engineering drawings where applicable and a process flow chart. If a pilot test has been conducted please attach description of methodology and results.

Currently the Processed Kimberlite Containment Facility does not produce excess water that requires discharge. All water is currently recycled for use in the process plant. Excess water is not forecast with current operating plans. If there is excess water and it meets effluent discharge limits, after removal of particulate material, then the excess water will be treated in the North Inlet Water Treatment Plant.

Ref # 7 – *North Inlet Water Treatment Plant Operations Plan – May 2001* submitted to MVLWB under Water License N7L2-1645, contains the requested information for this facility.

If there is excess PKC water, and the quality of the pond water within the PKC is not expected to achieve license discharge limits after treatment in the NIWTP, then a treatment plant for metals removal would be constructed. This treatment system would perform three functions a) 2-staged lime/sulphide precipitation to remove dissolved metals, b) 2-staged deep bed direct filtration to remove metal precipitates as well as fine processed kimberlite particles, c) pH control.

Mining Industry Questionnaire

6.2 List the names of chemicals to be used in the water treatment process.

Alum
Lime
Sulphide
Sulphuric acid or CO₂
Coagulant/flocculant

6.3 What is the proposed or present average rate of effluent treatment of the plant (if applicable)?

Not applicable _____ m³/min

6.4 What is the proposed or present maximum effluent treatment capacity of the plant (if applicable)?

Not applicable _____ m³/min

6.5 Will treated effluent be discharged directly to a natural waterbody or will polishing or settling ponds be employed? Describe location, control structures and process of water retention and transfer. Attach any relevant design drawings.

If it is necessary to discharge excess PKC water it will be discharged in conjunction with the effluent from the NIWTP, through the submerged discharge line.

6.6 Name the first major watercourse the discharge flow enters after it leaves the area of company operations.

Lac de Gras

6.7 In terms of rate of effluent release, and volume and flushing rate of the receiving watercourse, estimate the extent of the mixing zone within the receiving waters and where background levels of constituents for that watercourse will be attained.

Not applicable

6.8 Describe the present (proposed from pilot tests) chemical and physical characteristics of the tailings effluent (decant).

Mean - January 2004 to May 2005 - 1645-16 - N=16

T/Cu	<u>0.004</u>	mg/L	Total Ammonia	<u>1.2</u>	mg/L
T/Pb	<u>0.0005</u>	mg/L	Suspended solids	<u>43</u>	mg/L
T/Zn	<u>0.011</u>	mg/L	Specific conductivity	<u>580</u>	uhmo/cm
T/Ag	<u>0.0004</u>	mg/L	Alkalinity	<u>102</u>	CaCO ₃ /L
T/Mn	<u>0.060</u>	mg/L	Hardness	<u>131</u>	mg/L
T/Ni	<u>0.097</u>	mg/L	pH	<u>9.02</u>	
T/Fe	<u>2.73</u>	mg/L	Total Cyanide	<u>na</u>	mg/L

Mining Industry Questionnaire

T/Hg	<u>0.0002</u>	mg/L			
T/Cr	<u>0.026</u>	mg/L	<u>Other</u>		
T/Cd	<u>0.0004</u>	mg/L			
T/As	<u>0.003</u>	mg/L			

SECTION 7 -- ENVIRONMENTAL MONITORING PROGRAM

7.1 Has any baseline data been collected for the main waterbodies in the area prior to development?

Yes X No

7.2 If "Yes", include all data gathered on the physical, biotic and chemical characteristics at each sampling location. Identify sampling locations on a map.

Ref # 16 – 2000 Baseline Data Compilation – November 2000 submitted to MVLWB under Water License N7L2-1645 contains the requested baseline information.

7.3 Provide an inventory of hazardous materials on the property and storage locations. (attach separate map)

Ref # 17 – Hazardous Materials Management Plan – V8 2005 – submitted to MVLWB under Water License N7L2-1645 contains the requested information.

7.4 Attach the present or proposed contingency plan which describes course of action, mitigative measures and equipment available for use in the event of system failures and spills of hazardous materials.

Ref # 18 – Operational Phase Contingency Plan V8 2005 – submitted to MVLWB under Water License N7L2-1645 contains the requested information.

7.5 Provide a brief overview of the conceptual abandonment and restoration plan for the site.

Ref # 19 – Interim Abandonment and Restoration Plan – October 2001 - This is the closure plan approved by the MVLWB under Water License N7L2-1645.

Mining Industry Questionnaire

SECTION 8 -- PRESCREENING

In addition to providing sufficient technical and related information for licensing to proceed, applicants must provide adequate descriptive information to ensure that an initial pre-screening decision can be made prior to a project proceeding for regulatory approvals.

Your application and other project details, such as this questionnaire, will be sent out for review by local aboriginal, as well as, territorial and federal government agencies. Their comments (e.g., regarding the significance of project impacts) are considered before a decision is made to allow the project to proceed.

8.1 Has this project ever undergone an initial environmental review, including previous owners?

Yes CEAA 1999 _____ By whom/when _____ No _____ Unknown _____

8.2 Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project (e.g., wildlife, soils, air quality), in addition to water related information requested in this questionnaire?

Yes X _____ No _____ Unknown _____

8.3 Has any meteorological data been collected at or near the site? (e.g., precipitation, evaporation, snow, wind)

Yes X _____ No _____

8.4 If "Yes", please include data and attach copies of reports or cite titles, authors and dates.

Ref # 20 – *Meteorological Data*

Ref # 21 – *Meteorological Data*

Ref # 22 – *Meteorological Data*

8.5 If "No", are such studies being planned? Briefly describe the proposals.

8.6 Has authorization been obtained or sought from the Department of Fisheries and Oceans for dewatering or using any waterbodies for containment of waste?

DDMI was issued an authorization under section 35(2) of the *Fisheries Act* on August 2, 2000 (No. SC98001), amended May 16, 2001.

8.7 Please attach an outline briefly describing any options or alternatives considered or rejected for the various mine components outlined in this questionnaire (e.g., mill site, water supply sources, locations for ore and waste piles).

Ref # 23 – *Comprehensive Study Report – 1999* – Section 4 provides a description of the project alternatives assessed by DDMI, independent analysis and Regulatory Authorities conclusions.

8.8 Has a socio-economic impact assessment or evaluation of this project been undertaken? (This would include a review of any public concerns, land, water and cultural uses of the area, implications of land claims, compensation, local employment opportunities, etc.)

Yes X _____ No _____ Unknown _____

8.9 If "Yes", please describe the proposal briefly.

DDMI documented the potential environmental changes likely to occur from the project to climate and air quality, vegetation and terrain, wildlife, fish and water, and heritage resources. Together with an understanding of how people use the resources, DDMI provided an assessment of how environmental changes could affect socio-economic conditions. Potential effects were discussed within the areas of a) human health, b) heritage resources, and c) socioeconomic conditions.

DDMI also described expected direct effects on the socio-economic environment resulting from the project. These were discussed within the areas of a) wage economy, b) mine purchases, c) mine employment, cultural well-being, traditional economy, land use and resources, d) Social stability and community wellness, e) net effects on government, and, f) sustainable development.

Ref # 23 – *Comprehensive Study Report – 1999* – provides a description of the expected socio-economic effects identified, reviewer comments and Regulatory Authorities conclusions.

Mining Industry Questionnaire

SECTION 9 -- LIST OF ATTACHMENTS

Ref #	Question #	Title	Number of pages
1.	1.6	<i>Mine Location</i>	1
2.	1.6	<i>General Site Layout</i>	1
3.	1.6	<i>Site General Electrical Layout</i>	1
4.	1.6	<i>Site General Water Pipeline Layout</i>	1
5.	1.6	<i>Drainage Basins</i>	1
6.	1.8, 7.1	<i>Water Intake Structure</i>	23
7.	1.14,6.1	<i>North Inlet Water Treatment Plant Operations Plan</i>	112
8.	2.1	<i>Environmental Effect Report Fish and Water</i>	632
9.	2.1	<i>Baseline Data of Climate and Surface Water Hydrology</i>	210
10.	2.1	<i>Stratigraphic Delineation Program Vol 1 and 2</i>	204
11.	2.1	<i>Hydrogeologic Numerical Model December 2004 Re-calibration</i>	29
12.	2.4,2.5,2.6	<i>Diavik Geochemistry Baseline Report</i>	920
13.	2.5	<i>Country Rock Research Test Pile Annual Update</i>	18
14.	2.1,5.2,5.6,5.7,5.19	<i>Updated Processed Kimberlite Containment Design Report</i>	623
15.	5.20	<i>Processed Kimberlite Containment Facility Operations Plan</i>	166
16.	7.2	<i>2000 Baseline Data Compilation</i>	3240
17.	7.3	<i>Hazardous Materials Management Plan - V8</i>	26
18.	7.4	<i>Operational Phase Contingency Plan - V8</i>	75
19.	7.5	<i>Interim Abandonment and Restoration Plan</i>	66
20.	8.4	<i>2002 Meteorological Data</i>	156
21.	8.4	<i>2003 Meteorological Data</i>	152
22.	8.4	<i>2004 Meteorological Data</i>	151
23.	8.7,8.9	<i>Comprehensive Study Report</i>	271
24.	4.1	<i>Process Plant flow Sheet</i>	1

Part 3
Consultation

CONSULTATION

Over the past 5 months DDMI has met with communities and regulators to consult on the Water License Renewal and provide an update on the mine development. The Table below list the dates, organizations and locations of the meetings. Attached is a copy of the material that was presented.

Date	Consulted With	Location	# of Attendees
Wednesday, March 16, 2005	MVLWB Staff	MVLWB Offices	3
Wednesday, April 13, 2005	DIAND Water Resources and Environment Canada Representatives	DIAND Boardroom - YK	5
Monday, May 09, 2005	Chief/Residents - Gameti	Gameti, N.T.	8
Monday, May 09, 2005	Councilors/Residents - Wekweti	Wekweti, N.T.	20
Wednesday, May 11, 2005	Chiefs/Councilors - YK Dene First Nation	Ndilo	20
May 16-18, 2005	SEMA Board Meeting	Gameti, N.T.	12
Tuesday, May 17, 2005	Mayor/Council - Fort Smith	Fort Smith, N.T.	10
May 24-26, 2005	EMAB Board Meeting	EMAB Boardroom - YK	12
Tuesday, May 24, 2005	MVLWB Staff & Dogrib Treaty 11 Staff	MVWLB Office	3
Monday, June 06, 2005	Mayor/Council/Businesses - Hay River	Hay River - Ptarmigan Inn	15
Monday, June 13, 2005	KIA President/Residents - Kugluktuk	Kugluktuk, Nunavut	24
Tuesday, June 14, 2005	KIA President/Residents - Cambridge Bay	Cambridge Bay, Nunavut	28
Friday, June 24, 2005	DIAND Representative	DIAND Boardroom - YK	8
Monday, July 18, 2005	DFO Representatives	DFO Boardroom - YK	5
Tuesday, July 19, 2005	Environment Canada Representatives	EP Boardroom - YK	5
Thursday, July 21, 2005	ENR (GNWT) Representatives	ENR Boardroom - YK	10
Sunday, July 24, 2005	Board members NSMA (North Slave Metis Alliance)	Yellowknife	5
Fall 2005	In discussions with community on best suitable date in the fall	Lutsel ke, N.T.	
Fall 2005	At the request of Dogrib Treaty 11 - will provide update meeting on an agreed upon date after Tli- Cho Assembly	Whati and Rae, N.T.	


DIAMOND MINES INC.

Diavik – The Next Steps Update Spring 2005

- Constructing the Second Dike
- Planning the Underground Mine
- Renewing Water Licence




As per the Original 1999 Plan



Diavik Diamond Mine

At full development:

- 4 ore bodies, accessed by 3 dikes
- Open pit & underground mining

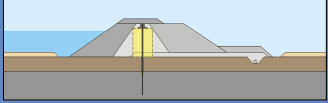
Next Step: Begin Second Dike Construction



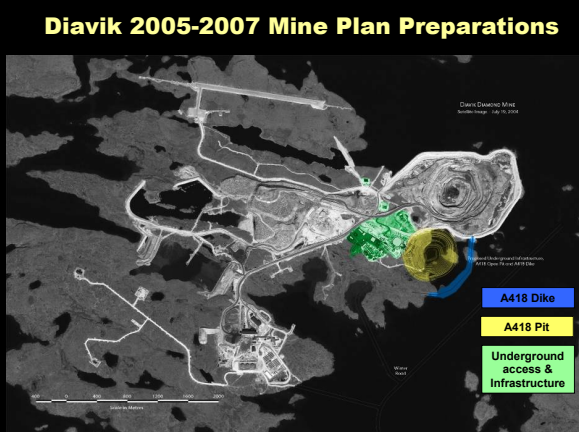
DIAMOND MINES INC.

Dike Statistics

<ul style="list-style-type: none"> • A418 Dike • 1.3 kilometres • Max. water depth – 95 ft • 1.1 million tonnes rockfill • Cement cut off wall • Curtain grouting • Jet grouting • Fish-out • Water removed & treated 	<ul style="list-style-type: none"> • A154 Dike • 3.9 kilometres • Max. water depth – 75 ft • 4.0 million tonnes rockfill • Cement cut off wall • Curtain grouting • Jet grouting • Fish-out • Water removal & treated
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Diavik 2005-2007 Mine Plan Preparations



DIAMOND MINES INC.

Dike Construction Plan

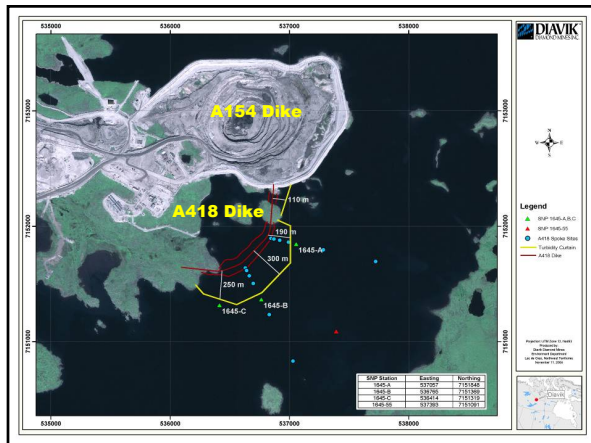
- **2005**
 - Mobilize equipment, crush rock
 - Install Silt curtain, dredge and place rock fill
- **2006**
 - Install the cement cut-off wall through centre of dike
 - Fish-out
- **2007**
 - Install instrumentation & dewater
 - Pre-strip and begin mining





Protecting the Water

- Same approach as first dike
 - Gave us excellent results protecting the water
 - Same contractor
- Silt Curtain
- Monitoring Stations (Water Licence Requirement)



Why Underground ?



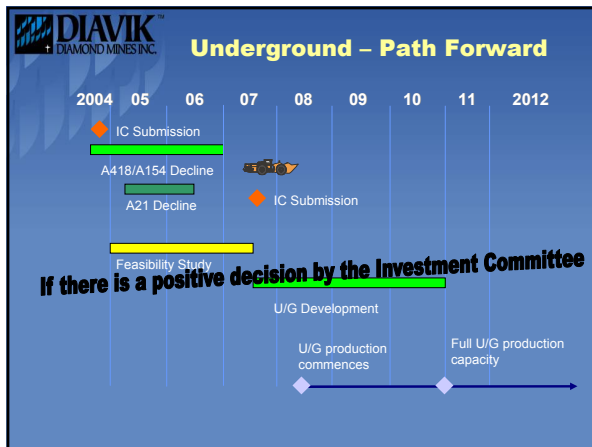
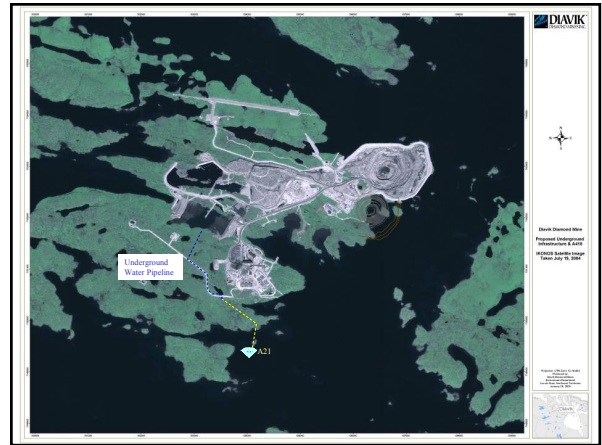
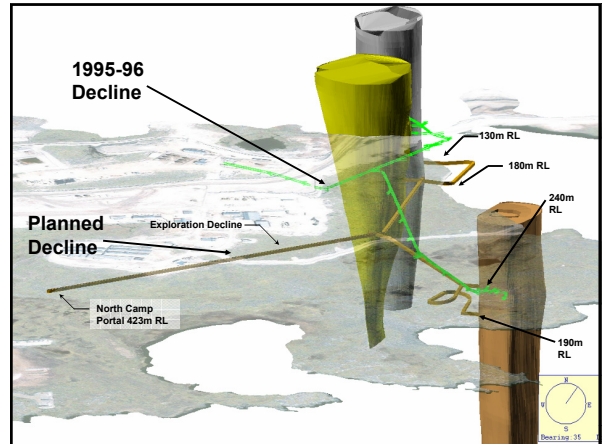
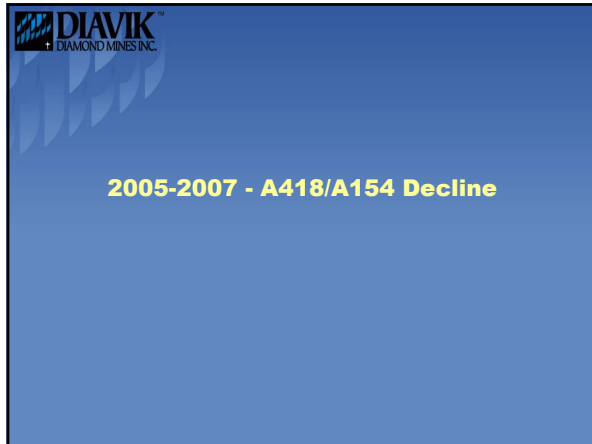
Prepare for Underground Mining

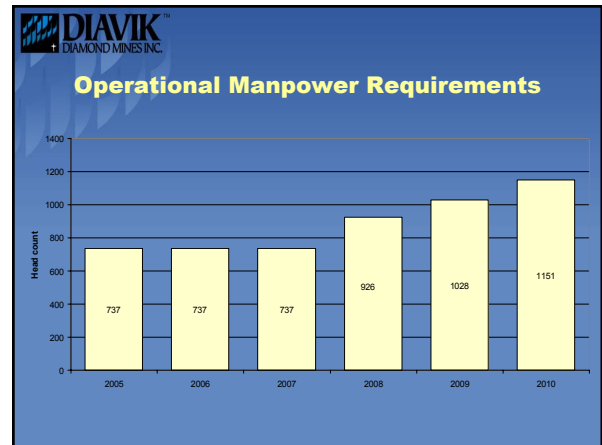
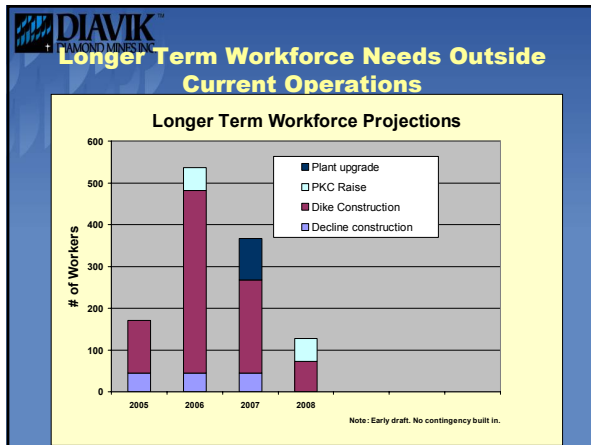
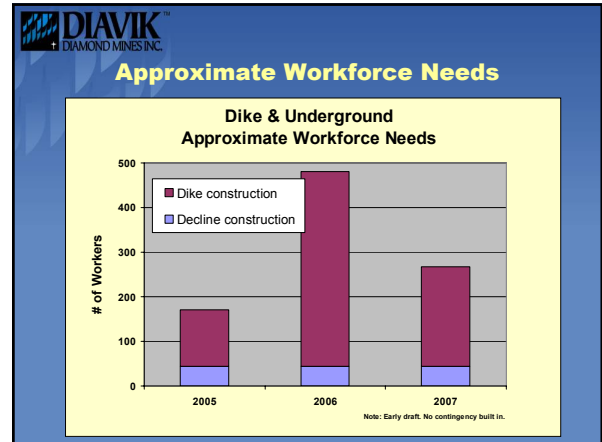
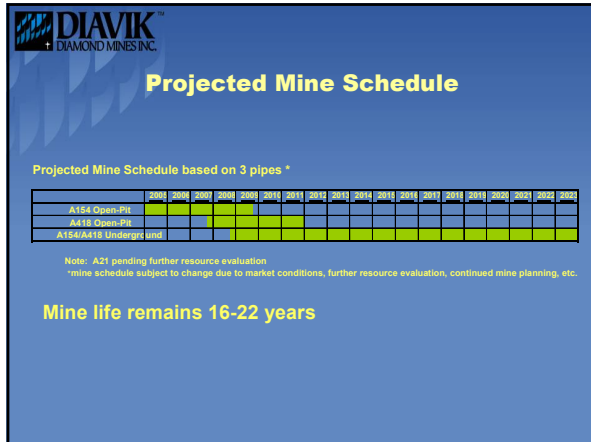
- Conduct Underground Feasibility (2005-2007)
 - Drive approximately 2 miles of decline to 3 pipes
 - A154, A418 and A21
 - Construct decline similar to 1996 decline



Information obtained will:

- Further evaluate:
 - the value of the ore,
 - the strength of the rock and the water conditions
 - allow us to drill the pipes deeper to better understand the size of the pipes
- Determine the best and safest mining methods





-
- Types of Jobs – Underground Feasibility Study**
- MAIN CONTRACTOR – KITIKMEOT CEMENTATION MINING AND DEVELOPMENT (KCMD)
- LHD (Load Haul Dump) Scoop operators
 - truck drivers
 - drill operators
 - labourers
 - surface loader
 - mechanics
 - electricians
 - surveyors
 - design engineers
 - clerk

-
- Types of Jobs Dike Construction**
- Main Contractor – Lac De Gras Constructors
- dozer operators
 - truck drivers
 - drill operators
 - labourers
 - loader operators
 - mechanics
 - electricians
 - surveyors
 - design engineers
 - clerks
 - supervisors
 - foreman
 - safety personnel
 - geological technicians
 - excavator operators
 - crusher operators
 - cement operators



Where do you send your Resumes

- To apply on Dike construction or Underground Work (Construction):
 - Send resumes to:
 - Lac de Gras Constructors (LDG)
 - Kitikmeot Cementation Mining and Development (KCMD)
 - I & D Management will maintain a "Job Seekers" Database to store all resumes according to jobs/experience.
 - I & D will work together with DDMI's HR and Community Affairs Department in hiring process
 - Contractors on site LDG and Cementation and any sub-contractors are encouraged to use I & D to find people.
- To apply for permanent position with Diavik:
 - Continue to apply on-line on web site where jobs will be posted



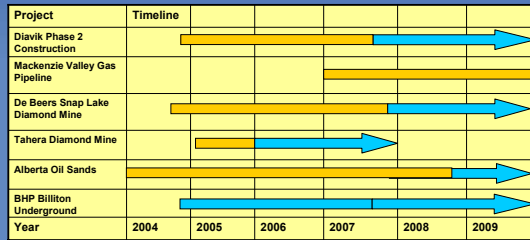
Northern Benefits Already Underway

- Project Engineering
 - Nishi-Khon/SNC Lavalin – Tii Cho jv
- Dike Construction
 - Lac de Gras Constructors – Inuit jv
- Underground decline construction
 - Kitikmeot Cementation Mining and Development Ltd (KCMD) – Inuit jv
- Construction Camp
 - Ekati Services – Yellowknives Dene jv
- Site Services
 - Tii Cho Logistics – Tii Cho JV
- Job Seekers Database
 - I&D Management Services – Tii-Cho, YK Dene, KIA, Lutselk'e JV



Challenges Lie Ahead

- Opportunities, and
- Challenges – Competing Projects (dates approximate)



Meeting the Challenges

- Work with communities to identify workers
 - Launch job seekers database (I & D) in the communities through employment officers
- Work with Mine Training Society
 - Develop Pre-employment Training Opportunities
- Work with contractors to plan northern content
 - Northern JV's, common goals, etc.
- Work with government on workforce options
 - Possibly hire from Sahtu and Delta and the east Kitikmeot Regions
- We Need your Help
 - Family and community leadership
 - Support Staying in School



WATER LICENCE RENEWAL



Plans For Renewal of Water Licence

- Submit application in August 2005
- Requesting
 - no changes to terms and conditions
 - a 15 year term – to end of operations phase
- Current licence expires August 2007
- Starting early on renewal process
- Requires renewal complete by January 2007 to make investment decision for future underground operations (IC Submission)
- DDMI requests your input/any issues?



*For centuries, people of the north
have used the resources wisely.*

... Diavik is continuing this tradition

Thank You

Diavik - www.diavik.ca

Part 4

Overview of Water License N7L2-1645

OVERVIEW – WATER LICENSE N7L2-1645

Purpose

This overview has been prepared by DDMI to possibly assist reviewers. It is intended to provide an overview of each of the Parts of the current Water License N7L2-1645, and describe, in general terms, the status of the requirements or conditions contained in each Part. DDMI is proposing to use the existing License as the basis for the renewed License.

Part A: Scope and Definitions

This Part contains the general authorizations for water use, waste deposition and a description of the Mine. It also contains a list of definitions applicable to this License. DDMI is not requesting any changes to Part A.

Part B: General Conditions

The schedule of security deposit requirements is specified in Section 2. This section will require updating as the existing schedule ends with Year 2007. A complete security deposit schedule for the life-of-mine has been agreed to with communities and regulators as part of the Environmental Agreement. The amount of the securities currently made available by DDMI under the Water License is \$50 million and will increase to \$70 million in August 2005.

Section 4 specifies the requirements of the Annual Water License Report. DDMI has submitted an Annual Report for each year of the Water License. Tables 1-3 provide a selected summary of water quantities, waste quantities and site water quality results. DDMI has responded to all directions from the MVLWB regarding Part B. There are no outstanding items. DDMI is not requesting any changes to Part B.

Table 1. Annual Water Quantities (Mm³/y)

Year	Withdrawal from LDG	Pumped from Mine	Discharged from NIWTP
2000	0.01	-	-
2001	0.18	-	-
2002	0.46	-	4.1
2003	0.52	2.0	6.8
2004	1.16	4.0	4.7

Table 2. Mine Waste Quantities

Year	Process Kimberlite (Mt)		Waste Rock (Mm ³)		
	Coarse	Fine	Type I	Type II	Type III
2002	-	-	-	-	-
2003	0.26	1.09	2.55	0.85	4.10
2004	0.38	1.60	3.64	1.57	5.63

Table 3. Median Site Water Quality (mg/L except pH, turbidity)

	Mine Water (1645-49)			PKC Pool Water (1645-16)			NIWTP Effluent (1645-18)		
	2002	2003	2004	2002	2003	2004	2002	2003	2004
T-aluminum	16.2	1.38	0.47	1.25	0.46	0.360	0.370	0.640	0.495
T-ammonia	9.58	3.81	4.57	0.050	0.165	0.700	0.008	0.959	1.410
T-arsenic	0.0097	0.0032	0.0030	0.002	0.003	0.003	0.001	0.001	0.001
T-cadmium	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002
T-chromium	0.033	0.013	0.002	0.004	0.008	0.007	<0.0008	<0.0008	<0.0008
T-copper	0.090	0.016	0.011	0.006	0.003	0.002	0.003	0.004	0.003
T-lead	0.011	0.001	0.0006	0.0008	0.0003	0.0003	<0.0001	<0.0001	<0.0001
T-nickel	0.038	0.022	0.020	0.010	0.029	0.030	0.005	0.006	0.013
T-phosphorus	0.610	0.251	0.284	0.045	0.041	0.030	0.007	0.010	0.018
TSS	314	43	8	9	19	16	4.0	4.0	3.0
Turbidity	378	17.9	12.1	17.8	15.9	15.7	4.48	4.26	1.69
T-zinc	0.049	0.009	0.014	0.009	0.008	0.010	0.008	0.005	0.006
pH	7.75	8.17	8.06	6.95	9.29	9.01	6.60	7.21	7.38

Part C: Conditions Applying to Construction

Part C specifies the requirements to submit engineering designs for all water or waste storage facilities. DDMI has submitted designs for the Waste Rock Storage Facility, the On-land Sediment Storage Facility, Processed Kimberlite Containment Facility, Drainage Control and Collection System, North Inlet Dams, A154 Dike and A418 Dike. Part C also includes the requirement for a Dredge Management Plan which was submitted for the construction of the A154 Dike and updated for the A418 Dike. The only remaining engineering design to be submitted is for the A21 Dike. DDMI has responded to all directions from the MVLWB regarding Part C. There are no outstanding items. DDMI is not requesting any changes to Part C.

Part D: Conditions Applying to Water Use

Section 3 specifies the various maximum quantities of water use and Section 5 requires the submission of a Water Management Plan. Water use at the mine continues to remain within the maximum quantities. Water Management and Site Water Balances have been regularly updated and submitted. DDMI has responded to all directions from the MVLWB regarding Part D. There are no outstanding items. DDMI is not requesting any changes to Part D.

Part E: Conditions Applying to Dewatering

Part E authorizes DDMI to dewater five inland lakes as well as the areas of Lac de Gras behind the A154, A418 and A21 Dikes. DDMI has completed the dewatering of all but the pool waters of A418 and A21. The Dewatering Plan for A418 has been approved by MVLWB and the Plan for A21 will be submitted once mining plans have been finalized. DDMI has responded to all directions from the MVLWB regarding Part E. There are no outstanding items. DDMI is not requesting any changes to Part E.

Part F: Conditions Applying to Waste Management Plans

Management and monitoring plans are required in Part F for the waste management facilities. DDMI submitted Operations Plans for the Processed Kimberlite Containment Facility, the North Inlet and North Inlet Water Treatment Facility and the On-Land Dredged Sediment Storage Facility. DDMI also submitted a Waste Rock Management Plan for the segregation of waste rock from the mine areas and a Hazardous Materials Management Plan. DDMI has responded to all directions from the MVLWB regarding Part F. There are no outstanding items. DDMI is not requesting any changes to Part F.

Part G: Conditions Applying to Water Retention Dikes

Part G outlines minimum operational and maintenance requirements for the Water Retention Dikes. The A154 Dike continues to operate within these requirements as will the A418 dike which is under construction and any future A21 dike. DDMI has responded to all directions from the MVLWB regarding Part G. There are no outstanding items. DDMI is not requesting any changes to Part G.

Part H: Conditions Applying to Waste Disposal and Waste Facilities

Part H outlines minimum operational and maintenance requirements for the North Inlet and Sewage Treatment Facilities, North Inlet, PKC, Drainage Control and Collection System, and the On-land Dredged Sediment Control Facility. These facilities all continue to operate within the stated requirements. In Section 25 the Board will establish (by August 15, 2006) effluent quality criteria for total

ammonia to apply after September 1, 2006. The criteria are to be established based on the results of a series of investigations and submissions also defined in Part H. DDMI has completed the investigations, has responded to all directions from the MVLWB regarding Part H, and is on schedule with the required submissions. Provided the Board does not make any significant changes to the total ammonia effluent criteria, DDMI is not requesting any changes to Part H.

Part I: Conditions Applying to Modifications

Part I contains the requirements for making modifications to specified facilities. DDMI has responded to all directions from the MVLWB regarding Part I. There are no outstanding items. DDMI is not requesting any changes to Part I.

Part J: Conditions Applying to Contingency Planning

Part J specifies the requirement to submit a Contingency Plan for approval, implement the plan once approved, and contains minimum requirements for the plan. DDMI submits an updated Contingency Plan with the Annual Water License Report each year. DDMI has responded to all directions from the MVLWB regarding Part H. There are no outstanding items. DDMI is not requesting any changes to Part H.

Part K: Conditions Applying to the Aquatic Effects Monitoring

The requirements for an Aquatic Effects Monitoring Program (AEMP) are specified in Part K along with requirements for the submission of aquatic baseline information collected prior to the issuance of the N7L2-1645 Water License. DDMI has submitted all the required information. The AEMP was approved by the Board and has been implemented and reported on each year. DDMI has responded to all directions from the MVLWB regarding Part K. There are no outstanding items. However, it should be noted that the MVLWB is in the process of having a second review completed of baseline information submissions and a review of the status of the special effects studies portion of the AEMP. DDMI is not requesting any changes to Part K.

Part L: Conditions Applying to Abandonment and Restoration

Part L stipulates that an Interim Abandonment and Restoration Plan be submitted for approval and states minimum requirements for the plan. Part L also requires an updated mine restoration liability estimate and associated restoration research and monitoring program. DDMI has submitted all plans required under Part L and has responded to all associated directions from the MVLWB. There are no outstanding items. DDMI is not requesting any changes to Part L.

Part 5

Water License N7L2-1645

PART A: SCOPE AND DEFINITIONS

1. Scope

- a) This License entitles Diavik Diamond Mines Inc. (DDMI) to use water, dewater a portion of Lac de Gras for the purpose of mining, dispose of waste for industrial undertakings in diamond mining and milling production of the A154 North and South, A418 and A21 Kimberlite Pipes and associated uses in Lac de Gras area of the Coppermine Watershed, Northwest Territories as shown on Figure 2.1, (Overall Site plan, page 13, Diavik Diamonds Project Supporting Documentation Class A Water License Application, August 1999);
- b) This License is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Northwest Territories Waters Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited, or under which any such waste may be so deposited this License shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations;
- c) The Licensee shall take every reasonable precaution to protect the environment; and
- d) Compliance with the terms and conditions of this License does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

In this License: **N7L2-1645**

“A154 Pit” means the developed open pit and underground mine workings for the mining of the A154 North and South Kimberlite Pipes;

“A21 Pit” means the developed open pit mining of the A21 Kimberlite Pipe;

“A418 Pit” means the developed open pit and underground mine workings for the mining of the A418 Kimberlite Pipe;

“Act” means the *Northwest Territories Waters Act*;

“Acid Rock Drainage (ARD)” means the production of acidic leachate, seepage or drainage from underground workings, pits, ore piles, waste rock, tailings, and overburden that could lead to the release of metals to groundwater and surface water during the life of the mine and after mine closure;

“Analyst” means an Analyst designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

“Annual Load of Total Phosphorus” means the sum of monthly loads from a calendar year.

“Aquatic Effects Monitoring Program (AEM Program)” means a monitoring program designed to determine the short and long-term effects in the water environment resulting from the Project, to evaluate the accuracy of impact predictions, to assess the effectiveness of impact mitigation measures and to identify additional impact mitigation measures to reduce or eliminate environmental effects;

“Average Annual Loading of Total Phosphorus” means the sum of annual loads divided by the number of annual loads summed.

“Board” means the Northwest Territories Water Board established under Section 10 of the *Northwest Territories Waters Act*, and the Mackenzie Valley Land and Water Board established under Part 4 of the *Mackenzie Valley Resource Management Act*;

“Construction” means any activities undertaken to construct or build any components of, or associated with, the development of the Diavik Diamond Mine;

“Cut off Wall Trench” means a trench excavated vertically through the dyke to allow the construction of a Diaphragm Wall seepage barrier;

“Dam Safety Guidelines” means the Canadian Dam Association’s (CDA) Dam Safety Guidelines (DSG), January 1999 or subsequent approved editions. The scope and applicability of the DSG referred to in this License, is presented in Section 1 of the DSG;

“Dewatering” includes the removal or draw down of water from any water body by pumping or draining;

“Diaphragm Wall” means the plastic concrete cut off wall constructed in the dykes as a seepage barrier;

“Dike Rock Placement” means the placement of rock associated with the construction of the dyke;

“DDMI Dike Review Board” means the Expert Review Board established by DDMI to review the dike designs;

“Dike Seepage” means any water which passes through a dike;

“Discharge” means the release of any water or waste to the receiving environment;

“Drainage Control and Collection System” means the ditches, ponds, and associated piping and pumps used for the diversion, collection, and disposal of surface runoff and seepage as proposed in Figure 4.1 (Runoff Drainage System, Volume II-A Part F, Drainage Ditches and Collection Ponds, Water License Application, August 1999);

“Draw Down” means the partial removal of water from any existing water body by pumping or draining;

“Dredged Sediment Containment Facility” means the engineered containment structure identified as the disposal location for the dredged sediments from the A154 dyke footprint as proposed in Drawing Number 4100-41D1-3020 (PKC, Country Rock Piles & Dredged Sediments Management Plan Year -2, On-Land Dredged Sediment Storage Design Report, Water License Application, August 1999);

“Dredging Activities” means excavating and moving lake-bottom sediments and glacial till below the high watermark and from the bottom of Lac de Gras in the area of the footprints of the dikes;

“East Island” means the large eastern-most island in Lac de Gras as identified in Figure 1.1B (Final Design Report site Location, Volume II-A, Part A, Water Management Plan, Version 1, Water License Application, August 1999);

“Engineering Geologist” means a professional geologist registered with the Association of Professional Engineers, Geologists, and Geophysicists of the Northwest Territories and whose principal field of specialization is the investigation and interpretation of geological conditions for civil engineering purposes;

“Engineered Structures” means any constructed facility which was designed and approved by a Professional Engineer registered with the Association of Professional Engineers, Geologists, and Geophysicists of the Northwest Territories;

“Freeboard” means the vertical distance between the water line and the effective water containment crest on a dam’s or dike’s upstream slope;

“Frozen Core” means a permafrost core comprising frozen ice-saturated aggregate material and functioning as an impervious seepage barrier to water or tailings;

“Geotechnical Engineer” means a professional engineer registered with the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories and whose principal field of specialization is the design and construction of earthworks in a permafrost environment;

“Ground Ice” means ice that occupies pores and crevices in rock and soil below the ground surface;

“Groundwater” means water that occupies pores and crevices in rock and soil below the ground surface;

“ICP Metal Scan” means the elements detected using an inductively coupled plasma mass spectrometer including but not limited to aluminum, cadmium, chromium, copper, manganese, molybdenum, nickel, lead, selenium, uranium and zinc;

“Inspector” means an Inspector designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

“Licensee” means the holder of this License;

“LC20” is the concentration of effluent in water that is estimated to be lethal to 20% of the test organisms. The LC20 and its 95% confidence limits are usually derived by statistical analysis of percent mortalities in several test concentrations, after a fixed period of exposure. The duration of exposure must be specified (e.g., 48-h LC20).

“Maximum Average Concentration” means the moving average of any five (5) consecutive analytical results collected at six (6) day intervals as submitted to the Board in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program";

“Metal Leaching” means the production of leachate under neutral or alkaline conditions, seepage or drainage from underground workings, pits, ore piles, waste rock, tailings, and overburden that could lead to the release of metals to groundwater and surface water during the life of the mine and after mine closure;

“Mine Design” means the detailed engineered designs for all mine components stamped by a design Engineer;

“Mine Plan” means the plan for development of the proposed mine, including the sequencing of the development;

“Minewater” means any water that accumulates in any underground workings or open pits;

“Minister” means the Minister of Indian Affairs and Northern Development;

“Monthly Load of total phosphorus” means the load calculated from the daily flow volume measurements and analytical results collected at 6-day intervals that fall within a calendar month.

“North Inlet Facility” means the containment facility that is constructed within the North Inlet of East Island of Lac de Gras;

“North Inlet Treatment Facility” includes the treatment plant designated for the treatment of waters associated with the North Inlet Facility and mine workings;

“Pit Water” means the water that seeps into and/or is collected within the pit;

“Processed Kimberlite” means material rejected from the process plant after the recoverable minerals have been extracted;

“Processed Kimberlite Containment (PKC) Facility” comprises the tailings containment basin(s) and the engineered structures that are designed to contain tailings as identified in Drawing Number 1110-42D3-1005 (Overall Site Plan, Volume II-B Part L, Processed Kimberlite Containment, Water License Application, August 1999);

“PKC Treatment Facility” includes the treatment plant designated for the treatment of waters associated with the PKC;

“Project” means the Diavik Diamonds Project, a joint venture between Aber Resources Inc. and Diavik Diamond Mines Inc.;

“Regulations” means Regulations proclaimed pursuant to Section 33 of the *Northwest Territories Waters Act*;

“Sewage” means all toilet wastes and greywater;

“Sewage Treatment Facilities” comprises the engineered structures that are designed to contain and treat sewage at the North and South Camps during the construction period, and the main accommodations complex during operations;

“Spillway” means an engineered structure to facilitate the emergency release of water or waste from a facility. The spillway elevation is the elevation at which water or waste begins to flow through the spillway structure;

“Waste” means any waste as defined by Section 2 of the *Northwest Territories Waters Act*;

“Waste Treatment Facilities” includes all facilities designated for the treatment and/or disposal of waters or wastes, and includes the North Inlet Treatment Facility, the PKC Treatment Facility, and the Sewage Treatment Facilities;

“Waste Rock” means all unprocessed rock materials that are produced as a result of mining operations;

“Waste Rock Storage Facilities” includes the engineered facilities for the disposal of rock and till, which are designated as the North and South Waste Rock Piles;

“Water License Application” means the type A Water License Application as submitted to the NWT Water Board comprising Volume I, Volume IIA, and Volume IIB, dated August 1999 and all additional supporting documents; and,

“Water Intake Facilities” comprises of the water intake infrastructure as identified in Drawing Number 1135-41D1-1001 (Raw Water Intake Earthworks & Section, Volume II-A, Part E, Water Intake Structure, WLA, August 1999).

PART B: GENERAL CONDITIONS

1. The water use fee shall be paid by the Licensee annually in advance of any water use.
2. Prior to the use of water for industrial undertakings or the disposal of waste and pursuant to Section 17(1) of the *Act* and Section 12 of the Regulations, the Licensee shall have posted and shall maintain a security deposit according to the following schedule:
 - a) within thirty (30) days of issuance of this License, an amount of \$7,000,000 (seven million dollars);
 - b) on each subsequent anniversary of the issuance of this License, an additional amount according to the following:

Year 2001 \$7,000,000 (seven million dollars)
Year 2002 \$7,000,000 (seven million dollars)
Year 2003 \$9,000,000 (nine million dollars)
Year 2004 \$20,000,000 (twenty million dollars)
Year 2005 \$20,000,000 (twenty million dollars)
Year 2006 \$23,000,000 (twenty-three million dollars)
Year 2007 \$23,000,000 (twenty-three million dollars)

until an amount of \$116,000,000 (one hundred and sixteen million dollars) is available;
 - c) such further or other amounts as may be required by the Board based on annual estimates of current mine restoration liability in accordance with Part L, Item 2 of this License; and
 - d) reductions to the security deposit may be granted by the Board based on annual estimates of current liability in accordance with Part L, Item 2 of this License.
3. The security deposit shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to Section 17 of the *Act*. This clause shall survive the expiry of this License or renewals thereof and until full and final restoration has been completed to the satisfaction of the Minister. This security deposit, which may include a Trust Fund, shall be in a form acceptable to the Minister.
4. The Licensee shall file an Annual Report with the Board not later than March 31 of the year following the calendar year reported which shall contain the following information:
 - a) the monthly and annual quantities in cubic metres of water obtained from Lac de Gras;

- b) the monthly and total quantities in cubic metres of water dewatered from the A154, A418 or A21 pools, each of the dewatered East Island inland lakes and the North Inlet;
- c) the monthly elevations of water within each of the cells in the North Inlet during the open water period;
- d) the monthly and annual quantities in cubic metres of recycled water identifying both the source and use;
- e) the monthly and annual quantities of solids in tonnes and liquid fractions in cubic metres of each waste stream discharged to the Processed Kimberlite Containment Facility, the Dredged Sediment Containment Facility and the North Inlet;
- f) the monthly and annual quantities in cubic metres of any discharges from the Processed Kimberlite Containment Facility, Dredged Sediment Containment Facility the North Inlet and the Water Treatment Facilities;
- g) the monthly and annual quantities in cubic metres of Minewater and dike seepage pumped from the A154, A418, A21 open pits to the North Inlet or Lac de Gras;
- h) the monthly and annual quantities in cubic metres of treated effluent discharged from the Sewage Treatment Facilities;
- i) the monthly and annual quantities in cubic metres of Sewage solids removed from the Sewage Treatment Facilities;
- j) a summary report which includes all data and information generated under the "Surveillance Network Program" in an electronic and printed format acceptable to the Board;
- k) a summary of dewatering activities undertaken in accordance with Part E;
- l) a summary of construction activities conducted and an updated Mine Plan;
- m) a summary of all work carried out under the Management Plans in accordance with Part F;
- n) a summary of modifications and/or major maintenance work carried out on the Water Treatment Facilities, Dredged Sediment Containment Facility, Processed Kimberlite Containment Facility, Sewage Treatment Facilities, Drainage Control and Collection System and any associated structures;
- o) a progress report on any studies requested by the Board that relate to waste management, water use or reclamation and a brief description of any future studies planned by the Licensee;
- p) the results of the Aquatic Effects Monitoring Program in accordance with Part K;
- q) any revisions to the approved Contingency Plan;
- r) a list and description including volumes of all unauthorized discharges, spills and summaries of follow-up action taken;
- s) an outline of any spill training exercises carried out;

- t) any revisions to the approved Abandonment and Restoration Plan;
 - u) a summary of any progressive reclamation work undertaken during the year and an outline of any work anticipated for the next year;
 - v) an updated estimate of the current mine restoration liability based upon the results of the mine reclamation research, monitoring during mine development, and any modifications to the mine plan;
 - w) any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
 - x) annual reporting of the quantity of waste rock disposed in the North country waste rock pile and inert rock stockpiled for reclamation purposes.
5. The Licensee shall comply with the "Surveillance Network Program" annexed to this License, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this License.
 6. The "Surveillance Network Program" and compliance dates specified in the License may be modified at the discretion of the Board.
 7. Meters, devices or other such methods used for measuring the volumes of water used and waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
 8. The Licensee shall, within thirty (30) days of the issuance of this License, post the necessary signs, to identify the stations of the "Surveillance Network Program". All postings shall be located and maintained to the satisfaction of an Inspector.
 9. The Licensee shall include a brief descriptive summary in each of the reports required to be submitted to the Board within this License.
 10. The Licensee shall ensure a copy of this License is maintained at the site of operation at all times.

PART C: CONDITIONS APPLYING TO CONSTRUCTION

1. The Licensee shall submit to the Board, within thirty (30) days of the issuance of this License, an updated mine plan including a schedule of activities and details for construction and mine development.
2. Prior to the start of construction of any dams, dikes, or structures intended to contain, withhold, divert or retain water or wastes, the Licensee shall submit to the Board for approval, design drawings stamped by a Geotechnical Engineer. The Licensee shall ensure that such facilities are designed and constructed to engineering standards such that at a minimum they comply with the Dam Safety Guidelines.
3. All rock used in construction must meet the appropriate geochemical criteria as specified in the approved Rock Management Plan as per Part F, Item 6.

4. The Licensee shall undertake and submit to the Board, the results of a comprehensive delineation program to identify soil, rock and ground ice conditions prior to the start of construction, along the centerline of all containment structures and runoff control ditches. This program shall be developed in accordance with Schedule 1, Item 1.
5. Prior to the start of construction of the Processed Kimberlite Containment Facility, the Licensee shall submit to the Board for approval a detailed design report, including drawings, stamped by a Geotechnical Engineer and/or Engineering Geologist. This report shall be developed in accordance with Schedule 1, Item 2.
6. The PKC Facility shall be designed and constructed to prevent discharge to the groundwater system. There shall be no accumulation of water against the containment dam structures of the PKC Facility until such time as the results of the thermal monitoring program have demonstrated the integrity of the frozen core dams.
7. Prior to the start of construction of the Dredged Sediment Containment Facility, the Licensee shall submit to the Board, a detailed design report including design drawings that are stamped by a Geotechnical Engineer and/or Engineering Geologist. This report shall include:
 - a) an evaluation of the magnitude of differential settlement related to the talik beneath the west dam footprint, as well as foundation movement related to frost heave and thaw settlement over the design life of the structure; and
 - b) an evaluation of the design and construction of the liner to determine that it is capable of withstanding the anticipated movements of the dams as identified in Part C, Item 7 (a).
8. The Licensee shall within ninety (90) days of issuance of this License, submit to the Board for approval, a Dredging Management Plan that shall include but not necessarily be limited to a schedule of dredging activities, dredging equipment design and operation, production rates, operational approaches for minimizing sediment disturbance, and final monitoring details.
9. Prior to the start of dredging activities for each dike, the Licensee shall submit to the Board, the final dike designs for that particular dike, stamped by a geotechnical Engineer and/or Engineering Geologist that includes the complete results of laboratory testing of plastic concrete, design criteria for formulating the plastic concrete on site, and the acceptable ranges of quantities of the constituent materials.
10. The Licensee shall also submit a comprehensive report from the DDMI Dike Review Board that indicates their assessment and approval of the final dike design and plastic concrete wall performance.
11. Prior to the start of construction of the Water Retention Dikes, the Licensee shall submit to the Board the final detailed mine design report stamped by a

Geotechnical Engineer and/or Engineering Geologist. This plan shall be developed in accordance with Schedule 1, Item 3.

12. Prior to the start of construction of the Waste Rock Storage Facility, the Licensee shall submit to the Board, the final detailed design report stamped by a Geotechnical Engineer and/or Engineering Geologist. This plan shall include geothermal and short term stability analyses, and be developed in accordance with Schedule 1, Item 4.
13. Prior to the start of construction of the Drainage Control and Collection System, the Licensee shall submit to the Board, the final detailed design report including representative cross sections and drawings of the Drainage Control and Collection System stamped by a Geotechnical Engineer and/or Engineering Geologist.
14. The Licensee shall ensure that all containment and runoff control structures are constructed and maintained to prevent escape of wastes to the surface or ground water systems.
15. The Licensee shall ensure that all construction of engineered structures are supervised by a Geotechnical Engineer and/or Engineering Geologist. The Licensee shall also ensure that construction records of engineered structures are maintained and made available at the request of the Board and/or Inspector.
16. The Licensee shall within ninety (90) days of completion of any structure designed to contain, withhold, divert or retain waters or wastes, submit to the Board for approval, a geotechnical engineering report prepared by a Geotechnical Engineer and/or Engineering Geologist that shall include as-built drawings, documentation of field decisions that deviate from original plans and any data used to support these decisions.
17. Prior to the start of construction of all on-land water and waste management structures, the Licensee shall prepare a Quality Assurance/Quality Control (QA/QC) Manual. The Manual shall be submitted to the Board for approval, prior to the commencement of the construction of those structures. This Manual shall be developed in accordance with Schedule 1, Item 5.
18. The Licensee shall prepare a construction QA/QC Manual for the construction of the Water Retention Dikes. The Manual shall be submitted to the Board for approval prior to the start of any dredging or dike construction activities. This Manual shall be developed in accordance with Schedule 1, Item 6.

PART D: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall install meters for all structures used to withdraw water or discharge waters or wastes to the satisfaction of an Inspector.
2. The Licensee is authorized to use water for domestic purposes, construction, mining, processing and associated uses from the Water Intake Facility or as approved by the Board.

3. The quantity of water used for all purposes shall not exceed the following:
 - a) 250,000 cubic metres annually, during the construction phase for domestic and associated purposes;
 - b) 1,280,000 cubic metres annually, during the operational phase for domestic, mining, milling and associated purposes;
 - c) 630,000 cubic metres during the dewatering of the inland lakes;
 - d) 9,700,000 cubic metres during the dewatering of the A154 pool water;
 - e) 1,600,000 cubic metres during the drawdown of North Inlet waters;
 - f) 2,500,00 cubic metres during the dewatering of the A418 pool water;
 - g) 11,400,000 cubic metres during the dewatering of the A21 pool water; and
 - h) 3,500,000 cubic metres during in-lake dredging activities.
4. All water intakes in fish bearing waters shall be equipped with a screen with a mesh size sufficient to ensure that no entrainment of fish can occur.
5. The Licensee shall submit a Water Management Plan acceptable to the Board on or before December 31, 2000. This plan shall be updated annually and include, but not necessarily be limited, to the following:
 - a) measures that will be undertaken to minimize the amount of raw water required from Lac de Gras, that includes consideration of alternative water sources such as the PKC Facility, Dredged Sediment Containment Facility, North Inlet Facility, and Pits;
 - b) the projected amount of water to be obtained from Lac de Gras in the upcoming year;
 - c) a summary of plans for managing water to be stored in the PKC Facility, the North Inlet Facility, the Dredged Sediment Containment Facility and for the management of all other waters on East Island; and
 - d) an overall water balance for the project, that includes the specific water balances for each of the PKC Facility and the North Inlet Facility, and associated waters for both facilities as updated with current information respecting:
 - i) on-site precipitation, evaporation and runoff;
 - ii) volumes of recycled water and raw water utilized during the previous year;
 - iii) ground water inflows to the pit;
 - iv) realized capacity of water treatment plants;
 - v) results and interpretation of further fracture zone characterization and hydrogeological test work conducted in accordance with Part D, Item 8, and its implications for potential ground water inflows and overall water balances; and

- vi) stage volume curves that shows the expected capacity of the PKC and the North Inlet Facilities.
6. The Licensee shall implement the Water Management Plan as and when approved by the Board.
 - a) The Licensee shall submit to the Board for approval on or before March 31, 2001 detailed plans for additional fracture zone characterization and hydrogeological test work throughout the entire depth of proposed mine workings in the A154 pit area.
 - b) Similar plans shall be submitted to the Board for approval three (3) years prior to mining in each of the A418 and A21 pits and shall include information gained from previous characterization and hydrogeological test work.
 7. The Licensee shall conduct the fracture zone characterization and hydrogeological test work as approved by the Board in accordance with Part D, Item 7.

PART E: CONDITIONS APPLYING TO DEWATERING

1. Upon issuance of this License, the Licensee is authorized to dewater five (5) inland lakes on East Island identified as E1, E6, E7, E8 and E10 (Figure 3.2.1, Construction Site Map showing Inland Lakes, Supporting Documentation, Vol. 1, Water License Application, August 1999) and a portion of Lac de Gras to facilitate mining the A154 North and South, A418, and A21 kimberlite pipes, to draw down the North Inlet water to increase storage capacity and to discharge water from hydrostatic testing.
2. Prior to the commencement of any dewatering activities, the Licensee shall submit to the Board for approval, a Dewatering Management Plan for each source to be dewatered that shall include, but not necessarily be limited to, the following:
 - a) the volume of water to be dewatered from each source;
 - b) the expected quality of water to be discharged to Lac de Gras;
 - c) a schedule for dewatering and daily discharge rates;
 - d) pumping methods including locations of intake and outflow structures;
 - e) the design of any erosion protection measures to be employed in the discharge areas;
 - f) the description of procedures and schedules for visual inspections of any erosion along the discharge areas;
 - g) the frequency and locations for water quality monitoring as referred to in the "Surveillance Network Program";
 - h) the frequency, location and procedures for monitoring flow rates in the discharge stream;
 - i) the design of each pipeline and related facilities;

- j) the procedures and rates for dewatering during the winter months to minimize erosion; and
 - k) the identification of any treatment that may be used to ensure that effluent quality criteria are met, in accordance with Part H, Item 7 (a) and (d).
3. The Licensee shall implement the Dewatering Management Plan referred to in Part E, Item 2 as and when approved by the Board.
 4. Each water source shall be sampled and analyzed in accordance with the Surveillance Network Program and the results shall be provided to an Inspector for approval prior to the commencement of dewatering.
 5. The Licensee shall ensure that any waters associated with dewatering activities that are to be discharged to Lac de Gras, are of such quality that the effluent quality criteria specified in Part H, Item 7 (a) and (d), are not exceeded.
 6. All dewatering discharge structures shall be designed and located to minimize erosion and impacts on receiving water quality.
 7. During the dewatering of any water source that is to be discharged to Lac de Gras, daily erosion inspections of the discharge points shall be carried out and records of these inspections shall be kept for review, upon the request of an Inspector.
 8. The Licensee shall submit to the Board, within sixty (60) days of the completion of dewatering each water source , a summary report that shall include, but not be limited to, the following:
 - a) the metered daily discharge rates;
 - b) a description of any water treatment undertaken, erosional problems encountered, and mitigative actions taken;
 - c) the results of water quality monitoring and an evaluation of compliance with the regulated water quality requirements; and
 - d) an evaluation of any impacts to Lac de Gras resulting from dewatering activities.

PART F: CONDITIONS APPLYING TO WASTE MANAGEMENT PLANS

1. The Licensee shall submit to the Board for approval within nine (9) months of issuance of this License, a Processed Kimberlite and Wastewater Management Plan in accordance with the Board's "Guidelines for Tailings Impoundment in the Northwest Territories, February 1987, "or subsequent editions. This plan shall be developed in accordance with Schedule 2, Item 1.
2. The Licensee shall submit to the Board for approval within nine (9) months of issuance of this License a PKC Monitoring Plan. This plan shall be developed in accordance with the Schedule 2, Item 2.

3. The Licensee shall submit to the Board for approval within nine (9) months of issuance of this License, a North Inlet Sediment and Wastewater Management Plan. This plan shall be developed in accordance with Schedule 2, Item 3.
4. The Licensee shall submit to the Board for approval within two (2) years of the issuance of this License, a monitoring plan for the North Inlet Facility to evaluate sediment and water quality.
5. The Licensee shall submit to the Board for approval within six (6) months of issuance of this License, a Dredged Sediment Containment Facility Management Plan. This plan shall be developed in accordance with Schedule 2, Item 4.
6. The Licensee shall submit to the Board for approval within sixty (60) days of issuance of this License a Rock Management Plan, which incorporates the Biotite Schist Management Plan (Volume II-B, Part N, Version 1, Water License Application, August 1999) to address the management of all rock that is disturbed, moved, stored, or otherwise affected by mining-related activity on the property, over the term of the project. The Plan shall be developed in accordance with the Department of Indian Affairs and Northern Development's (DIAND) "Guidelines for Acid Rock Drainage Protection in the North, September 1992," or subsequent editions. This Plan shall describe decision criteria and operating procedures for how all rock will be placed and managed during construction, mining and post closure. This plan shall be developed in accordance with Schedule 2, Item 5.
7. The Licensee shall submit to the Board for approval, on an annual basis upon the issuance of this License, a revised and updated Rock Management Plan as identified in Part F, Item 6. This plan shall be developed in accordance with Schedule 2, Item 6.
8. The Licensee shall within thirty (30) days of issuance of this License, submit to the Board for approval, a Hazardous Materials Management Plan.
9. If any of the Plans referred to in Part F, Items 1, 2, 3, 4, 5, 6, 7, and 8 are not approved by the Board, the Licensee shall revise the unapproved Plans and re-submit them to the Board for approval within forty-five (45) days of receiving notification of the Board's decision. These Plans shall be implemented upon approval.
10. The Licensee shall on an annual basis review the Plans referred to in Part F, Items 1, 2, 3, 4, 5, 6 and 8 and modify as necessary, or as requested by the Board, to reflect changes in operations and technology. Any proposed modifications to the plans shall be submitted to the Board for approval.
11. The Licensee shall submit to the Board by December 1st, on an annual basis, the results of seepage surveys of all mine components, that includes; constructed rock piles, stockpiles of reclamation rock, ore stockpiles, areas constructed with mined or quarried rock, and water retention dykes and dams. These surveys shall be developed in accordance with Schedule 2, Item 7.

PART G: CONDITIONS APPLYING TO WATER RETENTION DIKES

1. The Licensee shall operate and maintain the Water Retention Dikes to engineering standards such that at a minimum they comply with the Dam Safety Guidelines, and in accordance with the following:
 - a) the lowest point on the upper edge of the diaphragm wall shall not be lower than 419.0 metres above mean sea level, or as recommended by a Geotechnical Engineer and as approved by the Board;
 - b) the Licensee shall install and maintain geotechnical instrumentation in the Water Retention Dikes as described in the Water Retention Dikes Final Design Report, dated July 1999, WLA;
 - c) a schedule of reading the instrumentation shall be submitted to the Board for approval not less than three (3) months before dewatering is scheduled to commence. The Licensee shall carry out the schedule of reading the
 - d) instrumentation upon approval of the Board;
 - e) weekly inspections of the Water Retention Dikes shall be conducted and the records of these inspections and all monitoring records shall be kept for review upon request of an Inspector;
 - f) any seepage through the Water Retention Dikes that does not meet the effluent quality criteria Part H, Item 7 a) and d) shall be collected and directed to the North Inlet and through the treatment facilities prior to discharge, and measures shall be employed to reduce seepage;
 - g) any deterioration or erosion of any engineered structures associated with the Water Retention Dikes shall be reported to an Inspector and repaired immediately; and
 - h) an inspection of the Water Retention Dikes shall be carried out annually in July by a Geotechnical Engineer. The engineer's report shall be submitted to the Board within thirty (30) days of the inspection, including a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's recommendations.

PART H: CONDITIONS APPLYING TO WASTE DISPOSAL AND WASTE FACILITIES

1. The Licensee shall within one (1) year of the issuance of this License, submit to the Board for approval an Operation and Management Plan for each of the North Inlet, PKC, and Sewage Treatment Facilities. This plan shall include but not necessarily be limited to details on the design, operational capacity, management and maintenance, and disposal of sludges.
2. The Licensee shall operate and maintain the Processed Kimberlite Containment Facility to engineering standards such that:

- a) a minimum freeboard limit of 1.5 metres below the lowest point of either the zero degree isotherm for the perimeter dams or the emergency spillway, whichever is lower, shall be maintained at all times; or as recommended by a Geotechnical Engineer and as approved by the Board;
 - b) if seepage from PKC Facility occurs, the Licensee shall collect and return the seepage to the Processed Kimberlite Containment Facility and measures shall be employed to eliminate seepage;
 - c) any deterioration or erosion of any engineered structures associated with the PKC facility shall be reported to an Inspector repaired immediately;
 - d) the solids fraction of all Processed Kimberlite shall be deposited and permanently contained within the Processed Kimberlite Containment Facility;
 - e) weekly inspections of the PKC facility dams, emergency spillway(s), pipeline(s), and catchment basin(s) shall be conducted and the records of these inspections shall be kept for review upon the request of an Inspector; and
 - f) an inspection of the PKC Facility shall be carried out annually in July by a Geotechnical Engineer. The engineer's report shall be submitted to the Board within thirty (30) days of the inspection, including a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's recommendations.
3. The Licensee shall operate and maintain the Drainage Control and Collection System(DCCS) to engineering standards such that:
- a) a minimum freeboard limit of one (1) metre below the engineered emergency spillways shall be maintained at all times or as recommended by a Geotechnical Engineer and as approved by the Board;
 - b) seepage from the DCCS shall be minimized, collected and returned to the DCCS or PKC Facility;
 - c) any deterioration or erosion of any engineered structures associated with the DCCS shall be reported to an Inspector and repaired immediately;
 - d) weekly inspections of the DCCS, emergency spillway(s), pipeline(s), and catchment basin(s) shall be conducted and the records of these inspections shall be kept for review upon the request of an Inspector; and
 - e) an inspection of the DCCS shall be carried out annually in July by a Geotechnical Engineer. The engineer's report shall be submitted to the Board within thirty (30) days of the inspection, including a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's recommendations.
4. The Licensee shall operate and maintain the Dredged Sediment Containment Facility (DSCF) to engineering standards such that:
- a) a minimum freeboard limit of 1.5 metres below the lowest surveyed point of the liner or of the engineered emergency spillway, whichever is lower, shall

- be maintained at all times or as recommended by a Geotechnical Engineer and as approved by the Board;
- b) any deterioration or erosion of any engineered structures associated with the DSCF shall be reported to an Inspector and repaired immediately;
 - c) the solids fraction of the lake bed sediments shall be permanently contained within the DSCF or as approved by the Board;
 - d) seepage from the DSCF shall be minimized, collected and returned to the DSCF;
 - e) weekly inspections of the facility, emergency spillway(s), pipeline(s), and catchment basin(s) shall be carried out and records of these inspections shall be kept for review upon the request of an Inspector; and
 - f) an inspection of the facility shall be carried out annually in July by a Geotechnical Engineer. The engineer's report shall be submitted to the Board within thirty (30) days of the inspection, including a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's recommendations.
5. The Licensee shall operate and maintain the North Inlet Facility (NIF) to engineering standards such that:
- a) a minimum freeboard limit of 1.5 metres below the engineered emergency spillway shall be maintained at all times or as recommended by a Geotechnical Engineer and as approved by the Board;
 - b) any deterioration or erosion of any engineered structures associated with the NIF shall be reported to an Inspector and repaired immediately;
 - c) the solids fraction of the lake bed sediments that are disposed in the NIF shall be permanently contained within the NIF or as approved by the Board;
 - d) seepage from the west dike of the NIF shall be minimized, collected, and returned to the NIF.
 - e) weekly inspections of the NIF, emergency spillway(s), pipeline(s), and catchment basin(s) shall be carried out and records of these inspections shall be kept for review upon the request of an Inspector; and
 - f) an inspection of the NIF shall be carried out annually in July by a Geotechnical Engineer. The engineer's report shall be submitted to the Board within thirty (30) days of the inspection, including a covering letter from the Licensee outlining an implementation plan for addressing each of the Engineer's recommendations.
6. The Licensee shall provide at least five (5) days notice to an Inspector prior to commencement of any discharges to Lac de Gras.
7. The Licensee shall ensure that any discharges to Lac de Gras meet the following Effluent Quality Requirements:

- a) All discharges to Lac de Gras by the Licensee from the Water Treatment Facilities at "Surveillance Network Program" Station Number 1645-18 shall meet the following effluent quality criteria:

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample
Total Ammonia	N/A	20.0 mg/L
Total Aluminum	1.5 mg/L	3.0 mg/L
Total Arsenic	0.05 mg/L	0.1 mg/L
Total Copper	0.02 mg/L	0.04 mg/L
Total Cadmium	0.0015 mg/L	0.003 mg/L
Total Chromium	0.02 mg/L	0.04 mg/L
Total Lead	0.01 mg/L	0.02 mg/L
Total Zinc	0.01 mg/L	0.02 mg/L
Total Nickel	0.05 mg/L	0.1 mg/L
Nitrite	1.0 mg/L	2.0 mg/L
Total Suspended Solids	15.0 mg/L	25.0 mg/L
Turbidity	10 NTU	15 NTU

- i) Upon directing discharge from the Sewage Treatment Facilities to the PKC Facility, the main effluent discharge shall meet the following additional effluent quality requirements:

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample
BOD ₅	15.0 mg/L	25.0 mg/L
Oil and Grease	3.0 mg/L	5.0 mg/L
Faecal Coliforms	10 CFU/100ml	20 CFU/100ml

- b) All surface runoff during the construction of any facilities designed to withhold, divert, or retain such runoff up to and including December 31, 2002 shall meet the following criteria:

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample
Total Suspended Solids	50 mg/L	100 mg/L.

- i) All Surface Runoff discharged to Lac de Gras shall have a pH between 5.0 to 8.4 unless it can be demonstrated that a pH outside this range was not caused by mine activities.

- c) All Sewage effluent discharged by the Licensee from the Sewage Treatment Facilities during construction at “Surveillance Network Program” Station Numbers 1645-10 and 1645-11, shall meet the following effluent quality requirements:

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample
BOD5	15.0 mg/L	25.0 mg/L
Total Suspended Solids	10.0 mg/L	20.0 mg/L
Oil and Grease	3.0 mg/L	5.0 mg/L
Fecal Coliforms	10 CFU/100ml	20 CFU/100ml

- d) All discharges to Lac de Gras (except for Surface Runoff) shall have a pH between 6.0 to 8.4.
- e) All other discharges to Lac de Gras shall meet the effluent quality criteria as specified in Part H, Items 7 a) and 7 d).
8. All discharges to Lac de Gras by the Licensee from the Water Treatment Facilities at “Surveillance Network Program” Station Number 1645-18 shall not be acutely toxic under the following tests to be conducted monthly:
- a) Acute lethality to Rainbow Trout, *Oncorhynchus mykiss* (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/1 3); and
- b) Acute lethality to the crustacean, *Daphnia magna* (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/14).
9. The Licensee shall conduct monthly toxicity testing as prescribed under Part H, Item 8 until September 1, 2006. After this time the Licensee shall conduct toxicity testing as directed by the Board in accordance with Part F of the “Surveillance Network Program” annexed to this License.
10. The Licensee shall notify the Board in writing when the direct discharge of treated sewage from the Sewage Treatment Facilities to Lac de Gras has been discontinued.
11. The Licensee shall ensure that all in-lake dredging, dyke construction, or other in lake activities meet the following criteria:
- a) At SNP Stations 1645-55 to 1645-67 inclusive and at a 200 metre distance in any direction from the centerline of the dike footprint and any in-lake construction activities the maximum concentration for Total Suspended Solids shall not exceed 25 mg/L over the background concentration in any grab sample.

12. Total phosphorus loads from all treatment facilities discharging to Lac de Gras must be controlled, as per approved operations plans, such that loads of total phosphorus do not exceed a maximum of 300 kg per month during the life of the mine, and do not exceed an average annual loading of 1,000 kg per year during the life of the mine, and do not exceed a maximum loading of 2,000 kg per year in any year during the life of the mine.
13. The Licensee shall ensure that pH is managed for all discharges to Lac de Gras by the Licensee from the Water Treatment Facilities at "Surveillance Network Program" Station Number 1645-18 to prevent acute toxicity of ammonia.
14. The Licensee shall submit to the Board for approval, within six (6) months of amendment issuance, a report detailing Standard Operating Procedures for pH adjustment for all discharges to Lac de Gras from "Surveillance Network Program" Station Number 1645-18. The Licensee shall implement the Standard Operating Procedures as and when approved by the Board.
15. Until the report as referenced in Part H, Item 14 is approved, the Licensee shall ensure that all discharges from "Surveillance Network Program" Station Number 1645-18 exceeding a Total Ammonia Limit of 7 mg/L, have a pH between 6.0 and 7.0.
16. As of Sept 1, 2006, the effluent quality criteria for ammonia (total ammonia-N) and pH shall revert to the levels specified in the original Water License (August 16, 2000), unless otherwise determined by the Board.
17. The Licensee shall undertake investigations including applied and laboratory studies concerning best management practices and best available technology for controlling ammonia levels, and will identify mitigation measures intended to achieve the effluent quality criteria for ammonia as listed in the original water license (August 16, 2000). These investigations shall include but not be limited to:
 - a) approaches to control, segregate and manage pit water inflows; and
 - b) appropriate and effective water treatment technologies.
18. The Licensee shall submit Terms of Reference for investigations under Part H, Item 17, to the Board for approval, within three (3) months of issuance of the amendment. DDMI will carry out these investigations as and when approved by the Board.
19. The Licensee shall submit Progress Reports to the Board within six (6) months of amendment issuance, and on every anniversary six (6) months thereafter. These progress reports shall include, but not be limited to:
 - a) status of ongoing investigations conducted under Part H, Item 17;
 - b) results of the investigations undertaken;

- c) implications for pit water management and treatment; and
 - d) plans for further investigations.
20. Based on the review of the progress reports submitted under Part H, Item 19, the Board shall provide direction to the Licensee as appropriate.
21. DDMI shall submit a Discussion Paper to the Board by October 15, 2005, based on the investigations conducted under Part H, Item 17 outlining:
- a) options for achieving effluent quality criteria limits of 2 and 4 mg/L;
 - b) other options for achieving the lowest effluent quality criteria practical at the site; and
 - c) environmental implications of each option.
22. The Board shall review the Discussion Paper submitted under Part H, Item 21 and shall provide directions to the Licensee as appropriate for the preparation of the Ammonia Management Plan required under Part H, Item 23.
23. The Licensee shall submit an Ammonia Management Plan for managing pit water inflows and ammonia, to the Board for approval by February 28, 2006. The Ammonia Management Plan shall be based on the results of all investigations, the aquatic ecology report, special effects studies, toxicity tests, water quality study, and any directions from the Board and shall include:
- a) recommended measures for managing pit water inflows and ammonia; and
 - b) recommended effluent quality criteria for the period from September 1, 2006, onwards.
24. The Licensee shall implement the Ammonia Management Plan as and when approved by the Board.
25. The Board shall, prior to August 15, 2006, provide direction to the Licensee regarding the Ammonia Management Plan, and establish effluent quality criteria for the period from September 1, 2006 onwards.
26. The Licensee shall develop and submit to the Board by September 1, 2004, a terms of reference, study schedule and design to conduct a water quality study. The study will include, but not be limited to the following;
- a) environmental fate of ammonia upon discharge to Lac de Gras;
 - b) effects of ammonia discharges to ambient water quality conditions; and
 - c) assessment of water quality conditions under ice-covered conditions in spring.

PART I: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written approval from the Board, carry out modifications to the Water Intake and Waste Treatment Facilities provided that such modifications are consistent with the terms of this License and the following requirements are met:
 - a) the Licensee has notified the Board in writing of such proposed modifications at least forty-five (45) days prior to beginning the modifications;
 - b) such modifications do not place the Licensee in contravention of either the License or the Act;
 - c) the Board has not, during the forty-five (45) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than forty-five (45) days; and
 - d) the Board has not rejected the proposed modifications.
2. Modifications for which all of the conditions referred to in Part I, Item 1 have not been met may be carried out only with written approval from the Board.
3. The Licensee shall provide to the Board stamped and signed as-built plans and drawings of the modifications referred to in this License within ninety (90) days of completion of the modifications.

PART J: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Licensee shall submit to the Board for approval within thirty (30) days of issuance of this License, a Contingency Plan in accordance with the Board's "Guidelines for Contingency Planning, January 1987," or subsequent edition. The plan shall comply with the Dam safety Guidelines, address the construction and development phases and include the following:
 - a) contingencies for managing ground water and pit water flows should they become excessive and threaten to exceed treatment facility capacity or storage capacity;
 - b) contingencies for ice/water removal from open pit and underground mine and other areas;
 - c) the plan shall also include contingencies for the items identified in Schedule 3, Item 1; and d) specific threshold limits at which point management action will be undertaken to implement the contingency measures.
2. If not approved by the Board, the Contingency Plan referred to in Part J, Item 1 shall be revised and resubmitted within thirty (30) days of receiving notification of the Board's decision.

3. The Licensee shall review the Contingency Plan annually and modify the Plan as necessary to reflect changes in operation and technology. Any proposed modifications to the plan shall be submitted to the Board for approval.
4. If, during the period of this License, an unauthorized discharge of waste occurs, or if such a discharge is likely to occur, the Licensee shall:
 - a) implement relevant components of the Contingency Plan;
 - b) report the incident immediately via the 24 Hour Spill Report Line (867) 920-8130; and
 - c) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.
5. The Licensee shall submit a revised and updated Contingency Plan, to the Board for approval, within sixty (60) days of amendment issuance. The revised Contingency Plan will be based on measures that are proven to be effective and can be implemented. The revised Contingency Plan shall include, but not be limited to the following:
 - a) specific triggers to define when contingency measures are to be implemented; and
 - b) specific contingency measures to deal with effluent and actions to be taken if effluent exceeds LC20 values due to ammonia in accordance with toxicity testing as required under Part B, Item 12 (a) of the "Surveillance Network Program" annexed to this License . If the effluent exceeds LC20 values due to ammonia, the Contingency Plan shall address the following:
 - i) in the event of a monthly toxicity test failure, the effluent shall be retested immediately (confirmatory testing);
 - ii) if the confirmatory test also fails, the effluent shall be held and a Toxicity Identification Evaluation conducted to determine the cause of the toxicity;
 - iii) if failure is noted on two (2) tests in any four (4) month period, then the contingency plan shall be implemented (the effluent shall be held and a Toxicity Identification Evaluation conducted);
 - iv) if the Toxicity Identification Evaluation indicates ammonia is the cause, actions will be taken in accordance with the Contingency Plan and effluent will continue to be held until it passes an LC20 test;
 - v) if the Toxicity Identification Evaluation indicates a cause other than ammonia, DDMI will follow the steps identified in the Contingency Plan including continued Toxicity Identification Evaluation; and
 - vi) a protocol for undertaking pH adjustments, based on the results of the Toxicity Identification Evaluation.
6. The revised Contingency Plan required under Part J, Item 5 shall not include the extraction of water from Lac de Gras for the purpose of pre-diluting the effluent as an ongoing operational approach for dealing with elevated levels of ammonia.

PART K: CONDITIONS APPLYING TO THE AQUATIC EFFECTS MONITORING

1. The Licensee shall conduct sampling during the 2000 field season as proposed in the initial Aquatic Effect Monitoring (AEM) program as submitted in the Water License Application.
2. The Licensee shall provide to the Board, within sixty (60) days of issuance of this License, a compilation and evaluation of the adequacy of existing aquatic baseline information. The additional baseline information required to support an effective AEM program shall also be identified. This compilation shall be developed in accordance with Schedule 4, Item 1.
3. The Licensee shall address any deficiencies of the submissions made under Part K, Item 2 as directed by the Board.
4. The Licensee shall submit to the Board for approval, within ninety (90) days of the issuance of this License, a report that interprets the existing baseline information and provides a comprehensive, integrated description of the limnology and aquatic ecology of Lac de Gras. This compilation shall be developed in accordance with Schedule 4, Item 2.
5. The Licensee shall address any deficiencies in the submissions made under Part K, Item 4 as directed by the Board.
6. The Licensee shall submit to the Board for approval within six (6) months of issuance of this License, a Plan for conducting a revised AEM program designed to determine the short and long-term effects in the aquatic environment resulting from the Project, test impact predictions, measure the performance of operations and evaluate the effectiveness of impact mitigation.
7. The AEM program shall include, but not necessarily be limited to, the following:
 - a) clear identifiable objectives of the program;
 - b) a description of the area to be monitored that including maps depicting all sampling and control sites, as well as the overall predicted zones of influence of the Project;
 - c) a description of the sampling program that will be conducted throughout the term of the License to achieve the objectives of the AEM program including: the variables, sample media, monitoring protocols and Quality Assurance/Quality Control (QA/QC) procedures. The QA/QC procedures must ensure that any future changes in monitoring protocols will be calibrated to initial monitoring protocols and data sets so that continuity, consistency, validity, and applicability of monitoring results will be maintained. This program shall also explicitly describe the measures that will be taken to identify and address any information deficiencies.

- d) statistical design criteria, including a description of sampling frequencies for each parameter that ensures both accurate characterization of short-term variability and the collection of sufficient data to establish long-term trends;
- e) a description of procedures that will be used to analyze and interpret the data collected in reference to the results of the QA/QC program;
- f) a description of the approaches to be used to annually evaluate and adjust the AEM program;
- g) a description of how the results of the AEM program will be incorporated in the overall adaptive environmental management strategies employed by the Licensee, and how data will be used to identify the need for additional mitigation strategies to minimize the impacts of the project;
- h) a process for measuring Project-related effects in:
 - i) water quality;
 - ii) sediment quality;
 - iii) phytoplankton, periphyton, zooplankton and benthic invertebrate communities;
 - iv) fish, including contaminant levels (e.g.: mercury) in fish tissues, indicators of fish health and fish community status; and
 - v) other ecosystem components as may be required by the Board.
- i) Specific Effects Studies (SES's) that shall include but not necessarily be limited to the following:
 - i) in-situ evaluation of metal leaching and releases of explosives residues from the Water Retention Dikes;
 - ii) delineation study of any plume(s) from the main effluent discharge;
 - iii) characterization of the toxicity of the effluent source waters;
 - iv) validation of nutrient input predictions for Lac de Gras;
 - v) evaluation of the effects of dredging, dike construction, and associated sediment plume(s) on water quality and biota;
 - vi) evaluation of contaminant loading and the fate of contaminants in Lac de Gras;
 - vii) an evaluation of various eutrophication monitoring tools that may be used to evaluate the effects of nutrient releases to Lac de Gras;
 - viii) an evaluation of the effects of nutrient releases on the algal, benthos, and zooplankton communities and trophic status of Lac de Gras; and
 - ix) a site-specific evaluation of the impacts of cadmium on the waters of Lac de Gras;
- j) an evaluation of the project-related cumulative effects of multiple stressors on the aquatic environment of Lac de Gras;

- k) an evaluation of the contaminant loads associated with dust deposition and its effects on the aquatic environments;
 - l) the establishment of appropriate control sites in Lac de Gras or nearby lake systems to support an evaluation of project impacts. These control sites should be located outside the zone of influence of mining operations, mineral exploration or any other disturbance activities to provide the necessary information on natural background conditions that includes:
 - i) a detailed rationale for site selection, including examination of alternative approaches for establishing the control site(s);
 - ii) an evaluation of the adequacy of baseline data for representing pre-development conditions at the control site(s); and
 - iii) an appraisal of the adequacy of each site.
 - m) the establishment of sufficient and appropriate monitoring sites within the predicted zones of influence which shall include, but not necessarily be limited to, the following:
 - i) sites at appropriate intervals from the source of influence to a point one (1) kilometer from the source of influence;
 - ii) sites along the perimeter of East Island, including the channel between the East and West Islands;
 - iii) far field sites, including deeper basins;
 - iv) Lac de Gras at or near the outflow to the Coppermine River;
 - v) Lac de Gras at or near the Lac du Sauvage narrows; and
 - vi) any additional sites necessary to evaluate the spatial extent of impacts associated with the Project, and/or as predicted in the environmental assessment.
8. The Licensee shall prepare a Status Report for each of the Special Effects Studies identified under Part K, Item 7(i). The Status Report will include schedules for completion of any studies not yet completed under Part K, Item 7(i). This status report shall be submitted to the Board for approval within one (1) month of amendment issuance.
9. The Licensee shall submit to the Board for approval within one (1) month of amendment issuance, reports for all studies completed under Part K, Item 7(i).
10. If the AEM program is not approved by the Board, the Licensee shall resubmit a revised plan within thirty (30) days of notification.
11. The Licensee shall implement the AEM program as and when approved by the Board.
12. The Licensee shall submit to the Board on a annual basis the following information:
- a) a summary of activities conducted under the AEM program;

- b) tabular summaries of all data and information generated under the AEM program in an electronic and printed format acceptable to the Board;
- c) an interpretation of the results;
- d) an evaluation of any identified environmental changes relative to baseline conditions that occurred as a result of the Project;
- e) an evaluation of the overall effectiveness of the AEM program to date;
- f) recommendations for refining the AEM program to improve its effectiveness as required; and
- g) each AEM program annual report shall include, a summary of the significant results of the AEM program from the project inception, term effects of the Project, and of the actual effects of the Project to date, in comparison to the predicted impacts.

13. The Licensee shall review and update the AEM program of each year by March 31st.

PART L: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall submit to the Board for approval within one (1) year of issuance of this License, an Interim Abandonment and Restoration Plan in accordance with the Board's "Guidelines for Mines in the Northwest Territories," September 1980, or subsequent edition and the Dam Safety Guidelines.
 - a) The plan shall include specific abandonment and restoration objectives and an evaluation of alternatives for the closure of each mine component. The plan shall include, but not necessarily be limited to the following:
 - i) open pits, water retention dykes, and related structures;
 - ii) underground workings;
 - iii) Processed Kimberlite Containment Facility, including the placement of
 - iv) coarse kimberlite material over PKC slimes, and water handling during
 - v) placement;
 - vi) Waste Rock Storage Facilities and the Drainage Control and Collection
 - vii) System;
 - viii) water management structures (dams, intake and delivery systems,
 - ix) treatment plants);
 - x) Dredged Sediment Containment Facility;
 - xi) North Inlet Facility including, sediment containment, and water
 - xii) management;
 - xiii) borrow pits, ore storage stockpiles, and other disturbed areas;
 - xiv) surface infrastructure (process plant, camps, roads, and airstrip);

- xv) all petroleum and chemical storage areas;
 - xvi) any other areas potentially contaminated with hazardous materials;
 - xvii) any facilities or areas, which may have been affected by development such that a potential pollution problem exists;
 - xviii) contingencies for pit water treatment during closure;
 - xix) dyke breach locations and sizes; and
 - xx) restoration of aquatic habitat in all areas.
- b) a description of the detailed plans for reclamation, measures required, or actions to be taken, to achieve the objectives stated in the Board's Guidelines and Part L, Item 1 a) for each mine component;
 - c) a detailed description, including maps and other visual representations, of the pre-disturbance conditions for each site, accompanied by a detailed description of the proposed final landscape, with emphasis on the restoration of surface drainage over the restored units;
 - d) a comprehensive assessment of materials suitability, including geochemical and physical characterization, and schedule of availability for restoration needs, with attention to top-dressing materials, including maps where appropriate, showing sources and stockpile locations of all reclamation construction materials;
 - e) a description of the procedure to be employed for progressive reclamation, including details of restoration scheduling and procedures for co-ordinating restoration activities within the overall mining sequence and materials balance;
 - f) a description of any post-closure treatment that may be required for drainage water that is not acceptable for discharge from any of the reclaimed mine components including a description for handling and disposing of post-closure treatment facility sludges;
 - g) a description of the plan to assess and monitor any ground water contamination during post-closure;
 - h) an evaluation of the potential to re-vegetate disturbed sites that includes the identification of criteria to be used to determine technical feasibility and alternative restoration options;
 - i) an identification of the research needs for restoration;
 - j) a description of how progressive reclamation will be monitored throughout the life of the mine, including an evaluation of the effectiveness of any reclaimed areas;
 - k) details of closure measures proposed in the event of a premature or temporary shutdown at any time throughout mine life; and
 - l) a description of proposed means to provide long term maintenance of collection system and treatment plant.

2. The Licensee shall annually submit to the Board, an updated estimate of the anticipated mine restoration liability, utilizing the current version of RECLAIM, or another method acceptable to the Board. This estimate shall include the expected liability at the end of the upcoming year.
3. The Licensee shall submit to the Board for approval by March 31, 2001 a Restoration Research Plan that includes, but is not necessarily limited to, the following:
 - a) an update of restoration research to date and a description of how the results may affect restoration planning;
 - b) details of further restoration research the Licensee will undertake to address the objectives identified in Part L, Item 1 (a);
 - c) a timetable for future research requirements;
 - d) a description of a process to ensure that the restoration procedures that might result from the research are ecologically appropriate;
 - e) a description of how the research will incorporate objectives relating to the restoration or creation of viable terrestrial and aquatic habitat;
 - f) a description of how metal uptake in revegetated plant communities will be monitored;
 - g) a field-testing program and an implementation timetable to verify the effectiveness of the proposed impermeable closure cap for the Process Kimberlite Containment Facility and the Waste Rock Storage Facilities; and
 - h) a description of Quality Assurance/Quality Control protocols for conducting research, how research progress will be monitored and how results may affect the operational restoration program.
4. The Licensee shall annually review the Abandonment and Restoration Plan and Restoration Research Plan and shall modify the Plan(s) as necessary to reflect changes in operations, technology, and results from restoration research and other studies. All proposed modifications to the Plan(s) shall be submitted to the Board for approval.
5. Revisions to the Plan(s) shall be submitted to the Board for approval within six (6) months of receiving notification of the Board's requirement for revision.
6. The Licensee shall implement the Abandonment and Restoration Plan as approved by the Board in accordance with the schedules and procedures specified in the Plan.
7. Compliance with the Abandonment and Restoration Plan specified in this License does not limit the legal liability of the Licensee, other than liability arising from provisions of the *Act* and its Regulations.
8. The Licensee shall submit to the Board for approval by February 1, 2002 a restoration monitoring program to evaluate the effectiveness of all progressive

reclamation and to identify any modifications required to facilitate landscape restoration.

9. The Licensee shall implement the Restoration Monitoring Plan as and when approved by the Board.

The following schedules provide instructive detail to the conditions appearing in more general terms in the main body of the Licence and are spelled out in this format for greater clarity.

SCHEDULE 1
PART C: CONDITIONS APPLYING TO CONSTRUCTION

1. The Comprehensive Delineation Program referred to in Part C, Item 4 of the Licence, shall include, but not necessarily be limited to, the following:
 - i) detailed delineation of ice rich features;
 - ii) follow up test pit and/or borehole investigations; and
 - iii) geophysical surveys.

2. The detailed design report for the PKC Facility referred to in Part C, Item 5 of the Licence, shall include, but not necessarily be limited to, the following:
 - i) a description of existing conditions beneath the footprint of the structure and extending at least 50 metres beyond the footprint in either direction, including the distribution of the frozen and unfrozen soil and rock materials along representative cross sections of the dams;
 - ii) an explanation for any significant lateral variations in soil materials and the implications of the soil variability on the West Dam design;
 - iii) intended depth of excavation for each of the cross sections selected;
 - iv) a description of the variability of the spatial and engineering properties of the soils;
 - v) the interpreted engineering properties of unfrozen materials below the depth of excavation within the areas delineated in the cross sections in Item 2 i);
 - vi) representative cross sections showing the various stages of dam raises when geothermal modelling and short term slope stability analyses are to be conducted;

- vii) a schedule indicating the time of year when the construction of each lift will be carried out;
 - viii) representative cross sections showing the final configuration of the upstream toe of all dams when operation of the facility commences;
 - ix) an evaluation of the magnitude of differential settlement related to the taliks underneath the proposed dams, as well as foundation movement related to frost heave and thaw settlement over the design life of the structure; and
 - x) the results of revised geothermal modelling throughout the intermediate and final stages of construction.
3. The detailed mine design report referred to in Part C, Item 11 of the Licence, shall include, but not necessarily be limited to, the following:
- i) a detailed engineering mine design report;
 - ii) the results of detailed analyses that demonstrate the compatibility of the mine design and water retention dike design, with special reference to seepage and ground water flow, slope stability and deformations;
 - iii) a complete characterization of the rock or soil properties (including thermal) of both insitu and placed materials necessary to meet performance objectives;
 - iv) a description of the scope of any additional evaluations to be conducted prior to construction, that includes foundation inspection, drill holes and test pits, samples to be collected, analyses to be conducted and details of any instrumentation to be installed;
 - vi) the results of a comprehensive test program and structural assessment to demonstrate that the dike and plastic concrete wall will perform satisfactorily. The test program shall identify the range of acceptable material properties (dike fill zones, plastic concrete, jet grout and bedrock grout) that will meet performance expectations. The structural assessment shall demonstrate that the short and long term performance of the dike and plastic concrete, as an integrated structure, will be acceptable under the range of hydraulic, deformation and thermal conditions expected; and
 - vii) The plastic concrete testing shall include at a minimum laboratory testing for the optimization of the proposed mix design of the plastic concrete, laboratory testing to determine the freezing and frozen properties of the

plastic concrete, geothermal analysis to determine the thermal regime as a function of time as permafrost aggrades into the dike and encompasses the diaphragm wall, and analyses of deformation and water retention characteristics under predicted insitu conditions, including the drawdown, mining and closure scenarios.

4. The final detailed design plan for the Waste Rock Storage Facility referred to in Part C, Item 12 of the Licence, shall include, but not necessarily be limited to, the following:
 - i) geothermal analysis of the foundation of the Waste Rock Storage Facilities and till storage areas; and
 - ii) short term stability analyses that simulate the development of the waste rock disposal facilities and till storage area across the sediment retention pond and the clarification pond, particularly the portions underlain by thawed/thawing ice rich soils. These analyses should identify the method of construction and lift thickness of the rock pile that will not result in the release of water or sediment from the facility and/or damage to the containment structures.

5. The QA/QC Manual for on-land water and waste management structures referred to in Part C, Item 17 of the Licence, shall include, but not necessarily be limited to, the following:
 - i) a complete characterization of the soil and/or rock properties of both insitu and placed materials necessary to meet performance objectives for each structure;
 - ii) the procedures to be followed upon identification of any unacceptable materials, that includes reporting, removal, replacement, specifications for insitu remediation and/or replacement materials;
 - iii) the protocol and schedule for inspections and sampling during the construction of each structure;
 - iv) the frequency of visual inspections for the identification of material types, stratigraphy, ice content and distribution, and any other parameters as may be identified in Item 5 i) above; and
 - v) the schedule of sampling for confirmatory laboratory testing of the materials identified in Items 5 i) and 5 ii) above.

6. The QA/QC Manual for the construction of the Water Retention Dikes referred to in Part C, Item 18 of the Licence, shall include, but not necessarily be limited to, the following:
- a) For Dredging Activities:
 - i) the protocol and schedule of inspecting and sampling during the dredging period that includes a description of methods that will be used to assess dredging effectiveness to remove lakebed sediments;
 - ii) the procedures to be followed upon identification of any unacceptable materials that includes reporting requirements and removal methods;
 - iii) the operational measures that will be employed to minimize re-suspension of lakebed sediments in Lac de Gras as a result of dredging activities; and
 - iv) monitoring requirements and operational in-line dredge metering for determining dredging effectiveness.
 - b) For Dike Rock Placement Activities:
 - i) the protocol and schedule of inspecting and sampling during the placement of rock materials to ensure performance objectives are met for grain size distribution, surveying and geometric control and verification of vibro-densification;
 - ii) the schedule of monitoring that includes the type and distribution of instrumentation to be used , monitoring frequency, monitoring threshold limits upon which action should be taken and proposed contingency measures in the event that design specifications are not achieved; and
 - iii) identify operational measures to be employed to minimize introduction of sediments in Lac de Gras as a result of dike placement activities.
 - c) For Plastic Concrete Placement Activities:
 - i) the protocol and schedule of inspecting and sampling for preparation of the plastic concrete;
 - ii) the protocol of inspections and monitoring of the excavation of the cut off wall trench including vertical alignment, slurry loss, preparation of primary panel ends, cleaning of panel base, sequence of panel construction and placement;

- iii) the schedule of monitoring that includes type and distribution of instrumentation, monitoring frequency, design specifications upon which action should be taken and proposed contingency measures in the event that design specifications are not met; and
 - iv) measures to be employed for the management of all bentonite not confined to the cut off wall trench.
- d) For Jet Grouting and Bedrock Grouting Activities:
- i) the protocol and schedule of inspecting and sampling for preparation of the grout mixtures;
 - ii) the protocol of inspections and monitoring for the alignment of drill holes;
 - iii) the protocol of inspections and monitoring for the grouting pressures, grout take and return volume; and
 - iv) the schedule of monitoring including type and distribution of instrumentation and monitoring frequency.
7. The QA/QC Manuals in Items 5 and 6 above, shall describe the management thresholds upon which action will be taken to implement the contingency measures and mitigation in the event that design specifications are not met.

SCHEDULE 2
PART F: CONDITIONS APPLYING TO WASTE MANAGEMENT PLANS

1. The Processed Kimberlite and Waste Water Management Plan referred to in Part F, Item 1 shall include, but not necessarily be limited to, the following:
 - i) a comprehensive description of all sources and types of waste and wastewater which will be deposited in the Processed Kimberlite Containment (PKC) Facility;
 - ii) a description of any proposed physical or chemical treatment of waste or wastewater prior to its discharge to the PKC Facility and prior to discharge from the PKC Treatment Facility to the receiving environment;
 - iii) a description, including maps to scale, of the locations of all monitoring stations within the PKC Facility and discharge locations to and from the PKC Facility. The description should include the sampling protocols for each station;
 - iv) a description of the management and scheduling of all processed kimberlite deposition within the PKC Facility;
 - v) stage-volume curves and water, solids and ice balance calculations showing life expectancy of the PKC Facility; and
 - vi) any operational and/or structural modifications which may be implemented that will affect the management of the PKC Facility and associated wastewater operations.

2. The PKC Monitoring Plan referred to in Part F, Item 2 shall include, but not necessarily be limited to, the following:
 - i) a description of the methods that will be used to determine the volume in cubic metres of fine and coarse fractions of processed kimberlite disposed of in the PKC Facility on an annual basis;
 - ii) a description of the procedures that will be used to characterize the physical, thermal and chemical properties of the fine kimberlite in the frozen and thawed condition within the PKC Facility;
 - iii) a description of the procedures that will be used to characterize pore water within frozen and thawed zones; and

- iv) a description of the thermal monitoring of dam structures that will be conducted to ensure that the frozen core develops as planned and is maintained throughout the life of the mine.
3. The North Inlet Sediment and Waste Water Management Plan referred to in Part F, Item 3 shall include, but not necessarily be limited to, the following:
- i) a comprehensive characterization of all sources and types of wastewater and wastes including sediments that will be directed and stored in the North Inlet Facility;
 - ii) a description of any proposed physical and chemical treatment of waste prior to discharge to the North Inlet Facility and proposed treatment of waste stored in the North Inlet Facility prior to release to the environment;
 - iii) a description of proposed management and scheduling of sediment deposition in the North Inlet Facility; and
 - iv) any operational and/or structural modifications that may affect the North Inlet Facility operations.
4. The Dredged Sediment Containment Facility Management Plan referred to in Part F, Item 5 shall include, but not necessarily be limited to, the following:
- i) a comprehensive characterization of all sources and types of wastewater and sediments directed to and stored in the facility;
 - ii) a description of any proposed physical or chemical treatment of waste prior to any discharge to the environment;
 - iii) a schedule of anticipated volumes of sediments deposited to and waste discharged from the facility; and
 - iv) a description of the reclamation and closure plans for the facility.
5. The Rock Management Plan referred to in Part F, Item 6 shall include, but not necessarily be limited to, the following:
- i) an annual schedule for till storage, ore stockpiling, processed kimberlite generation and waste rock production by rock type, tonnage, and destination over the term of the project including sources and volumes of each rock type;

- ii) geochemical decision criteria for managing waste rock extracted from quarries and pits. Criteria will facilitate classification of rock which is suitable and not suitable for the following uses in terms of acid generation and heavy metals leaching potential:
 - a) construction of on-land roads and facilities;
 - b) construction in Lac de Gras;
 - c) reclamation;
 - d) disposal in waste rock piles; and
 - e) segregated as potentially acid generating rock;
 - iii) a description of operational procedures that will be used to segregate and manage the rock that is identified for construction;
 - iv) a complete description, including site maps to scale, of each till, ore and waste rock storage facility including the PKC Facility;
 - v) a description of the sampling design and analytical methods that will be used to support the operational classification of all rock types;
 - vi) a description of the methods that will be used to construct till storage, ore stockpiling, Processed Kimberlite, and waste rock facilities such that generation of acidic drainage and/or metal leaching is limited;
 - vii) design details for the construction of large-scale tests for assessing the effectiveness of blending different combinations of biotite schist and granite. The Licensee shall undertake these tests as and when approved by the Board; and
 - viii) a description of the temperature analysis that will be implemented in all Waste Rock Storage Areas having Acid Rock Drainage (ARD) potential to evaluate the potential for oxidation reactions and to determine predicted ARD generation rates.
6. The updated Rock Management Plan identified in Part F, Item 7 shall include, but not necessarily be limited to:
- i) a comparison of predicted and measured quantities of each rock type produced in the preceding year;
 - ii) results of geochemical sampling and testing of till, ore, Processed Kimberlite, and waste rock produced during the preceding year;
 - iii) geochemical characteristics of each rock type and area of exposure in the current pit wall(s);

- iv) updated predictions of water chemistry of the leachate from the waste rock based on measured results, from all sources; and
 - v) the results and interpretation of any additional geochemical testing on various rock types or Processed Kimberlite.
7. The Seepage Surveys referred to in Part F, Item 11 shall include, but not necessarily be limited to:
- i) monthly sampling of detected seepages during periods of flow;
 - ii) testing in the field shall include volume, dissolved oxygen, conductivity, Eh, field pH, water temperature, water colour, and precipitate colour;
 - iii) laboratory analysis of each sample shall include major ions (as defined in the SNP), nitrite, nitrate, Total ammonia, Total arsenic, Total Dissolved Solids, Total Phosphorus, TSS, pH, conductivity, Total and Dissolved metals determined by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) analysis as defined in this Licence and the SNP; and
 - iv) a site plan showing sampling locations, interpretation of SNP data collected from the drainage control and collection ponds and a description of how the results have been interpreted relative to the results of the QA/QC program.

SCHEDULE 3
PART J: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Contingency Plan referred to in Part J, Item 1 of the Licence shall include, but not be necessarily limited to the following contingencies for:
 - i) water management during construction;
 - ii) treatment plant operation and the capacity to ensure the effluent quality criteria are met;
 - iii) in-lake construction activities, including spills of hazardous materials and any plume beyond the 200 metre zone;
 - iv) dam seepage, reduced capacity, failures of containment facilities, uncontrolled discharges, metal contamination and threshold limits at which point management action will be taken;
 - v) handling of larger volumes of water than expected associated with pit dewatering, and the capacity of the PKC and North Inlet Facilities;
 - vi) hazardous materials storage areas, including spills of fuel and explosive chemicals;
 - vii) management of water associated with inland lake dewatering, including poor water quality, and erosion;
 - viii) operations of all treatment facilities including: poor treatment performance, toxic effluent, and inadequate diffuser performance;
 - ix) stability and drainage control associated with waste rock management, including slope failure and poor seepage quality;
 - x) seepage control systems, including the failure of collection ditches;
 - xi) uncontrolled discharges from spillways;
 - xii) ground water contamination; and
 - xiii) solid waste management.

SCHEDULE 4
PART K: CONDITIONS APPLYING TO AQUATIC EFFECTS MONITORING

1. A complete compilation of existing data and the evaluation of aquatic baseline information referred to in Part K, Item 2 of the Licence shall include, but not necessarily be limited to the following:
 - i) hydrological conditions in Lac de Gras;
 - ii) bathymetry of Lac de Gras;
 - iii) water quality conditions in Lac de Gras and at the outlet of Lac de Gras to the Coppermine River;
 - iv) sediment quality conditions in Lac de Gras;
 - v) diversity, distribution and abundance of aquatic plants in Lac de Gras;
 - vi) diversity, distribution and abundance of zooplankton in Lac de Gras;
 - vii) diversity, distribution and abundance of benthic invertebrates in Lac de Gras;
 - viii) diversity, distribution and abundance of fish in Lac de Gras;
 - ix) habitat use by fish in Lac de Gras; and
 - x) diversity, distribution and abundance of aquatic-dependent wildlife in the area of Lac de Gras.

2. The description of the existing limnology and aquatic ecology of Lac de Gras, referred to in Part K, Item 3 of the Licence shall include, but not necessarily be limited to a complete characterization of the following:
 - i) hydrological conditions in Lac de Gras that includes a description of inflows from Lac du Sauvage and outflow from Lac de Gras;
 - ii) bathymetry of Lac de Gras;
 - iii) water quality conditions in Lac de Gras that includes a description of the inflow water quality from Lac du Sauvage and the outlet quality to the Coppermine River;
 - iv) sediment quality conditions in Lac de Gras;

- v) aquatic plant communities in Lac de Gras;
- vi) zooplankton communities in Lac de Gras;
- vii) benthic invertebrate communities in Lac de Gras;
- viii) fish communities in Lac de Gras; and
- ix) aquatic ecology in Lac de Gras, with special reference to interactions among the various ecosystem components and habitat use.

MACKENZIE VALLEY LAND AND WATER BOARD

LICENSEE: Diavik Diamond Mines Inc.
LICENSE NUMBER: N7L2-1645
EFFECTIVE DATE OF LICENSE: August 16, 2000
EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM: August 16, 2000

SURVEILLANCE NETWORK PROGRAM – REVISED MAY 4, 2005.

A. Location of Sampling Stations

NOTE: Figure 1 and Figure 2 referenced in the SNP are attached as a guide for station locations. The description of the SNP Stations is approximate and subject to the approval of an Inspector.

Station Number Description

STATIONS APPLYING TO CLASS “B” LICENSE ONLY

- 1645-1 Minewater discharge (B License, November 1, 1998).
- 1645-2 Outflow decant from F1 (B License, November 1, 1998).
- 1645-3 Lac de Gras inflow from F1 wetlands (B License, November 1, 1998).
- 1645-4 Discharge from Sewage Disposal Facility (B License, November 1, 1998).
- 1645-5 Outflow from disposal pond (B License, November 1, 1998).
- 1645-6 Just prior to entering Lac de Gras at the stream outflow from the sewage disposal (B License, November 1, 1998).
- 1645-7 Just upstream of the confluence between the ice scrapings disposal area runoff and the stream from the sewage outflow (B License, November 1, 1998).
- 1645-8 Immediately down slope of the semi-permeable Dike in the D1 drainage way (B License, November 1, 1998).
- 1645-9 Treated minewater pumped directly to Lac de Gras (B License, November 1, 1998).

STATIONS APPLYING TO TREATED EFFLUENT DISCHARGE

- 1645-10 Sewage discharge from the North Construction Camp (B License November 1, 1998).

- 1645-11 Sewage discharge from the South Construction Camp/ Permanent Accommodation Site.
- 1645-12 West cell - North Inlet Facility.
- 1645-13 North Inlet - East Cell.
- 1645-14 North Inlet Treatment Plant treated effluent prior to mixing with PKC treated effluent.
- 1645-15 Process plant slurry discharge to PKC Facility.
- 1645-16 PKC Pond Water within the PKC Facility.
- 1645-17 PKC Treatment Plant Effluent prior to mixing with North Inlet Treatment Plant treated effluent.
- 1645-18 Main Effluent Discharge, at the water treatment plant, last point of control.
- 1645-19 Lac de Gras, at sixty (60) metres from the effluent discharge.

STATIONS APPLYING TO SURFACE RUNOFF AND GROUND WATER

- 1645-20 Northwest of clarification pond (drainage course) on the North West side of Pond.
- 1645-21 West of clarification pond (drainage course) between Pond 2 and Pond 3.
- 1645-22 North of quarry and till areas (drainage course) on the South side of North Inlet Facility.
- 1645-23 North perimeter road (drainage course) between the road and the North Inlet Facility.
- 1645-24 East perimeter road (drainage course), South of Pond 1.
- 1645-25 East PKC Dike area (drainage course) East of Pond 5 towards the bay.
- 1645-26 West PKC Dike area (drainage course) to the West side of Pond 4.
- 1645-27 Airstrip Drainage Course, North of Airstrip.
- 1645-28 Groundwater GW1 between the North Rock Pile and the North Inlet.
- 1645-29 Groundwater GW2 North of Pond 2.
- 1645-30 Groundwater GW3 Northwest of the Till Disposal Area.
- 1645-31 Groundwater GW4 West of the PKC, South of Pond 4.
- 1645-32 Groundwater - South of the PKC, between the Ammonium Nitrate Storage and

Pond 7.

1645-33 Groundwater-nearest bulk fuel storage.

STATIONS APPLYING TO DEWATERING

- 1645-34 Near intake structure for De-watering of Lake E1.
- 1645-35 Near intake structure for De-watering of Lake E6.
- 1645-36 Near intake structure for De-watering of Lake E7.
- 1645-37 Near intake structure for De-watering of Lake E8.
- 1645-38 Near intake structure for De-watering of Lake E10.
- 1645-39 Near intake structure for Dike pool de-watering within Dike the enclosure of A154.
- 1645-40 Near intake structure for Dike pool de-watering within the Dike enclosure of A418.
- 1645-41 Near intake structure for Dike pool de-watering within the Dike enclosure of A21.
- 1645-42 Pond 4 as indicated in the Water License Application, Volume 1.
- 1645-43 Pond 6 as indicated in the Water License Application, Volume 1.
- 1645-44 Pond 7 as indicated in the Water License Application, Volume 1.
- 1645-45 Pond 10 as indicated in the Water License Application, Volume 1.
- 1645-46 Pond 11 as indicated in the Water License Application, Volume 1.
- 1645-47 Pond 12 as indicated in the Water License Application, Volume 1.
- 1645-67 Pond 1 as indicated in the Water License Application, Volume 1.
- 1645-68 Pond 2 located at the northwest corner of the North Country Rock Pile area.
- 1645-69 Pond 5 located on the east side of the PKC between the East PKC dam and the Main Haul Road.
- 1645-48 Clarification pond, the west side of the North Rock Pile.
- 1645-49 Mine water removed from A154 pit.
- 1645-50 Mine water removed from A418 pit.
- 1645-51 Mine water removed from A21 pit.

- 1645-52 Seepage collected from the inside toe of A154 Dike.
- 1645-53 Seepage collected from the inside toe of A418 Dike.
- 1645-54 Seepage collected from the inside toe of A21 Dike.
- 1645-66 Near intake structure for De-watering of North Inlet.

STATIONS APPLYING TO DREDGING AND DIKE CONSTRUCTION

- 1645-55 Background reference Station in Lac de Gras for the regulation of the dredging and Dike construction activities.
- 1645-56 Fixed Dredging/Diking Station located 200 metres east in a perpendicular direction from the centerline of the North Inlet East Dike.
- 1645-57 Removed as per approved Dredging TSS Management and In Lake Construction Plan.
- 1645-58 Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan (N 7.152.057 E 537.073).
- 1645-59 Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan (N 7.152.210 E 537.342).
- 1645-60 Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan (N 7.152.587 E 537.575).
- 1645-61 Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan (N 7.153.263 E 537.666).
- 1645-62 Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan (N 7.153.562 E 537.079).
- 1645-63 Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan (N 7.153.744 E 536.463).
- 1645-64 Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan (N 7.153.768 E 536.173).
- 1645-65 Station as referenced in Figure 8.1 of the approved Dredging TSS Management and In Lake Construction Plan (N 7.153.740 E 535.756).
- 1645-70 Station referenced as 1645-A in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations (N 7.151.848 E 537.057).
- 1645-71 Station referenced as 1645-B in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations (N 7.151.369 E 536.765).
- 1645-72 Station referenced as 1645-C in Figure 1 of the April 12, 2005 DDMI request

for additional SNP Stations (N 7.151.319 E 536.414).

1645-73 Station referenced as 1645-55B in Figure 1 of the April 12, 2005 DDMI request for additional SNP Stations – Relocated background reference Station (N 7.152.720 E 538.765).

B. Sampling and Analysis Requirements

1. The field pH, sample temperature, and ambient wind and weather conditions shall be recorded at all locations at the time of sampling.

2. During construction, effluent at Station Numbers 1645-10 and 1645-11 shall be sampled:

a) every six (6) days and analyzed for the following:

BOD₅
pH⁴
Faecal Coliforms
Nutrients⁵
Oil and Grease
Temperature
Total Suspended Solids

b) annually and analyzed for the following:

ICP-MS Metal Scan ¹(Total) E. Coli

3. During operations, effluent at Station Number 1645-11 shall be sampled annually and analyzed for the following:

BOD ₅	Oil and Grease
pH ⁴	Temperature
Faecal Coliforms	Total Suspended Solids
Nutrients ⁵	

4. Water at Station Number 1645-12 shall be sampled monthly and analyzed for the following parameters:

Total Ammonia	Nitrite
Turbidity	Total Phosphorus
Field Parameters ³	ICP-MS Metal Scan ¹ (Total)
Nitrate	Major Ions ²
Total Suspended Solids	pH ⁴

5. Water at Station Number 1645-13 shall be sampled every two (2) weeks and analyzed for the following parameters:

Total Arsenic	Nutrients ⁵
Dissolved Organic Carbon	Total Mercury
Dissolved Oxygen	Total Organic Carbon
Field Parameters ³	Total Suspended Solids

Total Arsenic	Nutrients ⁵
ICP-MS Metal Scan ¹	
(Total and Dissolved)	
Major Ions ²	Turbidity
pH ⁴	

6. Water at Station Number 1645-14 shall be sampled every six (6) days during periods of discharge to Lac de Gras, and analyzed for the following:

Total Arsenic	Nutrients ⁵
Dissolved Organic Carbon	Total Mercury
Dissolved Oxygen	Total Organic Carbon
Field Parameters ³	Total Suspended Solids
ICP-MS Metal Scan ¹	
(Total and Dissolved)	
Major Ions ²	Turbidity
pH ⁴	

7. During periods of discharge, effluent at Station Number 1645-15 shall be sampled monthly, and analyzed for the following:

Volume	Percent solids
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8. Water at Station Number 1645-16 shall be sampled monthly and analyzed for the following parameters:

Total Arsenic	Nutrients ⁵
Dissolved Organic Carbon	Turbidity
Dissolved Oxygen	Total Mercury
Field Parameters ³	Total Organic Carbon
ICP-MS Metal Scan ¹	
(Total and Dissolved)	
Major Ions ²	Total Suspended Solids
pH ⁴	

9. Water at Station Number 1645-17 shall be sampled during discharge to Lac de Gras:

- a) every six (6) days and analyzed for the following:

Total Arsenic	Nutrients ⁵
Dissolved Organic Carbon	Turbidity
Dissolved Oxygen	Total Mercury
Field Parameters ³	Total Organic Carbon
ICP-MS Metal Scan ¹	
(Total and Dissolved)	
Major Ions ²	Total Suspended Solids
pH ⁴	

- b) quarterly and analyzed for the following:

BOD₅
Faecal Coliforms

Oil and Grease

10. During periods of discharge, effluent at Station Number 1645-18 shall be sampled:

a) Every six (6) days and analyzed for the following; and

Total Arsenic	Nutrients ⁵
Dissolved Organic Carbon	Total Mercury
pH ⁴	
Dissolved Oxygen	Total Organic Carbon
Field Parameters ³	Total Suspended Solids
ICP-MS Metal Scan ¹ (Total and Dissolved)	
Major Ions ²	Turbidity

b) Upon the commissioning of the PKC Treatment Facility Station Number 1645-18 shall also be sampled every six (6) days and analyzed for the following:

Faecal Coliforms
BOD₅
Oil and Grease

11. Effluent at Station Number 1645-18 shall be sampled quarterly and provided to an accredited bioassay laboratory for the purpose of performing the following acute and chronic toxicity tests:

- a) Chronic toxicity to the early life stages of salmonid fish (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/28);
- b) Chronic toxicity to the crustacean, *Ceriodaphnia dubia* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/21); and
- c) Chronic toxicity to the alga, *Selenastrum capricornutum* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/25);

12. Effluent at Station Number 1645-18 shall be sampled monthly with samples provided to an accredited bioassay laboratory for the purpose of performing the following acute toxicity tests:

- a) The LC20 values for tests performed under Part H, Item 8 (a) and (b) of the Water License;
- b) Ninety-six (96) hour toxicity tests (subject to availability of gametes) with Round Whitefish, *Prosopium cylindraceum* to evaluate the sensitivity of the species relative to Rainbow Trout. If availability of test organisms is intermittent, the toxicity tests should be run as frequently as possible in concurrence with the Rainbow Trout test as required under Part H, Item 8 (a) of the Water License; and
- c) Ten (10) day toxicity tests with the amphipod, *Hyalella azteca* (endpoint: survival/LC 50).

13. Water at Station Number 1645-19 shall be sampled monthly at three (3) stations located at a sixty (60) metre radius from the diffuser. Samples shall be collected at surface and at five (5) metre, intervals to depth at each station and analyzed for the following parameters.

Total Arsenic	Nutrients ⁵
Dissolved Organic Carbon	Turbidity
Dissolved Oxygen	Total Mercury
Field Parameters ³	Total Organic Carbon
ICP-MS Metal Scan ¹ (Total and Dissolved)	
Major Ions ²	Total Suspended Solids
pH ⁴	

- a) Sediment samples shall also be collected quarterly at each of the three (3) sites and analyzed for the following parameters;

Total Metals (strong acid Digestion)	Total Ammonia
Total Organic Carbon	PAH's
Simultaneous Extracted Metals	Hydrogen Sulfide
Acid Volatile Sulphide	

Methods for analysis for Simultaneous Extracted Metals and Acid Volatile Sulphide shall be approved by the Analyst.

14. During construction, water at Station Numbers 1645-20, 1645-21, 1645-22, 1645-23, 1645-24, 1645-25, 1645-26 and 1645-27 shall be sampled:

- a) daily during periods of flow and analysed for the following; and

pH ⁴	Turbidity
Total Suspended Solids	

- b) once during a period of high flow at the beginning of freshet and once during a period of low flow and analysed for the following:

Total Ammonia	Major Ions
Dissolved Oxygen	Nitrate
Field Parameters ³	Nitrite
ICP-MS Metal Scan ¹ (Total)	Total Phosphorus
Oil and Grease	

15. Groundwater at Station Numbers 1645-28, 1645-29, 1645-30, 1645-31, 1645-32, and 1645-33 shall be checked weekly for groundwater flow and sampled monthly for the following parameters:

Total Ammonia	Major Ions ²
Field Parameters ³	pH ⁴
ICP-MS Metal Scan ¹ (Total)	Total Petroleum Hydrocarbons

16. Effluent at 1645-34, 1645-35, 1645-36, 1645-37, 1645-38, 1645-66 and any other dewatering of surface waters shall be sampled at the intake de-watering point of each lake.

a) once prior to commencement of de-watering and analyzed for the following:

Total Ammonia	Total Phosphorus
Total Suspended Solids	Nitrate
Field Parameters ³	Nitrite
ICP-MS Metal Scan ¹ (Total)	Turbidity
Major Ions ²	

b) daily during de-watering and analyzed for the following:

Total Suspended Solids	Turbidity
pH ⁴	

c) once on the final day of de-watering and analyzed for the following:

Total Ammonia	Nitrate
Total Suspended Solids	Nitrite
Field Parameters ³	Turbidity
ICP-MS Metal Scan ¹ (Total)	
Major Ions ²	
pH ⁴	
Total Phosphorus	

17. During dewatering, water at Station Numbers 1645-39, 1645-40, and 1645-41 shall be sampled at the dewatering intake point(s) of each station:

a) once prior to the commencement of discharge at a minimum of five (5) stations evenly spaced along a longitudinal, transect as approved by an Inspector. At each station, samples must be collected at surface, and at two (2) metre intervals to depth and analyzed for the following;

pH ⁴	Total Suspended Solids
Field Parameters ³	Turbidity
ICP-MS Metal Scan ¹ (Total)	Nutrients ⁵
Major Ions ²	

(i) The samples collected at surface at each of the five (5) stations shall also be analyzed for Total Petroleum Hydrocarbons.

b) daily during dewatering and analyzed for the following;

pH ⁴	Turbidity
Total Suspended Solids	Total Phosphorus

c) every six (6) days during dewatering and analyzed for the following;

Field Parameters ³	Nutrients ⁵
ICP-MS Metal Scan ¹ (Total)	Oil and Grease
Major Ions ²	

- d) once on the final day of dewatering at each of the five (5) sites and analyzed for the following; and

pH ⁴	Total Suspended Solids
Field Parameters ³	Turbidity
ICP-MS Metal Scan ¹ (Total)	Nutrients ⁵
Major Ions ²	

- (i) The samples collected at surface at each of the five (5) stations shall also be analyzed for Total Petroleum Hydrocarbons.

- e) additional sampling may be required at the request of an Inspector.

18. Water at Station Numbers 1645-42, 1645-43, 1645-44, 1645-45, 1645-46, 1645-47, 1645-67, 1645-68 and 1645-69 shall be sampled monthly, if water is present, and analyzed for the following parameters:

Total Ammonia	Nitrite
Field Parameters ³	pH ⁴
ICP-MS Metal Scan ¹	(Total) Total Phosphorus
Major Ions ²	Total Suspended Solids
Nitrate	Turbidity

19. Water at Station Numbers 1645-42, 1645-43, 1645-44, 1645-45, 1645-46, 1645-47, 1645-67, 1645-68 and 1645-69 sampled daily during discharge to Lac de Gras and analyzed for:

TSS	Turbidity
pH ⁴	

20. Prior to discharge to Lac de Gras, water at Station Number 1645-48 shall be sampled:

- a) once prior to the commencement of the discharge at a minimum of three (3) stations evenly spaced along a longitudinal, transect at the centerline of the clarification pond. At each station samples must be collected at surface, and at two (2) metre intervals to depth and analyzed for the following:

pH ⁴	Oil and Grease
Field Parameters ³	Total Phosphorus
ICP-MS Metal Scan ¹ (Total)	Nitrate
Major Ions ²	Total Suspended Solids
Total Ammonia	Turbidity
Nitrite	

- b) daily during periods of discharge and analyzed for the following;

Total Suspended Solids	Turbidity
Total Phosphorus	

- c) every two (2) weeks during periods of discharge and once on the final day of discharge and analyzed for the following; and

pH ⁴	Oil and Grease
Field Parameters ³	Total Phosphorus
CP-MS Metal Scan ¹ (Total)	Nitrate
Major Ions ²	Total Suspended Solids
Total Ammonia	Turbidity
Nitrite	

21. Water at Station Number 1645-49, 1645-50, and 1645-51 shall be sampled every two (2) weeks and analyzed for the following: (stations 1645-50 & 1645-51 will apply only at the time that A418 and A21 pits are developed)

Field Parameters ³	pH ⁴
ICP-MS Metal Scan ¹ (Total)	Total Suspended Solids
Major Ions ²	Turbidity
Nutrients ⁵	Oil and Grease

22. During discharge to Lac de Gras, water at Station Number 1645-52, 1645-53, and 1645-54 shall be sampled once prior to discharge and analyzed for the following: (stations 1645-53 and 1645-54 will apply only at the time that A418 and A21 pits are developed)

Total Ammonia	Nutrients ⁵
pH ⁴	Turbidity
Field Parameters ³	Total Suspended Solids
ICP-MS Metal Scan ¹ (Total)	Total Dissolved Solids
Major Ions ²	Oil and Grease

- a) Daily during discharge for the following parameters:

Field Parameters ³	Turbidity
Total Suspended Solids	Total Ammonia
Total Phosphorus	

23. Water at Station Number 1645-55 and 1645-58 to 1645-73 inclusive shall be sampled daily using the approved depth integrated sampler. Samples from these stations shall be analyzed for the following parameters:

Total Suspended Solids	Turbidity
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24. The Licensee shall increase sampling if exceedances of the Effluent Quality Requirements occur or as directed by an Inspector.

25. All sampling, sample preservation, and analysis shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater" at the time of analysis, or by such other methods approved by an

Analyst.

26. All analyses shall be performed in a laboratory approved by an Analyst.
27. The Licensee shall submit to an Analyst for approval within two (2) months of the issuance of this License, a revised Quality Assurance/Quality Control QA/QC Plan that includes field and laboratory procedures and requirements.
28. The Licensee shall annually review the approved QA/QC Plan and modify the Plan as necessary. Proposed modifications shall be submitted to an Analyst for approval.
29. The SNP QA/QC Plan referred to in Part B, Items 26 and 27 shall be implemented as approved by an Analyst.

NOTES:

¹ICP-MS Metal Scan shall include at a minimum, the following regulated parameters:

Aluminum	Copper	Zinc
Cadmium	Lead	
Chromium	Nickel	

Once annually the ICP shall also include the following monitored parameters:

Manganese	Molybdenum	
Selenium	Strontium	Uranium

Total metals shall be analyzed unfiltered and dissolved using a 0.45 micron filter.

²Major ions includes the following parameters:

Calcium	Sulphate	Magnesium	Alkalinity
Chloride	Sodium	Fluoride	Potassium

³Field parameters includes the following measurements:

pH	Temperature
Conductivity	

⁴pH analyzed in the laboratory

⁵Nutrients include the following parameters:

Total Ammonia	Nitrate-Nitrogen
Nitrite-Nitrogen	Total Phosphorus
Total Dissolved Phosphorus	Ortho Phosphorus
Total Kjedal Nitrogen	

C. Flow and Volume Measurement Requirements

Unless otherwise noted, all flow and volume measurements shall be measured and recorded on a monthly basis in cubic metres.

1. The daily volume of water obtained from Lac de Gras for all purposes.
2. The daily volume of water dewatered from the A154, A418, and A21 Pits.
3. The volume of water obtained from all sources for use in the process plant.
4. The volume of effluent recycled from the Processed Kimberlite Containment Facility.
5. The volumes of the solids in tonnes and liquid fractions cubic metres of each waste pumped to the Processed Kimberlite Containment Facility.
6. The volume of effluent discharged from the Processed Kimberlite Containment Facility.
7. The volume of effluent discharged from the North Inlet Facility to the Treatment Facilities.
8. The daily volume of effluent discharged into Lac de Gras at SNP Station Number 1645-18.
9. The volume of dredged sediments deposited into the Dredged Sediment Containment Facility or the North Inlet Facility.
10. The daily volume of minewater and seepage pumped from A154, A418 and A21 open pits to the North Inlet Facility and/or Lac de Gras.
11. The daily volume of treated Sewage effluent discharged from the Sewage Disposal Facilities.
12. The volume of Sewage solids removed from the Sewage Disposal Facilities.
13. The volume of water pumped from the run-off ponds to the Processed Kimberlite
14. The volume of ice or frozen sediments removed from the Pit(s) areas.
15. The daily volume of water dewatered from the inland lakes.

D. Other Monitoring Requirements

1. The Licensee shall measure and record the following data:
 - a) precipitation, measured and recorded in hourly and daily totals;
 - b) evaporation, which is calculated from the parameters listed below with hourly and daily averages:
 - wind speed at approximately 2.0 metres above the water surface including daily minima and maxima;
 - wind direction on an hourly basis;

- air temperature at approximately 0.75 and 2.0 metres above the water surface including daily minima and maxima;
 - relative humidity at approximately 0.75 and 2.0 metres above the water surface;
 - water temperature at two levels approximately 1 and 2 metre depths;
 - net solar radiation over the water surface; and
 - water level; and
- c) The weather data for evaporation calculations shall be measured and recorded at a site located at or near the PKC Facility as approved by an Inspector.
2. The Licensee shall submit to the Board for approval, the location, methods, and frequency for measuring and recording the meteorological data identified in Part D, Item 1.
 3. The methods and frequency referred to in Part D, Item 1, shall be implemented as and when approved by the Board.
 4. The quantity of ore processed shall be measured in tonnes and recorded monthly.
 5. The quantity of waste rock, coarse tailings, and till shall be measured in tonnes and recorded monthly and their disposal locations recorded monthly.
 6. The Licensee shall install and monitor a minimum of one (1) SNP station for monitoring the Lac de Gras background references for the regulation of the dredging and Dike construction activities. This station shall not be located near developmental activities or the inlets of any rivers or streams and shall be sampled in accordance with SNP Part B, Item 23.
 7. In the event that a second dredge is required during the construction of the Water Retention Dikes, the Licensee shall establish additional SNP stations for the second dredge in the same manner as those identified (SNP Stations 1645-66, 1645-67, and 1645-68) in for the monitoring of a single dredge. These stations shall be numbered in sequence and monitored in accordance with SNP Part B, Item 22.

E. Reports

1. The Licensee shall, within thirty (30) days following the month being reported, submit to the Board all data and information in an electronic and printed format acceptable to the Board required by the "Surveillance Network Program" including the results of the approved QA/QC Program.

F. Toxicity Testing Protocols

1. In concurrence with the testing required under Part H, Item 8, an experts group shall be formed, at the direction of the Board, to determine the feasibility of developing a water only protocol for:
 - a) a ten (10) day toxicity tests with the amphipod (*Hyalella azteca*) (endpoint: survival/LC 50).
2. Upon agreement and completion of the protocol development as listed above, the Licensee shall submit the proposed protocol to the Board for approval. The Licensee shall

implement the protocol as and when approved by the Board. The protocol will be developed by mutual agreement and does not require the method chosen to be accepted as official Department of the Environment Protocol. Once the protocol is implemented, Part H, Item 8 of this Water License shall be adjusted to include regulation of three (3) species (Rainbow Trout, *D. magna*, and *H. azteca*) at the LC50 value. Upon implementation of the protocol the LC20 monitoring under Part B, Item 12 (a) of the "Surveillance Network Program," and associated LC20 contingency triggers and measures under Part J, Item 5 (a) and (b) of the Water License, shall be removed on Board approval.

3. If the protocol development under Part F, Item 1 of the "Surveillance Network Program" is not feasible, the following will be implemented:
 - a) An analysis of the scientific evidence will be conducted, and if supported by that analysis, a recommendation shall be submitted for Board approval to set toxicity testing limits under Part H, Item 8 of this Water License at the LC20 value for the following toxicity tests:
 - i) 96-hour with Rainbow Trout; and
 - ii) 48-hour with Water Flea (*D. magna*).
 - b) If the analysis, as listed above under (a), does not support imposition of such limits, the experts group will recommend an alternative approach to the Board for their consideration.