

## **Appendix 12**

- **Water Licence N7L2-0925.**

# NORTHWEST TERRITORIES WATER BOARD

Pursuant to the Northwest Territories Waters Act and Regulations the Northwest Territories Water Board, hereinafter referred to as the Board, hereby grants to

(Licensee) ECHO BAY MINES LTD.  
of BAG NO. 1  
(Mailing Address) NISKU, ALBERTA TOC 2G0

hereinafter called the Licensee, the right to alter, divert or otherwise use water subject to the restrictions and conditions contained in the Northwest Territories Waters Act and Regulations made thereunder and subject to and in accordance with the conditions specified in this Licence.

Licence Number	<u>NZL2-0925 (RENEWAL)</u>
Licence Type	<u>"A"</u>
Water Management Area	<u>NORTHWEST TERRITORIES 07</u>
Location	<u>LUPIN MINE, CONTWOYTO LAKE</u> <u>NORTHWEST TERRITORIES</u>
Purpose	<u>WATER USE AND WASTE DISPOSAL</u>
Description	<u>FOR A MINING AND MILLING UNDERTAKING</u>
Quantity of Water Not to be Exceeded	<u>1,700,000 CUBIC METRES PER YEAR</u>
Effective Date of Licence	<u>JUNE 1, 1995</u>
Expiry Date of Licence	<u>MAY 31, 2000</u>

This Licence issued and recorded at Yellowknife includes and is subject to the annexed conditions.

Pamela R. LeMoine  
Witness

NORTHWEST TERRITORIES WATER BOARD

John Wood  
Chairman

APPROVED BY

[Signature]  
Minister of Indian Affairs and  
Northern Development

## **PART A: SCOPE AND DEFINITIONS**

### **1. Scope**

- a) This Licence entitles Echo Bay Mines Ltd. to use water and dispose of waste for a mining and milling undertaking, and associated uses at the Lupin Operation located on the west shore of Contwoyto Lake in the Northwest Territories (approximate Latitude 65°46'N. and Longitude 111°14'W.);
- b) This Licence 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 Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations; and
- c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

### **2. Definitions**

In this Licence: **N7L2-0925**

**"Act"** means the Northwest Territories Waters Act;

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

**"Board"** means the Northwest Territories Water Board established under Section 10 of the Northwest Territories Waters Act;

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

**"Licensee"** means the holder of this Licence;

**"Minister"** means the Minister of Indian Affairs and Northern Development;

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

**"Average Concentration"** means the discrete average of four consecutive analytical results, or if less than four analytical results, the discrete average of the analytical results collected during a batch decant, and as submitted to the Board in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program";

**"Backfill"** means a combination of any or all of a mixture of sand, cement, water, or Tailings that is pumped underground and is used to strengthen/support mined out areas;

**"Minewater"** means groundwater or any water used in mining which is pumped or flows out of any underground workings or open pit;

**"Sewage"** means all toilet wastes and greywater;

**"Sewage Lakes Disposal System"** includes the sewage treatment area and the engineered structures designed to contain and treat sewage as described in Drawing Number LUSEW95.DWG entitled "Lupin Mine - Sewage Lakes Disposal Plan - General Arrangement" updated March, 1995;

**"Tailings"** means material rejected from the mill after the recoverable valuable minerals have been extracted;

**"Tailings Containment Area"** consists of the Tailings containment basin and the engineered structures designed to contain Tailings as described in Drawing Number LUTA195.DWG entitled "Lupin Mine - Tailings Impoundment Plan - General Arrangement" dated January, 1995;

**"Waste"** means waste as defined by Section 2 of the Northwest Territories Waters Act; and

**"Water Supply Facilities"** comprises the area and associated intake infrastructure as identified in Drawing Number LUWAT95.DWG entitled "Lupin Mine - Raw Water Supply Plan - General Arrangement" updated March, 1995.

## **PART B: GENERAL CONDITIONS**

1. The water use fee shall be paid annually in advance.
2. The Licensee shall have posted and shall maintain a security deposit in the amount of One Million (\$1,000,000.00) Dollars pursuant to Section 17(1) of the Act and Section 12 of the Regulations. 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 Licence or renewals thereof.
3. A Reclamation Trust Fund may be established during the term of this Licence. The Licensee shall implement the terms of the Trust Agreement as approved by the Board.
4. The Licensee shall file an Annual Report with the Board not later than March 31st 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 pumped from Contwoyto Lake at Station Number 925-01;

- b) the monthly and annual quantities in cubic metres of treated Tailings effluent discharged at Station Number 925-10;
  - c) the monthly and annual quantities in cubic metres of Minewater discharged at Station Number 925-11;
  - d) the monthly and annual quantities in cubic metres of treated Sewage effluent discharged at Station Number 925-14;
  - e) tabular summaries of all data generated under the "Surveillance Network Program";
  - f) a summary of modifications and/or major maintenance work carried out on the water supply and the waste disposal facilities, including all associated structures;
  - g) a list of unauthorized discharges;
  - h) revisions to the Contingency Plan;
  - i) revisions to the Abandonment and Restoration Plan;
  - j) a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year; and
  - k) any other details on water use or waste disposal requested by the Board by November 1st of the year being reported.
5. The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence.
6. The "Surveillance Network Program" and compliance dates specified in the Licence 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 maintain, to the satisfaction of the Inspector, all the signs necessary to identify the stations of the annexed Surveillance Network Program.
9. The Licensee shall ensure a copy of this Licence is maintained at the site of operation at all times.

**PART C: CONDITIONS APPLYING TO WATER USE**

1. The Licensee shall obtain all water for mining, milling, domestic, and associated uses from Contwoyto Lake using the Water Supply Facilities or as otherwise approved by the Board.
2. The annual quantity of water withdrawn from Contwoyto Lake for mining, milling, domestic, and associated uses shall not exceed 1,700,000 cubic metres.

**PART D: CONDITIONS APPLYING TO WASTE DISPOSAL**

1. The Licensee shall discharge all Tailings into the Tailings Containment Area, underground as Backfill or to other locations as approved by the Board.
2. The discharge from the Tailings Containment Area shall commence no sooner than July 15 of any year unless otherwise approved by the Board.
3. The discharge rate from the Tailings Containment Area shall not exceed 70,000 cubic metres per day unless otherwise approved by the Board.
4. The Licensee shall provide at least five (5) days notice to an Inspector prior to the first proposed discharge of Waste from the Tailings Containment Area during each calendar year.
5. All wastes discharged by the Licensee from the Tailings Containment Area shall meet the following effluent quality requirements:

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample
Total Arsenic	0.50 mg/L	1.00 mg/L
Total Copper	0.15 mg/L	0.30 mg/L
Total Cyanide	0.80 mg/L	1.60 mg/L
Total Lead	0.10 mg/L	0.20 mg/L
Total Nickel	0.20 mg/L	0.40 mg/L
Total Zinc	0.40 mg/L	0.80 mg/L
Total Suspended Solids	15 mg/L	30 mg/L
Oil and Grease		5.00 mg/L

The Waste discharged shall have a pH between 6.0 and 9.5.

6. The Tailings Containment Area shall be constructed, operated and maintained to engineering standards such that:
- a) a freeboard limit of 1.0 metre shall be maintained at all times or as recommended by a qualified geotechnical engineer and as approved by the Board;
  - b) seepage from the Tailings Containment Area is minimized;
  - c) any seepage that occurs is collected and returned immediately to the Tailings Containment Area;
  - d) erosion of constructed facilities is addressed immediately;
  - e) the solids fraction of the mill Tailings shall be permanently contained within the Tailings Containment Area;
  - f) weekly inspections of the dam(s), Tailings line(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. More frequent inspections shall be performed at the request of an Inspector; and
  - g) an inspection of the Tailings Containment Area shall be carried out annually during ice free, open water conditions by a qualified geotechnical engineer registered in the Northwest Territories. The engineer's report shall be submitted to the Board within sixty (60) days of the inspection, including a covering letter from the Licensee outlining an implementation plan to respond to the engineer's recommendations.
7. The Licensee shall discharge all Sewage to the Sewage Lakes Disposal System or to other locations approved by the Board.
8. All Waste discharged from the Sewage Lakes Disposal System shall not exceed the following effluent quality requirements:

Parameter	Maximum Average Concentration
Total Arsenic	0.05 mg/L
Total Copper	0.20 mg/L
Total Lead	0.05 mg/L
Total Nickel	0.30 mg/L
Total Zinc	0.50 mg/L
BOD <sub>5</sub>	30 mg/L
Total Suspended Solids	35 mg/L
Faecal Coliform	1000 colony forming units/100ml

The Waste discharged shall have a pH between 6.0 and 9.5.

9. The Licensee shall notify an Inspector of any planned discharge of Waste from the Sewage Lakes Disposal System at least five (5) days prior to any such discharge.
10. The Licensee shall discharge all Minewater to the Tailings Containment Area or to the Sewage Lakes Disposal System, except as specified in Part D, Item 11.
11. The Licensee shall submit to the Board for approval, a proposal for the disposal of Minewater should a location other than those specified in Part D, Item 10 be considered. The proposal shall detail options for discharge of Minewater which includes details on the quantity and quality of the Minewater and the options for Minewater treatment and disposal.
12. The proposal as specified in Part D, Item 11, shall be implemented as approved by the Board.

**PART E: CONDITIONS APPLYING TO MODIFICATIONS**

1. The Licensee may, without written approval from the Board, carry out modifications to the water supply and waste disposal facilities provided that such modifications are consistent with the terms of this Licence and the following requirements are met:
  - a) the Licensee has notified the Board in writing of such proposed modifications at least sixty (60) days prior to beginning the modifications;
  - b) such modifications do not place the Licensee in contravention of either the Licence or the Act;
  - c) the Board has not, during the sixty (60) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
  - d) the Board has not rejected the proposed modifications.
2. Modifications, for which all of the conditions referred to in Part E, 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 as-built plans and drawings of the modifications referred to in Part E, Item 1 within ninety (90) days of completion of the modifications.

**PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING**

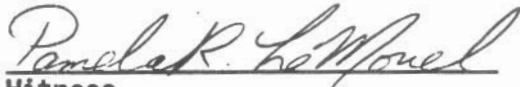
1. The Licensee shall, by November 30, 1995, submit to the Board for approval an updated/combined Contingency Plan in accordance with the Board's "Guidelines for Contingency Planning, January 1987."
2. The Licensee shall revise the Plan referred to in Part F, Item 1 if not approved. The revised Plan shall be submitted to the Board for approval within three (3) months 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 shall be submitted to the Board for approval.
4. If, during the period of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:
  - a) employ the appropriate contingency plan;
  - b) report the incident immediately via the 24 Hour Spill Reporting Line (403) 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.

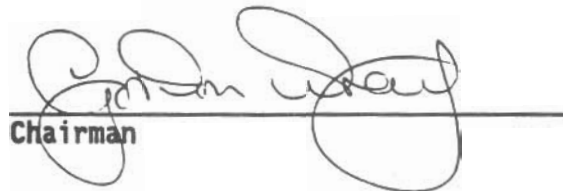
**PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION**

1. The Licensee shall on or before January 31, 1996 submit to the Board for approval an "Interim" Abandonment and Restoration Plan in accordance with the Board's "Guidelines for Abandonment and Restoration Planning for Mines in the Northwest Territories, September 1990."
2. The Licensee shall revise the Plan referred to in Part G, Item 1 if not approved. The revised Plan shall be submitted to the Board for approval within six (6) months of receiving notification of the Board's decision.
3. The Licensee shall review the Abandonment and Restoration Plan annually and shall modify the Plan as necessary to reflect changes in operation, technology, and results of reclamation and/or other studies. The proposed modifications shall be submitted to the Board for approval.

4. Notwithstanding the time schedule referred to in the Abandonment and Restoration Plan, the Licensee shall endeavour to carry out progressive restoration of areas which are abandoned prior to closure of operations.
5. The Licensee shall complete the restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
6. Compliance with the Abandonment and Restoration Plan specified in this Licence does not limit the legal liability of the Licensee, other than liability arising from provisions of the Act and its Regulations.

**NORTHWEST TERRITORIES WATER BOARD**

  
Witness

  
Chairman

## NORTHWEST TERRITORIES WATER BOARD

LICENSEE:	ECHO BAY MINES LTD.
LICENCE NUMBER:	N7L2-0925
EFFECTIVE DATE OF LICENCE RENEWAL:	JUNE 1, 1995
EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM RENEWAL:	JUNE 1, 1995

### SURVEILLANCE NETWORK PROGRAM

#### A. Location of Sampling Stations

<u>Station Number</u>	<u>Description</u>
925-01	Freshwater Intake from Contwoyto Lake.
925-10	Pond #2 discharge at Dam 1A.
925-11	Minewater discharge at automatic sampler in the mill.
925-12	Mill Tailings taken at the mill.
925-14	Decant structure from the Sewage Lakes Disposal System.
925-15	Discharge from Tailings Pond #1 (east pond) into Tailings Pond #2 (west pond).
925-16	Tailings Pond #2 at centre.
925-17	Tailings Pond #2 upstream of Station Number 925-10.
925-19	East end of Seep Creek in Dam 2 Lake.
925-20	West end of Seep Creek before discharge into Unnamed Lake.

925-21	North end of Concession Creek before discharge into Unnamed Lake.
925-22	Inner Sun Bay near centre.
925-24	Inner Sun Bay near narrows.
925-25	Outer Sun Bay.
925-26	Contwoyto Lake in bay east of water intake.

**B. Sampling and Analysis Requirements**

1. Water at Station Number 925-01 shall be sampled annually and analyzed for the following parameters:

Total Arsenic ✓	Total Cadmium ✓
Total Copper ✓	Total Lead ✓
Total Nickel ✓	Total Zinc ✓
Total Mercury ✓	Total Suspended Solids ✓
Conductivity ✓	Faecal Coliform
pH ✓	

2. Water at Station Number 925-10 shall be sampled daily during periods of discharge from the Tailings Containment Area and analyzed for the following parameters:

Total Arsenic	Total Copper
Total Zinc	Total Cyanide
pH	Total Suspended Solids

3. Water at Station Number 925-10 shall be sampled weekly during periods of discharge from the Tailings Containment Area and analyzed for the following parameters:

Total Lead	Total Nickel
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4. Water at Station Number 925-14 shall be sampled on the first day of discharge and then monthly thereafter during periods of flow and analyzed for the following parameters:

Total Arsenic	Total Copper
Total Zinc	Total Lead
Total Nickel	BOD <sub>5</sub>
pH	Total Suspended Solids
Faecal Coliform	

5. Water at Station Numbers 925-20 and 925-21 shall be sampled weekly during discharge from the Tailings Containment Area and analyzed for the following parameters:

Total Arsenic	Total Copper
Total Zinc	Total Cyanide
Total Lead	Total Nickel
pH	Total Suspended Solids

6. Water at Station Numbers 925-22, 925-24, and 925-25 shall be sampled weekly at mid-depth, commencing one (1) week prior to discharge from the Tailings Containment Area and conclude two (2) weeks after cessation of the discharge. Samples collected shall be analyzed for the following parameters:

Total Arsenic	Total Copper
Total Zinc	Total Cyanide
Total Lead	Total Nickel
pH	Total Suspended Solids

7. The pH and temperature shall be recorded at the time of sampling.
8. All sampling, sampling 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", or by such other methods approved by an Analyst.
9. All analysis shall be performed in a laboratory approved by an Analyst.
10. The Licensee shall annually review the approved quality assurance/quality control plan and modify the plan as necessary. Proposed modifications shall be submitted to an Analyst for approval.
11. The plan referred to in Part B, Item 11, shall be implemented as approved by an Analyst.

C. Flow Measurement Requirements

1. The monthly quantity of water pumped from Contwoyto Lake at Station Number 925-01 shall be measured and recorded in cubic metres.
2. The daily quantity of treated effluent discharged at Station Number 925-10 shall be measured and recorded in cubic metres.

3. The monthly quantity of Minewater discharged from Station Number 925-11 shall be measured and recorded in cubic metres.
4. The monthly quantity of treated sewage effluent discharged from Station Number 925-14 shall be measured and recorded in cubic metres.

**D. Other Requirements**

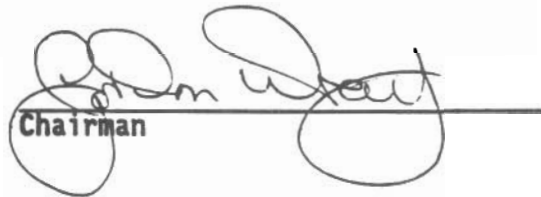
1. The quantity of ore milled shall be measured in tonnes and recorded monthly.

**E. Reports**

1. The Licensee shall, within thirty (30) days following the month being reported, submit to the Board all data and information required by the "Surveillance Network Program" including the results of the approved Quality Assurance Program.

**NORTHWEST TERRITORIES WATER BOARD**

  
Witness

  
Chairman