

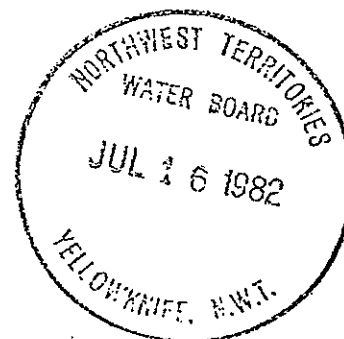
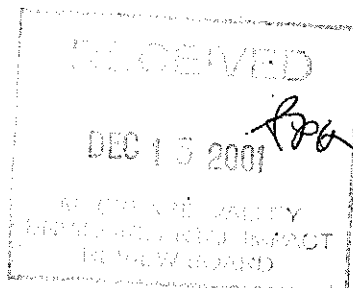


JUL 19 1982

WATER MANAGEMENT
YELLOWKNIFE, N.W.T.

JUL 2 1982

Mr. G.B. Warner,
Chairman,
N.W.T. Water Board,
P.O. Box 1500,
YELLOWKNIFE, N.W.T.,
X1A 2R3.



Dear Mr. Warner:

I am returning herewith the original and one copy of the water licence for Cadillac Explorations Ltd. at Prairie Creek, N.W.T. I have signed the licences as submitted.

Please keep me advised of any proposed modifications to this project prior to any approvals being given.

Yours sincerely,

John C. Munro

Enc.

NORTHWEST
TERRITORIES
WATERBOARD



ᐃᐱᐱᐱᐱ
ᐃᐱᐱᐱᐱ

Cadillac Exploration Limited
Suite 603
10120 Southport Road S.W.
Calgary, Alberta
T2W 4X9

Water Register: N3L3-9032

July 26, 1982

ATTENTION: Mr. Gerry Hamilton

Dear Sir:

Re: PRAIRIE CREEK MINE

Attached is a copy of the Water Licence N3L3-0932 granted by the Northwest Territories Water Board and approved by the Minister of Indian Affairs and Northern Development in accordance with Section 10 of the Northern Inland Waters Act. The original of this Licence is held at the office of the Controller of Water Rights in Yellowknife, Northwest Territories. A copy of the Procedure for Furnishing the Security Deposit requested by the Board is also attached. It is imperative to note that pursuant to Part A, Item 5, this Licence will only be valid when the security has been deposited and while it is maintained in good standing. The use of water and disposal of waste is prohibited prior to the said submission. Otherwise the Company will be in contravention of the Northern Inland Waters Act and of this Licence.

Since this is your initial Licence for this operation, an outline of how Licences issued by the Water Board are administered is as follows:

1. Once a Licence has been issued, a copy is placed in the Water Register at the Board's office in Yellowknife, and is available to the public.
2. The administration of the Water Licence rests with the Department of Indian Affairs and Northern Development through the Water Resources Division in Yellowknife, and the District office is in Fort Simpson.
3. To enforce the terms and conditions as required in the Licence, the Minister of Indian Affairs and Northern Development appoints Inspectors in accordance with Section 29 of the Northern Inland Waters Act. The Inspectors are coordinated through officials of the Water Resources Division of the Department of Indian Affairs and Northern Development, Yellowknife, Northwest Territories.

...../2

4. To keep the public and members of the Water Board informed of the Licensee's conformity to Licence conditions, the Inspectors prepare reports which detail observations on how each item in the Licence is being met. These reports are forwarded to the Licensee with a covering letter indicating what action, if any, should be taken. The inspection reports and covering letters are placed on the public Water Register, as are any responses received from the Licensee pertaining to the inspection reports. It is therefore of prime importance that you react to all areas of concern regarding all inspection reports so that there concerns may be clarified.
5. If the renewal of a Licence is contemplated, it is the responsibility of the Licensee to apply to the Water Board for a new Licence. The past performance of the Licensee plus the points raised during the required public hearing will be used to determine the terms and conditions of a new Licence. Please note that if one Licence expires and another one is not issued, then the use of water must cease or the company is in contravention of the Northern Inland Waters Act. It is suggested that application be one year in advance of an existing Licence expiry date.

An official from the Water Resources Division of the Department of Indian Affairs and Northern Development will review this Licence with company officials to ensure that its contents are fully understood which should enable the Company to proceed with development and mine operation within the restrictions contained in the Licence.

I hope as a result of this letter you will have clearly established the Board's requirements which must be met if you are to use water and dispose of waste under the Licence attached. Clarification of points pertaining to technical matters are to be addressed to Water Resources officials, however, matters relating to the Licence should be addressed directly to the Board.

In conclusion, I must stress, that the Water Licence and all inspection reports, and correspondence related thereto are part of the public Water Register and are intended to keep everyone informed of the manner in which the Licence requirements are being met. This will form a part of the material considered when the Licence comes up for renewal. The full cooperation of your company is anticipated.

Yours truly,



for
Glen B. Warner
Chairman
Northwest Territories
Water Board

Encl.

DM/lf



NORTHWEST TERRITORIES WATER BOARD

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

-----CADILLAC EXPLORATIONS LIMITED-----
(Licensee)

of ---SUITE 630-10201 SOUTHPORT ROAD S.W., CALGARY, ALTA. T2W 4X9---
(Mailing address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water subject to the restrictions and conditions contained in the Northern Inland Waters Act and Regulations made thereunder and subject to and in accordance with the conditions specified in this licence:

Licence Number ---N3L3-0932-----

Water Management Area ---NORTHWEST TERRITORIES 03-----

Location ---PRAIRIE CREEK AT APPROXIMATELY LATITUDE 61° 33' N AND
LONGITUDE 124° 48' W-----

Purpose ---INDUSTRIAL-----

Description ---TO USE WATER AND DISPOSE OF WASTE IN MINING AND MILLING
PROCESSES AND ASSOCIATED USES.-----

Quantity of Water Not to be Exceeded ---1,150 CUBIC METRES PER DAY-----

Rate of Use of Water Not to be Exceeded ---420,000 CUBIC METRES PER YEAR-----

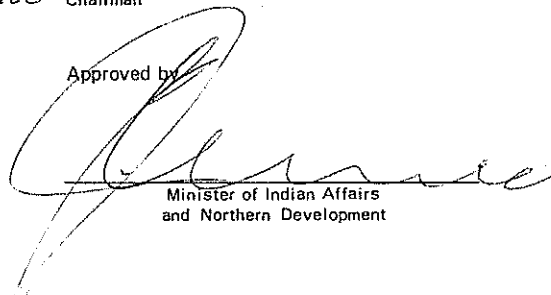
Effective Date of Licence ---JULY 1, 1982-----

Expiry Date of Licence ---JUNE 30, 1986-----

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

Northwest Territories Water Board

 Witness
 Vice-Chairman

Approved by

Minister of Indian Affairs
and Northern Development

GENERAL CONDITIONS

PART A

1. The purpose of this licence is: to authorize the use of Prairie Creek waters while ensuring the pristine quality of the said water is maintained; to ensure the quality of Prairie Creek water entering Nahanni National Park is unaltered; and to ensure the long term containment of mine tailings.
2. Definitions

In this Licence:

"Act" means the Northern Inland Waters Act;

"Regulations" means Regulations proclaimed pursuant to Section 26 of the Northern Inland Waters Act;

"Board" means the Northwest Territories Water Board established under Section 7 (1) of the Northern Inland Waters Act;

"Licensee" means the holder of this Licence;

"Controller" means the Controller of Water Rights for the Northwest Territories;

"Inspector" means an inspector designated by the Minister under Section 29 of the Northern Inland Waters Act;

"Waste" means waste as defined by Section 2 (1) of the Northern Inland Waters Act;

"Waste Treatment System" means the physical, chemical and/or biological processes applied to improve the quality of the waste;

"Prairie Creek Valley Aquifer" means the saturated bed, formation, or group of formations in Prairie Creek Valley which yields water in sufficient quantity to be of consequence as a source of water;

"Maximum Average Concentration" means the average of the last four analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program"; and

"Tailings Containment Area" means the engineered structure designed to contain solid and liquid waste fractions from the mill process as shown on Figure 2, Tailings Retention Area T-2, Revision B, dated January, 1982.

3. The licensee shall file reports pursuant to Section 10 (2) of the Act and Section 15 (1) of the Regulations not later than February 1st of the year next following the calendar year reported.
4. The water use fee shall be paid annually in advance.
5. This Licence will not come into effect until the Licensee has submitted a security deposit in the amount of \$500,000.00 pursuant to Section 11 (3) of the Act. This Licence shall be valid only while security is maintained in good standing. The security deposit shall only be refunded pursuant to Section 13 of the Regulations.

6. The Annual Report for the preceding year as required under Part A, Item 3, shall contain the following information:
 - (a) the daily and annual quantity of water in cubic metres pumped from the Prairie Creek Valley Aquifer;
 - (b) the daily and annual quantity of effluent in cubic metres discharged from the Industrial Waste Treatment System to Prairie Creek;
 - (c) the monthly and annual quantity of the solid and liquid fractions in cubic metres discharged to the Tailings Containment Area;
 - (d) the monthly and annual quantity of camp sewage effluent in cubic metres discharged to Prairie Creek;
 - (e) the mean daily and the mean annual rate of flow in cubic metres per second recorded at Surveillance Station No. 932-8;
 - (f) tabular summaries of all data generated under the "Surveillance Network Program";
 - (g) a detailed record of major maintenance work carried out on the water supply and the industrial and camp Waste Treatment Systems and all associated structures;
 - (h) a report on any methods incorporated or planned to conserve water so that the total quantity of waste will be reduced;
 - (i) any other details on water use or waste disposal as requested by the Board by November 1st of the year being reported; and
 - (j) approved revisions to the Contingency Plan.
7. 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 deposit of such waste may enter any waters. However, in accordance with Section 10 (3) of the Northern Inland Waters Act, whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the Northern Inland Waters Act, or other statute 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
8. The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence.
9. The "Surveillance Network Program" and its compliance dates may be modified at the discretion of the Board.
10. The Licensee shall locate any bulk chemical storage above the elevation of the Maximum Probable Flood and such sites shall be approved by the Board in advance.
11. The Licensee shall install, operate and maintain meters for measuring the volumes of water used and the wastes discharged
12. The Licensee shall inspect and maintain all flood protection work around the plant site.
13. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of other Federal or Territorial legislation including but not limited to matters of abandonment and/or restoration.

CONDITIONS APPLYING TO WATER USE

PART B

1. The Licensee shall obtain all fresh water from the Prairie Creek Valley Aquifer unless other freshwater sources are approved by the Board.
2. The quantity of water use shall not exceed 420,000 cubic metres per year.
3. The rate of water use shall not exceed 1,150 cubic metres per day.
4. The Licensee shall construct and maintain the Harrison Creek diversion channel as shown on Drawing Nos. 1561-100D, 1561-102B and 1561-103 so that no erosion occurs in the diversion channel.

CONDITIONS APPLYING TO WASTE DISPOSAL

PART C

1. The Licensee shall store all untreated minewater, mill tailings and mill process water in the Tailings Containment Area.
2. The Tailings Containment Area shall be constructed and maintained to engineering standards such that:
 - (a) the solid fraction of the mill tailings not recycled to the mine is permanently contained within the Tailings Containment Area;
 - (b) seepage from the Tailings Containment Area is minimized;
 - (c) the Tailings Containment Area piezometers monitor any seepage;
 - (d) seepage which does not meet the effluent quality limits specified in Part C, Item 4 is returned to the Tailings Containment Area;
 - (e) the runoff water from outside the immediate drainage area of the Tailings Containment Area does not enter the Tailings Containment Area; and
 - (f) erosion of Tailings Containment Area dam does not occur.
3. The Licensee shall operate and maintain the Tailings Containment Area, and the tailings line (s) such that:
 - (a) at least one metre of freeboard is maintained in the Tailings Containment Area at all times;
 - (b) inspection of the dams and tailings line (s) is carried out daily and records kept of these inspections for review upon the request of an inspector; and
 - (c) more frequent inspections are performed and more information provided at the request of an inspector.

4. All industrial waste effluent discharged by the Licensee to Prairie Creek shall meet the following requirements:

- (a) discharge at a rate which will maintain a dilution of effluent of not less than thirty (30) parts Prairie Creek water to one (1) part effluent;
- (b) discharge so as not to freeze and build up on land or on the ice covering Prairie Creek;
- (c) discharge so as not to cause a barrier to fish migration;
- (d) discharge so as not to be acutely lethal to fish as measured by a grab sample taken according to the Guidelines for the Measurement of Acute Lethality, at Surveillance Station No. 932-2 diluted at the ratio of one (1) part effluent to three (3) parts water; and
- (e) the following effluent quality.

PARAMETER	MAXIMUM AVERAGE CONCENTRATION	MAXIMUM CONCENTRATION OF ANY GRAB SAMPLE
Total Chromium	0.150 mg/l	0.300 mg/l
Total Arsenic	0.150 mg/l	0.300 mg/l
Total Copper	0.075 mg/l	0.150 mg/l
Total Lead	0.150 mg/l	0.300 mg/l
Total Nickel	0.200 mg/l	0.400 mg/l
Total Zinc	0.300 mg/l	0.600 mg/l
Total Cadmium	0.015 mg/l	0.030 mg/l
Total Mercury	0.0015 mg/l	0.0030 mg/l
Total Cyanide	0.30 mg/l	0.60 mg/l
Total Residual Chlorine	0.05 mg/l	0.10 mg/l
Un-ionized Ammonia Nitrogen	0.20 mg/l	0.40 mg/l
Suspended Solids	15.0 mg/l	30.0 mg/l
Nitrite	0.15 mg/l	0.30 mg/l
Nitrate	2.00 mg/l	4.00 mg/l

pH between 6.5 and 10.5
no floating solids or visible oil or grease

5. The Licensee shall:
 - (a) contain all industrial effluent in the Tailings Containment Area until the capability of the Waste Treatment System has been verified to the satisfaction of the Board.
 - (b) provide an interim report before September 1, 1982 outlining the approach to be taken to meet the effluent quality requirements and the construction timetable for a fully functional Waste Treatment System; and
 - (c) submit a final report by May 1, 1983 verifying the capability of the Waste Treatment System to achieve the effluent quality requirements specified in Part C, Item 4.
6. The Licensee shall notify the Controller at least fourteen (14) days prior to the discharge of effluent from the Waste Treatment System.
7. Runoff from the plant site shall be collected in an approved settling pond as shown on Drawing No. 100-13-6 dated March 30, 1982 and the runoff may be discharged to Prairie Creek provided its quality meets the industrial waste effluent requirements specified in Part C Item 4.
8. All camp waste effluent discharged by the Licensee shall meet the following effluent quality requirements:

PARAMETER	MAXIMUM AVERAGE CONCENTRATION	MAXIMUM CONCENTRATION OF ANY GRAB SAMPLE
<hr/>		
BOD	45 mg/1	70 mg/1
Suspended Solids	55 mg/1	85 mg/1
Suspended Coliforms per 100 ml	10,000	20,000
Total Residual Chlorine	0.05 mg/1	0.10 mg/1

pH between 6.0 and 9.0
no visible oil or grease
discharged so as not to build up on land or on the ice covering Prairie Creek.

9. The Licensee shall submit to the office of the Board further studies as requested by the Board pending the results of the report on the physical, chemical and biological characteristics of Prairie Creek submitted February 16, 1982.

CONDITIONS APPLYING TO CONTINGENCY PLANNING

PART D

1. The Licensee shall have a Contingency Plan in place and approved by the Board by the effective date of this Licence. This plan shall include but not be limited to the following:
 - (a) Oil Spill Contingency Plan;
 - (b) Hazardous Material Contingency Plan; and
 - (c) General Contingency Plan.

2. The Oil Spill Contingency Plan shall describe in detail:
 - (a) action to be taken to prevent, terminate, contain, recover and dispose of any discharges of oil or fluids and solids contaminated by petroleum products; and
 - (b) a program of studies and a program of oil spill recovery exercises over the term of this Licence to demonstrate the capability of the Licensee to contain, recover and report spills under a variety of environmental conditions.
3. The Hazardous Material Contingency Plan shall include the following:
 - (a) action to be taken to prevent and clean-up spilled material;
 - (b) on-site hazardous materials inventory for project construction and operations;
 - (c) normal and emergency handling procedures for hazardous materials; and
 - (d) on-site emergency equipment inventory and location index.
4. The General Contingency Plan shall include but not be limited to action to be taken should either the Tailings Containment Area dam or flood protection works lose their stability.
5. The Licensee shall undertake further field and communication exercises at the request of the Controller.
6. The Licensee shall submit to the office of the Board a detailed report on the successes and the failures of the exercises as well as recommendations for improvement within forty-five (45) days after completion of the exercise.
7. The Contingency Plan shall be reviewed annually by the Licensee and modified as necessary to reflect changes in operation and technology. The proposed modifications shall be approved by the Board.
8. If during the period of this Licence major damage occurs to facilities covered by this Licence, an authorized discharge of waste occurs, or if such damage or discharge is foreseeable, the Licensee shall:
 - (a) employ the Contingency Plans to prevent or terminate the damage or discharges and repair or contain and clean up the waste;
 - (b) advise an inspector immediately; and
 - (c) submit to the Controller a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

CONDITIONS APPLYING TO MODIFICATIONS

PART E

1. The Licensee may, without written consent from the Board, carry out modifications to the water supply and waste handling 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 of such proposed modifications at least sixty (60) days prior to beginning the modification;
 - (b) the Board has not, during the sixty (60) days following notification of the proposed modification, informed the Licensee that review of the proposal will require more than sixty (60) days; and
 - (c) the Board has not rejected the proposed modification.
2. Modifications for which all of the conditions referred to in Part E, Item 1, have not been met, can be carried out only with written consent from the Board.
3. The Licensee shall provide as-constructed plans and drawings of modifications referred to in this Licence within ninety (90) days of their completion. These plans and drawings shall be submitted to the Controller on material that will reproduce with the use of a standard printer.

CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

PART F

1. The Licensee shall by July 1, 1983 submit to the office of the Board an Abandonment and Restoration Plan which shall describe the procedures and resources that will be utilized by the Licensee to ensure that no wastes will be released into Prairie Creek after abandonment. This plan shall be reviewed and updated annually to reflect changes in technology and in operations.
2. The Licensee shall consider the following areas of concern in completing or revising the Abandonment and Restoration Plan with respect to this or any subsequent Licence:
 - (a) the final design and modification of the Tailings Containment Area dam considering the updated estimate of Maximum Probable Flood;
 - (b) the water intake facilities;
 - (c) the tailings disposal facilities;
 - (d) the waste rock disposal sites;
 - (e) any site affected by waste spills;
 - (f) the petroleum and chemical storage areas;
 - (g) the mine water discharge;
 - (h) the natural runoff waters from the development site(s);
 - (i) the random areas which may have been affected by development such that potential pollution problems exist;
 - (j) the open pit areas; and
 - (k) any other facilities which could potentially create a pollution problem.

3. The Licensee shall modify the proposal as referred to in Part F, Item 1, as required for its acceptance by the Board should the Plan be deemed unacceptable to the Board.
4. The Licensee shall complete the abandonment and restoration work within the time schedule specified in the Plan or as subsequently revised and approved by the Board.
5. Notwithstanding the time schedule referred to in Part F, Item 4, the Licensee shall, for all areas referred to in Part F, Item 2, which are abandoned prior to closure of operations, carry out the Abandonment and Restoration Plan as accepted by the Board upon abandonment of such areas unless approval for other restoration schedules is received in writing from the Board.
6. Compliance with the Abandonment and Restoration Plan stipulated in this Licence will not limit the legal liability of the Licensee, other than liability arising by operation of this Act.

Northwest Territories Board

Imachuanmi *McKase*
Witness Vice Chairman

NORTHWEST TERRITORIES WATER

LICENSEE:	CADILLAC EXPLORATIONS LIMITED
LICENCE NUMBER:	N3L3-0932
EFFECTIVE DATE OF LICENCE:	JULY 1, 1982
EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM:	JULY 1, 1982

SURVEILLANCE NETWORK PROGRAM

A. LOCATION OF SURVEILLANCE STATIONS

<u>Station Number</u>	<u>Description</u>
932-1	Freshwater pumphouse wetwell
932-2	Industrial waste treatment system effluent
932-3	Camp sewage effluent
932-4	Final discharge point from settling pond
932-5	Industrial waste treatment system influent
932-6	Prairie Creek at the confluence of Galena Creek
932-7	Prairie Creek upstream of the airstrip as shown on attached map
932-8	Prairie Creek at hydrometric station
932-9	Collection sump behind Tailings Containment Area
932-10	Piezometers on Tailings Containment Area dam as shown on Figure 2, Tailings Retention Area T-2, Revision B, dated January, 1982

B. SAMPLING AND ANALYSIS REQUIREMENTS

1. Water at Station No. 932-1 shall be sampled every six (6) months during winter and summer and analysed for the following parameters:

Total Arsenic	Total Alkalinity
Total Copper	Total Hardness
Total Lead	Suspended Solids
Total Nickel	Conductivity
Total Zinc	Temperature
Total Cadmium	pH
Total Mercury	

2. Effluent at Station No. 932-2 shall be sampled weekly during periods of discharge and analysed for the following parameters:

Total Arsenic	Total Residual Chlorine
Total Copper	Un-ionized Ammonia Nitrogen
Total Lead	Suspended Solids
Total Nickel	Nitrite
Total Zinc	Nitrate
Total Cadmium	Conductivity
Total Mercury	Temperature
Total Cyanide	pH

3. Effluent at Station No. 932-3 shall be sampled monthly and analysed for the following parameters:

BOD	Total Residual Chlorine
Suspended Solids	Temperature
Total Coliforms	pH
Fecal Coliforms	

4. Discharge from Station No. 932-4 shall be sampled weekly during periods of flow and analysed for the following parameters:

Total Copper	Suspended Solids
Total Lead	Conductivity
Total Zinc	pH
Total Cyanide	Oil and Grease

5. Until otherwise advised by the Board, water at Station No. 932-6 shall be sampled every second week to coincide with sampling at Station No. 932-7 and analysed for the following parameters:

Total Arsenic	Total Residual Chlorine
Total Copper	Un-ionized Ammonia Nitrogen
Total Lead	Suspended Solids
Total Nickel	Conductivity
Total Zinc	Temperature
Total Cadmium	pH
Total Mercury	Total Coliforms
Total Cyanide	Fecal Coliforms

6. Until otherwise advised by the Board, water at Station No. 932-7 shall be sampled every second week to coincide with sampling at Station No. 932-6 and analysed for the following parameters:

Total Arsenic	Nitrate
Total Copper	Nitrite
Total Lead	Conductivity
Total Nickel	Temperature
Total Zinc	pH
Total Cadmium	Total Coliforms
Total Mercury	Fecal Coliforms
Suspended Solids	

7. Water at Station No. 932-9 shall be sampled monthly and analysed for the following parameters:

Total Copper	Total Cyanide
Total Lead	Conductivity
Total Zinc	Temperature

8. Piezometers at Station No. 932-10 shall be measured weekly for hydrostatic head. Simultaneous readings shall be taken of the water level in Prairie Creek and in the Tailings Containment Area adjacent to each piezometer station. If the readings suggest seepage, a water sample shall be collected at the respective piezometer and analysed for the following parameters:

Total Arsenic	Total Cyanide
Total Copper	Conductivity
Total Lead	Temperature
Total Cadmium	

9. All sampling and sample preservation shall be done in accordance with methods specified by the Controller.

10. All analyses 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 as are approved by the Controller.

C. OTHER REQUIREMENTS

1. Streamflow data shall be collected at Station No. 932-8.
2. Rainfall data shall be collected at the minesite.
3. The rate of flow at Station Nos. 932-1, 932-3, 932-4 and 932-5 shall be measured in cubic metres per month
4. The rate of flow at Station Nos. 932-1, 932-2 and 932-8 shall be measured in cubic metres per second and reported as a mean daily discharge.
5. Data collected at Station No. 932-8 shall be carried out such that it meets the Water Survey of Canada, Department of the Environment, National Standards.
6. The quantity of ore in tonnes milled per month shall be recorded.
7. A composite of ore shall be tested annually for acid generation potential.

D. REPORTS

1. The Licensee shall report to the Controller the results of the weekly sampling at Station No. 932-2 within ten (10) days of the date of sampling.
2. The Licensee shall within sixty (60) days following the month reported submit to the Controller all the data and information required by the "Surveillance Network Program".

Northwest Territories Water Board

Imaahuanne
Witness

McClure
Vice - Chairman