

NORTHWEST
TERRITORIES
WATER BOARD



ALBERTA
WATER BOARD

WATER REGISTER: N7L1-1769

October 9, 2001

Mr. Toshi Hirata
Vice President - Operations
Japex Canada Limited
#2100, 101 - 6 Avenue S.W.
CALGARY, AB T2P 2P4

Dear Mr. Hirata:

ISSUANCE OF A "B" TYPE LICENCE

Attached is a duplicate of Licence No. N7L1-1769 granted to Japex Canada Limited by the Northwest Territories Water Board in accordance with the *Northwest Territories Waters Act*. The other original of this Licence has been filed with the Department of Indian Affairs and Northern Development in Yellowknife, Northwest Territories.

Also attached are general procedures for the administration of licences in the Northwest Territories. I request that you review these and address any questions to the Board's office.

In conclusion, please be advised that this letter with attached procedures, all inspection reports, and correspondence related thereto are part of the public Water Register, and are intended to keep all interested parties informed of the manner in which the Licence requirements are being met. All Water Register material will be considered when the Licence comes up for renewal or amendment.

The full cooperation of Japex Canada Limited is anticipated.

Sincerely,

Gordon Wray
Chairman
N.W.T. Water Board

Attachments (2)

**GENERAL PROCEDURES FOR THE ADMINISTRATION OF LICENCES
ISSUED UNDER THE NORTHWEST TERRITORIES WATERS ACT
IN THE NORTHWEST TERRITORIES**

1. At the time of issuance, a copy of the Licence is placed on the Water Register in the Office of the Northwest Territories Water Board in Yellowknife, and is then available to the public.

2. To enforce the terms and conditions of the Licence, the Minister of Indian Affairs and Northern Development has appointed Inspectors in accordance with Section 35(1) of the *Northwest Territories Waters Act*. The Inspectors coordinate their activities with officials of the Water Resources Division of the Department of Indian Affairs and Northern Development. The Inspector responsible for Licence No. N7L1-1769 is located in the North Mackenzie -Inuvik District Office.

3. To keep the Water Board and members of the public informed of the Licensee's conformity to Licence conditions, the Inspectors prepare reports which detail observations on how each item in the Licence has been 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 in all areas of concern regarding all inspection reports so that these concerns may be clarified.

4. If the renewal of Licence No. N7L1-1769 is contemplated it is the responsibility of the Licensee to apply to the Water Board for renewal of the Licence. The past performance of the Licensee, new documentation and information, and points raised during a public hearing, if required, will be used to determine the terms and conditions of any Licence renewal. Please note that if the Licence expires and another has not been issued, then water and waste disposal must cease, or you, the Licensee, would be in contravention of the *Northwest Territories Waters Act*. It is suggested that an application for renewal of Licence No. N7L1-1769 be made at least eight months in advance of the Licence expiry date.

5. If, for some reason, Licence No. N7L1-1769 requires amendment, then a public hearing may be required. You are reminded that applications for amendments should be submitted as soon as possible to provide the Water Board with ample time to go through the amendment process. The process may take up to six (6) months or more depending on the scope of the amendment requested.

6. Specific clauses of your Licence make reference to the Board, Analyst or Inspector. The contact person, address, phone and fax number of each is:

BOARD: Executive Assistant
Northwest Territories Water Board
Box 1500
YELLOWKNIFE, NT X1A 2R3
Phone No: (867) 669-2772
Fax No: (867) 669-2719

ANALYST: Analyst
Water Laboratory
Northern Affairs Program
Department of Indian Affairs
and Northern Development
Box 1500, 4601 - 52nd Avenue
YELLOWKNIFE, NT X1A 2R3
Phone No: (867) 669-2780
Fax No: (867) 669-2718

INSPECTOR: Inspector
North Mackenzie-Inuvik District Office
Northern Affairs Program
Department of Indian Affairs
and Northern Development
P.O. Box 2100
INUUVIK, NT X0E 0T0
Phone No: (867) 777-3361
Fax No: (867) 777-2090

7. Your Licence requires a security deposit be submitted. The contact person, address, phone and fax number of the individual administering security deposits is:

Office Co-ordinator
Water Resources Division
Northern Affairs Program
Indian and Northern Affairs Canada
Box 1500
YELLOWKNIFE, NT X1A 2R3

Phone No: (867) 669-2754
Fax No: (867) 669-2716

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

JAPEX CANADA LIMITED

(Licensee)

of #2100, 101 - 6th Avenue S.W.
(Mailing Address) CALGARY, ALBERTA T2P 2P4

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>N7L1-1769</u>
Licence Type	<u>"B"</u>
Water Management Area	<u>NORTHWEST TERRITORIES 07</u>
Location	<u>Mackenzie Delta</u> <u>Latitude 69°27'41" N.</u> <u>Longitude 134°39'30" W.</u> <u>NORTHWEST TERRITORIES</u>
Purpose	<u>TO USE WATER AND DISPOSE OF</u> <u>WASTE FOR INDUSTRIAL</u> <u>UNDERTAKINGS</u>
Description	<u>HYDRATE RESEARCH</u>
Quantity of Water Not to be Exceeded	<u>100 CUBIC METRES DAILY</u>
Effective Date of Licence	<u>OCTOBER 9, 2001</u>
Expiry Date of Licence	<u>SEPTEMBER 30, 2002</u>

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

NORTHWEST TERRITORIES WATER BOARD


Witness


Chairman

PART A: SCOPE AND DEFINITIONS

1. Scope

- a) This Licence entitles Japex Canada Limited to use water and dispose of waste for industrial undertakings in the Mackenzie Delta for the Mallik 3L-38 Mackenzie Gas Hydrate Research and Development Project and camp located at Latitude 69°27'41" N. and Longitude 134°39'30" W., Northwest Territories;
- 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: **N7L1-1769**

"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*;

"Artesian Aquifer" means a water-bearing rock stratum, which when encountered during drilling operations, produces a pressurized flow of groundwater that reaches an elevation above the water table or above the ground surface;

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

"Drilling Fluids" mean any liquid mixture of clay, water or chemical additives pumped downhole;

"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;

"Modification" means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

"Permeability" means the capacity to transmit water through a medium;

"Project Description" refers to the report titled "Mackenzie Delta Gas Hydrate Research and Development Project", dated March 2001, prepared by Japex Canada Limited;

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

"Sewage" means all toilet waste and greywater;

"Sump" means an excavation with an impermeable layer for the purpose of catching or storing fluids.

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

"Waters" mean waters as defined by Section 2 of the *Northwest Territories Waters Act*.

PART B: GENERAL CONDITIONS

1. The Licensee shall file a Final 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 total quantity in cubic metres of fresh Water obtained from all sources;

- b) the total quantities in cubic metres of each and all Waste discharged;
 - c) details of work completed;
 - d) details on the restoration of any Sumps;
 - e) a list of spills and unauthorized discharges; and
 - f) results from monitoring programs.
2. 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.
 3. The "Surveillance Network Program" and compliance dates specified in the Licence may be modified at the discretion of the Board.
 4. 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.
 5. Prior to the use of water for municipal 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 of One Hundred Thousand (\$100,000.00) Dollars in a form suitable to the Minister.
 6. 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 Water from the unnamed channel of the Mackenzie River just east of the site as described in the Project Description or as otherwise approved by an Inspector.

2. The daily quantity of Water used for all purposes shall not exceed 100 cubic metres.
3. The water intake hose used on the water pumps shall be equipped with a screen with a mesh size sufficient to ensure no entrainment of fish.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall, to the satisfaction of an Inspector, contain all drilling Waste in a drilling Sump near the drill site, or at an alternate Sump location as approved by an Inspector.
2. The Licensee shall, to the satisfaction of an Inspector, contain all Sewage Waste in a Sewage Sump as described in the Project Description, or at an alternate Sump location as approved by an Inspector.
3. Sumps shall be constructed of materials that normally exhibit low Permeability and in a manner that prevents intrusion of runoff Water.
4. In the event the initial Sumps do not consist of low Permeability materials, the Licensee shall construct offsite Sumps to the satisfaction of an Inspector.
5. There shall be no disposal of Drilling Fluids from the Sumps into any Waters or onto any land surface where Drilling Fluids may enter any Waters.
6. The Licensee shall construct and maintain the Sumps to the satisfaction of an Inspector.
7. The Licensee shall ensure that Chloride concentrations at SNP Station 1769-2 do not exceed 100,000 mg/L.

8. The Licensee shall prior to abandonment of the Sumps, obtain a representative sample from the Sump using the information requirements outlined in the "Sampling and Analytical Requirements for Characterization of Sump Supernatant Fluids" (Appendix A). The results shall be submitted to the Inspector.
9. If during the drilling, an Artesian Aquifer is encountered producing Water flowing at the surface, the Licensee shall notify an Inspector immediately. A sample of not less than ten (10) litres shall be collected from the flowing source at the point of discharge from the well. Five (5) litres shall be made available to an Inspector for analysis, and the Licensee shall have the remaining five (5) litres analysed.
10. Any fluids generated to surface, including those produced from an Artesian Aquifer, shall be contained and shall not be disposed of without approval of an Inspector.
11. Waste discharges during decanting from the Sewage Disposal Facilities shall meet the following effluent quality standards at SNP Station 1769-1:

<u>Sample Parameter</u>	<u>Maximum Average Concentration</u>
BOD ₅	80.0 mg/L
Total Suspended Solids	100.0 mg/L
Faecal Coliforms	10E4 CFU/dL
Oil and Grease	5.0 mg/L

The Waste discharged shall have a pH between 6 and 9.

12. In the event where decanting Waste or Water from the Sump is required by an unanticipated event, the Licensee shall:
 - a) advise an Inspector;
 - b) obtain a representative sample from the Sump using the information requirements outlined in the "Sampling and Analytical Requirements for Characterization of Sump Supernatant Fluids" (Appendix A);

- c) submit the results of the sampling and analyses to an Inspector at least ten (10) days prior to the requested date of commencing decant, or in the case of an unanticipated event, as soon as possible; and
 - d) indicate in writing to an Inspector;
 - i) the method of decant;
 - ii) the direction of flow;
 - iii) the location of where the decanted effluent is expected to go; and
 - iv) any treatment that will be applied to the Sump.
13. The Licensee may commence decanting upon receipt of an Inspector's approval.
14. 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 may be approved by an Analyst.
15. No oil-based Waste products are to be disposed of on-site. Oil-based additives and drill cuttings associated with these additives are to be disposed of at an approved offsite location to the satisfaction of an Inspector.
16. Any on-site treatment of oil-based Waste products must be done with the approval of an Inspector.
17. Lost circulation that may contaminate groundwater must be immediately reported to an Inspector.
18. The Licensee shall dispose of all solid Waste in a manner acceptable to an Inspector.

PART E: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written approval from the Board, carry out Modifications to the planned undertakings provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
 - a) the Licensee has notified an Inspector in writing of such proposed Modifications at least five (5) days prior to beginning the Modifications;
 - b) such Modifications do not place the Licensee in contravention of either this Licence or the Act;
 - c) an Inspector has not, during the five (5) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than five (5) days; and
 - d) an Inspector 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 an Inspector.
3. The Licensee shall provide to the Board as-built plans and drawings of the modifications referred to in this Licence within ninety (90) days of completion of the modifications.

PART F: CONDITIONS APPLYING TO STREAM AND WATER BODY CROSSINGS

1. The Licensee shall ensure that only clean snow is used on all stream or Water body crossings and that no debris is left on the surface of the crossings.
2. Stream or Water body crossings shall be notched or removed before spring break-up to facilitate natural flow.

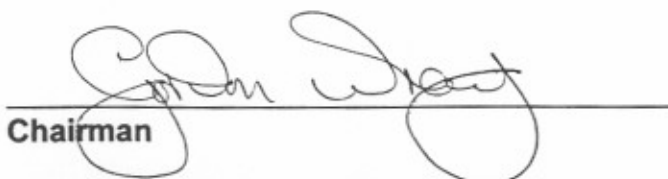
3. The removal of naturally occurring material from the bed or banks of any stream or Water body below the ordinary high Water mark is not permitted.

PART G: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Licensee shall submit to the Board for approval within thirty (30) days of issuance of this Licence, an Emergency Response Plan in accordance with the Board's "Guidelines for Contingency Planning, January 1987", or subsequent edition.
2. The Licensee will maintain a copy of the Emergency Response Plan onsite in a readily available location, to the satisfaction of an Inspector.
3. The Licensee shall ensure that petroleum products, hazardous material and other Wastes associated with the project do not enter any Waters.
4. The Licensee shall ensure that all containment berms are constructed of an impermeable material, to the satisfaction of an Inspector.
5. If, during the period of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
 - a) report the incident immediately via the 24 Hour Spill Report Line (867) 920-8130; and
 - b) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

NORTHWEST TERRITORIES WATER BOARD


Witness


Chairman

APPENDIX A - SAMPLING AND ANALYTICAL REQUIREMENTS FOR CHARACTERIZATION OF SUMP SUPERNATANT FLUIDS

In the event that decanting a sump is required, the Licensee shall sample the sump using the following method:

Divide the sump into a grid of six equal areas, take three samples in the vertical profile (surface, mid-depth, just above the mud/supernatant interface) at the centre of each area. Mix these eighteen samples together to form a single composite sample, from which as many sub-samples may be obtained as necessary for analysis. An additional sample must be taken from the surface of the sump.

The Licensee shall have the composite sample analyzed for the following parameters:

Total and Dissolved Metals -	Copper
	Cadmium
	Iron
	Nickel
	Lead
	Zinc
	Chromium
Sulphate	
Conductivity	
pH	
Total Suspended Solids	
Chloride	
Sodium	
Potassium	
Calcium	
Magnesium	
Oil and Grease	
Toxicity (96 hour LC50 using rainbow trout)	

The surface sample should be analyzed for oil and grease.

NORTHWEST TERRITORIES WATER BOARD

LICENSEE: JAPEX CANADA LIMITED
LICENCE NUMBER: N7L1-1769
EFFECTIVE DATE OF LICENCE: OCTOBER 9, 2001
EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM: OCTOBER 9, 2001

SURVEILLANCE NETWORK PROGRAM

A. Location of Sampling Stations

<u>Station Number</u>	<u>Description</u>
1769-1	Treated Effluent Discharge Prior to Decanting the Sewage Sump
1769-2	Drilling Waste Prior to Entering the Drilling Sump

B. Sampling and Analysis Requirements

1. Water at Station Number 1769-1, shall be sampled every two weeks, and analyzed for the following parameters:

BOD ₅	Total Suspended Solids
Oil and Grease	Faecal Coliforms
Ammonia	

2. Waste Water at Station 1769-2, shall be sampled monthly, and analysed for the following parameter:

Total Sulphur	Total Calcium
Total Chloride	Total Sodium
Total Reactive Chlorine	

3. More frequent sample collection maybe required at the request of an Inspector.
4. All sampling, sample preservation, and 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 approved by an Analyst.
5. All analysis shall be performed in a laboratory approved by an Analyst.
6. The Licensee shall, by January 31, 2002, submit to an Analyst for approval a Quality Assurance/Quality Control Plan.
7. The plan referred to in Part B, Item 2 shall be implemented as approved by an Analyst.

C. 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 Plan.

NORTHWEST TERRITORIES WATER BOARD



Witness



Chairman