

Annual Reports: 2006-2010

Water Licences: 3BM-TAL0813 and 1BR-TAL0712

Hamlet of Taloyoak, Nunavut

Submitted to the Nunavut Water Board

March 12, 2014



By:

Shah Alam
Municipal Planning Engineer

Community and Government Services
Cambridge Bay, Nunavut
X0B 0C0



Department of Community and Government Services
Nunalingni Kavamatkunnilu Pivikhaqautikkut
Ministère des Services Communautaires et gouvernementaux

Annual Reports 2006- 2010

- ✓ All sewage and solid waste disposal carried into the community Sewage Lagoon (series of two natural Lakes) and Solid Waste facilities. Although operation of these two facilities weren't in

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Two cells natural Lakes Sewage System



Natural wetland for effluent remediation



New water Treatment Plant: Cartridge filters system



Monitoring station on wetland: sampling point

Annual Report 2010:

Water, sewage and solid waste facility operation

Taloyoak Water Licence 3BM-TAL0813

ANNUAL REPORT

YEAR BEING REPORTED: 2010

The following information is compiled pursuant to the requirements of **Part B, Item 1** of Water Licence **3BM-TAL0813** issued to the **Taloyoak**.

- i) - iii) tabular summaries of all data generated under the “Monitoring Program”; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	3,209,565	Same
February	3,245,860	Same
March	3,283,955	Same
April	3,279,754	Same
May	3,281,907	Same
June	2,979,873	Same
July	3,180,224	Same
August	3,174,690	Same
September	3,160,695	Same
October	3,273,465	Same
November	3,230,775	Same
December	3,182,365	Same
ANNUAL TOTAL	38,483,128	Same

ANNUAL REPORT

- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
-
- Construction of new intake pumphouse, treatment plan and sustainable energy generation backup system in progress. Pre-fabricated pumphouse shipped on site and integrated treatment train in progress.
 - A new power line installed for the operation of new water intake pumphouse and treatment plant.
 - A new approach road section and truck turn around area also integrated with the project including operators training.
- v. a list of unauthorized discharges and summary of follow-up action taken;
-
- Current water Licence includes water uses only and not for wastewater treatment and landfill operation. An amendment application submission in plan for sewage and solid waste inclusion.
 - Sewage and solid waste disposal are not authorised, but the hamlet continued these operations and maintenance as needed for the community.
- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
-
- A&R plan for current intake system, delivery and treatment plant in-town once the new water system starts operation, expecting sometime in 2011-12. Another funding assurance also required to bring down the current water system since new Water improvement project not included for these activities.
- vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
-
- As requested by the Board for sufficient information and plan for solid waste facility which apparently showing to its capacity due to lacking of segregation and separation of hazardous materials, hamlet is looking for funding assistance for cleaning up the solid waste site including hazardous materials shipping out off site with certified handler. Hamlet requires GN assistance in supporting this cleanup process as hamlet has not enough resources to implement the plan.
 - The meandering wetland has been working properly in effluent remediation process. To keep continue the wetland remediation, a sludge clean up might be required close near the final discharge point as it getting filled by sludge sediments.
-

ANNUAL REPORT

viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and

- None
-

ix. Updates or revisions to the approved Operation and Maintenance Plans

- No approved Operation and Maintenance plan, but will be updated new Operation and maintenance plan for new water intake and treatment system
-

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- The hamlet is expecting the new water system operation by the end of next year. With the use of new intake pumphouse and treatment plant, the community will fulfill the need and in full compliance to potable water distribution in accordance with GCDWQ. Water in Canso Lake is less turbid and in confirmation of continuous water supply as watershed to Canso Lake is long and wide. Canso Lake is deep at the intake point and chances of small fish habitat are very less or at zero.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- The hamlet will apply for solid waste facility inclusion with the Licence with sufficient information related to solid waste collection, containment, disposal or storage.
- Hamlet will plan for updating an O&M manual for operation and management of solid waste facility and will submit a plan of compliance with the amendment application.

Annual Report 2009:

Water, sewage and solid waste facility operation

Taloyoak Water Licence 3BM-TAL0813

ANNUAL REPORT

YEAR BEING REPORTED: 2009

The following information is compiled pursuant to the requirements of **Part B, Item 1** of Water Licence **3BM-TAL0813** issued to the **Taloyoak**.

- i) - iii) tabular summaries of all data generated under the “Monitoring Program”; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	3,109,465	Same
February	3,035,960	Same
March	3,273,907	Same
April	3,169,774	Same
May	3,191,907	Same
June	2,979,873	Same
July	2,780,024	Same
August	3,034,690	Same
September	3,090,395	Same
October	3,263,457	Same
November	3,200,778	Same
December	3,172,362	Same
ANNUAL TOTAL	37,302,592	Same

ANNUAL REPORT

- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
-

- Upgrading water system with new intake pumphouse, treatment plan and sustainable energy generation backup system in progress.

- v. a list of unauthorized discharges and summary of follow-up action taken;
-

- New Water Licence allows for water uses only and not for wastewater treatment and landfill operation. An amendment application submission requested for the inclusion of sewage and solid waste facilities.
- In accordance on the current Licence, sewage and solid waste disposal are not authorised, but the hamlet continued these operations and maintenance as needed for the community.

- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
-

None

- vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
-

- Solid waste facility is apparently showing to its capacity of storage due to improper dumping and lacking of segregation. Hamlet has a plan for intensive cleaning up metals, hazardous and bulky materials from regular dump, compost them in cells and control burning of paper/wood/building materials which will create sufficient room for new dump.
- A shallow area with a sump created outside the solid waste site for leachate collection to stop free flow and mixing with sewage effluent on wetland which may lead additional contamination parameters to sewage effluent on its way to natural remediation.

- viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
-

None

- ix. Updates or revisions to the approved Operation and Maintenance Plans
-

- No approved Operation and Maintenance plan, but will be updated new Operation and maintenance plan for new water intake and treatment system

ANNUAL REPORT

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- The Board has determined that current water source is Water Lake and proposed source of potable water is Canso Lake. No concerns were raised by stakeholders in regards to water quantity and source water quality.
- With additional mitigation measures within DFO's submission, DFO has concluded the proposal is not likely to result in impacts to fish and fish habitat and formal approval from DFO is not needed.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- The hamlet is aware of the requirement for solid waste facility inclusion with the Licence as the Board indicated insufficient information provided related to solid waste collection, containment, disposal or storage with the application. Hamlet will make a plan explaining details on operation and management of solid waste facility and will submit a plan of compliance to the Board. An amendment application also in plan for submission to include sewage and solid waste facilities.

Annual Report 2008:

Water, sewage and solid waste facility operation

Taloyoak Water Licence 3BM-TAL0813

ANNUAL REPORT

YEAR BEING REPORTED: 2008

The following information is compiled pursuant to the requirements of **Part B, Item 1** of Water Licence **3BM-TAL0813** issued to the **Taloyoak**.

- i) - iii) tabular summaries of all data generated under the “Monitoring Program”; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	2,985,248	Same
February	2,830,476	Same
March	3,027,123	Same
April	2,867,118	Same
May	2,593,285	Same
June	2,474,731	Same
July	2,703,240	Same
August	3,033,256	Same
September	3,017,072	Same
October	3,019,566	Same
November	2,973,705	Same
December	3,066,859	Same
ANNUAL TOTAL	34,681,679	Same

ANNUAL REPORT

- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
-
- Upgrading on Water System including intake pumphouse, treatment plant with cartridge filter, truck-fill at plant house and sustainable energy back up started.
 - Secured sewage discharge flume with road bank protection support and retained sides and lower end against any movement during sewage discharge operation.
- v. a list of unauthorized discharges and summary of follow-up action taken;
-
- Previous Licence does not include water, sewage or solid waste disposal operation.
 - New application submitted on May 30, 2008, for water, sewage and solid waste facilities inclusion. Subsequent reports including pre-design and development package also accepted by the Board.
 - Board has issued a new Water Licence on Dec 11, 2008 for water uses only and not for wastewater treatment and landfill operation. An amendment application submission requested for the inclusion of sewage and solid waste facilities.
 - Dillon Consulting has been retained for an amendment application submission for sewage and solid waste facilities inclusion; however, a separate Land farm facility might not be required for community's current situation. Fenced area for hazardous materials has been identified to store any contaminated soil or spills using metal or wooden container for primary treatment before using as landfill cover material or final shipping out if hazardous or toxicity resistant to or preclude biological treatment
- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
-
- No abandonment or restoration this year, but plan for abandonment of current water intake system at Water Lake and delivery to in-town treatment plant once new plant start operation, expecting in 2010.
- vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
-
- INAC inspection report (Sep 11, 2007) requested to ensure sewage lagoon confinement and retention time for proper remediation to meet Environmental Guidelines and Fisheries Act before final discharge to ocean.
 - Annual Monitoring and sampling results shown the contaminated parameters within the allowable limit as noted in EC Schedule 1 for Effluent Discharge which prove that raw sewage and leachate from nearby areas has sufficient retention time within two cells (sharing between primary cell and secondary cell) before entering onto wetland and finally discharge to ocean, complying the Regulation and Acts of DFO.

ANNUAL REPORT

- Annual discharge and level of raw sewage in primary cell, indicates facility is within its storage capacity.

viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and

- INAC inspector requested to ensure the sufficient retention time of raw sewage in primary cell before entering into the secondary cell from where it moves out to wetland during summer when melts. Also for an expansion of current sewage lagoon as expecting to its capacity to meet community sewage disposal facility.

ix. Updates or revisions to the approved Operation and Maintenance Plans

- Not requires, but will require for new water intake and treatment system

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- With the operation of new water intake and treatment facility, the community will be able to maintain the water distribution to the community need and will meet Guideline for Potable water in North.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

Fuel/oil drum, batteries, propane and paint will be segregated next year as reported.

Annual Report 2007:

Water, sewage and solid waste facility operation

Taloyoak Water Licence 1BR-TAL0712

ANNUAL REPORT

YEAR BEING REPORTED: 2007

The following information is compiled pursuant to the requirements of **Part B, Item 1** of Water Licence **1BR-TAL0712** issued to the **Taloyoak**.

- i) - iii) tabular summaries of all data generated under the “Monitoring Program”; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	2,985,248	Same
February	2,626,824	Same
March	2,944,443	Same
April	2,729,284	Same
May	2,864,714	Same
June	2,623,471	Same
July	2,600,871	Same
August	2,969,303	Same
September	2,811,683	Same
October	2,952,810	Same
November	2,851,191	Same
December	2,593,285	Same
ANNUAL TOTAL	33,553,127	Same

ANNUAL REPORT

- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
-
- GN hired consultant Dillon Consulting has been working for a design and development for upgrading on water system, expecting a construction contract in next year and project completion by 2011.
 - The hamlet continued operation and annual maintenance of current water system.
 - Hamlet continued using and maintaining sewage and solid waste facilities operation in accordance with Guidelines of Municipal Waste Discharge although these facilities are not inclusion with the current Licence.
- v. a list of unauthorized discharges and summary of follow-up action taken;
-
- Current Licence does not include operation for water, sewage or solid waste facilities, but the community kept maintaining these operation and facilities maintenance.
-
- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
-
- None
- vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
-
- As requested by the Board and requirement for an application with suitable source of water intake, treatment process and distribution to community demand, Dillon Consulting is in progress to complete the study and design of a new water system.
 - Two natural Lakes connected with a submerged berm in between, involved in retaining community sewage waste for the whole winter and discharge primary remediated sewage onto wetland which finally ends to ocean. With the funding assurance, hamlet can make a plan for lagoon capacity and containment study if requires.
-
- viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
-
- ix. Updates or revisions to the approved Operation and Maintenance Plans

ANNUAL REPORT

-
- Currently no operation and Maintenance Plan, but may happen in future once new plant starts operation and a new water Licence in place.

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- none

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

Annual Report 2006:

Water, sewage and solid waste facility operation

Taloyoak Water Licence 1BR-TAL0712

ANNUAL REPORT

YEAR BEING REPORTED: 2006

The following information is compiled pursuant to the requirements of **Part B, Item 1** of Water Licence **1BR-TAL0712** issued to the **Taloyoak**.

- i) - iii) tabular summaries of all data generated under the “Monitoring Program”; monthly and annual quantities in cubic metres of freshwater obtained from all sources; monthly and annual quantities in cubic metres of each and all wastes discharged;

Attached are quantities of water used as reported in our On Tap Water Delivery System and the estimated discharge of sewage waste based on quantities used

Month Reported	Quantity of Water Obtained from all sources (litres)	Quantity of Sewage Waste Discharged
January	2,744,022	Same
February	2,520,052	Same
March	2,832,856	Same
April	2,631,351	Same
May	2,656,304	Same
June	2,438,268	Same
July	2,463,682	Same
August	2,728,798	Same
September	2,891,850	Same
October	2,943,484	Same
November	2,732,295	Same
December	2,796,822	Same
ANNUAL TOTAL	32,379,784	Same

ANNUAL REPORT

- iv. a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures and facilities;
-
- Regular annual maintenance to sewage and waste disposal facilities including fencing to solid waste site.
 - Horizontal delivery process of water to treatment plant in town for biological treatment (Chlorination) before truck fill distribution to resident tanks.
- v. a list of unauthorized discharges and summary of follow-up action taken;
-
- No approved Licence for water intake/treatment/distribution, or sewage or solid waste disposal
-
- vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
-
- No abandonment or restoration of facilities for water, sewage, solid waste or soil remediation during the period.
- vii. a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
-
- The hamlet was requested to submit an application for water uses and sewage waste disposal with relevant study of source water and compliance with Drinking Water Guidelines. The hamlet has been operating those facilities without an approved Licence.
-
- viii. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
-
- INAC inspector requested to improve Spill reporting to Nunavut/NWT 24 hours Spill Line.
 - Request also received to improve handling of waste fuel and oil drums those appears leaky and unsealed stored at the Land farm.
 - Hamlet has collected those empty and half-filled oil drums, stored on wooden plank inside a cordoned area.
-

ANNUAL REPORT

- ix. Updates or revisions to the approved Operation and Maintenance Plans
- No approved Operation and Maintenance Plan.
 - Plan for new facilities of water system which will include updating of operational and maintenance manuals.
-

ADDITIONAL INFORMATION THAT THE LICENSEE DEEMS USEFUL:

- An external consultant (Dillon Consulting) retained by the GN- CGS with the realization that the community requires an upgrading of water intake and distribution to meet the Guidelines set out in GCDWQ in regards to its turbidity and quantity issues. An application submission to NWB for a new Water Licence also in the scope of the consultant, expecting by next year.

FOLLOW-UP REGARDING INSPECTION/COMPLIANCE CONCERNS:

- Hamlet is preparing an application submission to the Board for water intake, treatment, distribution and sewage waste disposal approval by next year.

Taloyoak Water Licence: 3BM-TAL 0813

Date of issuance: Dec 11, 2008

Date of Expiry: Sep 30, 2013



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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: 3BM-TAL0813

December 11, 2008

Mr. Chris Dixon
Acting SAO of Taloyoak
Hamlet of Taloyoak
P.O. Box 8
Taloyoak, NU X0B 1B0
E-mail: sao_hbhamlet@qiniq.com

RE: NWB Licence No. 3BM-TAL0813

Dear Mr. Dixon;

Please find attached Licence No. 3BM-TAL0813 issued to the Hamlet of Taloyoak by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*. The terms and conditions of the attached Licence related to water use are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use must cease, or the Licensee will be in contravention of the *Nunavut Land Claims Agreement* (NLCA) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA). However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment, however a minimum of sixty (60) days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been

received and acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received from interested persons on issues identified¹. The NWB notes that among the comments received were recommendations from the Department of Fisheries and Oceans on how the water intake facilities should be constructed and operated such that impact to fish habitat are minimized. The Hamlet should consider implementing the DFO's recommendations. This information is attached for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read 'T. Kabloona', with a long horizontal flourish extending to the right.

Thomas Kabloona
Nunavut Water Board
Chair

TK/db

Enclosure: Licence No. 3BM-TAL0813
Comments: DOE, EC, INAC

cc: Kitikmeot Distribution List

¹ Government of Nunavut Department of the Environment, August 11, 2008; Department of Fisheries and Oceans Canada, June 9, 2008; Department of Indian and Northern Affairs, August 25, 2008; Environment Canada, August 29, 2008.



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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

DECISION

LICENCE NUMBER: 3BM-TAL0813

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a new water Licence received on May 30, 2008, made by:

Hamlet of Taloyoak

to allow for the use of water for the Hamlet of Taloyoak, located within the Kitikmeot Region of Nunavut. With respect to this application, the NWB gave notice to the public on July 17, 2008 that the Hamlet had filed an application for a new water licence.

DECISION

After having been satisfied that the application was exempt from the requirement for screening by the Nunavut Impact Review Board in accordance with S. 12.3.2 of the *Nunavut Land Claims Agreement* (NLCA), the NWB decided that the application could proceed through the regulatory process. After reviewing the full submission of the Applicant and written comments expressed by interested parties, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *NLCA* and of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA), decided to waive the requirement to hold a public hearing and determined that:

Licence Number 3BM-TAL0813 be issued subject to the terms and conditions contained therein. (Motion #: 2008-06-L20)

SIGNED this 11th day of December, 2008 at Gjoa Haven, NU.

Thomas Kabloona
Nunavut Water Board
Chair

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I. BACKGROUND

The Hamlet of Taloyoak has a population of approximately 800 people and is located at the coordinates of 69° 32' north latitude and 93° 31' west longitude on the Boothia Peninsula within the Kitikmeot region of Nunavut. Taloyoak is located within a zone of continuous permafrost and is located on sand and gravel raised beaches with flat and gently rolling terrain containing numerous lakes and ponds.

Existing water use and waste disposal facilities include a freshwater intake pump and reservoir, sewage lagoon, solid waste disposal and hazardous waste storage.

II. PROCEDURAL HISTORY

The Hamlet of Taloyoak is currently unlicensed. Inspections carried out by the INAC Inspector have made reference to the need for the Hamlet to prepare the appropriate documentation and submit an application to the NWB for approval of the water source and intake along with the waste disposal facilities (solid waste and sewage) associated with the Hamlet. Inspections dating back to 1997 and those carried out from 2002 through to the latest Inspection Report dated January 11, 2008 for an inspection carried out on September 11, 2008 all have made note of the lack of a licence and the need for the Hamlet to comply with the *Act*. Currently, a Licence [1BR-TAL0712] for the operation of a landfarm within the Hamlet, was applied for on December 16, 2004 and issued on December 10, 2007.

On May 30, 2008 an application for a water licence for Taloyoak's new water treatment plant was submitted along with support documents in the form of Pre-Design reports produced by Dillon Consulting. Additional Tender Documents were submitted on July 16, 2008 following requests made by the Technical Advisor assigned to the file. Following a preliminary review of the application, the NWB concluded that it met the requirements of section 48(1) of the *Nunavut Waters and Surface Rights Tribunal Act* (the *Act*) and advised the Applicant and distribution list accordingly on July 17, 2008.

Information contained in the July 17, 2008 submission and distributed for review included the following:

- Application cover letter, May 28, 2008;
- NWB Licence Application form;
- Pre-Design Report, Water System Upgrades, Taloyoak; Dillon Consulting, November 13, 2007;
- Alternative Power Generation Report; Dillon Consulting, November 8, 2007;
- Taloyoak Water System Upgrade Planning Study; Dillon Consulting, April 2005;
- Taloyoak Water System Site Investigation and Remedial Action Plan; Dillon Consulting, December 13, 2004; and
- Submitted tender drawings, June 28, 2008.

The scope of the licence application applied only to the construction and operation of the water treatment plant. No other information was presented to the NWB. An amendment application should be made for the operation of both the landfill and the sewage lagoon, which are currently in operation, however unlicensed.

On July 17, 2008, the Nunavut Water Board publicly posted notice of this application, in accordance with Section 55.1 of the *Act* and Article 13 of the *Nunavut Land Claims Agreement (NLCA)*. This assessment process included the referral of the application to a variety of Federal, Territorial and local organizations for their review and comment.

As no public concern was expressed, the NWB waived the requirement to hold a public hearing and proceeded with the application process.

The NWB received comments on the application from the Department of Fisheries and Oceans Canada (DFO) on June 9, 2008, the Government of Nunavut Department of Environment (GN-DoE) on August 11, 2008, the Department of Indian and Northern Affairs Canada (INAC) on August 25, 2008 and from Environment Canada (EC) on August 29, 2008.

Based upon the results of the detailed assessment, including consideration of any potential accidents, malfunctions, or impacts to water that the overall project might have in the area, the Board approved the application and has issued Licence 3BM-TAL0813.

III. ISSUES

Term of Licence

In accordance with Section 45 of the *Act*, the NWB may issue a licence for a term not exceeding twenty-five (25) years. In determining an appropriate term of a water licence, the Board considers a number of factors, including, but not limited to, the results of INAC site inspections and the compliance record of the Applicant. In review of the Inspection Reports prepared by INAC, the NWB has noted that there were several issues with the existing water source and treatment system that precipitated the need for upgrades. These were as follows:

- i. The close proximity of the existing water source to the community resulting in the potential contamination of the water source;
- ii. Run-off from the community has been observed to enter into the water source;
- iii. The existing water treatment plant is outdated and requires upgrades to its electrical and mechanical components;
- iv. The water treatment plant could no longer meet the needs of the increasing population;

Having considered INAC's inspection comments, as well as the history of the applicant, the NWB has decided on a five (5) year term for the Licence. This term is longer than the two (2) years the applicant originally requested and is principally due to the fact that the Licence

currently only covers the water taking operation and not the wastewater treatment and landfill operations. If a two (2) year term were awarded then the Licencee would not have sufficient time to seek amendments to this Licence to allow for wastewater and landfilling activities. The Licencee is strongly encouraged to seek amendments to this Licence as soon as possible in order to have its wastewater treatment and landfilling activities permitted under a Water Board Licence. The NWB has placed a requirement for the Licensee to submit a 'Plan for Compliance' that will detail how the waste management facilities will be brought under the Licence. This requirement is found under Part B, Item 10 of the Licence.

Annual Report

The NWB has imposed on the Licensee, the requirement to produce an Annual Report. These Reports are for the purpose of ensuring that the NWB has an accurate annual update of municipal activities during a calendar year. This information is maintained on the public registry and is available to interested parties upon request. A "*Standardized Form for Annual Reporting*" is to be used by the Licensee and is available from the NWB file transfer protocol (FTP) site under the Public Registry link at the NWB Website. Additional information may be submitted as required.

(<ftp://nunavutwaterboard.org/ADMINISTRATION/Standardized%20Forms/>).

Operational Manuals and Plans

Appropriate Manuals and Plans need to be developed to the satisfaction of the NWB for the operation and maintenance of the facilities, the protection of the environment with regard to potential spills through day-to-day operations, and abandonment and restoration of the sites.

It is noted that the Licensee has not submitted an Operations and Maintenance (O&M) Manual as part of the application process and as such, a requirement to provide a plan is included in the conditions of the Licence. The O&M Manual is to include the following in accordance with Part F, Item 1 of the Licence:

- i. *Water Storage and Distribution Facility Operation and Maintenance (O&M) Manual;*
- ii. *Spill Contingency Plan; and*
- iii. *Monitoring Program Quality Assurance/Quality Control Plan.*

The purpose of the O&M Manual noted above is to assist Hamlet staff in carrying out the procedures relating to their water access and distribution facilities. The O&M Manual should demonstrate to the NWB that the Hamlet is capable of operating and maintaining the infrastructure related to water use in such a way that it meets the requirements of the Licence. The O&M Manual should be based, at a minimum, on the various NWB-approved guidelines and other regulatory guidelines as deemed appropriate.

Water Use

The Hamlet of Taloyoak currently obtains its water from “Water Lake” for potable use. This source is not currently licensed by the Board. The proposed new source of potable water for the Hamlet is Canso Lake, located to the northeast. No concerns were raised by the parties in their written submissions as to the amount of water required by the Hamlet, the manner in which it is obtained, the location of the water source or the manner in which this water will be used. The Department of Fisheries and Oceans Canada (DFO) however, did make several recommendations with respect to the construction window, including a timeframe when construction of the new water taking infrastructure should take place and mitigation procedures that should be implemented during construction. Provided that the additional mitigation measures described within DFO’s submission, are incorporated into the plans, DFO has concluded that the proposal is not likely to result in impacts to fish and fish habitat, and that formal approval from DFO is not needed to proceed.

Sewage

The application as received did not provide information on the activities related to sewage collection, treatment, containment and disposal. Therefore an amendment to this Licence will be required in order to permit these activities.

Solid Waste

As with the sewage disposal, the application as received did not provide information on the activities related to solid waste collection, containment, disposal or storage (hazardous wastes). Therefore, an amendment to this Licence will be required in order to permit these activities.

Abandonment and Restoration

To ensure that all existing end-of-life facilities are reclaimed in an appropriate manner, the NWB requires Licensees to submit an *Abandonment and Restoration Plan*. The NWB notes that the existing Water Supply Facilities are being replaced and as such the Board requires the Licensee submit for approval within ninety (90) days of issuance of this Licence an *Abandonment and Restoration Plan* for this facility. In addition to the above Plan the NWB also requires the Licensee to submit at least six (6) months prior to final closure of any licensed facility, or upon submission of the final design drawings for the construction of new facilities to replace existing ones, an *Abandonment and Restoration Plan* for the licensed facilities. The requirements for the Plans are outlined in Part G, Item 1 and 2 of this Licence. The Licensee should also be aware that any on-going restoration work is to be reported in the annual report.

IV. LICENCE 3BM-TAL0813

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

HAMLET OF TALOYOAK

(Licensee)
of
P.O. BOX 8, TALOYOAK, NUNAVUT X0B 1B0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water for a period subject to restrictions and conditions contained within this Licence:

3BM-TAL0813
Licence Number _____

NUNAVUT 07
Water Management Area

TALOYOAK, KITIKMEOT REGION, NUNAVUT
Location **(Latitude 69°32'N and Longitude 93°31'W)**

WATER TAKING AND WATER USE
Purpose: _____

MUNICIPAL UNDERTAKINGS
Description _____

TWO HUNDRED AND FORTY EIGHT (248)
CUBIC METRES PER DAY
Quantity of Water Not to Exceed _____

DECEMBER 11, 2008
Date of Licence _____

SEPTEMBER 30, 2013
Expiry Date of Licence _____

Dated this 11th of December, 2008 at Gjoa Haven, NU.



Thomas Kabloona
Nunavut Water Board
Chair

PART A: SCOPE AND DEFINITIONS

1. Scope

This Licence allows for the use of water for an undertaking classified as municipal as per Schedule II of the Regulations at the Hamlet of Taloyoak, Kitikmeot Region, Nunavut (69° 32' N; 93° 31' W).

- a. This Licence is issued subject to the conditions contained herein with respect to the taking of water. Whenever new Regulations are made or existing *Regulations* are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the taking of water, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and.
- b. 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: **3BM-TAL0813**

“Act” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“Amendment” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“Analyst” means an Analyst designated by the Minister under Section 85 (1) of the *Act*;

“Appurtenant undertaking” means an undertaking in relation to which a use of waters or a deposit of waste is permitted by a licence issued by the Board;

“Average Concentration” means the arithmetic mean of the last four consecutive analytical results for composite or grab samples collected from the monitoring stations identified in Part H;

“Board” means the Nunavut Water Board established under the *Nunavut Land Claims Agreement*;

“Composite Sample” means a water or wastewater sample made up of four (4) samples taken at regular periods over a 24 hour period;

“Engineer” means a professional engineer registered to practice in Nunavut in accordance with the *Engineering, Geological and Geophysical Act (Nunavut)* S.N.W.T. 1998, c.38, s.5;

“Freeboard” means the vertical distance between water line and the designed maximum operating height on the crest of a dam or dyke’s upstream slope;

“Geotechnical Engineer” means a professional engineer registered with the Association of Professional Engineers, Geologist and Geophysicists of Nunavut and whose principal field of specialization with the engineering properties of earth materials in dealing with man-made structures and earthworks that will be built on a site. These can include shallow and deep foundations, retaining walls, dams, and embankments;

“Grab Sample” means a single water or wastewater sample taken at a time and place representative of the total discharge;

“Greywater” means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

“Inspector” means an Inspector designated by the Minister under Section 85 (1) of the Act;

“Licensee” means the holder of this Licence;

“Modification” means an alteration to a physical work that introduces new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion, and changes to the operating system that are consistent with the terms of this Licence and do not require amendment;

“Monitoring Program” means a monitoring program established to collect data on surface water and groundwater quality to assess impacts to the freshwater aquatic environment of an appurtenant undertaking;

“Nunavut Land Claims Agreement” (NLCA) means the “*Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*”, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“Waste” means, as defined in S.4 of the Act, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

“Water Supply Facilities” comprises the area and associated intake infrastructure at Canso Lake, as described in the Application for Water Licence filed by the Applicant on May 30, 2008.

3. Enforcement

- a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*;
- c. For the purpose of enforcing this Licence and with respect to the use of water by the Licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law; and
- d. The Licensee shall, in relation to any application to renew or amend the Licence, provide an updated Plan for Compliance as submitted pursuant to Part B, Item 10. The updated Plan for Compliance must be submitted at the time of Application, in order for the Application to be deemed complete.

PART B: GENERAL CONDITIONS

1. 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. tabular summaries of all data generated under the “Monitoring Program”;
 - b. the monthly and annual quantities in cubic metres of fresh water obtained at the Water Supply Facilities;
 - c. a summary of modifications and/or major maintenance work carried out on the Water Supply Facilities including all associated structures and facilities;
 - d. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
 - e. Any updates or revisions for manuals and plans (i.e., *Operations and Maintenance Manual*) as required by changes in operation and/or technology;
 - f. a summary of any studies or reports requested by the Board that relate to water use or restoration, and a brief description of any future studies planned; and

- g. any other details on water use requested by the Board by November 1st of the year being reported.
2. The Licensee shall comply with the “Monitoring Program” described in this Licence, and any amendments to the “Monitoring Program” as may be made from time to time, pursuant to the conditions of this Licence.
 3. The “Monitoring 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.
 5. The Licensee shall, within ninety (90) days after the first visit by the Inspector following issuance of this Licence, post the necessary signs to identify the stations of the “Monitoring Program.” All signage postings shall be in the Official Languages of Nunavut.
 6. The Licensee shall immediately report to the 24-Hour Spill Report Line (867-920-8130) any spills, which are reported to, or observed by the Licensee, within the boundaries of the Water Supply Plant and source water.
 7. The Licensee shall ensure a copy of this Licence is maintained at the Municipal Office at all times. Any communication with respect to this Licence shall be made in writing to the attention of:

Manager of Licensing:

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369
Email: licensing@nunavutwaterboard.org

Inspector Contact:

Water Resources Officer
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295
Fax: (867) 979-6445

Analyst Contact:

Taiga Laboratories
Department of Indian and Northern Affairs
4601 – 52 Avenue, P.O. Box 1500
Yellowknife, NT X1A 2R3
Telephone: (867) 669-2781
Fax: (867) 669-2718

8. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.
9. The Licensee shall ensure that all document(s) and correspondence submitted by the Licensee to the Board are received and acknowledged by the Manager of Licensing.
10. The Licensee shall submit to the Board for approval, within ninety (90) days of Licence issuance or upon the filing of any application in relation to the Licence within that time, a Plan for Compliance that clearly demonstrates the measures the Licensee will undertake, including an implementation schedule, to achieve full compliance with the conditions of this Licence, including the approval of the waste water and solid waste disposal facilities.
11. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.
12. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and condition imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.
13. This Licence is not assignable except as provided in Section 44 of the Act.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all fresh water from Canso Lake using the Water Supply Facilities or as otherwise approved by the Board in writing.
2. The daily quantity of water used for all purposes shall not exceed two hundred and forty eight (248) cubic metres.
3. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen.

4. The Licensee shall not remove any material from below the ordinary high water mark of any water body unless otherwise approved by the Board in writing.
5. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
6. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. This Licence does not allow for any activities related to sewage disposal, treatment and discharge, solid waste collection, containment or disposal. An application for an amendment to this licence will be required to permit these activities.

PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION

1. The Licensee shall submit to the Board for written approval, construction design drawings stamped by a qualified engineer registered in Nunavut, prior to the construction of any dams, dykes or structures intended to contain, withhold, divert or retain water.
2. The Licensee may, without written approval from the Board, carry out modifications to the Water Supply 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. these modifications do not place the Licensee in contravention of 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.
3. Modifications for which all of the conditions referred to in Part E, Item 2, have not been met may be carried out only with written approval from the Board. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

4. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage
5. The Licensee shall implement sediment and erosion control measures prior to and during all activities carried out under this Part to prevent the release of sediment and minimize erosion.

PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

1. The Licensee shall submit to the Board for approval, within ninety (90) days of issuance of the Licence, an Operations and Maintenance Manual prepared where appropriate, in accordance with the “*Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996*”. The Manual shall take into consideration the comments received during the application review process and shall contain a Spill Contingency Plan in the format set out by the *Consolidation of Spill Contingency Planning and Reporting Regulations R-068-9*. The Spill Contingency Plan shall be appended to the Operation and Maintenance Manual.
2. The Licensee shall review the O&M Manual referred to in Part F, Item 1 as required by changes in operation and/or technology and modify accordingly. Revisions are to be submitted in the form of an Addendum to be included with the Annual Report.
3. The Licensee shall perform more frequent inspections of the engineered facilities at the request of an Inspector.
4. If, during the period of this Licence, a fuel or chemical spill occurs, the Licensee shall:
 - a. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
 - b. submit to the Inspector, a detailed report on each occurrence, not later than thirty (30) days after initially reporting the event, that provides the necessary information on the location (including the GPS coordinates), initial response action, remediation/clean-up, status of response (ongoing, complete), proposed disposal options for dealing with contaminated materials and preventative measures to be implemented.
 - c. include all relevant data about the spill location, quantity, cause, clean-up efforts and future prevention in the annual report to the Board.

PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall submit for Board for approval within ninety (90) days of issuance of this Licence an *Abandonment and Restoration Plan* for the existing water intake facility that is being decommissioned.
2. The Licensee shall submit to the Board for approval an *Abandonment and Restoration Plan* at least six (6) months prior to abandoning of any facilities or upon submission of the final design drawings for the construction of new facilities to replace existing ones. Where applicable, the Plan shall include information on the following:
 - a. water intake facilities;
 - b. the water treatment facilities;
 - c. petroleum and chemical storage areas;
 - d. an implementation schedule;
 - e. maps delineating all disturbed areas, and site facilities;
 - f. consideration of altered drainage patterns; and
 - g. future area use.

PART H: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of water pumped at the Water Supply Facilities, for all purposes.
2. The Licensee shall include all of the data and information required by the “Monitoring Program” in the Licensee's Annual Report, as required *per* Part B, Item 1, or as requested by an Inspector.
3. Modifications to the Monitoring Program may be made only upon written approval from the NWB.
4. All data concerning spills that occur within the boundaries of the Water Supply Plant and source shall be detailed in the annual report to the Board.

Taloyoak Water Licence; 1BR-TAL 0712

Date of issuance: Dec 10, 2007

Date of Expiry: Dec 31, 2012



P.O. Box 119
Gjoa Haven, NU X0B 1J0
Tel: (867) 360-6338
Fax: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No: **1BR-TAL0712**

December 10, 2007

Steven King, SAO
Hamlet of Taloyoak
P.O. Box
Taloyoak, NU X0B 1B0

RE: NWB LICENCE No. 1BR-TAL0712

Dear Mr. King:

Please find attached Licence No. **1BR-TAL0712** issued to the Hamlet of Taloyoak by the Nunavut Water Board (NWB) under **Motion No. 2007-46** pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee will be in contravention of the *Nunavut Land Claims Agreement* (NLCA) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA). However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment, however a minimum of thirty (30) days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and

acknowledged by the Manager of Licensing.

Sincerely,

Original Signed By:

Thomas Kabloona
A/Chief Executive Officer

TK/ajw/db

Enclosure: License No. 1BR-TAL0712

Cc:	Amy Liu	DFO
	Andrew Keim	INAC
	Bradley Flynn	DFO
	Carson Gillis	NTI
	Colette Spagnuolo	INAC
	David Hohnstein	NWB
	Earle Baddaloo	GN-DOE
	Erin Calder	NWMB
	Froydis Reinhart	INAC
	Jim Rogers	INAC
	John Dawe	GN
	Kevin Tweedle	KIA
	Peter Kusugak	INAC
	Leslie Payette	NIRB
	Mike Fournier	EC
	Jim Wall	NWB



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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

DECISION

LICENCE NUMBER: 1BR-TAL0712

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a Licence dated December 16, 2004 made by the:

HAMLET OF TALOYOAK

to allow for the use of water and disposal of waste during Landfarm Facility operations in the Community of Taloyoak within the Kitikmeot Region, Nunavut, at general latitude 69°32'N and general longitude 93°32'W.

DECISION

After having been satisfied that the application was exempt from the requirement for screening by the Nunavut Impact Review Board in accordance with Schedule 12.1, Paragraph 5 of the *Nunavut Land Claim Agreement* (NLCA), the NWB decided that the application could proceed through the regulatory process. In accordance with S.55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWSRTA) and Article 13 of the *NLCA*, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *NLCA* and of the *NWSRTA*, decided to waive the requirement to hold a public hearing and determined that:

Licence Number 1BR-TAL0712 be issued subject to the terms and conditions contained therein. (Motion #: 2007 - 46)

SIGNED this 10th day of December 2007 at Gjoa Haven, NU.

Original Signed By:

Thomas Kabloona
A/Chief Executive Officer

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I. INTRODUCTION

The Community of Taloyoak is located within the Kitikmeot Region, Nunavut, at general latitude 69°32'N and general longitude 93°32'W. The Community is located on the west coasts of the Hudson Bay, approximately 460 km east of Cambridge Bay, and 1,224 km northeast of Yellowknife.

Taloyoak is bounded by a ridge of Pre-Cambrian rock approximately 20 m in height surrounds the Community. Boulder fields and rock outcrops are common in the area. The Community is located in a zone of continuous permafrost, which has an active layer of approximately 50 cm and 1 m (in poorly drained and well drained soils, respectively). A thin organic layer supports a limited growth of lichen and moss on the low hills in the area.

Taloyoak receives an average annual rainfall of 6.5 cm and 103 cm of snowfall. Mean annual precipitation totals 16.8 cm annually. July mean high and low temperatures are 11.5°C and 3.2°C, respectively. January mean high and low temperatures are -29.7°C and -39.3°C, respectively. Winds are generally north-west, and average 22 km/h.

During the remediation of the Community's bulk petroleum storage tank farm in 2002, in excess of 1000m³ of soils were identified as hydrocarbon contaminated. The Community has constructed a Landfarm facility, where this soil and other hydrocarbon-contaminated soils will be remediated, and utilized for industrial purposes.

II. PROCEDURAL HISTORY

An application for a water licence dated December 1, 2004 for operation of a landfarm facility within the community, was filed by the Hamlet of Taloyoak, which is located within the Kitikmeot Region, Nunavut, at general latitude 69°32'N and general longitude 93°32'W, and received on December 16, 2004 by NWB.

The Application was distributed to interested persons for review on April 5, 2005. No significant concerns with the activities proposed by the Applicant were received from the parties prior to the May 5, 2005 deadline for comments. However, it has come to the attention of the NWB that the landfarm has been constructed without a water licence.

Accordingly, on May 28, 2007, pursuant to sections 86 and 87 of the NWNSRTA, the NWB advised the Department of Indian and Northern Affairs Canada (INAC) of the unauthorized actions of the Hamlet.¹ At that time, the Board was requesting guidance from INAC on (a) issuing of a license of the existing facilities for past activities, and/or (b) issuing a license to these facilities for purposes of monitoring the future operations.

On July 20, 2007, INAC responded:

¹ Letter from NWB to INAC dated May 28, 2007; re: Facilities constructed prior to NWB approval

The NWB delay in processing an application does not authorize the applicant to use water or dispose of waste in contravention of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSTRA). An applicant must diligently pursue its application for a licence, and must not engage in activities prohibited by sections 11 and 12 of the NWNSTRA until it has an approved water licence.²

INAC further advised the Board that INAC Water Resource Officers will be inspecting all Nunavut communities in the coming months for compliance with the NWNSTRA to determine whether further compliance and enforcement action is warranted.

Further INAC stated:

While INAC does not condone violations of the NWNSTRA, it is clear that the possibility of past violations must not forestall the NWB from reviewing a pending application. We encourage the NWB to continue its review of these applications. Further, we would be willing to recommend to the applicants that they submit information on the current status of the activities or infrastructure referenced in their original amendment applications.²

The Board continued with its review of the Application and issued a Type B Water License effective November 10, to allow for the operation of a Landfarm Facility in the Hamlet of Taloyoak.

The Board does not condone the Applicant's failure to comply with NWNSTRA and notes that the License does not operate retroactively.

III. GENERAL CONSIDERATIONS

A. Term of the Licence

In accordance with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* S. 45, the NWB may issue a licence for a term not exceeding twenty-five years. The NWB believes that a term of approximately five (5) years is appropriate. The license term will allow the Licensee to properly carry out the terms and conditions of the licence and will ensure that sufficient time is given to permit the Licensee to develop, submit and implement the plans required under the licence to the satisfaction of the NWB.

² Response from INAC to NWB; re: NWB letter dated May 28, 2007

B. Deposit of Waste

Solid Waste

The Licensee has indicated that contaminated soil will be placed in an appropriately designed engineered Landfarm Facility. The Landfarm Facility shall accept only soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of fuel oil and/or diesel fuel and /or gasoline. Soils contaminated by hydrocarbons that are resistant to, or preclude, biological treatment by landfarming shall not be accepted.

The Board, having duly considered these issues and the submission of the Applicant, has set the terms and conditions in the water license, which govern the segregation and treatment of hydrocarbon-contaminated soil for eventual industrial re-use, during the proposed undertaking accordingly.

C. Annual Report

The requirements imposed on the Licensee in this licence are for the purpose of ensuring that the NWB has an accurate annual update of water use and depositions of waste during a calendar year. This information is maintained on the public registry and is available to any interested persons upon request. The requirements of this Annual Report can be found in Part B, Item 1. A standard form for annual reporting under Part B, Item 1, can be downloaded from the NWB ftp site at <ftp://ftp.nunavut.ca/nwb/> in the administration folder.

D. Spill Contingency Planning

The Board generally requires that all Licensees prepare a comprehensive Spill Contingency Plan to establish a state of readiness to ensure a prompt and effective response to possible spills or system failure events. The site-specific spill contingency plan will assist the Licensee in responding to emergencies such that the impact to water in particular and the environment and public health in general are minimized. The NWB has imposed the requirement on the Licensee that a Spill Contingency Plan be developed in accordance with the requirements outlined in Part H, Item 1 and submitted to the NWB within ninety (90) days of the issuance of this Licence.

E. Abandonment and Restoration (A&R)

To ensure that all facilities are reclaimed in an appropriate manner upon abandonment, the NWB requires Licensees to prepare and submit an Abandonment and Restoration Plan, at least six (6) months prior to abandoning any facility. Other conditions for restoration have been included under Part I of this Licence.

LICENCE 1BR-TAL0712

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

HAMLET OF TALOYOAK

(Licensee)

of

PO BOX 8, TALOYOAK NUNAVUT, X0B 1B0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water for a period subject to restrictions and conditions contained within this licence:

1BR-TAL0712

Licence Number

NUNAVUT 07

Water Management Area

TALOYOAK, KITIKMEOT REGION, NUNAVUT

Location

WASTE DISPOSAL

Purpose

INDUSTRIAL – TYPE “B”

Classification of Undertaking

ZERO (0) CUBIC METRES

Quantity of Water Not to Exceed

DECEMBER 10, 2007

Date of Licence

DECEMBER 31, 2012

Expiry Date of Licence

Dated this 10th day of December 2007 at Gjoa Haven, NU.

Original Signed By:

Thomas Kabloona
A/Chief Executive Officer

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the use of water and the disposal of waste for an undertaking classified as Industrial, for the operation of the Landfarm Facility in the Community of Taloyoak, located within the Kitikmeot Region, Nunavut, at general latitude 69°32'N and general longitude 93°32'W.

- a. 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 Nunavut Waters and Nunavut Surface Rights Tribunal 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 subject to such requirements; and
- b. 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: **1BR-TAL0712**

“Act” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*

“Analyst” means an Analyst designated by the Minister under Section 85 (1) of the *Act*;

“Appurtenant undertaking” means an undertaking in relation to which a use of waters or a deposit of waste is permitted by a licence issued by the Board;

“Board” means the Nunavut Water Board established under the *Nunavut Land Claims Agreement*;

“Chief Executive Officer” means the Chairperson of the Nunavut Water Board;

“Effluent” means treated or untreated liquid waste material that is discharged into the environment from a structure such as a settling pond or following a treatment process

“Final Discharge Point” means the point at which the Licensee no longer exerts care and/or control over the quality and/or quantity of the effluent from a treatment process;

“Greywater” means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

“Inspector” means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

“Landfarm Facility” means an area designed to biologically treat Type B soils, as described in the Application for Water License filed by the Applicant on December 16, 2004;

“Licensee” means the individual or organization to which Licence 1BR-TAL0712 Type “B” is issued or assigned;

“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;

“Hazardous waste” means waste classified as “hazardous” by Nunavut Territorial or Federal Legislation, or as “dangerous goods” under the *Transportation of Dangerous Goods Act* at the time of clean-up;

“Monitoring Program” means a program established to collect data on surface water and groundwater quality to assess impacts to the environment of an appurtenant undertaking;

“Nunavut Land Claims Agreement” (NLCA) means the “*Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*,” including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“Treatment Objective” means the treatment objective for the Landfarm Facility which is the Canadian Council of Ministers of the Environment (CCME), 2001 *Canada – Wide Standard for Petroleum Hydrocarbon in Soil*, for Industrial land use; and

“Type A Soil” means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of lubricating oil and grease;

“Type B Soil” means soil contaminated with hydrocarbons in which the primary petroleum product present in the soil as determined by laboratory analysis consists of fuel oil and/or diesel fuel and /or gasoline;

“Waste” means as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means.

3. Enforcement

- i. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- ii. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- iii. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the licensee, Inspectors appointed under the *Act*, hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

PART B: GENERAL CONDITIONS

1. Licensee shall file an Annual Report on the appurtenant undertaking with the Board no later than March 31st of the year following the calendar year being reported which shall contain the following information:
 - i. A summary of any construction work, modification and major maintenance work (including as-built diagrams) carried out on the Landfarm Facilities, including all associated structures;
 - ii. Tabular summaries for all data and information generated under the “Monitoring Program”;
 - iii. An analysis of data collected during the “Monitoring Program” and a brief description of any future studies planned by the Licensee;
 - iv. A summary of any abandonment and restoration work undertaken during the year and an outline of any work anticipated for the next year;
 - v. A summary of any studies requested by the Board that relate to waste disposal or reclamation, and a brief description of any future studies planned;
 - vi. A list of unauthorized discharges and summary of follow-up actions taken;
 - vii. Any revisions to an approved Spill Contingency Plan;
 - viii. If applicable, a description of any trenches and sumps excavated, including but not limited to the following: GPS coordinates, dimensions, depth below active layer, and secondary containment features;
 - ix. A public consultation/participation report describing consultation with local

- organizations and the residents of the nearby communities;
- x. A brief summary of work done to address concerns or deficiencies listed in the inspection reports and/or compliance reports prepared by an Inspector;
 - xi. An executive summary in English and Inuktitut of all plans, reports, or studies conducted under this Licence; and
 - xii. Any other details on waste disposal requested by the Board by November 1st of the year being reported.
2. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
 3. The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of water volumes, to be operated and maintained to the satisfaction of an Inspector.
 4. The Licensee shall, within sixty (60) days of issuance of this Licence, post signs in the appropriate area to inform the public of the location of the Landfarm Facility, and the stations of the “Monitoring Program”. All postings shall be in the Official Languages of Nunavut and located and maintained to the satisfaction of an Inspector.
 5. The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:
 - (i) **Licensing Manager**
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369
Email: licensing@nunavutwaterboard.org
 - (ii) **Inspector Contact:**
Water Resources Officer
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4298
Fax: (867) 979-6445
 6. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.

7. The Licensee shall ensure that any document(s) or correspondence submitted by the Licensee to the Board is received and acknowledged by the Manager of Licensing.
8. This Licence is not assignable except as provided in Section 44 of the *Act*.

PART C: CONDITIONS APPLYING TO THE PROTECTION OF WATER

1. The Licensee shall not remove any material from below the ordinary high water mark of any water body.
2. The Licensee shall not do anything that will cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
3. The Licensee shall implement sediment and erosion control measures to prevent the deposition of dust and/or sediment arising from contractor activities or on-site vehicular travel, into water.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall treat, to the Treatment Objective, Type B soil in a Landfarm Facility constructed and operated in a manner in accordance with the Plans contained in the application submitted to the Board by the Licensee on December 16, 2004, with supplemental information.
2. The Licensee shall locate areas designated for waste disposal at a minimum distance of thirty (30) metres from the ordinary high water mark of any water body such that the quality, quantity or flow of water is not impaired, unless otherwise authorized by the Board.
3. The Licensee shall provide at least fifteen (15) days written notice to the Inspector prior to any planned discharges from the sump in the Landfarm Facility. The notice shall include an estimate of the volume proposed for discharge.
4. All water from within the perimeter of the Landfarm Facility and/or any other liquid effluent shall meet the following wastewater discharge limits prior to being released onto land:

Parameter	Maximum Allowable Concentration (µg/L)
pH	6 to 9
Oil and Grease	5000
Arsenic (total)	100

Parameter	Maximum Allowable Concentration (µg/L)
Cadmium (dissolved)	10
Chromium (dissolved)	100
Cobalt (dissolved)	50
Copper (dissolved)	200
Lead (dissolved)	50
Mercury (total)	0.6
Nickel (dissolved)	200
PCB (total)	1000
Phenols	20
Zinc (total)	500

5. If effluent does not meet the wastewater discharge criteria (Part D, Item 4), it shall be considered hazardous waste and disposed off-site at an approved facility.
6. The discharge location for all treated effluents described in Part D Items 4 shall be to the satisfaction of an Inspector and shall at a minimum be located thirty (30) metres from the ordinary high water mark from any water body and where direct flow into a water body is not possible and no additional impacts are created.
7. The Licensee shall dispose of soils containing contaminants in excess of Canadian (CCME) Guidelines off site at an approved treatment facility.
8. The Licensee shall, prior to the removal of any treated soil from the Landfarm Facility, confirm with the Government of Nunavut, Environmental Protection Service that the soils have been treated so as to meet all legislatively-required Soil Quality Remediation Objectives (SQRO).

PART E: CONDITIONS APPLYING TO THE UNDERTAKING

1. The Licensee shall ensure that the location and construction parameters of the Landfarm Facility, roads including stream crossings, active layer monitoring wells and any other associated structures conform to the plans submitted to the Board by the Applicant on December 16, 2004, with supplemental information.
2. The Licensee shall, if any constructed facilities were to fail, immediately repair such facilities to the satisfaction of an Inspector.
3. The Licensee shall ensure that all activities are conducted in such a way as to minimize impacts on surface drainage and the Licensee immediately undertake any corrective measures in the event of any impacts on surface drainage.

4. All sites affected by construction or removal activities shall be stabilized, landscaped as necessary, and suitable erosion control measures implemented to minimize sediment deposition into watercourses located on or adjacent to the site, to the satisfaction of an Inspector.
5. The Licensee shall restore and stabilize all areas affected by the undertaking upon completion of the work, to the satisfaction of an Inspector.
6. The Licensee shall not deposit any waste in any body of water, or on the banks thereof, which may impair the quality, quantity, or flow of water.

PART F: CONDITIONS APPLYING TO DRILLING OPERATIONS

1. The Licensee is authorized to drill and install monitoring wells in accordance with the Project Drawings and Specifications contained in the application submitted to the Board by the Licensee on December 16, 2004, with supplemental information.

PART G: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the Landfarm Facility, provided that such Modifications are consistent with the terms of this License and the following requirements are met:
 - i. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
 - ii. such Modifications do not place the Licensee in contravention of the License or the *Act*;
 - iii. 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
 - iv. the Board has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part G, Item 1 have not been met can be carried out only with written approval from the Board.
3. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this License within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

PART H: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Licensee shall submit to the Board for approval, within ninety (90) days of issuance of the Licence, an “*Environmental Emergency Contingency Plan For Landfarm Facility Operations in the Hamlet of Taloyoak, Nunavut*”. This Plan shall include, but not be limited to, the following:
 - a. The name, address and contact number for the person in charge, management or control of the facility (in this case, fuel oil and any other chemicals associated with the program);
 - b. The name and address and telephone number of the employer;
 - c. The name, job title and 24 hour contact number for the person or persons responsible for activating the spill plan;
 - d. A detailed description of the facility, including its geographic location – in UTM coordinates (map sheet number, Eastings and Northings) and geographic coordinates (Lat/Long) – size and storage capacity;
 - e. A description of the type and amount of contaminants stored on site;
 - f. A description of the spill prevention measures to be undertaken in the handling, storage and disposal of petroleum products and hazardous materials;
 - g. Steps taken to report, contain, clean up and dispose of a spill;
 - h. A site map of sufficiently large scale to show the location of facilities, sensitive areas such as water bodies, probable pathways of contaminant flow and general topography;
 - i. A description of the spill response training provided to employees who will respond to a spill;
 - j. An inventory and location of the response and clean up equipment available to the response team;
 - k. The means by which the spill plan is activated; and
 - l. The date that the spill plan was prepared.
2. If the Plan referred to in Part H, Item 1 is not approved, the Licensee shall make the necessary revisions and resubmit the Plan within thirty (30) days following notification from the Board.
3. The Licensee shall implement the Plan specified in Part H, Item 1 as and when approved by the Board.
4. The Licensee shall annually review the Plan referred to in this Part and if needed, modify it to reflect changes in operation and/or technology. The Plan and any revisions shall be submitted with the Annual Report.
5. The Licensee shall ensure that any chemicals, petroleum products or wastes associated with the project do not enter water. All sumps shall be located at a distance of at least

thirty (30) metres from the ordinary high water mark of any adjacent water body and inspected on a regular basis.

6. The Licensee shall ensure that any equipment maintenance and servicing be conducted only in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other waste and contain potential spills.
7. If during the term of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:
8. Employ the Spill Contingency Plan, or in the absence of an approved Plan undertake such measures as are reasonable and prudent, so as to prevent the spill from occurring or to mitigate the health, safety and environmental risks and consequences of the spill, and that demonstrate the due diligence of the Licensee in this regard;
9. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
10. For each spill occurrence, submit to the Inspector, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.

PART I: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall submit to the Board for approval an Abandonment and Restoration Plan at least six (6) months prior to abandoning any facilities and the construction of new facilities to replace existing ones. The Plan shall include, but not be limited to where applicable:
 - a. Description of the landfarm facility
 - b. any site affected by waste spills;
 - c. leachate prevention;
 - d. an implementation schedule;
 - e. maps delineating all disturbed areas, and site facilities;
 - f. consideration of altered drainage patterns;
 - g. type and source of cover materials;
 - h. future area use;
 - i. hazardous wastes; and
 - j. a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.

2. The Licensee shall implement the plan specified in Part I, Item 1 as and when approved by the Board.
3. The Licensee shall revise the Plan referred to in Part I, Item 1 if not approved. The revised Plan shall be submitted to the Board for approval within thirty (30) days of receiving notification of the Board's decision.
4. The Licensee shall complete the restoration work within the implementation schedule specified in the Plan, or as subsequently revised and approved by the Board.
5. All disturbed areas shall be stabilized and re-vegetated as required, upon completion of work, and restored as practically as possible to a pre-disturbed state to the satisfaction of an Inspector.

PART J: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall maintain Monitoring Program Stations at the following locations:

Monitoring Program Station Number	Description
TLF-1	Soil entering Landfarm Facility
TLF-2	Discharge from the Landfarm Facility containment sump at the controlled point of release
TLF-3	Monitoring well located up gradient of the Landfarm Facilities
TLF-4	Monitoring well located down gradient of the Landfarm Facilities

2. The Licensee shall measure and record the volume of all soil from all locations entering the Landfarm Facility (TLF-1).
3. The Licensee shall assess and record the concentration of petroleum hydrocarbon contaminated soil entering the Landfarm Facility from all sources, as *per* the CCME *Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil*.
4. The Licensee shall install groundwater monitoring wells at the Landfarm Facility. These wells shall be located with at least one located up gradient of the facility for background data collection (TLF-3) and at least one down gradient of the facility (TLF-4).
5. The Licensee shall monitor compliance with respect to Part D Item 4, by collecting a representative composite sample of the total volume to be released from the Final

Discharge Point of the Landfarm Facility at monitoring program station (TLF-2).

6. The Licensee shall sample at Monitoring Program Stations TLF-3 and TLF-4 once annually in the summer, giving consideration to adequate ground thaw and obtaining a representative groundwater sample. Samples shall be analyzed for the following parameters:

BOD	Faecal Coliforms
pH	Conductivity
Total	Suspended Solids
Ammonia Nitrogen	
Nitrate-Nitrite	Oil and Grease
Total Phenols	Total Alkalinity
Total Hardness	Calcium
Magnesium	Potassium
Sodium	Sulphate
Total Arsenic	Total Cadmium
Total Copper	Total Chromium
Total Iron	Total Lead
Total Mercury	Total Nickel
TPH (Total Petroleum Hydrocarbons)	
PAH (Polycyclic Aromatic Hydrocarbons)	
BTEX (Benzene, Toluene, Ethylbenzene, Xylene)	

7. An Inspector may impose additional monitoring requirements.
8. 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 the Board.
9. The Licensee shall submit to the Board for approval ninety (90) days prior to releasing any effluent a Quality Assurance/Quality Control Plan that conforms to the guidance document “*Quality Assurance (QA) and Quality Control (QC) Guidelines For Use by Class “B” Licensees in Collecting Representative Water Samples in the Field and for Submission of a QAQC Plan*” INAC (1996).