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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

DECISION

LICENCE NUMBER: 3BM-ARC0810

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a Licence renewal originally received October 9, 2007, made by:

Hamlet of Arctic Bay

to allow for the use of water and disposal of waste for the Hamlet of Arctic Bay, located within the Qikiqtani Region, Nunavut. With respect to this application, the NWB gave notice to the public that the Hamlet had filed an application for a water licence renewal.

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-ARC0810 be issued subject to the terms and conditions contained therein. (Motion #: 2007-58)

SIGNED this 17th day of March, 2008 at Gjoa Haven, NU.

Thomas Kabloona
Acting Chief Executive Officer

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I. BACKGROUND

The Hamlet of Arctic Bay has a population of about 700 and is located at the coordinates of 73°02' north latitude and 83°05' west longitude on north Baffin Island within the Qikiqtani region of Nunavut. The community is surrounded by steep hills and sits on a low gravel beach on the shore of Arctic Bay located off of Adams Sound. Existing water use and waste disposal facilities include a freshwater intake and pump, sewage lagoon, wetland treatment area, solid waste and bulky items disposal areas and hazardous waste storage.

II. PROCEDURAL HISTORY

The NWB issued a municipal water licence to the Hamlet of Arctic Bay on November 1, 2002, to allow for the use of water and disposal of waste. Following an application by the Hamlet, the NWB issued an amendment to the Licence on March 2, 2005 to allow for emergency remedial work required to prevent failure of the lagoon's containment berms (that could result in the release of waste into water in particular, and in the environment in general) at the Hamlet's Sewage Disposal Facility.

The municipal water licence expired on October 31, 2007. The Government of Nunavut, Department of Community and Government Services (GN-CGS), on behalf of the Hamlet, submitted an application for water licence renewal to the NWB on October 9, 2007, with the technical summaries following on November 23, 2007. 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 December 5, 2007.

Information contained in the October 9 and November 23, 2008 submissions and distributed for review was as follows:

- Water licence application renewal form; and
- Technical summaries in English and Inuktitut.

The scope of the renewal application included ongoing operation of the existing Sewage Disposal Facility (lagoon) and solid waste disposal facilities. In its application, the Applicant also advised the NWB of plans to construct a new sewage lagoon in 2008 for commissioning in 2009, which will be subject to an amendment application to this Licence.

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), on December 5, 2007. 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 interested parties including Indian and Northern Affairs Canada (INAC), Environment Canada (EC), and the Government of Nunavut Department of Environment (GN-DOE) on or prior to January 5, 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-ARC0810.

III. ISSUES

Term of the Licence, Reporting, Manual and Plan Submissions

In accordance with section 45 of the Act, the NWB may issue a licence for a term not exceeding twenty-five 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 previous water licence 3BM-ARC0207, the NWB has noted that there were several issues of non-compliance with conditions contained therein. The issues varied throughout the duration of the Licence, however re-occurring items were significant and as follows:

- i. Unauthorized release of Effluent and failure to file a spill report;
- ii. Unacceptable Effluent discharge quality, decant structure, erosion, dyke failure, and available freeboard of lagoon;
- iii. Failure to submit annual reports for 2002 to 2005 (2006 annual report received on April 7, 2007);
- iv. The Licensee did not submit an Operations and Maintenance Plan during the Licence term; and
- v. Incomplete monitoring data.

Term of Licence

In review of the application and the comments received from interested parties, there were no comments with respect to the Hamlet's request for a term of five (5) years for the Licence renewal. However, the NWB has decided on a two (2) year term for the Licence. The decision for a short duration was based on issues with non-compliance and is intended to send a clear message to the Hamlet and regulatory authorities that the Board will not passively encourage the Hamlet's failure to comply with the Licence conditions and associated legal requirements. The Board fully expects the Hamlet to take immediate steps to come into full compliance with the Licence requirements for its existing facilities and to operate the Sewage Disposal Facility in accordance with the Licence. When

the Hamlet submits an application to renew the Licence in approximately 24 months, the Board expects the Hamlet to be in full compliance with the licence. This short duration also permits the Board to increase its level of confidence that the facility is operating as it should. As per Part B, Item 10 of the Licence the Licensee must submit a Plan for Compliance that clearly demonstrates how the Hamlet will achieve full compliance with the Licence conditions.

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.

Operational Plans

Appropriate 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) Plan to the NWB. This Licence has therefore, included the requirement to provide O&M Manual to the NWB, which is to include the following in accordance with Part F, Item 1 of the Licence:

- i. *Water Distribution Facility Operation and Maintenance (O&M) Plan;*
- ii. *Sewage Disposal Facility Operation and Maintenance (O&M) Plan;*
- iii. *Sewage Sludge Management Plan;*
- iv. *Solid Waste Disposal Facility Operation and Maintenance (O&M) Plan;*
- v. *Spill Contingency Plan; and*
- vi. *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 distribution and waste disposal 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 and waste disposal adequately and to meet the requirements of the Licence. The O&M Manual should be based, at a minimum on the various NWB-approved guidelines available (i.e. *Guidelines for the Preparation of an Operations and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories*, Duong and Kent, 1996) and other regulatory guidelines as deemed appropriate.

Water Use

The Hamlet of Arctic Bay currently utilizes Marcil Lake as a source of potable water with the quantity used not exceeding 45,000 cubic metres annually. 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 or in the manner in which this water will be used. The NWB has renewed the terms and conditions associated with water use by the Hamlet accordingly.

Deposit of Waste

Sewage

The Hamlet of Arctic Bay currently provides trucked sewage services for the Community's residents, businesses and institutions.

Specific comments relevant to sewage disposal operations in the Hamlet were provided by GN-DOE, INAC and EC.

EC noted that any effluent discharged must be in compliance with Section 36(3) of the Fisheries Act. In addition, monitoring of the sewage lagoon effluent (Sewage Disposal Facility) and outlet of the wetland was requested by EC in order to assess the wetland's treatment efficiency. The NWB concurs with this request and has included monitoring requirements for the sewage effluent and the outlet of the wetland treatment area. In order to effectively monitor the effluent for compliance purposes, the NWB has imposed acute toxicity testing as a Licence requirement under Part D, Item 6.

EC provided comments on the water quality discharge limits and recommended that the NWB include criteria for fecal coliforms if the discharge location is close to harvesting or recreational areas. The previous licence included fecal coliforms as a licenced parameters and the NWB has renewed those existing discharge limits in Part D, Item 3 of this Licence, which are slightly below those suggested by EC.

The NWB has reviewed the INAC inspection reports including the Inspector's direction issued on August 8, 2003, which notes the "...continued discharge of untreated sewage lagoon effluent into Strathcona Sound". Without having been provided with confirmation of the wetland treatment efficiency the NWB has also added, for information purposes, a monitoring station in Arctic Bay. Given the history of the facilities as documented in the inspection reports, the NWB has also added a requirement for the Licensee to have geotechnical inspection of the facilities carried on an annual basis by a qualified engineer. This condition is included in other water licences issued in Nunavut.

Both the GN-DOE and EC noted that maintenance should include removal and disposal of sewage sludge. EC recommended that prior to removal of sludge occurring, that the Licensee submit for approval a Sewage Sludge Management Plan (as part of the above-mentioned O&M Manual) that

clearly outlines the chemical composition of the sludge, and how sludge will be stored, treated and eventually disposed of. The NWB concurs with this recommendation, and has imposed this requirement in the Licence.

Both the GN-DOE and EC noted that a Spill Contingency Plan has not yet been prepared, and submitted to the NWB by the Licensee. The NWB concurs with this recommendation, and has imposed this requirement as part of the O&M Manual in the Licence.

Solid Waste

The development of an O&M Plan for the Solid Waste Disposal Facility is required as part of the overall O&M Manual discussed above. The O&M Plan for the Solid Waste Disposal Facility should set out procedures for the segregation, storage and eventual removal for disposal of hazardous wastes and should also address procedures for the incineration of solid waste.

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*. This plan is to be submitted at least six (6) months prior to final closure of Licenced facilities or upon submission of the final design drawings for the construction of new facilities to replace existing ones. The requirements for the Plan are outlined in Part G, Item 1 of this Licence.

2008 New Lagoon Construction Amendment

INAC, EC, and GN-DOE acknowledged the proposal to build a new sewage lagoon in 2008. As the NWB has not been provided with the details of the new facility, it has not been considered as part of this Licence. As such, the Licensee must file an application for amendment and obtain approval from the NWB prior to commencing construction of the new facility. In accordance with the comments received the amendment application must contain the following information:

- A Wetland Treatment Assessment Report. This Report must provide: the additional final design and topography data required to adequately assess the proposed system; the criteria needed in order to properly assess the efficiency of the system over time; a verification of assumed flow pattern and total area utilized; a vegetation assessment of the area used; residence time and determination of a focal point of release for the Final Discharge Point; and contingencies.
- An updated Operations and Maintenance Manual;
- Abandonment and Restoration Plan for facilities to be decommissioned; and
- Final design drawings stamped by a professional engineer registered in Nunavut.

LICENCE 3BM-ARC0810

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 ARCTIC BAY

(Licensee)

of

ARCTIC BAY, NUNAVUT X0A 0A0

(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-ARC0810

Licence Number

NUNAVUT 05

Water Management Area

ARCTIC BAY, NUNAVUT (Latitude 73°02'N and Longitude 83°05'W)

Location

WATER USE AND WASTE DISPOSAL

Purpose

MUNICIPAL UNDERTAKINGS

Description

45,000 CUBIC METRES ANNUALLY

Quantity of Water Not to Exceed

March 17, 2008

Date of Licence

March 31, 2010

Expiry Date of Licence

Dated this 17th of March 2008 at Gjoa Haven, NU.



Thomas Kabloona Acting Chief Executive Officer

PART A: SCOPE AND DEFINITIONS

1. Scope

- a. This Licence allows for the use of water and the disposal of waste for municipal undertakings at the Hamlet of Arctic Bay, Qikiqtani Region, Nunavut (73°02' N; 83°05'W);
- b. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *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;
- 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: **3BM-ARC0810**

“**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;

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

“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;

“Final Discharge Point” in respect of an effluent means an identifiable discharge point of a facility beyond which the operator of the facility no longer exercises control over the quality of the effluent;

“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;

“Sewage” means all toilet wastes and greywater;

“Sewage Disposal Facilities” comprises the engineered lagoon and decant structures designed to contain and treat sewage as described in the Application for Water Licence filed by the Applicant on 18 July, 2002, and the Emergency Amendment Application filed by the Applicant on May 6, 2004.

“Solid Waste Disposal Facilities” means the facilities designated for the disposal of solid waste, as described in the Application for Water Licence filed by the Licensee on July 18, 2002;

“Toilet Wastes” means all human excreta and associated products, but does not include greywater;

“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 Marcil Lake, as described in the Application for Water Licence filed by the Licensee on July 18, 2002;

“Wetland Treatment Area” comprises the area of land immediately downstream of the Sewage Disposal Facility (Sewage Lagoon), to the Final Discharge Point down to the ocean shoreline.

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.
- iv. The Licensee shall, in relation to any application to renew or amend the Licence, have in place a Plan for Compliance approved by the Board in writing, to achieve full compliance with the conditions of this Licence, or a 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:
 - i. tabular summaries of all data generated under the “Monitoring Program”;
 - ii. the monthly and annual quantities in cubic metres of fresh water obtained at the Water Supply Facilities;
 - iii. the monthly and annual quantities in cubic metres of each and all waste discharged;
 - 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;
 - v. a list of unauthorized discharges and summary of follow-up action taken;
 - vi. a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;
 - vii. Any updates or revisions for manuals and plans (i.e., *Operations and Maintenance Manual*) as required by changes in operation and/or technology;
 - viii. a summary of any studies or reports requested by the Board that relate to water use and waste disposal or restoration, and a brief description of any future studies planned;

- ix. any other details on water use or waste disposal requested by the Board by November 1st of the year being reported; and
- 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 of Waste, which are reported to, or observed by the Licensee, within the municipal boundaries or in the areas of the Water Supply or Waste Disposal Facilities.
- 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:

(i) 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

(ii) 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

(iii) 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 the lesser of ninety (90) days or upon the filing of any application in relation to the Licence, a Plan for Compliance that clearly demonstrates the ways and means the Licensee will undertake to achieve full compliance with the conditions of this Licence.
11. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.
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 Marcil Lake using the Water Supply Facilities or as otherwise approved by the Board.
2. The annual quantity of water used for all purposes shall not exceed 45,000 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. The Licensee shall direct all Sewage to the Sewage Disposal Facilities or as otherwise approved by the Board.
2. The Licensee shall provide notice to an Inspector at least ten (10) days prior to initiating any decant of the Sewage Disposal Facilities.
3. All Effluent discharged from the Sewage Disposal Facilities at Monitoring Program Station ARC-3 shall meet the following Effluent quality standards:

Parameter	Maximum Average Concentration
BOD ₅	100 mg/L
Total Suspended Solids	120 mg/L
Faecal Coliforms	1 x 10 ⁶ CFU/100mL
Oil and grease	No visible sheen
pH	between 6 and 9

4. The Licensee shall maintain at all times, a freeboard of at least 1.0 metre, or as recommended by a qualified geotechnical engineer and as approved by the Board, for all dams, dykes or other structures intended to contain, withhold, divert or retain water or wastes.
5. The Sewage Disposal Facility shall be maintained and operated, to the satisfaction of an Inspector in such a manner as to prevent structural failure.
6. All Effluent discharged from the Wetland Treatment Area Final Discharge Point (ARC-4), shall be demonstrated to be Not Acutely Toxic under the following tests to be

conducted once annually approximately mid-way through discharge:

- i. Acute lethality to Rainbow Trout, *Oncorhynchus mykiss* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/13); and
 - ii. Acute lethality to the crustacean, *Daphnia magna* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/14).
7. The Licensee shall dispose of and contain all solid wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board.
 8. The Licensee shall segregate and store all hazardous materials and/or hazardous waste within the Solid Waste Disposal Facility in a manner as to prevent the deposit of deleterious substances into any water until such a time as proper disposal arrangements are made.
 9. The Licensee shall implement measures to control wind-blown litter at the Solid Waste Disposal Facility.
 10. The Licensee shall submit to the Board for review within six (6) months of the issuance of this license amendment a report identifying each Final Discharge Point. The report shall at least include:
 - a. Plans, specifications, geographic coordinates and a general description of each Final Discharge Point; and
 - b. A description of how each Final Discharge Point is designed and maintained.
 11. If, during the term of this Licence, additional Final Discharge Points are identified, the Licensee shall submit the information as required by Part D, Item 12 for each new Final Discharge Point at least sixty (60) days prior to depositing Effluent from the new Final Discharge Point.

PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION

1. The Licensee shall submit to the Board for approval, 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 or wastes.
2. The Licensee may, without written approval from the Board, carry out modifications to the Water Supply and Waste Disposal Facilities provided that such modifications are consistent with the terms of this Licence and the following requirements are met:

- i. the Licensee has notified the Board in writing of such proposed modifications at least sixty (60) days prior to beginning the modifications;
 - ii. these modifications do not place the Licensee in contravention of the Licence 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.
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 ensure that sediment and erosion control measures are implemented prior to and maintained during 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 the following plans:
 - a. *Water Distribution Facility Operation and Maintenance (O&M) Plan;*
 - b. *Sewage Disposal Facility Operation and Maintenance (O&M) Plan;*
 - c. *Sewage Sludge Management Plan;*
 - d. *Solid Waste Disposal Facility Operation and Maintenance (O&M) Plan;*
 - e. *Spill Contingency Plan; and*
 - f. *Monitoring Program Quality Assurance/Quality Control Plan.*

2. The Licensee shall review the Manual and Plans referred to in this Part 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, unless directed otherwise by an Inspector
3. An inspection of all engineered facilities related to the management of water and waste shall be carried out annually in July or August by a Geotechnical Engineer. The engineer's report shall be submitted to the Board within sixty (60) days of the inspection, including a covering letter from the Licensee outlining an implementation plan addressing each of the Engineer's recommendations.
4. The Licensee shall perform more frequent inspections of the engineered facilities at the request 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:
 - i. employ the appropriate contingency measures as approved under the Operation and Maintenance Manual for the Hamlet of Arctic Bay;
 - ii. report the incident immediately via the 24-Hour Spill Reporting Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
 - iii. 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.

PART G: 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 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:
 - i. water intake facilities;
 - ii. the water treatment and waste disposal sites and facilities;
 - iii. petroleum and chemical storage areas;
 - iv. any site affected by waste spills;
 - v. leachate prevention;
 - vi. an implementation schedule;
 - vii. maps delineating all disturbed areas, and site facilities;
 - viii. consideration of altered drainage patterns;

- ix. type and source of cover materials;
- x. future area use;
- xi. hazardous wastes; and
- xii. a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment.

PART H: CONDITIONS APPLYING TO THE MONITORING PROGRAM

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

Monitoring Program Station Number	Description	Status
ARC-1	Raw water supply intake at Marcil Lake	Active (Volume)
ARC-2	Raw Sewage from pump-out truck	Active (Volume)
ARC-3	Effluent discharged from the Final Discharge Point of the Sewage Disposal Facilities	Active
ARC-4	Final Discharge Point of the Wetland Treatment Area	New
ARC-5	Ocean water five (5) metres from point where Effluent enters ocean	New
ARC-6 (previously ARC-2 under licence NWB3ARC0207)	Run-off from the Solid Waste Disposal Facility	Active

2. The Licensee shall sample at Monitoring Program Stations ARC-3, ARC-4 and ARC-5 once at the beginning, middle and near the end of discharge. Samples shall be analyzed for the following parameters:

Biochemical Oxygen Demand - BOD
 Total Suspended Solids
 Conductivity
 Oil and Grease (visual)
 Magnesium
 Sodium
 Chloride
 Total Hardness
 Ammonia Nitrogen
 Total Cadmium

Faecal Coliforms
 pH
 Nitrate-Nitrite
 Total Phenols
 Calcium
 Potassium
 Sulphate
 Total Alkalinity
 Total Zinc
 Total Iron

Total Cobalt	Total Manganese
Total Chromium	Total Nickel
Total Copper	Total Lead
Total Aluminum	Total Arsenic
Total Mercury	Total Organic Carbon (TOC)

3. The Licensee shall sample at Monitoring Program Station ARC-6 annually during periods of runoff or seepage. Samples shall be analyzed for the following parameters:

TPH (Total Petroleum Hydrocarbons)	
PAH (Polycyclic Aromatic Hydrocarbons)	
BTEX (Benzene, Toluene, Ethylbenzene, Xylene)	
BOD	Faecal Coliforms
pH	Conductivity
Total Suspended Solids	Oil and Grease
Nitrate-Nitrite	Ammonia Nitrogen
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

4. The Licensee shall report all results of acute toxicity testing as required under Part D, Item 6 within the Annual Report as per Part B, Item 1.
5. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of water pumped at Monitoring Program Station ARC-1, for all purposes.
6. The Licensee shall measure and record, in cubic metres, the monthly and annual quantities of raw sewage offloaded from trucks at Monitoring Program Station ARC-2, for all purposes.
7. Additional monitoring stations, sampling and analysis may be requested by an Inspector.
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. All analyses shall be performed by a laboratory certified by the Canadian Association of Environmental Analytical Laboratories (CAEAL), or as otherwise approved by an Analyst.

10. The Licensee shall measure and record the annual quantities of sewage solids removed from the Sewage Disposal Facility.
11. 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.
12. Modifications to the Monitoring Program may be made only upon written approval from the NWB.