Ministre des Affaires indiennes et
du Nord canadien et interlocuteur fédéral
auprès des Métis et des Indiens non inscrits

Minister of Indian Affairs and
Northern Development and Federal Interlocutor
for Métis and Non-Status Indians

Ottawa, Canada K1A 0H4

APR 21 2008

Mr. Thomas Kabloona
Interim Chair
Nunavut Water Board
PO Box 119
GJOA HAVEN NU X0B 1J0

Dear Mr. Kabloona:

This is in response to your letter of March 7, 2008, regarding water licence number 3BM-CAP0810 for the Hamlet of Cape Dorset, Nunavut, and the Nunavut Water Board's reasons for decision. I would like to thank the Nunavut Water Board for its work in the development of this licence.

I recognize the challenges faced by both the Nunavut Water Board and the joint proponents, the Government of Nunavut and the Hamlet of Cape Dorset, in finalizing the application for this licence, in the preparation for the public hearings, and in the drafting of this water licence. Moreover, I recognize the importance of improving Cape Dorset's sewage treatment infrastructure.

With this letter, I am approving water licence number 3BM-CAP0810 for the Hamlet of Cape Dorset. However, I would like to make some observations regarding two aspects of the water licence. In making this approval I have assumed that water licence number 3BM-CAP0810 renews then amends Cape Dorset's previous water licence number 3BM-CAP0207 which has expired. Indian and Northern Affairs Canada's enforcement activities will be based on this understanding. Additionally, conditions of licence number 3BM-CAP0810 (section 25.ii) could be interpreted to require departmental inspectors to evaluate the proponent's work in confirming the geotechnical assumptions made in the design of the wastewater facility for Cape Dorset. The limits of the Department's role in fulfilling such a condition would be to confirm whether the validation work required by the water licence is being conducted. Any evaluations of whether the project's design assumptions were accurate would be the role of the proponent.

.../2

Again, I thank the Nunavut Water Board for its efforts and energies in the development of the Hamlet of Cape Dorset water licence.

Sincerely,

Chuck Strahl

Encl:

c.c.: The Honourable Levinia Brown, MLA
His Worship Fred Schell

WATER LICENCE NO: 3BM-CAP0810

TABLE OF CONTENTS

ANNEX B

LICENCE 3BM-CAP0810

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 CAPE DORSET
(Licensee)

of **P.O. BOX 30, CAPE DORSET, NUNAVUT X0A 0C0**
(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:

Licence Number	**3BM-CAP0810**
Water Management Area	**NUNAVUT 05**
Location	**CAPE DORSET, NUNAVUT** **Latitude 64°14'N and Longitude 76°32'W**
Purpose	**WATER USE AND WASTE DISPOSAL**
Description	**MUNICIPAL UNDERTAKINGS**
Quantity of Water Not to Exceed	**70,000 CUBIC METRES ANNUALLY**
Date of Licence	**MARCH 7, 2008**
Expiry Date of Licence	**MARCH 1, 2010**

Thomas Kabloona,
Nunavut Water Board
A/Chair

APPROVED BY:

Minister of Indian and Northern Affairs Canada

DATE LICENCE APPROVED: APR 21 2008

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

a. This Licence allows for the use of water and the disposal of waste for municipal undertakings at the Hamlet of Cape Dorset, Nunavut (Latitude 64°14'N and Longitude 76°32'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

"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 contained in composite or grab samples collected from the Waste Disposal Facility's final discharge point;

"**Average Concentration For Faecal Coliforms**" means the geometric mean of the last four consecutive analytical results for faecal coliforms contained in composite or grab samples collected from the Waste Disposal Facility's final discharge point;

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

"**Chief Administrative Officer**" means the Executive Director of the Nunavut Water Board;

"**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**" means the discharge location point where the effluent from the 2007 Sewage Disposal Facilities enters fish habitat or fish bearing waters;

"**Final Point of Control**" means the discharge location at the 2007 Sewage Disposal Facilities August 27, 2007 submission prepared by Dillon Consulting including ten appendices, to be confirmed by an Inspector;

"**Freeboard**" means the vertical distance between water line and crest on 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**" includes the facilities licensed in 2001, 2004 and 2007;

"**Emergency Sewage Disposal Facility**" comprises the area designed to contain and treat sewage as described in the Water License Amendment Application filed by the Applicant on August 16, 2004, and illustrated on the "Cape Dorset Sewage Lagoon Rehabilitation Site Plan (August 2004)"

"**2001 Sewage Disposal Facilities**" comprises the Three Tier Lagoon which comprises the area and engineered lagoon and decant structures designed to contain sewage as described in the Application for Water Licence filed by the Applicant on April 19, 2001;

"**2007 Sewage Disposal Facilities**" comprises the engineered lagoon and decant structures constructed in 2007 and illustrated in the Record Drawings No.'s 100 and 101 of Project N-05-4319-3000 prepared by Dillon Consulting and submitted November 13, 2007;

"**Solid Waste Disposal Facilities**" comprises the area and associated structures designed to contain solid waste (landfill site) as described in the Application for Water Licence filed by the Applicant on April 19, 2001;

"**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;

"**Waste Disposal Facilities**" means all facilities designated for the disposal of waste, and includes the 2001, 2004 and 2007 Sewage Disposal Facilities, Solid Waste Disposal Facilities, and Bagged Toilet Waste Disposal Facilities, as described in the Application for Water Licence filed by the Applicant on April 19, 2001 and subsequently in the application dated July 7, 2005;

"**Water Supply Facilities**" comprises the area and associated intake infrastructure at Tee Lake, as described in the Application for Water Licence filed by the Applicant on April 19, 2001;

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 from all sources;
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 following year;
vii. a summary of any studies, reports and plans (i.e. Operations and Maintenance, Abandonment and Restoration, QA/QC) requested by the Board that relate to water use and waste disposal or reclamation, and a brief description of any future studies planned; and
viii. any other details on water use or waste disposal 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 submit to the Board, for approval in writing, within the lesser of ninety (90) days or 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.

7. 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.

8. 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.

9. 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.

10. 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

11. 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.

12. The Licensee shall ensure that any document(s) or correspondence submitted by the

Licensee to the Board, is received by the Board and maintain on file a copy of the acknowledgment of receipt issued by the Manager of Licensing.

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 the Tee Lake using the Water Supply Facilities or as otherwise approved by the Board in writing.

2. The annual quantity of water used for all purposes shall not exceed 70,000 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. 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 approved by the Board in writing.

2. Subject to the conditions in the Licence regarding commissioning, the Licensee shall direct all Sewage to the 2007 Sewage Disposal Facilities or as otherwise approved by the Board in writing.

3. The Licensee shall provide notice to an Inspector at least ten (10) days prior to initiating any decant of the 2001 and 2007 Sewage Disposal Facilities.

4. All Effluent discharge from the 2001 Sewage Disposal Facility at Monitoring Program Station CAP-3 and the Emergency Sewage Disposal Facility at Monitoring Program

Station CAP-4, shall meet the following effluent quality limits:

Parameter	Maximum Average Concentration
BOD_5	120 mg/L
Total Suspended Solids	180 mg/L
Faecal Coliforms	1 x 10^4 CFU/100mL
Oil and grease	No visible sheen
pH	between 6 and 9

5. All Effluent discharged from the 2007 Sewage Disposal Facilities at Monitoring Program Station CAP-5 shall meet the following effluent quality limits:

Parameter	Maximum Average Concentration
BOD_5	80 mg/L
Total Suspended Solids	100 mg/L
Faecal Coliforms	1 x 10^4 CFU/100mL
Oil and grease	No visible sheen
pH	between 6 and 9

6. The Licensee shall maintain at all times, a freeboard of at least 1.0 metre, or as recommended by a qualified Geotechnical Engineer with notice in writing provided to the Board, for all dams, dykes or other structures intended to contain, withhold, divert or retain water or wastes.

7. The Sewage Disposal Facilities shall be maintained and operated in such a manner as to prevent structural failure.

8. All Effluent discharged from the 2007 Sewage Disposal Facility at the Final Discharge Point at Monitoring Station CAP-14 and effluent discharge from Monitoring Stations CAP-3 and CAP-4 prior to the point of entry at the ocean, , shall be demonstrated to be non-acutely toxic under the following tests to be conducted once annually, approximately mid-way through the discharge period:

   i. Acute lethality to Rainbow Trout, Oncorhynchus mykiss (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/13); or

ii. Acute lethality to the crustacean, Daphnia magna (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/14).

9. The Licensee shall dispose of and contain all solid wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board in writing.

10. The Licensee shall implement appropriate erosion and diversion control methods, to minimize surface water intrusion and leachate generation at the Solid Waste Storage Facility.

11. The Licensee shall segregate and securely 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.

PART E: CONDITIONS APPLYING TO MODIFICATION AND CONSTRUCTION

1. The Licensee shall submit to the Board, for approval in writing, 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.

4. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Part within ninety (90) days of completion of the Modification. These plans and

drawings shall be stamped by an Engineer.

5. The Licensee shall, within sixty (60) days of issuance of this Licence, provide a summary report along with revised stamped as-built plans and record drawings of the 2007 Sewage Disposal Facility, to reflect the clarifications and omissions identified through the Licence application review and detailed in the attached Schedule 1.

6. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake corrective measures to restore natural surface drainage in the event of any impacts on surface drainage

7. The Licensee shall ensure that sediment and erosion control measures are implemented prior to and maintained during the operation to prevent the release of sediment and minimize erosion during construction activities.

8. The Licensee shall designate an area for the deposition of excavated and stockpiled materials that is at least thirty (30) metres above the ordinary high water mark of any water body and in such a manner as to prevent sediment from entering any surrounding water body.

9. The Licensee shall ensure that both (a) fill material used in construction, and (b) that the ground to be constructed upon, are free of contaminants. If contaminated soils are identified, notification shall be made in the Licensee's annual report. All contaminated soils shall be treated and disposed of in accordance with Part F, Item 2, or as otherwise approved by the Board in writing.

PART F: CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

1. The Licensee shall submit to the Board, for approval in writing, within ninety (90) days of issuance of the Licence and prior to commissioning of the 2007 Sewage Disposal Facilities, a revised *Operation and Maintenance Manual, Sewage Treatment System, Hamlet of Cape Dorset, November 7, 2007.* The revision shall include the requirements of Schedule 2.

2. The Licensee shall submit to the Board, for approval in writing, within ninety (90) days of issuance of the Licence, an Operation and Maintenance Manual for the Water Supply Facilities and the Solid Waste Disposal Facilities prepared in accordance with the *"Guidelines for Preparing an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities", October 1996.* The Plan shall include a specific section addressing waste management and the proper diversion and segregation of wastes, the storage, transport and disposal of hazardous wastes materials.

3. The Licensee shall implement the Manuals specified in Part F, Items 1 and 2, following approval in writing by the Board.

4. The Licensee shall provide notification in writing to the Board, in accordance with Part E, Item 2, of changes to the approved Operation and Maintenance Plan under Part F, Item 1, with respect to the wastewater storage and decanting operations and procedures. For any potential significant impact of such change to the geothermal regime within and under the berms or lagoon floor, notice shall be accompanied by the Geotechnical Engineer's supporting documentation and further geotechnical analysis.

5. An inspection of all engineered facilities related to the management of water and waste shall be carried out annually in July, by a Geotechnical Engineer in accordance with the Canadian Dam Association, Dam Safety Guidelines, November 2007, where applicable. This inspection shall include the access road alignment with respect to water resources and the diversion and passage of water through culverts. 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.

6. The Licensee shall perform a visual operations inspection of all engineered facilities related to the management of water and waste on a weekly basis or more frequently as requested by an Inspector, to assess the general operating conditions and integrity of the containment structures. The records of these inspections are to be maintained and made available to an Inspector upon request during the Licence term.

7. The Licensee shall review the Manual(s) referred to in this Part if there are changes in operation and/or technology and modify the Manual(s) accordingly. Revisions to the Board approved Manual(s) are to be submitted in the form of an Addendum to be included with the Annual Report under Part B, Item 1.

8. 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 plan as provided for in the Operation and Maintenance Manual;
   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, no 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, RESTORATION AND CLOSURE

1. The Licensee shall submit to the Board, for approval in writing, within ninety (90) days of issuance of the Licence, a detailed Final Abandonment and Restoration Plan for the 2001 Sewage Disposal Facility and the Emergency Sewage Disposal Facility. The Plan should incorporate, where applicable, the appropriate sections as described in Part G, Item 2.

2. The Licensee shall submit to the Board, for approval in writing, within six (6) months of issuance of this Licence, a preliminary or conceptual Abandonment and Restoration Plan for the Hamlet of Cape Dorset, Water and Waste Disposal Facilities and all associated structures not covered under Part G, Item 1, with end objectives to return the site to pre-use conditions. The Plan shall include the following (where applicable):

   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 and completion 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.

3. The Licensee shall submit to the Board, for approval in writing, six (6) months prior to the planned decommissioning of any licensed facility and the construction of new facilities to replace existing ones, a Final Abandonment and Restoration Plan for the facilities being decommissioned.

4. The Licensee shall implement the Plan(s) specified in Part G, Item 1 and 3, following approval in writing by the Board.

5. The Licensee shall review the Plan(s) referred to in this Part if there are changes in operation and/or technology and modify the Plan accordingly. Revisions to the Board approved Plan(s) are to be submitted in the form of an Addendum to be included with the Annual Report under Part B, Item 1.

6. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.

7. The Licensee shall complete the restoration work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.

8. The Licensee shall complete all restoration work prior to the expiry of this Licence.

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
CAP-1	Raw Water supply prior to treatment	Active (Volume)
CAP-2	Runoff from the Solid Waste Disposal Facilities	Active
CAP-3	Influent of Wastewater to Wastewater Facilities (active at the time of sampling)	New
CAP-4	Effluent Discharge from the 2001 Sewage Disposal Facilities	Active (including volume)
CAP-5	Effluent discharge from the Emergency Sewage Disposal Facilities	Active (including volume)
CAP-6	Effluent discharge from the 2007 Sewage Disposal Facilities – Final Point of Control	Active (including volume)
CAP-7	Point of influent of wastewater to P-Lake	New
CAP-8	Centre of P-Lake	New
CAP-9	Location midway between the Centre of P-Lake (Station 8) and the effluent discharge of P-Lake	New

Monitoring Program Station Number	Description	Status
CAP-10	Effluent discharge from P-Lake; note, if flow is negligible a sample from the immediate upstream area within P-Lake shall be obtained	New
CAP-11	Effluent discharge from Wetland area	New
CAP-12	Wetland Pathway at the top of the waterfall	New
CAP-13	Wetland Pathway at mid-way down waterfall	New
CAP-14	Wetland Pathway at bottom of cliff – Final Discharge Point	
CAP-15	Control point using a small lake located between the Lagoon and Tee Lake	New
CAP-16	Monitoring well located up gradient of the 2007 Sewage Disposal Facility	New
CAP-17	Monitoring Well No.1 located down gradient of the 2007 Sewage Disposal Facility	New
CAP-18	Monitoring Well No.2 located down gradient of the 2007 Sewage Disposal Facility	New
CAP 19	Monitoring well located up gradient of the Solid Waste Disposal Facilities	New
CAP-20	Monitoring well located down gradient of the Solid Waste Disposal Facilities	New
CAP-21	Thermistor stations	Proposed with final description to be provided
CAP-22	As above	
CAP-23	As above	
CAP-24	As above	

2. The Licensee shall sample at Monitoring Program Stations CAP-3 through CAP-15 inclusive, one week prior to the proposed discharge date, once at the beginning of discharge and weekly thereafter until cessation of discharge. Samples shall be analyzed for the following parameters:

Biochemical Oxygen Demand (BOD_5)

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)
Total Suspended Solids
pH
Conductivity
Oil and Grease (visual)

Fecal Coliforms	
Nitrate-Nitrite	Ammonia Nitrogen
Total Phosphorus	Total Phenols
Magnesium	Calcium
Sodium	Potassium
Chloride	Sulphate
Total Hardness	Total Alkalinity

Total Trace Metals as determined by a standard ICP Scan (to include at a minimum, the following elements: Al, Sb, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Mo, Ni, Se, Sn, Sr, Tl, Ti, U, V, Zn),

Total Arsenic
Total Mercury
Total Organic Carbon (TOC)

3. If the discharge at Station CAP-4, CAP-5 or CAP-6 has been suspended for more than 48 hours and subsequently restarted, the sampling sequence described in Part H, Item 2 of the Monitoring Program shall be repeated for these Stations.

4. The Licensee shall sample monthly at Monitoring Program Station CAP-2 during periods of observed flow. Samples shall be analyzed for the following parameters:

BOD_5	Fecal 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

5. The Licensee shall report all results of non-acute toxicity testing as required under Part D, Item 8 within the Annual Report as per Part B, Item 1.

6. The Licensee shall install thermistors for the purpose of validating assumptions made in the geothermal analyses for the 2007 Sewage Disposal Facilities as recommended by the Geotechnical Engineer of record and agreed upon by the Licensee, subject to a minimum of three 20 to 25 metre deep thermistors installed in crest of the west berm and at least one thermistor of that depth in the east berm.

7. The results of thermistor monitoring required under Part II, Item 6, shall be submitted to the Board for approval in writing, prior to commissioning of the 2007 Sewage Disposal Facility. The results shall include an Engineer's Report, validating the assumptions of the geothermal analysis through adequate monitoring of the thermal regime for the East and West Berms and downstream foundations

8. The Licensee shall not commission the 2007 Sewage Disposal Facility until the requirements of Part H, Item 6 and Item 7 have been completed and approved.

9. The Licensee shall, within ninety (90) days of issuance of this Licence, provide a Temperature Monitoring Program and Implementation Plan for ongoing collection of ground temperatures within each berm structure and foundation of the 2007 Sewage Disposal Facility through the installation of thermistors. This Plan shall take into consideration the following:

    i. Locations of thermistors, to be incorporated into the Monitoring Station Table under Part H, Item 1;
    ii. Appropriate thermistor configuration, overall depth and spacing of bead locations to provide the level of data collection that will capture any extreme variations in temperature and provide the information needed to validate the assumptions made in the geothermal analysis.
    iii. The frequency of temperature readings shall be such to allow the determination of the maximum freeze and thaw of the berm and underlying native materials and provide adequate data for thermal modeling of the berms.
    iv. This frequency may be reviewed and adjusted upon collection of adequate data and as recommended by the Geotechnical Engineer in order to assess the berms through thermal modeling and provide an assessment with respect to berm stability and potential seepage.
    v. This information is to be reported along with the results of the annual geotechnical inspection as required under Part F, Item 6.
    vi. An implementation schedule that will allow collection of data for confirmation of core-trench freeze-back.

10. The Licensee shall implement the Plan specified in Part II, Item 9 following approval by the Board in writing.

11. The Licensee shall review the Plan(s) referred to in this Part if there are changes in operation and/or technology and modify the Plan accordingly. Revisions to the Board approved Plan(s) are to be submitted in the form of an Addendum to be included with the Annual Report under Part B, Item 1.

12. The Licensee shall install groundwater monitoring wells at the 2007 Sewage Disposal Facility to obtain at least one monitoring season of data prior to the expiry of the Licence. At least one groundwater monitoring well shall be located upstream of the 2007 Sewage Disposal Facility for background data collection, at least one groundwater monitoring well shall be located downstream of the landfill and at least one groundwater monitoring well shall be located downstream of the metals dump.

13. The Licensee shall sample at Monitoring Program Stations CAP-16, CAP-17 and CAP-18 once annually in the summer, prior to commencing discharge from the 2007 Sewage Disposal Facility, giving due consideration to adequate ground thaw and obtaining a representative groundwater sample. Samples shall be analyzed for parameters identified in Part H, Item 4.

14. The Licensee shall install groundwater monitoring at the Solid Waste Disposal Facilities wells to obtain at least one monitoring season of data prior to the expiry of the Licence, At lease one groundwater monitoring well shall be located upstream of the Solid Waste Disposal Facilities for background data collection and at least one groundwater monitoring well shall be located downstream of the Solid Waste Disposal Facilities .

15. The Licensee shall sample at Monitoring Program Stations CAP-19 and CAP-20 once annually in the summer season, giving due consideration to adequate ground thaw and obtaining a representative groundwater sample. Samples shall be analyzed for parameters identified in Part H, Item 4.

16. The Licensee shall measure and record in cubic metres, the monthly and annual quantities of water pumped for all purposes at Monitoring Program Station CAP-1.

17. The Licensee shall measure and record in cubic metres (a) the monthly and annual quantities of raw sewage offloaded from trucks and the number of days of use for the 2001 Sewage Disposal Facility and the Emergency Sewage Disposal Facility, and (b) the monthly and annual quantities of raw sewage offloaded from trucks at the 2007 Sewage Disposal Facility.

18. The Licensee shall measure and record the annual quantities of sewage solids removed from the Sewage Disposal Facilities.

19. The Licensee shall conduct additional sampling and analysis as may be requested by an Inspector.

20. The Licensee shall revise the "Guidelines for Wastewater Sampling, October 27, 2007" and submit to the Board for approval by an Analyst in writing a Quality Assurance/Quality Control (QA/QC) Plan for the Hamlet of Cape Dorset, within ninety (90) days of issuance of this Licence. The Plan shall use as a guide the document *"Quality Assurance and Quality Control Guidelines for use by Class "B" Licensees in Collection of Representative Water Samples in the Field, and for Submission of a QA/QC Plan, July 1996"*. The Plan shall address the use of field blanks, replicate sampling and certified reference material in order to assess accuracy, precision and field contamination.

21. The Licensee shall implement the Plan referred to in Part H, Item 20 following approval in writing by the Analyst.

22. 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.

23. All analyses shall be performed in a Canadian Association of Environmental Analytical Laboratories (CAEAL) Certified Laboratory, or as otherwise approved by an Analyst.

24. 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 otherwise requested by an Inspector.

25. Her Majesty in the right of Canada shall:
    i. Monitor the Licensee's installation of thermistors and notify the Board when the installation of thermistors is complete and in compliance with Part H, Item 6;
    ii. Monitor the Licensee's validation of the assumptions of the geothermal analysis through adequate monitoring of the thermal regime for the East and West Berms and downstream foundations under Part H, Item 7, and notify the Board when satisfied the assumptions of the geothermal analysis have been validated; and
    iii. Monitor the 2007 Waste Disposal Facility and notify the Board immediately if the Project is commissioned prior to the completion of i. and ii., or in contravention of any other condition of the Licence.

SCHEDULE 1 CONDITIONS APPLYING TO MODIFICATIONS AND CONSTRUCTION

List of drawing deficiencies identified by BGC for revision and submission.
Please refer to Technical Memorandum "Cape Dorset Sewage lagoon-Review of Final Submissions, January 8, 2008", or the final intervention memo dated January 8, 2008 for further clarification.

The record set of drawings fails to include a signature block for AMEC. It was noted that the original design drawings issued by Dillon in the December 21, 2006 design report, revision 5, marked "Issued for Construction" included a signature block "Reviewed by AMEC" on Drawing 111, which is the equivalent of Drawing 112 of the Record Drawings

1. At a minimum, AMEC is to provide a signature block for the following drawings:
   - Drawing 101- shows location of test pits carried out for geotechnical investigations.
   - Drawing 109- shows longitudinal geological sections along cut-off trench.
   - Drawing 110- shows typical earthworks sections for the access road and berm.
   - Drawing 112- shows lagoon berm sections

2. The as-built drawings must identify the areas where field changes were made from the original design drawings, preferably in the form of a revision bubble and a brief note in the revisions section of the title block.

List of Drawing alterations and request for rationale for the change.

Record drawing 100 - the alignment of the access roads between the East and West Berms, on the north and south sides of the lagoon was changed from the original design. The road berms were originally designed to deflect runoff from entering the lagoon.

3. Explanation is required as to the rationale for changing the alignment of the road berms and how the as-built berm details in the drawing prevents runoff from entering the lagoon.

Record Drawing 109 - there is up to 1m of unfrozen fill used to level the ground surface under both the East and West berms. This leveling course of material has not been shown as a separate zone in the berm sections presented in Record Drawing 112.

4. A description for record drawing 112 is required of the material used including grain size gradation curve.

Record Drawing 109 shows that the berm contours at the north end of the West Berm have been modified from the original design drawings. Crest widened from 4m to 25m to accommodate what appears to be a vehicle turnaround on the downstream side of the berm.

5. Additional as-built cross-sections of this area are to be provided along with geothermal analysis that there is sufficient fill thickness over the abutment to ensure that the GCL tie-in to the cut-off trench remains frozen.

Record Drawing 110 shows typical road sections. On July 30, 2007, the GN CGS provided a revised ditch detail for the road

6. This revised ditch detail is requested as part of the as-built drawing details for Drawing 110

7. Additional information is requested providing further details as to how seepage through the active zone under the berm will be prevented.

The Hamlet of Cape Dorset noted a problem during the October 1, 2007 Technical Meeting/Pre-Hearing, with seepage into the lagoon through the active zone with the as-constructed detail. Record Drawing 112 indicates that the material used to backfill the cut-off trench is a "Sand", the same material as used for the berm.

8. Further clarification is requested on how the issue of seepage is being resolved.

In the original Design Drawing 111, Detail 4 showed the liner embedment longitudinal section in the abutments. This Detail was absent from Record Drawing 112. The cut-off trench must extend sufficient distance into the abutment so that any "end-run" seepage through the active zone is prevented. It is not clear from the as-built information if the extent of the cut-off trench satisfies this criterion.

9. Therefore the as-built liner embedment details for the abutment areas of the East and West Berms are therefore requested to be included for Record Drawing 112.

In Record Drawing 112, the crest detail of the emergency overflow weir section was changed. This change notice was transmitted to the contractor by Dillon on July 21, 2007. The as-built detail shows the geo-web and the GCL in one layer, with no granular or other material between the two. Dillon initiated this modification to address a previous concern raised by BGC that water could seep under the GCL in the emergency spillway and potentially lift the liner. It is still not clear how the above modification prevents this problem from occurring.

10. Design change rationale is requested that provides an explanation as to the change from the original drawing, change to meet BGC's concern and then further change to what appears to be potentially inadequate construction.

SCHEDULE 2 CONDITIONS APPLYING TO MONITORING AND MAINTENANCE

A revised *Operation and Maintenance Manual, Sewage Treatment System, Hamlet of Cape Dorset, November 7, 2007* shall include the following requirements:

i. Expansion of Section 3.4.5 to include terms and conditions for the disposal of sludge as provided for in the Draft Guidelines for Discharge of Domestic Wastewater in Nunavut, 2000;

ii. Section 3.4.6 should include a description of the installation of thermistors required under Part H, Item 6, including the number, locations and depths of thermistor beads used to monitor the berms, and a description of the method and frequency of monitoring requirements;

iii. Section 3.4.6 should include a description of the installation of monitoring wells required under Part H, Item 7, including the number, locations and depths of thermistor beads used to monitor the berms, and a description of the method and frequency of monitoring requirements

iv. Description of the details of any repairs, upgrades and maintenance required for the use of part or all of the 2001 Sewage Disposal Facility or Emergency Sewage Disposal Facility;

v. Include a contingency plan for the operation of the 2007 Sewage Disposal Facility during periods where accessibility to the facility is limited and alternative measures are required for the handling of sewage. This may include operation and maintenance of any older facility or portion of, that would be retained as the contingency;

vi. Provision for the monitoring of effluent discharges from the 2001 Sewage Disposal Facility and the Emergency Sewage Disposal Facility;

vii. Inspection program for the 2001 Sewage Disposal Facility, the Emergency Sewage Disposal Facility and 2007 Sewage Disposal Facility, detailing the frequency and inspection requirements by the operator(s) of the facility;

viii. Appendix C of the O&M Manual to include forms to document the recommendations and follow up work required as a result of the annual geotechnical inspection.

ix. Section 4 – Spill Contingency Plan be revised to comprehensively address specific recommendations provided during the review process by GN DoE as follows:

   a. The date the contingency plan was prepared.
   b. The name and address of the person in charge, management or control. This is an on-site person responsible for managing the facility. This person would be initially responsible for clean-up activities.
   c. The name and address of the owner if different from the person in charge. This is the person ultimately responsible for the facility, usually the owner.
   d. The name, job title and 24 hour telephone number for the persons responsible for activating the contingency plan. This ensures the employee discovering the spill can activate a response and provides a 24 hour point of contact for the authority

investigating the spill.

e. A description of the facility including the location, size and storage capacity. This is important if persons are unfamiliar with the facility or area. The description could include a map and/or diagrams.

f. A site map that is intended to illustrate the facilities relationship to other areas that may be affected by the spill. The map should be to scale and be large enough to include the location of your facility, nearby buildings or facilities, roads, culverts, drainage patters, and any nearby bodies of water.

g. The steps to be taken to report, contain, and clean up and dispose of a contaminant in the case of a spill.
   1. Reporting: Notification of all parties involved. This can include internal and external reporting procedures as well as a copy of the spill report;
   2. Clean up: Removal of the contaminant from the environment, a detailed of actual containment and clean up techniques. (2 steps: contain and remediate; be aware of fire);
   3. Disposal: Is the treatment of the contaminant such that it is no longer a threat to the environment. Plans may include location of disposal sites approved to accept wastes, means of storage prior to disposal and other approvals required. (Waste Manifest document).

h. The means by which the contingency plan is activated. This should outline internal company procedures to activate appropriate response equipment and personnel.

i. A description of the training provided to employees to respond to a spill. A sound training program is necessary when dealing with an emergency situation.

j. An inventory and the location of response and clean up equipment available to implement the plan. This includes your equipment as well as any to be used by another person responding to the spill on your behalf.

k. SPILL KIT (FUEL)The kit can include but not limited to the following: shovel, pick-axe, drums, booms, absorbent pad/sheet, disposable protective gloves/coveralls, sorbent and containment materials, and disposal bags.

l. A list of local contractors or clean up specialists who may be called upon to assist in responding to spills. A list of emergency numbers such as fire, ambulance and police.

x. Section 4 – describe the measures to be implemented for a spill during the collection and transportation of wastewater. This spill response is to be expanded to include spill scenarios resulting from the leakage or failure of a containment structure for the Sewage Disposal Facilities; and

xi. Appendix B to include specific reference to monitoring stations and required frequency of sampling and the analyses required by the Licence.