P.O. BOX 119
GJOA HAVEN, NT X0E 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

Water Licence Application
Supplémentaire Questionnaire
For Municipalities

I. GENERAL

1. Date: **September 31st, 2003**

2. Applicant: **Hamlet of Coral Harbour, Kivalliq Region**
   Municipality and Region

3. Contacts**: Lucy Netser SAO, also Bryan Purdy, (CG&T)**
   Name of Contact

   Senior Administration Officer
   Position

   1 (867) 925-8867 LN, 1 (867) 645-8114 BP, 1 (867) 925-8233
   Telephone # Fax #

4. Community Status: __ Village __ Town __ City
   X Hamlet __ Settlement Corporation

5. Indicate the status of the municipality's license on the date of the application.
   __ New Application
   X Renewal Water License # _____

II. ATTACHMENTS

1. Attach current or up-to-date detailed map(s) showing the locations of the:

   a. Raw water intake;
   b. Water storage and treatment facilities;
   c. Fuel and chemical storage;
   d. Sewage treatment facilities (lagoon, honey bag pit, wetland);
   e. Wastewater treatment area and discharge outlets;
   f. Solid waste disposal areas and drainage patterns;
   g. Hazardous waste disposal area;
   h. Transportation access routes;
   i. Existing water bodies/courses and any changes to these water bodies/courses that have or may occur as a result of water use or waste disposal facilities, locations of environmental monitoring sites. (Outline drainage basin);
   j. Traditional use areas outlined on site map and areas around the community used for recreation, camping, fishing, etc.
   k. Abandoned and/or restored water treatment, sewage, and solid waste disposal facilities.

   Are maps attached? __ Yes __No

   If no, please indicate when they will be available.

   ]

Indicate which organization has provided the various maps or diagrams.

III. WATER SUPPLY

Water Source

1. Type of source: __ Lake **X River** __Well __ other _____

2. Name of water source and alternative, if any.
3.

POST RIVER _____

Primary Source

_____

Secondary Source

3. Usual break-up & freeze-up period: May **31** **November 1.**

Break-up Freeze-up

Water Intake

1. Please provide short descriptions for the following:

a. Freshwater intake facility

Twin heat-traced 100 mm HDPE lines inside 250 mm HDPE pipes themselves covered with 75 mm polyurethane insulation and 400 mm HDPE casing.

b. Operating capacity of pumps used **** 900 L/min**

Intake screen size **

c. **N/A**

Water Storage

1. Type of water storage facility. (Check where applicable)

___**X** **Reservoir/Pond** ___ Storage tank ___ none ___

___ Other _____Description:

Reservoir has a 40,000 cubic meter capacity Reservoir consists of two cells (not independent)

2. If "reservoir" checked:

Is the reservoir lined? ___Yes _**X**_ No

What type of liner? _____ When was it installed?_____

Water Treatment

1. Indicate the quality of the water.

Summer:	**__x_ good**	____ fair	___ poor
Fall:	**__x_ good**	____ fair	___ poor
Winter:	**__x_ good**	____ fair	___ poor
Spring:	**__x_ good**	____ fair	___ poor

2. Describe.

3. Type of water treatment.

____ Filtration and chlorination
__X_ Chlorination only
____ None
___ Other _____
Description

Water Use And Distribution**

1. Volume of water use:

Distribution	Estimated number of people on the system **A**	Estimated average water consumption (Liters/capita/day) **B**	Total water consumption (Day/day) **A x B**
PIPED			
TRUCKED	**875**	**80.70**	**70061**
TOTAL			

General Condition of the water supply facilities

1. General condition of the:

   a. Water supply facility
   __ satisfactory _**x**_ **Unsatisfactory**

   If unsatisfactory, explain.
The electrical is corroding and breaking down, major upgrades and repairs are needed. A new facility would be beneficial to the community.
CG&T is currently analyzing possible courses of action to secure funding and initiate improvements and eventually replace the existing facility

   b. Storage facility
   _**X**_ **satisfactory** __ Unsatisfactory

   If unsatisfactory, explain.

   c. Distribution system
   X satisfactory __Unsatisfactory

   If unsatisfactory, explain.
Truck delivery, 1500 and 1800 gallon tanks

Modifications

1. Are there any changes *planned* for the water supply system?
   __ No _**x**__**Yes**

   If yes, please attach a copy of the plan, or describe changes. Provide information on the implementation schedule.
The electrical is corroding and breaking down, major upgrades and repairs are needed. A new facility would be beneficial to the community.
CG&T is currently analyzing possible courses of action to secure funding and initiate improvements and eventually replace the existing facility

2. Does the community believe changes needed to the water supply, storage or treatment facilities? Describe.

Identification

Are there signs identifying drinking water sources presently used by the municipality?

__ Yes _**x**_ **No**

IV. SEWAGE DISPOSAL

1. What type(s) of sewage treatment does the community have?

___ Lagoon
___ Mechanical system
_X__ Wetland
___ Honey bag
___ Combination/Other: describe

Lagoon *(if applicable)*

1. Has there been any operating problems with the lagoon?

___ Yes ___ No

If yes, describe

N/A

Mechanical System *(if applicable)*

1. Describe (type, specifications, operation and maintenance program for the mechanical wastewater treatment system).

N/A

2. Are sludge's produced ?

__ Yes _**x**_ **No**

If yes, describe how the sludge's are disposed of:

***Wetland** (if applicable)*

1. Describe the Wetland wastewater treatment system.

Natural wetlands method in four shallow ponds with an area of 7 ha over a total site area of 10.5 ha.

Honey Bag Pit

1. Does the municipality use a honey bag pit?

___ Yes __**x**_ **No**

If yes, describe the location, drainage, and operation/maintenance of the site:

Commercial, Industrial and/or Hazardous Wastes

1. Are there any sources of commercial or industrial *liquid* waste being discharged or deposited to the wastewater treatment system that may affect the quality of the effluent or leachate produced? *(The municipality should be aware that any commercial or industrial discharge has to be approved by the municipality)*

___ Yes __**x** **No**

If yes, indicate sources, types and quantities.

Sewage Discharge

1. Are fish, shellfish and other wildlife harvested in or near the discharge area?

___ Yes __**x**_ **No**

If yes, indicate species harvested, and level of harvest.

General Condition of the sewage treatment facilities

1. General condition of the:

a. Sewage collection system

__ Satisfactory __ Unsatisfactory

If unsatisfactory, explain.

N/A

b. Discharge control system

__ Satisfactory **_x_ Unsatisfactory**

If unsatisfactory, explain.

A new lagoon and discharge site are needed, construction of a new fenced sewage lagoon has begun

c. Dams, diversion dykes, berms

__ Satisfactory __ Unsatisfactory

If unsatisfactory, explain.

Modifications

1. Are there any changes *planned* in the sewage treatment facilities?

__ No **x_ Yes**

If yes, please attach a copy of the plan, or describe changes. Provide information on the implementation schedule.

Drawings of the new sewage lagoon will be attached.

2. Does the municipality or residents believe changes are needed to the sewage treatment facilities? Describe.
3. **Yes**, **the new sewage lagoon is needed to contain sewage that drains towards and into the Hamlet. The sewage effluent mixes with the effluent from the solid waste site and could be creating dangerous bi-products. Fencing is needed to eliminate the Caribou from being able to feed on sewage/solid wastes effluent.**

Construction of a new drop off area with installations of a new retaining wall, bollards, wheel stops and signs is needed.

Abandonment and Restoration

1. List and describe abandoned or restored sewage treatment facilities.
   Refer to original attachment maps.

North East of the Community there is an old site that is not signed. This used to be a solid waste site as well as a honey bag drop off. I was advised that this site has been successfully decommissioned

Identification

Are there signs identifying past and present sewage disposal sites?
__ Yes _**x**_ **No**

V. SOLID WASTE DISPOSAL

1. Briefly describe how solid wastes are collected and delivered to the disposal area.

Routine garbage collection

2. Is the solid waste site fenced? _ Yes _**x**_ **No**

3. Is the fence adequate? _ Yes __ No

   If no, describe

Waste Reduction

1. Does the municipality burn garbage?
   _**X Yes** __No
   If yes, describe how and when this is done.

Once a month, garbage is burned; a permit is obtained from the Fire Chief before burning is carried out.

At the end of each summer, a bulldozer compacts the accumulated garbage and covers it every two years.

2. Has the municipality considered measures for waste reduction such as recycling or reuse?
_X_ Yes _ No

If yes, describe
This has been discussed, however, a plan has never been implemented

Animal Carcasses Pit

1. Does the municipality have an area for the disposal of animal carcasses?
__ Yes **__x No**
If yes, describe the location, drainage and operation/maintenance of the site

Carcasses go in the general garbage

Waste Oil Pit

1. Describe the waste oil storage area.

Waste oil, anti-freeze, and transmission fluids are stored in an area near the hamlet maintenance garage.
A plan is needed to collect organize and properly store waste oil; the hamlet does not have a disposal procedure for these wastes.

Bulky Scrap Metal Waste Disposal Area

1. Does the municipality have a scrap metal or bulky waste disposal area?
__X Yes __ No
If yes, briefly describe its location and operation plan.

Commercial, Industrial and/or Hazardous Wastes Disposal Area

1. Are there any commercial or industrial waste being discharged or deposited in the solid waste disposal area? *(The municipality should be aware that any discharge of commercial or industrial waste has to be approved by the municipality)*
___ Yes **_x_ No**
If yes, please indicate sources, types and quantity.

2. Will the municipality use a hazardous waste disposal area?

__ Yes __**x**_ **No**

If yes, describe its:

a. Location

b. Structure

c. Operation and maintenance (describe special handling/disposal methods for these wastes)

General Condition of the Solid Waste Disposal Area

1. Comment on the general conditions of the:

The site is too close to the airport, does not meet the 20-year demand, and is not fenced in.

a. Solid waste disposal area

__ satisfactory _**x**_ **Unsatisfactory**

If unsatisfactory, explain.

The site is too close to the airport, does not meet the 20-year demand, and is not fenced in.

Modifications

1. Are there any changes planned for the solid waste disposal area?

__ No _**x** **Yes**

If yes, attach a copy of the plan, or describe changes. Provide information on the implementation schedule.

2. Are changes needed to the solid waste disposal area? Describe.

YES

Abandonment and Restoration

1. List and describe abandoned or restored solid waste facilities.
   Indicate their location on a map.

North East of the Community there is an old site that is not signed. This used to be a solid waste site as well as a honey bag drop off. I was advised that this site has been successfully decommissioned

There is an old solid waste site close to the airport as well, need more info on this site.

Identification

Are there signs identifying past and present solid waste disposal sites ?

__ Yes _**x**_ **No**

VI. INSPECTION AND MONITORING

1. When were municipal facilities inspected by?

_X__ Indian and Northern Affairs Inspector Date: **__August 26, 2003**

_X__ Municipal and Community Affairs Date: **__August 26, 2003**

_X__ other: Regional Health Officer Date: **___Summer of 2003**

2. Is there a system in place for reporting spills?

___ Yes **__x_ No**

If yes, describe.

3. Is there a contingency plan for clean up of spills?

__ _ Yes **_x__ No**

If yes, describe.

4. Have any spills occurred in the past five years?

_X__ Yes **___ No**

If yes, describe and show on a map the locations of the spills. What action has been taken to clean the affected areas?

While filling the bulk fuel tanks this summer, there was a spill that was reported by the S.A.O. to the Coast Guard in Iqaluit. The ship's crew cleaned up the spill.

Monitoring Program

1. Is water sampling and analysis done?
_X_ Yes ___No

If Yes, answer the questions a to e

a. Briefly describe how samples are taken and sent to the laboratory.
Monthly samples are taken at the School, Nursing Station and from both Water trucks
These samples are then sent to the Regional Health Officer in Rankin Inlet for Testing

b. Briefly describe any monitoring done for wastewater effluent and leachate.
Annual inspections by a water Resources Officer (WRO) from INAC

c. Who is responsible for water sampling?
Name: **_Ronnie Ningeongan**

Position: **Community Lands Administrator**

Telephone **#: (867) 925-8867**

Fax # **:(867) 925-8233**

Level of training:
Informal Training in taking daily Chlorine residual readings
Several of the water truck drivers have begun to do some daily testing as well. This has been an issue of concern as daily testing in the past was not being done.

d. Recognized laboratory performing analysis of samples. **(MONTHLY SAMPLES)**

Name: **Fred O'Brien, Regional Health Officer**

Address: **P.O. Bag 298, Rankin Inlet, NU, X0C 0G0**

Telephone #: **(867) 645-2171**

Fax #: **(867) 645-2409**

e. Are any changes planned in the water quality monitoring program?
___ Yes **_x_ No**
If yes, describe.

VII. PUBLIC CONCERNS

1. What concerns does the municipality or residents have regarding the municipal water supply or waste disposal facilities? List the concerns and describe what steps have been taken to address those concerns.

VIII. PUBLIC HEALTH *(Help may be obtained from the Regional Environmental Health Officer if you have difficulty with this section.)*

1. Date:

2. Municipality: Coral Harbour**, (Kivalliq Region)**

3. Contact: **Mr. Fred O'Brien**

   Telephone # **(867) 645-2171**

   Fax # : **(867) 645-2409**

4. Have there been any problems or health/environmental concerns with drinking water?
   ___ Yes **_x_ No**

   I will attach e-mail from the Regional Health Officer giving his limited experience with water quality in the Kivalliq

   If yes, describe

5. Have there been any problems or health/environmental concerns with sewage disposal/treatment?
   _X__ Yes ___ No

   If yes, describe

The sewage effluent mixes with the effluent from the solid waste site and could be creating dangerous bi-products. Fencing is needed to eliminate the Caribou from being able to feed on sewage/solid wastes effluent. There is both a commercial hunt and local consumption of Caribou meat; this should raise a serious concern.

6. Have there been any problems or health/environmental concerns with solid waste disposal?
   _X__ Yes _ No

   If yes, describe

The sewage effluent mixes with the effluent from the solid waste site and could be creating dangerous bi-products. Fencing is needed to eliminate the Caribou from being able to feed on sewage/solid wastes effluent. There is both a commercial hunt and local consumption of Caribou meat; this should raise a serious concern.

Monitoring Program

1. Does the Regional Health Board perform water quality sampling?

___No **x If** Yes, answer questions (a) to (e)

The Health Officer receives monthly water samples from Coral Harbour and performs testing at the Regional Office in Rankin Inlet

a. Briefly describe the sampling methodology.

Monthly samples are taken at the School, Nursing Station and from both Water trucks These samples are then sent to the Regional Health Officer in Rankin Inlet for Testing

b. Briefly describe any monitoring of wastewater effluent and leachate.

A DIAND Officer carries out sewage effluent sampling on an annual basis
Total Suspended Solids, Phenols, BOD, PH, and Oil and Grease testing (where applicable) is carried out

c. Who is responsible for sampling?

Name: **Scott Stewart**

Position: **INAC Officer**

Telephone **#(867) 975-4289**

Fax #: **(867) 979-6445**

Level of training:

d. Recognized laboratory performing analysis of samples.

Name: **Taiga Environmental**

Address: **P.O. 1500 Yellowknife, NT.**

Telephone #: **(867) 669-2788**

Fax #: **(867) 669-2718**

e. Are any changes planned in the water quality-monitoring program?

__ Yes **_x_ No**

If yes, describe.

IX. TECHNICAL INFORMATION *(Assistance may be obtained from the Regional Community Government (CG&T) office if you have difficult with this section).*

1. Date: **Oct. 2, 2003**

2. Municipality: **Coral Harbour, NU (Kivalliq Region)**

3. Contact: **Bryan Purdy**
(Community Government and Transportation Representative)

Telephone # **(867) 645-8114**

Fax # **(867) 645-8143**

4. Population (according to most recent census results): **875**

5. Estimated growth rate over next 5 years**: 875**

6. Has any baseline data collection and evaluation been undertaken with respect to the physical, biological, and chemical characteristics of the main water bodies in the area?
__Yes __No

If yes, provide a summary of program details or site title, authors, cities, and dates:

Prepared by	Title	Completion Date

If no, are such studies being planned?
___ No ___Yes (If yes, when and by whom):

7. Have Elders been consulted in the collection of baseline data on main water bodies in the area?
___No __Yes

If yes, specify.

8. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project?
__No __Yes

If yes, provide details below.

Prepared by	Title	Completion Date

If no, are such studies being planned?
__ No __Yes.

If yes, specify:

Attachments

1. Attach detailed plan or drawing(s) of the present *solid waste disposal area*. Include the following information:

   a. details of pond size and elevation;
   b. details of all retaining structures (dimensions, materials of construction, etc.);
   c. details of the drainage basin, and existing and proposed drainage modifications;
   d. details of all decant, siphon mechanisms etc., including sewage treatment facilities;
   e. details regarding direction and path of wastewater flow from the area;
   f. distance from watercourses and fish bearing waters;
   g. location and construction of liners;
   h. leachate and groundwater collection systems; and
   i. control structures.

2. Attach detailed plan or drawing(s) of the present *sewage treatment system*. The drawing(s) should include the following:

a. details of all retaining structures (dimensions, materials of construction, etc.);
b. details of the drainage basin, and existing and proposed drainage modifications;
c. details regarding direction and path of wastewater flow from the area;
d. indications of the distance from watercourses and fish bearing waters;
e. all sources of seepage presently encountered near these areas, including volumes (m^3/day) and directions.
f. The volume of seepage flow (m^3 / day); and
g. The direction of each flow.

3. Are drawings for the solid waste disposal area and sewage treatment system attached?
___ Yes ___No

If Yes, who has provided them?

If no, indicate when they will be available.

Hydrology

1. Effects on surface water flow:
Are any stream channels altered? __ Yes **x** **No**
Is the natural storage or water level of any lake or pond changed? __ Yes **x** **No**
Are there changes in water flow downstream of the project? __ Yes **x** **No**

Is a storage reservoir created in a natural channel? __Yes **x** **No**

If yes to any of the above, briefly describe the expected change in flow or storage:

2. Drainage Area:
What is the drainage area? _____km^2
What is the average elevation of the drainage basin?_____metres
Is the drainage basin outlined on an attached map? ___Yes ___No

Describe the drainage basin characteristics, (vegetation, general soil type, lakes, swamps and permafrost areas, etc.)

3. Channel characteristics:
Is the course of any channel changed? ____ Yes **x** **No**

If yes, describe measures to maintain stream bed and bank stability.

4. Will the cross-section of any watercourse be changed? __ Yes **x** **No**
If yes, describe the change and its effect on the flow capacity of the channel.

Water Supply

1. What is the rate of withdrawal from the source? **1428 (approx.) m^3/day.**

2. Is water drawn from the source ___ intermittently **x continuously (from river)**

3. If it is drawn intermittently, during what month(s) is it drawn? **Sept.**

4. For what period is it drawn (days/weeks/months)? **2 weeks**

5. What is the rate of flow of source (if river) or size (if lake)? _____

6. At the intended rate of water usage, describe the effects on the river or lake from which water will be drawn.

There is no effect on the volume of Post River

Water Intake

1. Please provide short descriptions of the following:
   a. freshwater intake facility

Twin heat-traced 100 mm HDPE lines inside 250 mm HDPE pipes themselves covered with 75 mm polyurethane insulation and 400 mm HDPE casing.

b. operating capacity of the pumps -

900 L/min

c. intake screen size **?**

Water Storage

1. Is a dam or dyke being used to store or alter the flow of water? ___Yes **__x No**

2. What are the dimensions of the dam or dyke?
   Length:_____ Width: _____ Height:_____
   U/S slope: _____ D/S slope: _____

3. Does the proposed dam create a reservoir in a natural watercourse?
   ___ Yes ___No
   If yes, what is the storage capacity and surface area of the reservoir?
   _____ ha.

4. Will the dam or dyke affect fish migration or movement ?
   ___ Yes ___ No
   If yes, describe all measures for compensation of fish habitat lost due to the dam or dyke, and mitigation for fish migration or movement.

Water Treatment

1. Indicate the capacity of the treatment facility. _____ L/min

2. What is the capacity of the water storage facility. **__40000 m^3**

3. Describe the method of water treatment (i.e., backwash, flocculation, sedimentation, chemicals used), and provide the results of the most recent bacteriological and chemical analysis. Attach a diagram, if possible.

Chlorine is added to each water truck load as it is loaded.

4. Are there any changes planned in the water treatment facilities? Yes
   __ No **_x__Yes**

If yes, attach a copy of the plan or indicate changes and include an implementation schedule.
Include excerpt from MACA Capital Plan if available.

The electrical is corroding and breaking down, major upgrades and repairs are needed. A new facility would be beneficial to the community. This would include improvements to the treatment system (currently trying to initiate substantiation for this project)

Sewage Disposal

1. Indicate the level of sewage treatment:
   __x_ primary ___ secondary ___ tertiary
   Pre-treatment (if applicable): ___ screening ___ maceration
   Lagoons (if applicable): ___ anaerobic ___ aerobic ___facultative

2. Indicate the capacity of the sewage treatment facility **70,000m2**

3. Based on current population projections, the facility will meet the needs of the community until
   the year **2005 (Approx.)** .

4. Average depth of the wastewater lagoon _____ m.
   N/A
5. What is the design freeboard? _____m**.**
   N/A

6. Indicate the retention time of the sewage while in the treatment facility_____ days.
   N/A

7. Indicate the estimated rate of discharge of wastewater_____ L/sec.

8. Indicate the location of the discharge point _____.

9. Is the discharge: ___ seasonal ___continuous

   If the discharge is seasonal, during what month(s) is it done?
   What is the duration of the discharge (days/weeks/months) ?

10. Are there any changes planned in the sewage disposal facilities?
    ___ No **__x Yes**
    If yes, attach a copy of the plan or indicate changes and include an implementation schedule. **Attached**

.

Solid Waste Disposal

1. Indicate the capacity of the disposal area **30,000 SQ.m**

2. The *average* depth of the solid waste disposal site **2.0 m.**

3. The current facility will meet community needs until the year **2004**.

4. Do any natural watercourse enter the solid waste disposal area? What methods are used to decrease the amount of runoff water entering these areas?
   A Berm has been built to surround the solid waste site
   This area may not be large enough

5. Indicate the volume of water that may enter these areas from any source(s) and attach all pertinent details of the diversions. **No flow just natural precip**.

Source	Volume

6. Please describe any diversions of watercourses:

7. Are there any changes planned in the solid waste disposal facilities?
___ No __**x** **Yes**
If yes, attach a copy of the plan or indicate changes and include an implementation schedule.

Other

1. Describe any additional details on the existing municipal facilities which should be considered by the Nunavut Water Board during it review.