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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

Water Licence Application Supplementary Questionnaire for Municipalities

I. GENERAL

1. Date: May 7, 2002

2. Applicant: Hamlet of Coral Harbour, Coral Harbour, NU

3. Contacts:

   Name of Contact: Lucy Netser
   Position: Senior Administrative Officer
   Telephone: 867-925-2985
   Fax: 867-925-8233

4. Community Status:

   ___ Village
   ___ Town
   ___ City
   _√_ Hamlet
   ___ Settlement Corporation

5. Indicate the status of the municipality's licence on the date of the application.

   ___ New Application
   _√_ Renewal - Water Licence # _____

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

Please refer to the Coral Harbour Sewage Treatment and Solid Waste Site Improvements report prepared by Ferguson Simek Clark.

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
_v__ River
_____Well
____ Other _____

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

Primary Source: Post River
Secondary Source: Not Applicable

3. Usual break-up & freeze-up period:

Break-up: June
Freeze-up: October

Water Intake

1. Please provide short descriptions for the following:

a. Freshwater intake facility

Twin heat-traced 100 mm HPDE 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/m

c. Intake screen size

N/A

Water Storage

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

_√_Reservoir/Pond
___ Storage tank
___ None
___ Other

Other

Description:

2. If "reservoir" checked:

Is the reservoir lined?

____ Yes __√_ No

What type of liner?

Not Applicable

When was it installed?

Not Applicable

Water Treatment

1. Indicate the quality of the water.

Summer:	_√__ good	___ fair	___ poor
Fall:	_√__ good	____ fair	___ poor
Winter:	_√__ good	____ fair	___ poor
Spring:	_√__ good	____ fair	___ poor

2. Describe.

The water is of good to excellent chemical quality for domestic use. Based on chemical analysis the water is very clear, soft, weakly buffered, and low in dissolved solids. Comparison of the chemical analysis for raw and treated water samples to the Guidelines for Canadian Drinking Water Quality shows the parameters tested to be below the recommended limits. Microbiological analysis of treated water shows that batch chlorination eliminates or greatly reduces the number of bacterial species present in raw water samples.

3. Type of water treatment.

___ Filtration and chlorination
_√_ Chlorination only
___ None
____ Other _____
Description

Water Use And Distribution

1. Volume of water use:

Distribution	Estimated number of people on the system	Estimated average water consumption (Litres/capita/day)	Total water consumption (Litres/day)
Piped			
Trucked	750	50	36,200
Total			36,200

General Condition of the water supply facilities

1. General condition of the:

a. Water supply facility

_√_ Satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

b. Storage facility

_√_ Satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

c. Distribution system

_√_ Satisfactory ___Unsatisfactory

If unsatisfactory, explain.

Modifications

1. Are there any changes *planned* for the water supply system?

_√_ No ____ Yes

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

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

No

Identification

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

___ Yes _√_ No

IV. SEWAGE DISPOSAL

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

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

Lagoon *(if applicable)*

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

___ Yes __ No

If yes, describe

Mechanical System *(if applicable)*

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

Not applicable

2. Are sludges produced ?

__ Yes __ No

If yes, describe how the sludges 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 _√__ 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 _√_ No

   If yes, indicate sources, types and quantities.

Sewage Discharge

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

   ___ Yes _√_ 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.

b. Discharge control system

_√_ Satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

c. Dams, diversion dykes, berms

_√_ Satisfactory ___ Unsatisfactory

If unsatisfactory, explain.

Modifications

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

___ No _√_ Yes

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

Reconstruct the drop off area with a retaining wall, and install bollards, wheel stops and signs.

2. Does the municipality or residents believe changes are needed to the sewage treatment facilities? Describe.

No

Abandonment and Restoration

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

None

Identification

Are there signs identifying past and present sewage disposal sites?

__ Yes __ No

N/A

V. SOLID WASTE DISPOSAL

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

   Ford 350 truck fitted with a garbage compactor

2. Is the solid waste site fenced?

   ___ Yes _√_ No

3. Is the fence adequate?

   __ Yes __ No

   If no, describe

Waste Reduction

1. Does the municipality burn garbage?

   _√_ Yes ___ No

   If yes, describe how and when this is done.

   Weekly

2. Has the municipality considered measures for waste reduction such as recycling or reuse?

   _√_ Yes ___ No

   If yes, describe

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

Animal Carcasses Pit

1. Does the municipality have an area for the disposal of animal carcasses?

   ___ Yes _√_ No

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

Waste Oil Pit

1. Describe the waste oil storage area.

Waste oil, anti-freeze and transmission fluids are stores in an area near the hamlet maintenance garage. The hamlet does not have a disposal procedure for the wastes.

Bulky Scrap Metal Waste Disposal Area

1. Does the municipality have a scrap metal or bulky waste disposal area?

   _√_ Yes ___ No

   If yes, briefly describe its location and operation plan.

   They are discarded of in the municipal waste, 500 m north of the solid waste site.

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 _√_ No

   If yes, please indicate sources, types and quantity.

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

   ___ Yes _√_ 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:

   a. Solid waste disposal area

      ___ Satisfactory _√_ 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 ___√___ Yes

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

The site will be fenced in, and the surrounding area will be cleaned up.

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

The site will eventually be relocated (year 2005/06)

Abandonment and Restoration

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

None

Identification

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

____ Yes ___√___ No

VI. INSPECTION AND MONITORING

1. When were municipal facilities inspected by:

___√___ Indian and Northern Affairs Inspector Date: August 24, 2001
___√___ Community Government and Transportation Date: Summer 2001
____ Other: Date:

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

___ Yes ___v___ No

If yes, describe.

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

___ Yes __v_ No

If yes, describe.

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

__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?

Monitoring Program

1. Is water sampling and analysis done?

_v__ Yes ___ No

If Yes, answer the questions a to e

a. Briefly describe how samples are taken and sent to the laboratory.

Water bottles are filled from the truck-filling arm, and then air-shipped to Rankin Inlet for analysis.

b. Briefly describe any monitoring done for wastewater effluent and leachate.

No regular systematic monitoring is done. Ferguson Simek Clark did the latest sampling in August and September 2001, and, in their March 2002 report, indicate that the Coral Harbour wetland effluent meets applicable standards, and will likely do so for the next 20 years.

c. Who is responsible for water sampling?

Name: Ronnie Nirgeongan
Position: Lands Officer
Telephone #: 867-925-8867
Fax #: 867-923-8823
Level of training: No Formal Training

d. Recognized laboratory performing analysis of samples.

Name: Wanda Poirier and DHSS
Address: Bag 298 Rankin Inlet, NU, X0C OG0
Telephone #: 867-925-2171
Fax #: 867-925-2409

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

___ Yes _v_ 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.

Runoff or leachate entering the wetlands from the solid waste site. This was looked at by Ferguson Simek Clark in 2001, samples were taken, and all was okay.

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

1. Date: May 10, 2002

2. Municipality: Hamlet of Coral Harbour

3. Contact: Wanda Poirier

   Telephone #: 867-645-2171
   Fax: 867-645-2409

4. Have there been any problems or health/environmental concerns with drinking water ?

   _√_ Yes ___No

   If yes, describe

   In summer 2001 there as a problem with ravens nesting in the walls of the reservoir.

5. Have there been any problems or health/environmental concerns with sewage disposal/treatment?

   _√_ Yes ___ No

   If yes, describe

   Sewage area is very close to the landfill sit and garbage is blown all over this area. Also, there is no signage.

6. Have there been any problems or health/environmental concerns with solid waste disposal?

   _√_ Yes ___ No

   If yes, describe

   There is no separation of waste. There is no fence to contain windblown materials. The disposal site is on both sides of the road and it is very disorganized.

Monitoring Program

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

___No _√__If Yes, answer questions (a) to (e)

a. Briefly describe the sampling methodology.

Samples are collected monthly from water trucks and other sites and sent to the EHO lab in Rankin Inlet for membrane filtration testing.

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

Not done by the Department of Health and Social Services.

c. Who is responsible for sampling ?

Name: Ronnie Nineongan
Position: Lands Officer
Telephone #: 867-925-8867
Fax # : 867-925-8233
Level of training:

d. Recognized laboratory performing analysis of samples.

Name: Dept. Health and Social Services –Wanda Poirier (EHO)
Address: 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 _√_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: May 7, 2002

2. Municipality: Hamlet of Coral Harbour

3. Contact: Jean Corbeil, Municipal Planning Engineer

Telephone #: (867) 645-8114
Fax #: (867) 645-8143

4. Population (according to most recent census results): 750

5. Estimated growth rate over next 5 years: 13% to about 850

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

No, because INAC lab results indicate there are no concerns regarding the water intake and supply facilities. All parameters meet the Guidelines for Canadian Drinking Water Quality, save for a field pH of 9.3 versus the 6.5-8.5 aesthetic objective, and a turbidity value of 1.9 NTU.

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

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?

_v__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: Arctic Environmental Services Ltd.
Title: Review of the Natural Wetlands Sewage Disposal System ay Coral Harbour, NWT
Completion Date: March 1995

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
   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)
   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?

   Ferguson Simek Clark.

   If no, indicate when they will be available.

Hydrology

1. Effects on surface water flow:

   Are any stream channels altered? __ Yes _√_ No

   Is the natural storage or water level of any lake or pond changed? __ Yes _√_ No

   Are there changes in water flow downstream of the project? __ Yes _√_ No

   Is a storage reservoir created in a natural channel? __ Yes _√_ 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?

   Unknown exactly, but approximately 10 km^2

   What is the average elevation of the drainage basin?

   Approximately 15 m

   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 _√_ No

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

4. Will the cross-section of any watercourse be changed?

   __ Yes _√_ 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?

   Approximately 70 m^3/day.

2. Is water drawn from the source

   _√_ intermittently ___ continuously

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

   Summer

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

   Months

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

   Rate of flow of Post River is unknown. Water is pumped yearly from Post River into a 50M-liter reservoir blasted out of bedrock.

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

   None

Water Storage

1. Is a dam or dyke being used to store or alter the flow of water?

   ___Yes _√_No

2. What are the dimensions of the dam or dyke?

   Not Applicable

3. Does the proposed dam create a reservoir in a natural watercourse?

   Not Applicable

If yes, what is the storage capacity and surface area of the reservoir?

Not Applicable

4. Will the dam or dyke affect fish migration or movement ?

Not Applicable

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.

900 L/min

2. What is the capacity of the water storage facility.

25,200 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.

Chlorination in truck-fill arm.

4. Are there any changes planned in the water treatment facilities?

_√_ No ___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.

Sewage Disposal

1. Indicate the level of sewage treatment:

___ primary
___ secondary
_v_ tertiary

Pre-treatment (if applicable):

Not Applicable

Lagoons (if applicable):

Not Applicable

2. Indicate the capacity of the sewage treatment facility

   40,000 m^3

3. Based on current population projections, the facility will meet the needs of the community until the year

   2022.

4. Average depth of the wastewater lagoon

   Not Applicable

5. What is the design freeboard?

   Not Applicable

6. Indicate the retention time of the sewage while in the treatment facility

   8 months

7. Indicate the estimated rate of discharge of wastewater

   7.78 L/sec.

8. Indicate the location of the discharge point.

   The highly treated water is discharges to Hudson Bay. The sewage wetlands run in a predominantly southeasterly direction towards the ocean.

9. Is the discharge:

   _v__seasonal
   ___continuous

If the discharge is seasonal, during what month(s) is it done?

Summer

What is the duration of the discharge (days/weeks/months)?

Months

9. Are there any changes planned in the sewage disposal facilities?

___ No
_v_ 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.

Same as stated earlier in Section IV, question 1, under Modifications.

Solid Waste Disposal

1. Indicate the capacity of the disposal area

   Approximately 16,000 m^3.

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

   2 m.

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

   2007

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?

   No

5. Indicate the volume of water that may enter these areas from any source(s) and attach all pertinent details of the diversions.

   Source: Not Applicable
   Volume: Not Applicable

6. Please describe any diversions of watercourses:

   N/A

7. Are there any changes planned in the solid waste disposal facilities?

   ___ No _√_ 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.

   Relocate the site in fiscal year 2006/07

Other

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