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NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN
KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

Water Licence Application
Supplementary Questionnaire
For Municipalities

I. GENERAL

1. Date: **September 17, 2008**

2. Applicant: Municipality of Clyde River

Municipality and Region

3. Contacts: _____ Bill Buckle_____
Name of Contact

SAO
Position

867 -924-6620 **867- 924-6293** **saoclyde2005@qiniq.com**
Telephone # Fax # Email

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

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

II. ATTACHMENTS: NIL

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.
   l.

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 __River __Well __ _Other _____

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

   * _____

   Primary Source Secondary Source

3. Usual break-up & freeze-up period: **June/July** **September/October**
   Break-up Freeze-up

Water Intake

1. Please provide short descriptions for the following:

   a. Freshwater intake facility
   ___**Water Lake**_____

   b. Operating capacity of pump used
   _____**1000 litres per minute**_____

   c. Intake screen size
   _____**Yes**_____

Water Storage

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

___ Reservoir/Pond ____ Storage tank ___ none

__*_ Other **Natural Lake** Description:

2. If "reservoir" checked:

Is the reservoir lined? __Yes _*_ No

What type of liner? _____When was it installed?_____

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: **Recirculation Process under Heat Tracing**

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 **A**	Estimated average water consumption (Liters/capita/day) **B**	Total water consumption (Day/day) **A x B**
PIPED			
TRUCKED	**850**	**79.8 l/p/d**	**67,830**
		TOTAL	

General Condition of the water supply facilities

1. General condition of the:

a. Water supply facility

*___ satisfactory __ Unsatisfactory

If unsatisfactory, explain.

b. Storage facility N/A

___ **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.

The water intake facility has only one pump, should have a backup or secondary pump installed for emergency/maintenance purposes

Identification

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

Lagoon Breach June 2008, capacity issues

Mechanical System *(if applicable)* ***N/A***

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

2. Are sludge's produced ? __ Yes __ No
If yes, describe how the sludge's are disposed of:

Wetland *(if applicable)*

1. Describe the Wetland wastewater treatment system.

   Natural sloping ground with vegetation.

Honey Bag Pit: N/A

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, shellfish 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.

Needs repairs and truck offloading stabilization

b. Discharge control system __ Satisfactory _*_ Unsatisfactory
If unsatisfactory, explain.

Siphoning system using gravity

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.

2. Does the municipality or residents believe changes are needed to the sewage treatment facilities?
If yes Describe.
Capacity issues, new sewage lagoon in process, better decanting process

Abandonment and Restoration; N/A

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

Identification

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

V. SOLID WASTE DISPOSAL

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

   1999 F-350 Garbage Truck pickup 3 times per week, emptied at site, burned on Fridays and collected and compacted monthly.

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.

   Usually every Friday, depending on wind direction and velocity

2. Has the municipality considered measures for waste reduction such as recycling or reuse?
   _*_ Yes ____ No
   If yes, describe

   Discussion underway with Federal Government and private company about possible pilot project for gasification/incineration/waste reduction options, Community considering options for recycling, and plastic bag prohibition. New solid waste site should include separate waste areas, having specific collection days for different types of waste. Funding will be an issue.

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.

A designated area outside the landfill site in old 45 gallon drums

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.

Across from sewage lagoon access, no operations plan, minimal sorting of different material types. Funding an issue.

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 disposal area? **N/A**

___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.

No fencing or cell structures, garbage blows all over in the wind, all garbage dumped into same area no sorting or separate cells, no recycling/waste reduction, no signage, no operations plan, no hazardous waste/contaminated soil pits or areas.

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.

CGS Capital Plan for 2009-2011

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

Larger area, separate cells for different types of waste, fencing for whole area, gate to stop unauthorized dumping, signage, possible equipment for recycling/waste reduction, operations plan

Abandonment and Restoration

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

Identification
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 at:
Date: August, 2008
__* **GN-CGS**)
Date:
___ Other: _____ Date: _____

2. Is there a system in place for reporting spills?
_*_ Yes ___ No
If yes, describe.

Spill Action Line/CGS/INAC

3. Is there a contingency plan for clean up of spills?
___ Yes _*__ No
If yes, describe.

Spill kits are available.

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?
   _*_ Yes ___No

   If Yes, answer the questions a to e:

   a. Briefly describe how samples are taken and sent to the laboratory.
   b.
      Daily from each Truck and monthly for the lab.
      The monthly samples are sent to GN-DOH lab through local Health centre.

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

   c. Who is responsible for water sampling?
      Name: **Hamlet Water Truck Drivers**

      Position: **Water Truck Drivers**

      Telephone **#:** _____

      Fax #: _____

      Level of training**: Locally Trained and NTWWA**

   d. Recognized laboratory performing analysis of samples.

Name: **GN-DOH Lab in Iqaluit**

Address: _____

Telephone #: _____

Fax #: _____

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

VII. PUBLIC CONCERNS

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

VIII. PUBLIC HEALTH : Please contact GN-DOH

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

1. Date: _____

2. Municipality: _____

3. Contact: (Environmental Health Officer Contact)
_____

Telephone # _____

Fax #: _____

4. Have there been any problems or health/environmental concerns with drinking water?
___ Yes *___No
If yes, describe:

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

___ Yes _*__ No

If yes, describe

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

___ Yes _*___ No

If yes, describe:

Monitoring Program

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

_*__ Yes ___ No

If Yes, answer questions (a) to (e)

GN-DOH Environmental Health officer

a. Briefly describe the sampling methodology.

Health inspectors collect samples two/three times in a year and test in their Lab in Iqaluit for QA/AC.

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

.

c. Who is responsible for sampling?
Name: ___**Hamlet Staff**_____

Position: Whoever on duty_____

Telephone #: _____

Fax #: _____

Level of training: Locally trained_____

c. Recognized laboratory performing analysis of samples.

Name: _____

Address: _____

_____

Telephone #: _____

Fax #: _____

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 (CGS office if you have difficult with this section).*

1. Date: _____**Sep.16, 2008**_____

2. Municipality: __**Municipality of Clyde River**_____

3. Contact: _____**SAO**_____

Telephone #: _____

Fax #: _____

4. Population: _**850**_____

5. Estimated growth rate over next 5 years:
Total: (estimated), 1138; Growth rate: 6%

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:

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.

No record is available.

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.

If no, are such studies being planned?

__ No ____Yes.

If yes, specify:

Attachments NIL

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, 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 _*_ 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: **N/A**

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 *__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? _~69,830 **litres/day**
   ~24,755,740 litres per year (April 2007 to March 2008 volume)

2. Is water drawn from the source ___ intermittently___*__continuously

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

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

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

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

Water Intake

1. Please provide short descriptions of the following:

a. freshwater intake facility : Water lake

b. operating capacity of the pumps: **1000 litres per minute**

c. intake screen size:

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? N/A
   Length:_____ Width: _____ Height:
   U/S slope: _____ D/S slope:

3. Does the proposed dam create a reservoir in a natural watercourse? **N/A**
   ___ Yes ___No

If yes, what is the storage capacity and surface area of the reservoir?
____ m^3 _____ ha.

4. Will the dam or dyke affect fish migration or movement ? **N/A**
   ___ 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. ___**1000**___**L/min**

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

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.
   Chemical used-Chlorination

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.

Sewage Disposal

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

2. Indicate the capacity of the sewage treatment facility: (11,500 **approximately)** m^3

3. Based on current population projections, the facility will meet the needs of the community until the year **__2008_____** .

4. Average depth of the wastewater lagoon : **m**.

5. What is the design freeboard? **__1.0m** .

6. Indicate the retention time of the sewage while in the treatment facility
_____**90**_____ days.

7. Indicate the estimated rate of discharge of wastewater**___11.36 L/sec.**

8. Indicate the location of the discharge point:
   S-W corner of the Lagoon towards sea

9. Is the discharge: ____* seasonal ____
   If the discharge is seasonal, during what month(s) is it done?
   Normally August/October

What is the duration of the discharge (days/weeks/months) ? **_____4days_____**

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

_____ No _*_Yes

If yes, attach a copy of the plan or indicate changes and include an implementation schedule.

Include excerpt from CGS Capital Plan if available

Solid Waste Disposal

1. Indicate the capacity of the disposal area __2000_ m³

2. The *average* depth of the solid waste disposal site ___2.0m___ m**.**

3. The current facility will meet community needs until the year: **____2008_____.**

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	Volume

6. Please describe any diversions of watercourses:
_____NIL_____

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

Other

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

N/A