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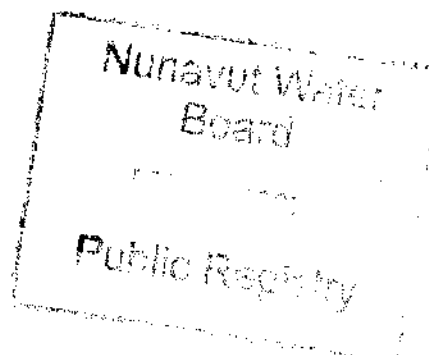
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NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

**Water Licence Application
Supplementary Questionnaire
for Municipalities**

INTERNAL	
PM	<input checked="" type="checkbox"/>
PA	<input checked="" type="checkbox"/>
CM	
TA	
IS	
SM	
SG	
BR	



Water Treatment

1. Indicate the quality of the water.

Summer:	<input type="checkbox"/> good	<input checked="" type="checkbox"/> fair	<input type="checkbox"/> poor
Fall:	<input checked="" type="checkbox"/> good	<input type="checkbox"/> fair	<input type="checkbox"/> poor
Winter:	<input checked="" type="checkbox"/> good	<input type="checkbox"/> fair	<input type="checkbox"/> poor
Spring:	<input type="checkbox"/> good	<input type="checkbox"/> fair	<input checked="" type="checkbox"/> poor

2. Describe.

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)
	A	B	A x B
PIPED			
TRUCKED			
TOTAL			

I. GENERAL

1. Date: FEB 16/01
2. Applicant: CAMBRIDGE BAY (KITIKMEOT)
Municipality and Region
3. Contacts: LINTON HODGE
Name of Contact
MUNICIPAL SERVICES CLERK
Position
867 983 2114 867 983-2782
Telephone # Fax #
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 # N443-1532

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.

COMMUNITY GOVERNMENT

III. WATER SUPPLY

Water Source

1. Type of source: ☒ Lake ☐ River ☐ Well ☐ Other _____

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

3.

WATER LAKE
Primary Source

Secondary Source

3. Usual break-up & freeze-up period: JUNE Break-up SEPT Freeze-up

Water Intake

1. Please provide short descriptions for the following:

a. Freshwater intake facility

b. Operating capacity of pumps used

10HP, 3Ø, 200V

c. Intake screen size

Water Storage

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

☐ Reservoir/Pond ☐ Storage tank ☐ None ☐

☐ Other _____ Description:

2. If "reservoir" checked:

Is the reservoir lined? ☐ Yes ☐ No

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

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

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).

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.

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.

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.

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.

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.

BURNED BY GARBAGE TRUCK DRIVER
ONLY IF WINDS ARE AWAY FROM TOWN

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

If yes, describe

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.

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.

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?

☐ 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.

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.

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.

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

Date: _____

☐ Municipal and Community Affairs

Date: _____

☐ Other:

Date: _____

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

☒ Yes ☐ No

If yes, describe.

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

☒ Yes ☐ 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 ?

 ✓ Yes No

If Yes, answer the questions a to e

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

SAMPLES ARE TAKEN DAILY IN SAMPLE BOTTLES
AND BROUGHT TO HEALTH CENTER FOR SHIPPING
TO LAB

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

- c. Who is responsible for water sampling ?

Name: JOHN ATIGIYOK

Position: BUILDING MAINTAINER

Telephone #: (967) 493 2114

Fax #: 867 493 2782

Level of training: NONE

- d. Recognized laboratory performing analysis of samples.

Name: STANTON-REGIONAL HEALTH BOARD

Address: 550 BYRNE RD YELLOWKNIFE NT

Telephone #: 669-4163

Fax #: 669-4141

- 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 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: Jan. 23/01
2. Municipality: Cambridge Bay, NU
3. Contact: (Environmental Health Officer Contact)
Telephone #: Robert Phillips
(867) 983-4086
Fax #: (867) 983-4088
4. Have there been any problems or health/environmental concerns with drinking water?
☐ Yes ☒ No

If yes, describe

Public Health Act (Public Water Supply Reg's) requires that two water samples be submitted for bacteriological analysis per month, and that a chemical sample be submitted every other year.

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

- ① Blowing Debris - perimeter fence recommended
- ② Occasionally smoke from burning dump blows into town.

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.

Membrane filtration for total and faecal coliforms

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

Water Resources Officer (INAC) samples 1x year

- c. Who is responsible for sampling?

Name: Johnny Oyakpale

Position: Building Maintainer

Telephone #: 983-2114

Fax #: 983-2782

Level of training:

- d. Recognized laboratory performing analysis of samples.

Name: Stanton Regional Hospital

Address: 550 Byrne Road
Yellowknife, NT

Telephone #: (867) 669-4163

Fax #: (867) 669-4141

- 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 difficulty with this section).

1. Date: JAN 31/01
2. Municipality: CAMBRIDGE BAY
3. Contact: LEO O. KUINI, P. ENG.
(Community Government and Transportation Representative)
Telephone # 867-983-4011
Fax # 867-983-4003
4. Population (according to most recent census results): 1500
5. Estimated growth rate over next 5 years: 2.25%
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 WATER SUPPLY LAKE & DEW LINE LAKE

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

Prepared by

Title

Completion Date

UMA GROUP	APPRECIATION REPORT ON WATER SUPPLY SOURCE INITIATIVE FACILITY FOR CAMBRIDGE BAY	1978
TECHNICAL SERVICES UNIT	COMMUNITY WATER & SANITATION SERVICES - ILLIKIMOOT REGION	1982
FSC	PLANNING STUDY FOR THE CAMBRIDGE BAY WATER SYSTEM	1996
UMA ENGINEERING	WATER SUPPLY UPGRADE CAMBRIDGE BAY	1997

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.

UMA GROUP

CAMBRIDGE BAY WATER SUPPLY SYSTEM - OPERATION & MAINTENANCE MANUAL

1981

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:

EXISTING LAND USE
WATER AND SANITATION SITES

- 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 (m³/day) and directions,
- f. The volume of seepage flow (m³ / 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?

Is the natural storage or water level of any lake or pond changed?

Are there changes in water flow downstream of the project?

☐ Yes ☒ No
☐ Yes ☒ No
☐ Yes ☒ No

Is a storage reservoir created in a natural channel?

☐ Yes ☐ No

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? 2.3 km²

What is the average elevation of the drainage basin? 15 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.)

NOTE: THE LAKE WATER SURFACE AREA OF WATER LAKE IS APPROXIMATELY 165 acres (67 ha). MAXIMUM DEPTH BY RANDOM SOUNDING WAS 5.49 m. *see sheet marked "EXHIBIT" DRAINAGE AREA*

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? 186 m³/day.
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)? EVERY DAY
5. What is the rate of flow of source (if river) or size (if lake)? 1,738,000 m³
6. At the intended rate of water usage, describe the effects on the river or lake from which water will be drawn. INSIGNIFICANT

Water Intake

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

INCLINED SHAFT INTAKE CASING WITH SUBMERSIBLE PUMP.
CONNECTED TO AN INTAKE PUMPHOUSE EQUIPPED WITH
WATER TEMPERING AND DISINFECTION SYSTEMS PLUS A TRUCK FILL
ARM.

- b. operating capacity of the pumps

10 HP, 3 ϕ , 200V

- c. intake screen size

JOHNSON SURFACE WATER INTAKE SCREEN. 16PS SCREEN SIZE.
SCREEN LENGTH 500MM. STAINLESS STEEL. SLOT OPENING
0.50MM. UPSTREAM END FITTED WITH FLAT SCREEN PLATE.
DOWNSTREAM END WELDED TO 1/4" THK MATING FLANGE.

Water Storage

N/A

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?
 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?
 _____ m³ _____ 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. 347.4 L/min
2. What is the capacity of the water storage facility. 240 m³
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 DISINFECTION.

See Bob Phillips for most recent bacteriological and chemical analysis.

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 ☐ tertiary
 Pre-treatment (if applicable): ☐ screening ☐ maceration
 Lagoons (if applicable): ☐ anaerobic ☐ aerobic ☒ facultative
2. Indicate the capacity of the sewage treatment facility 90,000 m³
3. Based on current population projections, the facility will meet the needs of the community until the year 2020 GUESSIMATE
4. Average depth of the wastewater lagoon 2.0 m.
5. What is the design freeboard? NATURAL LAKE m.
6. Indicate the retention time of the sewage while in the treatment facility 270 days.
7. Indicate the estimated rate of discharge of wastewater NOT AVAILABLE L/sec.
8. Indicate the location of the discharge point See sheet marked "EXHIBIT": MUX
9. Is the discharge: ☒ seasonal ☐ continuous
 If the discharge is seasonal, during what month(s) is it done? JULY - SEPTEMBER
 What is the duration of the discharge (days/weeks/months)? 3 MONTHS
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 MACA Capital Plan if available.

Solid Waste Disposal

1. Indicate the capacity of the disposal area 63,000 m³.
2. The average depth of the solid waste disposal site 3.0 m.
3. The current facility will meet community needs until the year 2020. UNESTIMATE

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?

COMBINATION

A BERM / SHORE SEPARATES THE WASTE DISPOSAL AREA FROM THE NEIGHBORING SEWAGE LAGOON OR LAKE

NO SIGNIFICANT AMOUNT OF RUNOFF ENTER THESE AREAS AS THE DRY WEATHER IN CAMBRIDGE BAY CAUSES ANY PRECIPITATION TO QUICKLY EVAPORATE.

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

Source

Volume

6. Please describe any diversions of watercourses:

NOT APPLICABLE

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.

COUNCILS PLANS TO RELOCATE THE SEWAGE LAGOON, SOLID WASTE SITE, AND BULK WASTE DISPOSAL SITE TO CREATE ROOM FOR THE FUTURE GROWTH OF THE COMMUNITY TOWARDS AND ON THE LAND CURRENTLY OCCUPIED BY THE REFERENCED SANITATION SITES WHICH ARE IN RELATIVE ~~Other~~ CLOSE PROXIMITY TO EACH OTHER.

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

SEE COUNCIL/MAYOR FOR COPIES OF BRIEFING NOTES AND CAPITAL PLAN.