NORTHWEST TERRITORIES WATER BOARD

NUNAPPA SIVUNIUKPAIT IMMAKUN

Water Licence Application Questionnaire

for

Municipal Undertakings

January 2009

The purpose of this questionnaire is to solicit supplemental information from an applicant to support his/her application for a water license (or its renewal). It is anticipated that the completion of this questionnaire will reduce delays arising from the NWT Water Board having to solicit additional information after an application has already been submitted. This information will also be useful during the pre-screening of your application, which must be undertaken prior to development and approval of a water license to determine if the project needs to be referred for further environmental assessment.

The applicant should complete the questionnaire to the best of his/her ability, recognizing that some questions may not be relevant to the project under consideration. For questions that do not relate to the operation undertaking, the applicant is requested to indicate "N/A" (Not Applicable).

NOTE: If space is insufficient for any of the responses on this questionnaire, use the back of the sheet or an attachment.

If any questions arise while completing the questionnaire, the applicant may wish to contact the NWT Water Board at (867) 678-2942.

This questionnaire can be sent with the application for a new licence or the renewal of an existing licence to the following contact information:

Executive Director
NWT Water Board
P.O. 2531
Inuvik, NT, Canada
X0E 0T0
Email: info@nwtwb.com

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SECTION 1. GENERAL

1.1. **Date:** August 13, 2014

1.2. **Applicant:**

Hamlet of Aklavik

(Company, Corporation, Hamlet, Town)

Fred Behrens, SAO

(Person to contact and its position)

P.O. Box 88, Aklavik NT X0E 0A0

(Postal address)

(867) 978-2351

(Telephone number)

(867) 978-2434

(Facsimile number)

1.3. **Community Status**

City ☐ Village ☐ Town ☐ Camp ☐ Other ☑

1.4. **Population (according to most recent census results), and the Estimated Growth Rate over next five years or Camp Maximal Capacity:**

628 population. 0% estimated growth rate

1.5. **Indicate the status of the municipality's license on the date of application.**

New Application: Yes ☐ No ☑

If yes, please submit your water licence Number and the date the licence was issued.

Renewal of Water License Number: N3L3-0570

Date of Issuance: June 29, 2009

1.6. **Has any baseline data been collected for the main water bodies in the area?**

Yes ☐ No ☑ Unknown ☐

If yes, please attach:

- All data gathered on the physical, biological and chemical characteristics at each sampling location;
- A summary or program details indicating sampling locations, description of waste at each location, sampling frequency, and parameters analyzed;
  An outline of Quality Assurance/Quality Control methods being applied to sampling, preservation and analysis within the program.

1.7. **Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project (e.g., wildlife, soils, air quality) in addition to water related information requested in this questionnaire?**

Yes ☐ No ☑ Unknown ☐

If yes, please attach copies of reports or cite titles, authors and dates (prepared by, title and completion date).
If no, do you plan on doing such studies? If you do plan on doing such studies, please describe the proposals.

1.8. **Attach detailed maps which show the relative locations of the:**

- raw water intake,
- water treatment facilities,
- fuel & chemical storage,
- sewage treatment facilities,
- wastewater treatment area and discharge outlets,
- solid waste disposal areas and drainage patterns,
- hazardous waste disposal area,
- transportation access routes, existing waterbodies/courses and any changes to these water bodies/courses which have or may occur as a result of water use of waste disposal facilities, locations of environmental monitoring sites.

See attached "Background Report for Water Licence Renewal" dated August 2014

1.9. **Attach detailed scale plan drawing(s) of the proposed (or present) sewage treatment system. The drawing(s) must be stamped by an engineer registered in NWT and include the following:**

- details of pond size and elevation;
- precise details of all retaining structures (dimensions, materials of construction, etc.);
- details of the drainage basin, and existing and proposed drainage modifications;
- details of all decant, siphon mechanisms etc, including sewage treatment facilities;
- details regarding direction and route followed by wastewater flow from the area;
- indications of the distance to nearby major watercourses, and fish bearing waters;
- location and construction of liners;
- leachate and groundwater collection systems; and control structures.

See attached "Background Report for Water Licence Renewal" dated August 2014

1.10. **Attach detailed scale plan drawings of the proposed (or present) solid waste disposal area. The drawings must include the following:**

- precise details of all retaining structures (dimensions, materials of construction, etc.);
- details of the drainage basin, and existing and proposed drainage modifications;
- details regarding direction and route followed by wastewater flow from the area;
- indications of the distance to nearby major watercourses, and fish bearing waters;
- all sources of seepage presently encountered in the vicinity of these areas;
- the volume of each seepage flow (m3/day); and
- the direction of each flow.

See attached "Background Report for Water Licence Renewal" dated August 2014

1.11. **Attach the present or proposed contingency plan which will be used for each portion of the waste control system in the event it fails to operate properly.**

n/a

1.12. **Attach the present or proposed spill contingency plan which will be employed in case a spill of hazardous materials occurs. Describe courses of action, mitigative methods and equipment available for use.**

See attached Background Report for Water Licence Renewal

SECTION 2. WATER SUPPLY

Section 2 is N/A - NWT water licence covers sewage and solid waste systems only

2.1. **Volume of water use (m^3/day)**

2.2. **Type of source**

Lake ☐ River ☑ Well ☐ Other ☐

2.3. **Name of raw water source and alternative, if any**

Peel Channel of Mackenzie River

2.4. **Usual break-up & freeze-up months**

Break-up: May - June Freeze-up:

2.5. **Please provide short descriptions for the following**

Freshwater intake facility:

Operating capacity of the pumps used:

2.6. **Type of water storage facility (i.e. Reservoir, storage, tank, none. For other, please provide a description)**

Storage Tank

2.7. **What is the capacity of the water storage facility? m3**

300,000 lt. 2 tanks 150,000 ea

2.8. **What is the rate of withdrawal from the source? (m3/day)**

100 - 120 m^3/day

2.9. **Is water drawn from the source?**

daily

If yes, during what month(s) is it drawn? And for what period of time is it drawn (days/weeks/months)?

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

N/A

2.11. **At the intended rate of water usage, describe the effects on the river or lake fro which water will be drawn.**

no real effect

2.12. **General condition of**

Water supply facility: Satisfactory ☑ Unsatisfactory ☐

If unsatisfactory, explain:

Storage facility: Satisfactory ☑ Unsatisfactory ☐

If unsatisfactory, explain:

Distribution system: Satisfactory ☑ Unsatisfactory ☐

If unsatisfactory, explain:

2.13. **Are there any changes planned in the water supply system?**

Yes ☐ No ☑

If yes, please attach a copy of the plan, or describe changes.

SECTION 3. WATER TREATMENT

Section 3 is N/A - NWT water licence covers sewage and solid waste systems only

3.1. **Indicate the quality of the raw water prior to treatment & distribution and give a description**

Good ☑ Fair ☐ Poor ☐

Description:

3.2. **Indicate the capacity of the treatment facility (L/minute)**

120 L/minute

3.3. **Type of water treatment facility (i.e. Filtration & Chlorination, Chlorination only, UV, None. If other, please describe)**

Filtration & Chlorination

3.4. **Describe in detail 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.**

backwash flocculation, sedimentation & chemical used. conventional filtration

3.5. **Have there been any problems or health and environmental concerns with the water treatment facilities?**

Yes ☐ No ☑

If yes, please describe:

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

Yes ☐ No ☑

If yes, please attach a copy of the plan or indicate change

SECTION 4. SEWAGE DISPOSAL

4.1. **Indicate the level of treatment the sewage will be receiving (primary, secondary or tertiary. If other, please describe)**

Primary

4.2. **Pre-treatment (if applicable)**

Screening ☐ Maceration ☐

N/A

4.3. **Lagoons (if applicable)**

Anaerobic ☐ Aerobic ☐ facultative ☑

4.4. **Indicate the capacity of the sewage treatment facility (m^3)**

435,000 m3. See attached Background Report section 3.1

4.5. **Indicate the retention time of the sewage while in the treatment facility (days)**

5018 days - see attached Background Report section 3.1

4.6. **Indicate the estimated rate of discharge of wastewater**

unknown

4.7. **Indicate the location of the discharge point**

See Background Report Figure 3-3

4.8. **Will the discharge be seasonal or continuous?**

continuous

If seasonal, during what month(s) will it occurred?

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

4.9. **Comment on the general condition of the:**

Sewage collection system

satisfactory

Discharge control system

n/a

Dams, diversion, dykes or berms

n/a

4.10. **Have there been any problems or health and environmental concerns with the sewage disposal facilities?**

Yes ☑ No ☐

If yes, please describe:

The lagoon is occasionally inaccessible due to flooding. See Background Report section 5.3.

4.11. **The average depth of the wastewater lagoon is (meters)**

1.5 m

4.12. **What is the design freeboard? (meters)**

n/a (natural lagoon, no design freeboard)

4.13. **Is there any harvesting of fish or shellfish in the waters where waste is discharged?**

Yes ☐ No ☑

If yes, please indicate species harvested, and estimate amounts.

4.14. **Will the municipality be using a honey bag pit?**

Yes ☐ No ☑

If yes, describe its location, drainage and operation & maintenance

4.15. **Are there any sources of commercial or industrial liquid waste being discharged or deposited to the municipal system which may affect the quality of the effluent or leachate produced?**

Yes ☐ No ☑

If yes, please describe:

4.16. **Have any spills occurred in the past five years?**

Yes ☑ No ☐ See Background Report section 5.3

If yes, please submit a list of all spills with the date of the spill, the type of spill, the quantity spilled, the location of the spill, the method used to clean the spill and the results of the clean-up.

4.17. **Have there been any operating problems with the lagoon?**

Yes ☐ No ☑

If yes, please describe:

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

Yes ☑ No ☐

If yes, please describe and if possible, attach a copy of the plan:

See attached Background Report section 6.2.

SECTION 5. SOLID WASTE DISPOSAL

5.1. **Indicate the capacity of the disposal area (m^3)**
40,000 m3. See attached Background Report section 3.2

5.2. **The average depth of the solid waste disposal site is (meters)**
0 m

5.3. **Are there any sources of commercial or industrial solid waste being deposited in the municipal system which may affect the quality of the effluent or leachate produced?**

Yes ☐ No ☑

If yes, please describe:

5.4. **Briefly describe how the solid waste will be picked up & delivered to the disposal area**
trucked by Michael Greenland

5.5. **Is the solid waste site fenced?**

Yes ☐ No ☑

5.6. **Will the municipality be using a dead animal pit?**

Yes ☐ No ☑

If yes, please describe its location, drainage and operation & maintenance:

5.7. **Will the municipality be using a bulky metal waste disposal area?**

Yes ☑ No ☐

If yes, please describe its location and operation & maintenance:
See Background Report Figure 3-4

5.8. **Will the municipality be using a hazardous waste disposal area?**

Yes ☑ No ☐

If yes, please describe it location, structure and operation & maintenance:

See Background Report Figure 3-4

5.9. **Are there any hazardous commercial wastes entering the solid waste disposal system?**

Yes ☐ No ☑

If yes, please describe (source, volume, special handling and disposal methods for these wastes):

5.10. **If any natural watercourse may gain access to the proposed solid waste disposal area, what methods will be used to decrease the amount of runoff water entering these areas? Indicate the volume of water which may enter these areas from the source(s) in question and attach all pertinent details of proposed diversions**

n/a

5.11. **Please describe the nature of any diversions of watercourses**

n/a

5.12. **Have there been any problems or health and environmental concerns with the solid waste disposal facilities?**

Yes ☐ No ☑

If yes, please describe:

5.13. **Are any changes planned in the solid waste disposal system?**

Yes ☑ No ☐

If yes, please describe and, if possible, attach a copy of the plan:

See Background Report section 6.2

SECTION 6. ABANDONMENT AND RESTORATION PROGRAM

6.1. **List and describe the locations of abandoned or restored water treatment facilities.**

n/a

6.2. **List and describe the locations of abandoned or restored sewage treatment facilities.**

N/A

6.3. **List and describe the locations of abandoned or restored solid waste disposal facilities.**

N/A

6.4. **Do you have an abandonment and restoration plan?**

Yes ☐ No ☑

If yes, please attach a copy of the plan.

SECTION 7. WATER QUALITY MONITORING PROGRAM

7.1. **Briefly describe the methodology that is presently used to sample the raw water supply**

n/a

7.2. **Briefly describe any monitoring that is done on wastewater effluent and leachate**

Hamlet staff collect a sample of lagoon effluent in the summer or fall.

7.3. **Recognized laboratory performing analysis of samples** (currently Administered by Public Works G-NWT.

Name of the laboratory:	TAIGA Environmental Laboratory
Contact name:	
Postal address:	
Telephone number:	867-669-2788
Facsimile number:	

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

Yes ☑ No ☐

If yes, please describe:

Hamlet intends to increase the frequency of lagoon effluent samples according to the water licence Surveillance Network Program (SNP).

SECTION 8. ENVIRONMENTAL ASSESSMENT AND SCREENING

8.1. **Has this project ever undergone an initial environmental review, including previous owners?**

Yes ☐ No ☑ Unknown ☐

If yes, by whom and when?

8.2. **Has approval been obtained or sought from the Department of Fisheries and Oceans for using any fish bearing water bodies for containment or disposal of waste?**

Yes ☐ No ☑

8.3. **Are there any environmental studies ongoing or planned?**

Yes ☐ No ☑

If yes, please provide a list of these studies.

Prepared by:

Fred Behrens
Printed Name

Senior Admin Officer
Title

Fred Behrens
Signature

Aug 14/14
Completion Date

SECTION 9. LIST OF ATTACHMENTS

Reference to the question in the questionnaire	*Title of the documents*	*Date of the documents*	*Author(s) of the documents*	*Number of pages of the documents*
Question N°:	Background Report for Water Licence Renewal	August 2014	Cortney McCracken, Mike Yamada (P.Eng.)	15
Question N°:				
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