INAC, Nunavut District Office
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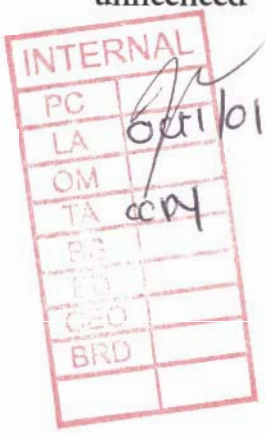
Your file Votre référence

Our file Notre référence
unlicenced



September 13, 2001.

Brian Fleming
Senior Administrative Officer
Municipality of Sanikiluaq
P.O. Box 150
Sanikiluaq, NU X0A 0A0

June 7, 2001 Municipal Water Use Inspection - Report

Firstly, I wish to thank Mosese Novalinga for the much appreciated time and assistance provided during the tour of the Municipality's water use and waste disposal facilities. Attached for your records is the Municipal Water Use Inspection Report pertaining to the June 7, 2001 inspection; given the relatively limited resources at its disposal, the Municipality appears to adequately manage its water use and waste disposal facilities. Nonetheless, the following considerations were noted:

- **Water supply:** No concerns were noted with the intake facility itself. However, it was related that a significant proportion of residents rely on alternate water supplies for their drinking water. Also, it was mentioned that the municipality is contemplating the adoption of bylaws which would be aimed at restricting access to Sanikiluaq Lake as the municipal drinking water source. This being said, the attached analytical results relating to a sample collected from the vicinity of the intake station (figure 1) reveal that the quality of the municipal drinking water is quite satisfactory. Indeed, concentrations of all tested parameters lie well within the levels recommended under the *Guidelines for Canadian Drinking Water Quality*, save for two slight exceptions: field pH value of 9.0 (versus the 6.5-8.5 aesthetic objective), and turbidity value of 1.5 Nephelometric Turbidity Unit (NTU) resting above the 1 NTU maximum acceptable concentration but below the 5 NTU aesthetic objective.

- **Sewage disposal:** Although some signs of erosion were observed in the truck discharge area, very little concerns were noted at the sewage disposal facility (figure 2). In fact, the combination of lagoon with retention berm (figure 3) and ample vegetation along the path of discharge (figure 4) seems to provide substantial treatment. As such, the attached analytical results indicate that the effluent is relatively benign. However, the concentration of ammonia within the sewage effluent notably exceeds *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life* (18 mg/L vs 2.2 mg/L).

- **Solid waste disposal:** The solid waste disposal facility covers a vast area (figure 5), and its perimeter is notably extended by windblown garbage (figure 6). Accordingly, it was suggested during the inspection that the municipality compact the wastepile and then confine the area with a fence so as to prevent windblown waste from entering waters; it may be possible to undertake this work in light of the capital funds reportedly identified for the municipal solid waste disposal facility . Although bulky wastes are set aside to the metal dump, additional segregation of waste could be undertaken. In this regards, it was suggested that a sealift container be used to store hazardous materials and thus minimise the chances of release of contaminants to the environment. Nevertheless, no runoff or leachate could be observed flowing from the solid waste disposal facility.

- **Non-compliance of Act:** The Municipality does not hold the Water licence it requires for its municipal water use and waste disposal. Though it is recognizes that a valid Water licence is a requirement under both the *Northwest Territories Waters Act* and the *Nunavut Land Claims Agreement*, the municipality has yet to submit and application to the Nunavut Water Board. Consequently, the Inspector is glad to hear that the municipality plans to apply shortly and points out that INAC and/or other implicated agencies can provide assistance.

Please feel free to contact me at (867) 975-4298 or lavalleep@inac.gc.ca should any questions/comments arise.

Sincerely,

Philippe Lavallée
Water Resources Officer
INAC, Nunavut District

c.c. - Nunavut Water Board, Gjoa Haven
- CG&T, Iqaluit (Doug Sitland)
- Environmental Health Officer, Rankin Inlet (Wanda Poirier)
- EC Environmental Protection, Yellowknife (Anne Wilson)

Indian and Northern Affairs Canada | Affaires Indiennes et du Nord Canada

MUNICIPAL WATER USE INSPECTION FORM

Date: 2001/06/07 **Licensee Rep.** (Name/Title): Mosese Novalinga Sr / Foreman

Licensee: Municipality of Sanikiluaq **Licence No.:** unlicenced

WATER SUPPLY

Source(s): Sanikiluaq Lake **Quantity used:** recorded @ truck delivery

Owner:/Operator: GN/Municipality

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Intake Facilities: A **Storage Structure:** NA **Treatment Systems:** A **Chemical Storage:** A

Flow Meas. Device: NA **Convey. Lines:** NA **Pumping Stations:** NA

Comments: Water intake station kept clean and tidy. Only one pump operating due to heat trace problems leading to freeze up last winter. Pump repair and intake screen replacement scheduled for later in the summer. Intake is not metered; water use is recorded through truck delivery. Chlorination in use.

WASTE DISPOSAL

Sewage: **Sewage Treatment System** (Prim./Sec/Ter.): primary; discharge overland to ocean

Natural Water Body: x **Continuous Discharge** (land or water):

Seasonal Discharge: x **Wetlands Treatment:** x **Trench:**

Solid Waste: **Owner/Operator:** GN/Municipality

Landfill: **Burn & Landfill:** x **Other:**

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Discharge Quality: sampled **Decant Structure:** A **Erosion:** A

Discharge Meas. Device: none **Dyke Inspection:** NA **Seepages:** A

Dams, Dykes: A **Freeboard:** NA **Spills:** none reported

Construction: NA **O&M Plan:** NA **A&R Plan:** NA

Periods of Discharge: A **Effluent Discharge Rate:** not measured

Comments: Berm erected in lagoon's decant area appears to increase retention time and treatment of effluent prior to discharge. Extensive vegetation noted along discharge path. Signs of erosion at the truck discharge station; beams have been installed to limit impact. The unfenced solid waste disposal facility sprawls a vast area. Limited segregation of bulky metal wastes was noted. The wastepile is burnt infrequently. No proper containment for hazardous materials was apparent. Waste oil is now burnt at the municipal garage's furnace. No runoff or leachate could be observed flowing from the solid waste disposal facility.

FUEL STORAGE

Owner/Operator:

Indicate: **A** - Acceptable **U** - Unacceptable **NA** - Not Applicable **NI** - Not Inspected

Berms & Liners: **Water within Berms:** **Evidence of Leaks:**

Drainage Pipes: **Pump Station & Catchment Berm:**

Pipeline Condition: **Not Applicable:** x **Condition of Tanks:**

SURVEILLANCE NETWORK PROGRAM (SNP)

Samples Collected **Hamlet:** none

INAC: drinking water @ lake intake, sewage discharge 15m from decant berm

Signs Posted **SNP:** not applicable **Warning:** to be installed @ Sanikiluaq lake

Records & Reporting: not applicable

Geotechnical Inspection: not applicable

Non-Compliance of Act or Licence: Community is unlicenced.

Philippe Lavallée

Inspector's Name **Inspector's Signature**

figure 1. Intake at Sanikiluaq Lake; 2001/06/07.

figure 2. Sewage lagoon, with truck dumping area in background; 2001/06/07.

figure 3. Bermed discharge area of the sewage lagoon; 2001/06/07.

figure 4. Path of discharge from the sewage lagoon; 2001/06/07.

figure 5. Solid waste disposal site; 2001/06/07.

figure 6. Perimeter of the solid waste disposal site; 2001/06/07.

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788
Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND District Office : Nunavut DIAND Operations *Attn:* Philippe Lavalllee

Sample ID: Senikilugg - Raw Water **Taiga Sample ID:** 211052

Client Project: **Sample Type:** water **Received Date:** 08-Jun-01

Location: Senikilugg **Sampling Date:** 07-Jun-01

Report Status: **Final** ***Approved by:***

Lab Section	Test Parameter	Result	Units	Detection Limit	Analysis Date
Major Ions	Chloride	58.1	mg/L	0.2	15-Jun-01
	Fluoride	0.03	mg/L	0.03	26-Jun-01
	Potassium	1.19	mg/L	0.03	14-Jun-01
	Sodium	33.0	mg/L	0.02	14-Jun-01
	Sulphate	8	mg/L	3	13-Jun-01
Microbiology	Coliforms, Fecal	<1	CFU/100mL	1	08-Jun-01
Nutrients	Ammonia as N	0.008	mg/L	0.005	15-Jun-01
	Biological Oxygen Demand	<2	mg/L	2	08-Jun-01
	Nitrate+Nitrite as N	<0.008	mg/L	0.008	14-Jun-01
Physicals	Colour	5		5	08-Jun-01
	Solids, Total Dissolved	202	mg/L	10	11-Jun-01
	Turbidity	1.5	NTU	0.1	08-Jun-01
Total Metals	Arsenic	<1.0	µg/L	1.0	19-Jun-01

Report Date: July 4, 2001

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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND District Office : Nunavut DIAND Operations *Attn:* Philippe Lavalllee

Sample ID: Senikilugg - Raw Water **Taiga Sample ID: 211052**

Total Metals	Cadmium	<0.3	µg/L	0.3	13-Jun-01
	Chromium	<3	µg/L	3	13-Jun-01
	Cobalt	<1	µg/L	1	13-Jun-01
	Copper	<2	µg/L	2	13-Jun-01
	Iron	100	µg/L	30	15-Jun-01
	Lead	<1	µg/L	1	13-Jun-01
	Manganese	7	µg/L	1	13-Jun-01
	Mercury	<0.01	µg/L	0.01	21-Jun-01
	Nickel	<1	µg/L	1	13-Jun-01
	Zinc	<10	µg/L	10	13-Jun-01

Field Data (01/06/07) **raw water**
Temperature: 11.5 °C
Conductivity: 312 µS
pH: 9.0 Time: 13:25

Report Date: July 4, 2001

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- CERTIFICATE OF ANALYSIS -

Prepared For: DIAND District Office : Nunavut DIAND Operations *Attn:* Philippe Lavalllee

Sample ID: Senikilugg - Sewage Discharge **Taiga Sample ID:** 211053

Client Project: **Sample Type:** sewage **Received Date:** 08-Jun-01

Location: Senikilugg **Sampling Date:** 07-Jun-01

Report Status: **Final** ***Approved by:***

Lab Section	Test Parameter	Result	Units	Detection Limit	Analysis Date	Data Qualifier
Microbiology	Coliforms, Fecal	600	CFU/100mL	1	08-Jun-01	
Nutrients	Ammonia as N	18.0	mg/L	0.005	15-Jun-01	
	Biological Oxygen Demand	18	mg/L	2	08-Jun-01	
	Nitrate+Nitrite as N	< 0.008	mg/L	0.008	14-Jun-01	
	Phosphorous, Total	4.28	mg/L	0.004	21-Jun-01	
Organic	Oil and Grease	1.1	mg/L	0.2	13-Jun-01	
	Phenols		µg/L		03-Jul-01	10
Physicals	Solids, Total Suspended	11	mg/L	3	11-Jun-01	

Data Qualifier Descriptions:

10 Analyst error, unable to repeat measurement

Field Data (01/06/07) lagoon
Temperature: 11.0 °C
Conductivity: 832 µS
pH: 7.7 Time: 13:55

Report Date: July 5, 2001

REPORT OF TOXICITY USING MICROTOX

COMPANY/LOCATION: **Sanikiluaq Sewage Discharge - 2001/06/07**

Sample Collected By: Philippe Lavallee

Date/Time Sampled: June 07 , 2001

Date/Time Received: N/A

Date/Time Test Start: June 15, 2001

Sample Type: Elutriate
Sampling Method: Grab

Method: ***Environment Canada Laboratories SOP#830.0 Revision 1, for Microtox Testing in Compliance with November 1992: Biological Test Method: Toxicity Test Using Luminescent Bacteria Photobacterium phosphoreum), November 1992, EPS 1/RM/24.***

RESULTS: **NON TOXIC at 45% Concentration**

TEST ORGANISMS:
Species: Vibrio fisheri (Photobacterium phosphoreum)
Test Apparatus: Model 500 Analyzer

TEST SUBSTANCE/CONDITIONS

pH of Sample: — (No pH adjustment)

Sample Appearance: Clear, no colour adjustment

Lot # of OAS: OSA007
(Osmotic Adjusting Solution)

Lot # of Reconstitution Solution: RSN099Y

Lot # of Diluent: DIL034L

TEST METHODS AND CONDITIONS

Test Start Date/Time: June 15, 2001 / 12:42 PM

Test Method: Basic 45% Test, 15 minute incubation.

QUALITY CONTROL

Reference Toxicant: Zinc Sulfate Standard

Analyst: Ron Bujold - EPB

Date of Test: June 15, 2001

Reagent Lot #: ACV022-2

IC_{50} - 15 minutes mg/L: 3.3 mg/L

IC_{50} Confidence Range: 2.3 to 5.0 mg/L

TEST ANALYST: Ron Bujold **INITIAL:** RB