

Level of training: N/A

- d. Recognized laboratory performing analysis of samples.

Name: Kavilliq Regional Health Board

Address: Government of Nunavut

Department of Health and Social Services

Kavilliq Region

PO 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.

## 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.

Regarding solid waste disposal, the community does not want a new site between the airport and the community because of prevailing winds.

The other concern of the community is the sewage lagoon. There is exfiltration from the lagoon to the ocean side that flows through the wetlands for additional treatment. There also appears to be exfiltration towards the community. The exfiltration from the lagoon as well as the lagoon water itself was tested and measured well below the Nunavut Water Board Guidelines.

## VIII. PUBLIC HEALTH

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

1. Date: January 18, 2002
2. Municipality: Whale Cove
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

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

The Solid waste disposal facility requires a fence to enclose the site. The site also requires an enclosed area for the storage of hazardous materials such as batteries etc.

### ***Monitoring Program***

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

☐ No ☒ Yes

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

- a. Briefly describe the sampling methodology.

Water Samples are taken from water truck and other locations in community once a month and sent to Rankin Inlet for analysis by EHO.

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

Not done by Dept. H+SS

- c. Who is responsible for sampling?

Name: Paul Voisey

Position: Settlement Maintainer  
Telephone #: 867-896-9305  
Fax #:  
Level of training:

- d. Recognized laboratory performing analysis of samples.

Name: Taiga Environmental Laboratory  
Address: 4601 52<sup>nd</sup> Ave. PO Box 1500  
Yellowknife, NT, Canada, X1A 2R3  
Telephone #: (867) 669-2788  
Fax #: (867) 669-2718

- 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: March 2002
2. Municipality: Whale Cove
3. Contact: Wade Lovell(Community Government and Transportation Representative)  
Telephone # 645-8100  
Fax # 645-8141
4. Population (according to most recent census results): 644 (1996)
5. Estimated growth rate over next 5 years: 3.18 %
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:

Prepared by: Ferguson Simek Clark  
Title: Whale Cove Sewage and Solid Waste Planning Study  
Completion Date: August 23, 2001

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

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:

### ***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:

Not Applicable

- b. Details of all retaining structures:

Not Applicable

- c. Details of the drainage basin, and existing and proposed drainage modifications: ☒

- d. Details of all decant, siphon mechanisms etc., 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:

Not Applicable

h. Leachate and groundwater collection systems; and control structures:

Not Applicable

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:

Not Applicable

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( $\text{m}^3/\text{day}$ ) and directions:

Not Applicable

f. The volume of seepage flow ( $\text{m}^3 / \text{day}$ ):

Not Applicable

g. The direction of each flow:

Drainage appears to flow WSW and NE from the sewage lagoon.

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, Engineers and Architects

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:

Water is obtained from Fish Lake. Fish Lake has a recharge volume for the lake of nearly 93,000 m<sup>3</sup> of water per year is available as, compared with the present annual consumption of 9,000 m<sup>3</sup>. Winter storage capacity of 97,000 m<sup>3</sup> was calculated based on an assumption that 50% of the total volume of the lake was occupied by ice cover.

2. Drainage Area:

What is the drainage area:

What is the average elevation of the drainage basin?

27.4 m to 0 m (drains to ocean)

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.)

A thin layer of organic material supports mosses and lichens along the rocky coast and low hills.

3. Channel characteristics:

Is the course of any channel changed?

☐ Yes ☒ No

If yes, describe measures to maintain streambed 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?

34.2 m<sup>3</sup>/day

2. Is water drawn from the source

☐ intermittently  
☒ continuously

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

Not Applicable

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)?

The lake has 93,000 m<sup>3</sup> per year of recharge

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

The water fluctuates less than 0.5 m per year.

### ***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?
- 194 000 m<sup>3</sup>      10.7 ha.
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:
- 1000 L/min
2. What is the capacity of the water storage facility:
- Winter recharge capacity of 97,000 m<sup>3</sup> (50% is covered by ice). The Hamlet stated in their water licence application that the storage capacity is 93,000 m<sup>3</sup>. This is actually the volume of recharge per year for the lake.
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.
- Water is treated through 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.
- 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:  
  
22 500 m<sup>3</sup> (Based on a surface area of 15 000 m<sup>2</sup> with a working depth of 1.5 m)
3. Based on current population projections, the facility will meet the needs of the community until the year:  
  
2016-2021
4. Average depth of the wastewater lagoon  
  
1.2 m.
5. What is the design freeboard:  
  
Not Applicable (Wastewater lagoon was previously a lake)
6. Indicate the retention time of the sewage while in the treatment facility days:  
  
657 days
7. Indicate the estimated rate of discharge of wastewater:  
  
34200 L/day
8. Indicate the location of the discharge point:  
  
See attached diagram "Whale Cove Drainage"
9. Is the discharge :

☐ seasonal  
☒ continuous

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

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

All year

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.

Ferguson Simek Clark performed a study for Public Works and Services on the possibility of making the lagoon berms impermeable. During the study, it was found that the existing semi-permeability of the lagoon berms provided an efficient treatment system and discharge system.

Include excerpt from MACA Capital Plan if available.

### ***Solid Waste Disposal***

1. Indicate the capacity of the disposal area:

40 000 m<sup>2</sup>

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

1 m (maximum depth of trenches)

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

2021

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?

None, changes have been made to the placement of the domestic waste trench from the shoreline of the solid waste facility.

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:

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.

Close out of the abandoned site, transferring solid waste to the active site, and spreading of fill cover. "No Dumping" signage will be put in place to discourage continued use.

The active site will be upgraded as follows:

- Clean up of waste lining the shore
- Construction of a fence around the municipal solid waste site
- Litter fence construction
- Burial of the honey bag pit
- Emplacement of a peizometer

A plan has not been included because the proposal is currently in tender.

Include excerpt from MACA Capital Plan if available.

***Other***

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

