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88.09.14

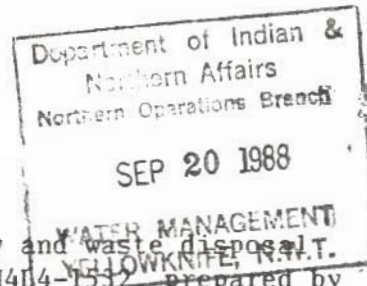
Hamlet of Cambridge Bay  
P. O. Box 16  
CAMBRIDGE BAY, N.W.T.  
XOE OCO

Your file: Votre référence

Our file: Notre référence

N4L4-1532

Attention: Ikey Evalik  
Secretary Manager



1532-<sup>insp</sup>  
1532  
IW  
WB  
MACA

Dear Mr. Evalik

I have enclosed a report on the water supply and waste disposal facilities in Cambridge Bay, Water Licence N4L4-1532, prepared by Kevin McDonnell, Water Resources Officer, Inuvik, following his inspection trip on July 15, 1988. The inspection was carried out under the authority of the Northern Inland Waters Act to check the Hamlet's compliance with the terms and conditions of the water licence, and to identify water use or waste disposal practices which may contravene the Act.

Care should be taken to operate the solid waste disposal site and sewage lagoon in an organized and tidy manner. It would be a good idea to install a concrete or gravel pad with discharge pipe at the lagoon to facilitate pumpout. This area should also be posted with a sign. A pit should be dug for the honeybags. Furthermore, attempts should be made to keep as much solid waste out of the water as possible. I do realize that local topography limits the suitability of a disposal site, however the close location of the lagoon/dumpsite to town requires that an effort be made to keep the area clean and tidy.

No other problems were noted and this is appreciated.

Yours truly

*Bonnie AK Heaton*  
for R. A. Cockney *11/10m*  
District Manager

cc: MACA, GNWT - Yellowknife  
Environmental Health Officer - Inuvik  
Water Resources - Yellowknife

KCM/bakh

Canada



INSPECTION REPORT  
HAMLET OF CAMBRIDGE BAY  
JULY 15, 1988

BY

KEVIN MCDONNELL  
INSPECTOR UNDER THE NORTHERN INLAND WATERS ACT  
NORTHERN AFFAIRS PROGRAM  
INDIAN AND NORTHERN AFFAIRS CANADA  
INUVIK, N.W.T.

Water Licence N4L4-1532

## CAMBRIDGE BAY MUNICIPAL INSPECTION

### Introduction

An inspection of the water supply and waste disposal facilities was conducted at Cambridge Bay on July 15, 1988. The Inspector was Kevin McDonnell, Water Resources Officer, Inuvik. Points of contact during the inspection were; Al Wilson, DPW Trades Foreman; Eddie Maniyogina, Acting Hamlet Foreman; George Kavanna, Hamlet foreman, and Ikey Evalik, Secretary Manager. There are 950 - 1,000 residents in 550 dwellings (approximate).

### A. Water Supply

Water is obtained from a lake southwest of the Hamlet, past the airport. Water is transported via underground pipeline from the pumphouse at the lake to the treatment house in the DPW yard in town. At the lake intake there were two buildings, one housing the boiler and one housing the pumping facilities.

Chlorination of the water at the treatment plant is done by an autofeeder system using commerical grade 12% sodium hypochlorite. Once per month the chlorine content is checked. DPW prefers to have the total chlorine content at 1.0 mg/l and free chlorine at 0.4 mg/l.

Water is stored in a 40,000 gallon reservoir tank for distribution by water trucks operated by the Hamlet. Water is delivered three times per week to residential units, and six times per week to larger establishments (government and commercial). Two 1,000 gallon trucks are used for water delivery, and a third truck is kept on standby. All units are metered, with the meters read monthly.

Water sampling for bacteria is done every four months by the Environmental Health Officer located in Inuvik. The last sample taken was in November, 1987 and the next one was to be taken in late July, 1988. Samples are analyzed for total and fecal coliforms and no counts had been observed in the November, 1987 sampling results. Sampling locations may include the reservoir tank, water trucks, Nursing Station, restaurant, school, six-plex, row housing, Victoria Apartments, etc. Usually about 9 - 12 samples are sent out for analysis.

Plans were to shut down the water treatment plant August 1, 1988 for an extensive cleaning. Water trucks would get their water from the pumphouse and manually chlorinate the water.

Water samples were collected from the tap on the line leading to the truck fill arm. Results are as follows:

|                           | <u>1532-1A</u> | <u>Maximum Acceptable Limit (2)</u> |
|---------------------------|----------------|-------------------------------------|
| Date:                     | July 15, 1988  |                                     |
| Time:                     | 1145 hours     |                                     |
| Air Temperature ( C): (1) | 17.5           |                                     |
| Water Temperature ( C):   | 13             |                                     |
| pH (units)                | 7.8            | 6.5 - 8.5                           |
| Conductivity (umho/cm)    | 340            |                                     |
| Turbidity                 | 0.3            | 5                                   |
| Colour                    | <5             | 15                                  |
| Suspended Solids          | 186            |                                     |
| Total Dissolved Solids    | <2             |                                     |
| Calcium                   | 23             |                                     |
| Magnesium                 | 17             |                                     |
| Total Hardness            | 130            |                                     |
| Total Alkalinity          | 115            |                                     |
| Sodium                    | 21             |                                     |
| Potassium                 | 1.7            |                                     |
| Chloride                  | 34             | 250                                 |
| Sulphate                  | 6.2            | 500                                 |
| Ammonia Nitrogen (N)      | 0.016          |                                     |
| Nitrate and Nitrite (N)   | <0.04          | 10                                  |
| Total Phosphorus (P)      | 0.006          |                                     |
| Cadmium (T, ug/l)         | 0.2            | 5                                   |
| Copper (T, ug/l)          | 30             | 1000                                |
| Iron (T, ug/l)            | 75             | 300                                 |
| Lead (T, ug/l)            | 1.2            | 50                                  |
| Mercury (T, ug/l)         | 0.22           | 1                                   |
| Mickel (T, ug/l)          | <1             |                                     |
| Zinc (T, ug/l)            | 32             | 5000                                |
| Chromium (T, ug/l)        | <1             | 50                                  |

(1) Results are in mg/l except as indicated.

(2) Table 2.4, Water Quality Objectives for Drinking Water Sources in Guidelines for Municipal Type Wastewater Discharges in the Northwest Territories Waterboard, 1981.

No problems were noted with the water quality.

#### B. Sewage Disposal

All except for four residential dwellings are on pumpout facilities. The Hamlet pumps out large establishments six times a week and residential units three times a week. Sewage is taken to a lagoon at the dumpsite. There was no pad for pumpout resulting in some erosion, and poor placement of pumpout discharge. Apparently in winter a truck had gone through the ice during pumpout.

The four units on honeybags are collected five days a week. The bags are taken to the lagoon/dumpsite.

Samples were taken of the sewage lagoon. The results are as follows:

Station 1532-2

|                         |               |
|-------------------------|---------------|
| Date:                   | July 15, 1988 |
| Time:                   | 1025 hours    |
| Air Temperature ( C):   | 17.5          |
| Water Temperature ( C): | 17.5          |
| pH                      | 7.9           |
| Suspended Solids        | 15            |
| Cadmium                 | 0.5           |
| Copper                  | 3.0           |
| Iron                    | 3000          |
| Lead                    | 7             |
| Mercury                 | 0.08          |
| Nickel                  | <1            |
| Zinc                    | 15            |
| Chromium                | <1            |

No problems were noted.

C. Solid Waste Disposal

Garbage is put into barrels for collection. The Hamlet collects the garbage twice or three times a week from residential units, and five days a week from larger establishment. Garbage at the dumpsite is burned daily and backfilled monthly. The solid bulky waste site is segregated from the domestic waste site.

The old dumpsite had been located on the east side of River Road, but as it was too close to the ocean, the dumpsite was moved to the west side of the road bordering the lagoon. There is poor drainage in the dump area with a fair amount of solid waste in the water. Any discharge that there is probably routes into the lagoon.

D. Fuel Storage

Fred H. Ross is the contractor handling the fuel facilities in Cambridge Bay. A new large fuel tank was being installed at the tank farm. The farm was bermed and no problems or spills were noted.

E. Posting

A sign was posted at the solid waste disposal site. No signs were posted at the water supply or sewage disposal area.

F. Records and Reporting

Water usage is metered. Truckloads of solid and sewage waste hauled are recorded.

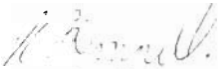
#### G. Other Concerns

Ikey Evalik mentioned a concern regarding the fate of the old townsite across from the bay and all the scrap metal piled there. The old townsite was visited, photographs taken and the issue was discussed with the INAC District Manager in Inuvik.

#### H. Official Onsite Discussion

No official onsite discussion, other than general questions and answers, was done.

The Inspector would like to thank his contacts for their cooperation.



Kevin McDonnell  
Water Resources Officer

KCM/bakh