MUNICIPAL INSPECTION REPORT

ON THE

HAMLET OF TUKTOYAKTUK

WATER LICENCE N7L4-0714

SEPTEMBER 24, 1990

PREPARED BY

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NORTHERN AFFAIRS PROGRAM

INDIAN AND NORTHERN AFFAIRS CANADA

INUVIK, N.W.T.

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Introduction

An inspection of the water supply and waste disposal facilities was conducted by Scott Gallupe, Water Resources Officer, Inuvik, on September 24, 1990.

There were no changes in the facilities and method of operation except for the necessary maintenance for both water supply and waste disposal.

Points of contact during the inspection were Rick Mills, Development Officer, and Bill Cockney, Acting Hamlet Foreman.

A. Water Supply

Water is obtained from Kudalak Lake and piped approximately 7.5 km to a large circular reservoir via an above ground 6" PVC pipeline. Northern Underwater Systems (N.U.S) are responsible for the line and intake maintenance as well as filling the reservoir once a year.

The filling of the reservoir usually takes about two weeks and is started at the end of July. This year N.U.S. fused all the couplings on the pipeline except for one at each end to allow for draining of the line. This year N.U.S. pumped 37,231 cubic metres into the reservoir. This figure is well below the allowable 150,000 cubic metres per year as stipulated in the Hamlet's Water Licence.

Apparently the pumphouse at Kudalak Lake has a new propane pump. The Inspector was unable to inspect this pumphouse due to poor weather conditions, however after discussion with N.U.S. there appeared to be no major problems.

The raw water is chlorinated and fluoridated at the pumphouse at the reservoir. There was a test kit for both chlorine and fluoride content which is checked weekly. The main line from the reservoir to reservoir pumphouse is backwashed one per month.

GNWT's Department of Public Works maintains the pumphouse and truck fill-up station at the reservoir. The Hamlet delivers the trucked water. Meters are installed to measure volumes delivered to the truck and the amount pumped into the reservoir. Records were being kept at the pumphouse. The reservoir pumphouse was neat and tidy.

Samples were taken at the reservoir pumphouse. Results will be forwarded when available.

B. Sewage Disposal

The majority of sewage is collected by truck and deposited at the lagoon located approximately 8 km southwest of the Hamlet.

The pump-out chute at the lagoon was in good shape except for a little erosion on the sides of the facility. There were no signs of garbage or honeybags being deposited there.

The Hamlet had commenced their annual decant of the lagoon at the time of inspection. There was a problem with the decant structure valve not closing tight. The estimated flow through the leaky decant structure is approximately 5 litres/minute. The Hamlet plans to do maintenance work on the decant structure this fall which will included stopping the leak, placing more sand bags on the berm and filling in the holes made by ground squirrels. A new gate will also be constructed just before the berm to prevent people from driving their vehicles over it. The existing gate had been vandalised.

There was an emergency decant of the lagoon on June 9, 1990. One theory for the high water levels is that the gate on the ocean side of the decant structure had been left open which allowed winter tides to back up into the lagoon then become entrapped when the structure became frozen. The other reasons for high levels could be that the lagoon was not decanted down enough in the fall or else there was an unusually high runoff this year. The latter one is thought to be highly unlikely because of the small drainage basin surrounding the lagoon. Therefore, it is thought to be an operational rather than a functional disorder with the sewage lagoon. This emergency decant has been thoroughly discussed with the Hamlet, MACA, Inuvik, and the Inspector. The proper procedures have been outlined to the Hamlet to prevent such an occurrence from happening again.

The lagoon was a good green colour and the odor was nominal. Samples were taken at SNP Station 714-2 previous to the decant on September 19, 1990 and at the time of inspection. The samples taken on September 19, 1990 indicated medium strength sewage. Refer to Appendix One. No problems noted with the decant. The results for samples taken at time of inspection will be forwarded when available.

There are approximately 12 residences that use honeybags which are picked up with the garbage and deposited at the honeybag pit at the solid waste disposal site. The honeybag pit was full of other garbage and was poorly identified.

The sewage lagoon was posted.

C. Solid Waste Disposal

The existing solid waste disposal site appeared disorganized and poorly managed. There was evidence of infrequent backfilling such as large amounts of windblown debris. There were no garbage segregation signs at the disposal site, however there was some segregation of bulky metal waste. The honeybag pit was overflowing with garbage and was poorly posted.

The Hamlet has a Tuktoyaktuk Landfill Operations Manual, February, 1988 prepared by Stanley Associates Engineering Ltd. The manual describes the construction of a berm with a waste metal core for the protection of the site against storm tide flooding.

There appeared to be very little progress towards the construction of the berm at time of inspection. There was an abundance of bulky metal waste at the existing and old disposal sites as well as a proposal from Canmar to dispose of some bulky metal waste.

The Hamlet has written to the Water Board outlining their plans to modify the landfill site with the construction of the berm and the Water Board has granted approval with the following conditions:

1. the material must be clean; and
2. should be covered

The solid waste disposal site was posted at the front gate.

D. Surveillance Network Program (SNP)

All SNP requirements have been met.

E. Posting

The water supply and waste disposal facilities were posted. The honeybag pit and the bulky metal waste disposal areas were not posted. It was also noted that there should be a sign at the old solid waste disposal site saying "No Dumping Here". There was garbage piling up at the front gate of the old solid waste disposal site.

G. Abandonment and Restoration

The old solid waste disposal site has been backfilled, contoured, planted and fenced. However, there remains a lot of bulky metal waste and some garbage left at the front gate to this site.

The success rate for the first planting of the reclaimed sold site was quite low. The Hamlet is currently experimenting with other seed packages.

H. Other Concerns

None noted.

I. Official Onsite Discussion

The terms and conditions of the Hamlet's Water Licence was discussed during the inspection with Rick Mills, Development Officer, and Bill Cockney, Acting Hamlet Foreman.

The Inspector would like to thank Mr. Mills and Mr. Cockney for their cooperation and assistance.

Scott Gallupe
Water Resources Officer

PRIORITY

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT APPENDIX ONE

WATER RESOURCES DIVISION, YELLOWKNIFE, NORTHWEST TERRITORIES

RESULTS OF LABORATORY ANALYSIS (Emergency decant)

LICENSEE/PROJECT: Hamlet of Tuktoyaktuk	LICENCE NUMBER: N7L4-0714	LOCATION: Decant Structure at Sewage Lagoon
DATE SAMPLED: June 11, 12, 1990	DATE RECEIVED: JUNE 13, 1990.	DATE COMPLETED: June 28/90

WC

STATION NUMBER	June 11/90 714-2	June 12/90 714-2				
LABORATORY NUMBER	900262	900263				
ANALYSIS REQUIRED	✓	✓	✓	✓	✓	✓
pH (units)	✓ 6.45	✓ 6.62				
Conductivity (µmho/cm)						
Dissolved Oxygen						
Turbidity (NTU)						
Colour (colour U.)						
Suspended Solids						
TDS, Residue						
Calcium						
Magnesium						
Tot. Hardness ($CaCO_3$)						
Tot. Alkalinity ($CaCO_3$)						
Sodium		✓ 52.				
Potassium		✓ 9.6				
Chloride		✓ 66.				
Sulphate						
Total Coliform (count/100 ml)	✓ 69×10^6	✓ 37×10^6				
Fecal Coli. (count/100 ml)	✓ 22×10^4	✓ 13×10^4				
Fecal Strep. (count/100 ml)						
Std. Plate Cnt. (cnt/ml)						
BOD_5	✓ 86	✓ 79				
Carbon, IC						
Carbon, TOC						
Ammonia Nitrogen (as N)						
Nitrate + Nitrite (as N)						
Total Kjeldahl N (as N)						
Phosphorus O-P (as P)						
Phosphorus Tot (as P)	✓ 4.2	✓ 4.1				
Silica Reac. (as SiO_2)						
Total Cyanide						
Available Cyanide						
Sulphide						
Oil & Grease						
Phenols						
Arsenic T (µg/L)						
Arsenic D (µg/L)						
Cadmium T (µg/L)						
Cadmium D (µg/L)						
Copper T (µg/L)						
Copper D (µg/L)						
Iron T (µg/L)						
Iron D (µg/L)						
Lead T (µg/L)						
Lead D (µg/L)						
Mercury T (µg/L)						
Mercury D (µg/L)						
Nickel T (µg/L)						
Nickel D (µg/L)						
Zinc T (µg/L)						
Zinc D (µg/L)						
Chromium T (µg/L)						
Chromium D (µg/L)						

Results are expressed in mg/L, except as indicated. T and D refer to