

Nicickousemenecaning First Nation (Band No. 129)

Date of Visit: March 14, 2001

By Keith Lusignan (OCWA), P. Zachariasz (Technical Service Advisor)

Site Address: P.O. Box 68

Fort Frances, ON P9A 3M5

Phone No.: 807-481-2536

Fax No.: 807-481-2511

Tribal Council Affiliation: Pwi-di-goo-zing Ne-yaa-zhing Tribal Council

Operator: Randy Allen

Location: The Nicickousemenecaning First Nation community is located approximately 40 km east of Fort Frances on Hwy. 11

Population: 119 people in the community (November 2000 - INAC)

No. of Units: 33 housing units (CAIS)

1.0 Description of the Community Water Supply

Based on the CAIS report, water to the houses in the Nicickousemenecaning community is treated as follows:

- 112 people use piped water
- 7 people have other services

- 31 houses are serviced by a communal water system; and
- 2 houses have other services.

2.0 Description of the Community Sewage System

Based on the CAIS report, sewage from the houses in the Nicickousemenecaning community is treated as follows:

- 119 people use septic tanks

- 33 houses are serviced by individual septic tanks.

3.0 Overall Assessment for Communal Water Treatment Supply

The questionnaire developed by PWGSC required OCWA to undertake a risk assessment of the Water Source, Design, Operation, Reporting, and Operators. To properly assess these areas, a revisit to the water treatment facilities would be required.

OCWA was requested to undertake the evaluation without a visit to the site. With the available information, OCWA has undertaken the requested assessment of the facilities.

The ranking system used is as follows:

- 0 = Not enough information to assess
- 1-4 = Low Risk
- 5-7 = Medium Risk
- 8-10 = High Risk

For more detailed information on the Risk Assessment used see the Terms of Reference, Appendix B.

SECTION Water	SECTION RANKING Water	RISK Water
A. Water Source		
Biological	0	
Chemical	0	
Physical	0	
Overall Ranking for Water Source	0	No data available
B. Design		
Biological	2	No exceedances
Chemical	10	Turbidity, THMs exceedances
Physical	6	High color, low hardness, alkalinity
Risk to Public Health	10	Turbidity, THMs, boil water advisories
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	10	
C. Operations		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Not inspected
Overall Ranking for Operations	8	No backup power
D. Reporting		
Ranking for Laboratories and Testing	1	Regular bacteriological and chemical testing
Ranking for Boil Water Advisories	10	More than one boil water advisory
Overall Ranking for Reporting	6	

SECTION Water	SECTION RANKING Water	RISK Water
E. Operators		
Overall Ranking for Operators	4	Some training and confidence
F. Statistical Data		
Overall Ranking for Individual Wells	0	
Overall Ranking for the System	10	High Risk

4.0 Communal Water Treatment Plant (31 houses)

4.1 Water Source

The raw water is drawn from Rainy River.

4.2 Design

The Nicickousemenecaning community water is supplied by two low lift pumps and an intake from Rainy Lake. The treatment plant was constructed in 1984 consists of two activated carbon filters, two rapid sand filters and a chlorinator for disinfection with onsite water storage and two high lift pumps to a distribution system.

The following table summarizes the treated water chemical exceedance data available from Health Canada:

Date	Location	Exceedances	Result	GCDWQ Limit
June 13, 2000	Treated Surface Supply	Colour	35 TCU	15 TCU (AO)
		Hardness	14 mg/L	80 to 100 mg/L (OG)
		Alkalinity	14 mg/L	30 to 500 mg/L (AO)
		Dissolved Organic Carbon	9 mg/L	5 mg/L (AO)
Oct. 4, 2001	Water Treatment Plant	Hardness	14 mg/L	80 to 100 mg/L (OG)
		Turbidity	2.69 NTU	1 NTU (HL)
		Colour	28.5 TCU	15 TCU (AO)
		THM	0.11 mg/L	0.1 mg/L (HL)
		Alkalinity	13 mg/L	30 to 500 mg/L (AO)

AO - aesthetic objective; OG - operational guideline HL - health limit

The rated design data was not available. Plant ventilation, office/filing laboratory and workshop areas are all inadequate.

There is no diesel generator to provide backup power and subsequently power failures have occurred resulting in disruption in service. There is no diesel-operated pump for fire protection.

The operator flushes the hydrants twice a year. There is an annual main valve operating and maintenance program for the water distribution system. Emergency spare parts are available on site. Technical trades people are available with a response time of one half hour.

4.3 Operations

The disinfection equipment is functional. Sodium hypochlorite has been on site for one month and there is sufficient test reagent available with sufficient shelf life. Potassium permanganate is used in the process. Chemicals are not properly stored. There is no on line chlorine analyzer.

There are as-built drawings, and operating and maintenance manuals on site.

There is a list of technicians and trades people. The average response is one half-hour.

4.4 Reporting

Health Canada conducts bacteriological tests twice per month. The results are kept at the Band Office and the Health Canada office on Agency 1 land.

The following table summarizes the bacteriological data available from Health Canada:

Period	Frequency	Regularity	Exceedances
99/10/08 to 2001/10/04	2 to 20 times per month from different locations	<ul style="list-style-type: none">▪ 2 months missing in 1999▪ 1 month missing in 2000▪ 1 month missing in 2001	<ul style="list-style-type: none">▪ No exceedances in 128 samples

The chlorine residual and water turbidity are checked daily. There is no colilert unit and incubator. Turbidity has exceeded recommended readings.

A chemical analysis is performed once a year. More than one boil water advisory has been issued for the community in the last two years.

4.5 Operators

s.19(1)

Randy Allen is responsible for operating the water treatment plant and water distribution system. Bob Calder is the backup operator. [REDACTED]. Bob only has on the job training, no formal instruction. The filter manufacturer has conducted some on site training for both operators.

The operator has received training in the following areas: wastewater, surface water and confined spaces. Contractors and advisory services provided the instructions.

Recommended courses include laboratory procedures, electrical, and water treatment.

5.0 Deficiencies in the Communal Water Supply

1. Several safety hazards/concerns were noted including no eyewash unit by the chemical work area, and there is no safety equipment such as fall arestor or tripod.
2. The plant does not have sufficient ventilation.
3. There is no diesel pump or reservoir capacity for fire protection.
4. The water treatment plant does not have a backup power supply and service disruptions have occurred because of power failures.
6. A spare chlorine pump needs to be purchased and kept on site.
7. The plant has no storage/office/lab/workshop area.
8. Turbidity has exceeded GCDWQ. Also there is no on-line chlorine analyzer or colilert or incubator in the plant.

9. THMs have slightly exceeded the GCDWQ in 2001.
10. There have been more than one boil water advisories issued on the communal water system
s.19(1)
11. The operator has received some training to run the facilities.

6.0 Recommendations

- Investigate previous boil water advisories to ensure source of contamination is being addressed adequately.
- Investigate reasons for turbidity and THM exceedances.
- Purchase eyewash system for operator safety.
- Implement a training program that can lead to certification of the operator.
- Implement a regular sampling program at the water treatment plant.
- Store chemicals according to MOE guidelines.
- Consider purchasing backup power generator.
- Review plant ventilation.
- Purchase an on-line chlorine residual analyzer.
- Develop a comprehensive contingency plan to address operational problems, breakdowns, vacations and illnesses and main breaks and boil water advisories.

7.0 Plant Classification

Based upon the Terms of Reference – Appendix I – Plant Classification Guideline developed by Public Works and Government Services Canada and with discussions with the Ontario Ministry of the Environment Classification Group, OCWA classified this plant as follows:

Water Treatment Facility - Class II

8.0 Overall Community Risk Assessment

Water Category – High Risk

- **High Risk because of the following:**
 - More than one boil water advisory has been issued in the past two years; and
 - Turbidity and THM exceedances of GCDWQ have been recorded.

Note: Information within this report is based on discussions with the plant operator and a quick visual walks through of the facilities. No detailed review was undertaken by OCWA.