Ebametoong (Fort Hope) First Nation (Band No. 183)

Date of Visit: February 28, 2001
By Roger Beauvais (OCWA)
Site Address P.O Box 70
Eabamet, ON P0T 1L0
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Tribal Council Affiliation: Matawa First Nations Management Inc.
Operators: Tim Nate, Susan Waboose, Simon Monias
Location: The Ebametoong First Nation community is located 220 km northwest of Geraldton and 385 km northeast of Thunder Bay
Population: 1090 people in the community (November 2000 – INAC)
No. of Units: 222 houses in the community (CAIS)

1.0 Description of the Community Water Supply

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

- 1041 people use piped water
- 49 people have no services

- 212 houses are serviced by a communal water system; and
- 10 houses have no services.

2.0 Description of the Community Sewage Facilities

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

- 1041 people use piped sewage
- 49 people have no services

- 212 houses are serviced by a communal sewage system; and
- 10 houses have no services.

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	No lab data available
Chemical	1	No exceedances
Physical	6	High total organic carbon and colour
Overall Ranking for Water Source	5	
B. Design		
Biological	1	No exceedances
Chemical	10	High THMs
Physical	6	High colour
Risk to Public Health	10	THMs, four boil water advisories
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	8	Inadequate safety equipment
C. Operations		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Unknown
Overall Ranking for Operations	5	No as-built drawings
D. Reporting		
Ranking for Laboratories and Testing	2	Biweekly colilert tests by operator, annual chemical analyses by Health Canada
Ranking for Boil Water Advisories	10	Four boil water advisories
Overall Ranking for Reporting	2	

SECTION Water	**SECTION RANKING Water**	**RISK Water**
E. Operators		
Overall Ranking for Operators	5	Trained and confident
F. Statistical Data		
Overall Ranking for Individual Wells	0	No data
Overall Ranking for the System	8	High Risk

4.0 Overall Assessment for Communal Sewage Treatment Facilities

The questionnaire developed by PWGSC required OCWA to undertake a risk assessment of the Effluent Receiver, Design, Operation, Reporting, and Operators. To properly assess these areas, a revisit to the sewage treatment facility 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 Sewage	SECTION RANKING Sewage	RISK Sewage
A. Effluent Receiver		
Overall Ranking for Effluent Receiver	1	No intake nearby
B. Design		
Quality of Treated Effluent	1	One sample result meet all guidelines
Ranking of Design of Sewage Plant	8	Leaking problem from cell to cell, undersized forcemain causes basement flooding
Ranking of Concerns and Hazards within the Plant	0	
Condition of Laboratory Equipment	0	
Overall Ranking for Design	8	
C. Operations		
Ranking for Emergency Plan	0	
Overall Ranking for Operations	6	No as-builts, pumping station pump not routinely maintained
D. Reporting		
Overall Ranking for Reporting	8	Basement flooding
E. Operators		
Overall Ranking for Operators	2	Not certified but confident
F. Statistical Data		
Overall Ranking for Individual Septic Tanks	0	
Overall Ranking for the Systems	8	High Risk

5.0 Communal Water Treatment Supply (212 houses)

5.1 Water Source

The raw water source is Eabamet Lake.

The following table summarizes the treated water data available from Health Canada, which does not meet GCDWQ:

Date	Exceedances	Result	GCDWQ limit	Notes
Feb. 12, 2001	Colour	66 TCU	15 TCU (AO)	Turbidity and pH were expired upon receipt of the sample
	Total Organic Carbon	14.1 mg/L	5.0 mg/L (AO)	
	Hardness	63 mg/L	80 to 100 mg/L (OG)	

AO = aesthetic objective, OG = operational guideline

5.2 Design

The community is serviced by a water treatment plant constructed in 1992. The treatment process has pressure filters with disinfection, an on-site 370.5-m^3 water reservoirs, and pumps water to a distribution system. The rated design capacity for the system is 13.05 L/s.

The following table summarizes the treated water data available from Health Canada, which does not meet GCDWQ:

Sample Date	Sample Received	Location	Exceedances	Result	GCDWQ limit	Notes
Feb. 12, 2001	Feb. 16, 2001	Water Plant	Colour	58 TCU	15 TCU (AO)	Turbidity and pH were expired upon receipt of the sample
			Total Organic Carbon	14.3 mg/L	5.0 mg/L (AO)	
			THMs	0.167 mg/L	0.1 mg/L	
			Hardness	64 mg/L	80 to 100 mg/L (OG)	
Oct. 10, 2001	Oct. 15, 2001	Water Plant	Colour	34 TCU	15 TCU (AO)	Turbidity and pH were expired upon receipt of the sample
			THMs	0.174 mg/L	0.1 mg/L	
			Hardness	54 mg/L	80 to 100 mg/L (OG)	

AO = aesthetic objective, OG = operational guideline

The plant has ventilation and a diesel operated pump for fire protection. A generator is available to supply back up power to the water treatment plant in case of power failure. There is no confined space entry safety equipment. There is also adequate laboratory and office spaces, but no maintenance area.

5.3 Operations

The system is disinfected with sodium hypochlorite, which is delivered to the site four times a year. There is no online chlorine residual analyzer, but the residual on the system is checked daily by the operator. The chemicals are not stored in an adequate area and were frozen on the day of the OCWA visit. There is a colilert unit available and being used at the plant. The samples are transported off-site by Health Canada on a weekly basis. All operations and maintenance manuals are available, but no as-built drawings. A hydrant-flushing program is in place on the distribution system.

If a breakdown in equipment occurs, it takes an average of one week to get a qualified tradesperson to this location. A re-occurring problem with the system is that chlorine residuals tend to drop off. The OCWA inspector noted that a better circulation of chlorine in the system would prevent this.

5.4 Reporting

The operators take bacteriological samples with the colilert unit on a bi-weekly basis. The results are kept at the plant. There have been no disease or health related outbreaks in the past two years. However, there have been four boil water advisories in the past, which were issued by the community Health Officer. A total chemical analysis of the treated water is conducted annually. Turbidity of treated water is checked daily.

The following bacteriological data was available from Health Canada:

- On August 15, 2001, 14 colilert samples were taken with no exceedances.

5.5 Operators

Tim Nate (primary operator) and Susan Waboose (assistant operator) operate both the water and sewage treatment plants. Simon Monias (the third operator) [redacted] **s.19(1)**

The operators could use some training in basic water and wastewater, electrical, and instrument and calibration.

6.0 Deficiencies in the Communal Water Supply

1. The water plant is missing confined space entry safety equipment.
2. There is also an adequate laboratory and office but no maintenance area.
3. There is no online chlorine residual analyzer but the operator checks the residual on the system daily.
4. The chemical is not stored in an adequate area and was frozen on the day of the OCWA visit.
5. If a breakdown in equipment occurs, it takes on average one week to get a qualified tradesperson to this location.
6. A re-occurring problem with the system is that chlorine residuals tend to drop off.
7. THMs in treated water are above the GCDWQ.
8. Colour in treated water is significantly above the GCDWQ.

7.0 Communal Sewage Treatment Facilities (212 houses)

7.1 Effluent Receiver

The effluent is discharged to a creek/marsh area.

7.2 Design

The sewage system in the Ebametoong community was built in 1995 and is made up of a lagoon receiving effluent from the sewer collection system with three pumping stations. The pumping stations have adequate ventilation. There is back up power available in case of power failure. There is no safety equipment on site. There is no space available for a laboratory, office or maintenance area.

One treated effluent result is available from Health Canada.
- October 28, 1999, sample met all Federal Guideline.

A letter dated November 6, 2000 from Simon Moonias, one of the operators, addressed to the Chief and Council, alerts to a leaking problem from cell #2 to cell #1 which needs to be repaired.

7.3 Operations

There are no other chemicals used during the process.

There are no operations and maintenance manuals or as-built drawings on site.

The sewage pumping station wet wells are cleaned in the spring and fall. There are emergency spare parts available, but technicians take up to a week to get to this community. The lagoon discharges to a creek/marsh area annually.

7.4 Reporting

Annual effluent tests and results are conducted and kept by Health Canada. No improper discharges or sewage back ups have occurred, but some basements have flooded because the forcemain on the system is too small.

7.5 Operators

Tim Nate (primary operator) and Susan Waboose (assistant operator) operate both the water and sewage treatment plants. Simon Monias (the third operator) [redacted] s.19(1)

The operators could use some training in basic water and wastewater, electrical, and instrument and calibration.

8.0 Deficiencies in the Community Sewage Treatment Facilities

1. There is no safety equipment on site for the sewage treatment plant. There is not space available for a laboratory, office or maintenance areas.

2. There are no operations and maintenance manuals and as-built drawing on site.

3. There are emergency spare parts available, but technicians take up to a week to get to this community.

4. Undersized forcemain has caused basement flooding.

5. Leaking from cell #1 to cell #2 needs repair.

9.0 Recommendations

- Investigate boil water advisories confirmed by Health Canada to ensure the source of contamination is being addressed adequately.
- Address high THMs in treated water.
- Consider addressing high colour in treated water.
- Implement a training program that can lead to operator certification.
- Implement a regular water sampling program.
- Purchase necessary safety equipment.
- Address chemical storage issues.
- Develop a contingency plan in case of emergencies for the complete water supply system.
- Purchase an on-line chlorine residual analyzer.
- Obtain as-built drawings for the plant.
- Address chlorine residual drop off problem.
- Investigate and resolve basement-flooding issue.
- Consider use of disinfection in sewage treatment process.
- Repair leak from cell #1 to cell #2.
- Investigate options to remedy basement flooding from undersized forcemain.

10.0 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 these plants as follows:

Water Treatment Facility - Class I
Sewage Treatment Facility - Class I

11.0 Overall Community Risk Assessment

Water Category – High Risk
- **High Risk because of the following:**
  - Address boil water advisories confirmed by Health Canada; and
  - Address high THMs in treated water.

Sewage Category – High Risk
- **High Risk because of the following:**
  - Address basement flooding due to undersized forcemain

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