Poplar Hill First Nation (Band No. 238)

Date of Visit: March 6, 2001
Cam McIvor
Site Address: P.O. Box 5004
Red Lake, ON P0V 2M0
Phone No.: 807-772-8838 **Fax No.:** 807-772-8876
Tribal Council Affiliation: Keewaytinook Okimakinak Tribal Council (KOTC)
Operators: Alvin Owen, Ennis Strang, Danny Owen
Location: The Poplar Hill First Nation community is located approximately 120 km north of Red Lake
Population: 369 people in the community (November 2000 - INAC)
No. of Units: 114 housing units (CAIS)

1.0 Description of the Community Water Supply

Based on the CAIS report, and information supplied to OCWA, water to the houses in the Poplar Hill community is treated as follows:

- 81 people use piped water
- 288 people have tanks with trucked water

- 25 houses are serviced by a communal water system; and
- 89 houses are serviced by water tanks with trucked water.

2.0 Description of the Community Sewage Facilities

Based on the CAIS report, and information supplied to OCWA, sewage from the houses in the Poplar Hill community is treated as follows:

- 81 people use piped sewage
- 81 people have holding tanks with trucked sewage
- 207 people have no services

- 25 houses are serviced by a communal sewage treatment system;
- 25 houses are on holding tanks with trucked sewage; and
- 64 houses are designated 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	
Chemical	0	
Physical	0	
Overall Ranking for Water Source	0	No lab data available
B. Design		
Biological	0	No lab data available
Chemical	8	High THMs, aluminum
Physical	6	Low alkalinity, hardness; high total organic carbon; yellow in appearance.
Risk to Public Health	8	High THMs, no boil water advisory
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	6	
C. Operations		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Unknown
Overall Ranking for Operations	5	No valve maintenance program; safety concern noted
D. Reporting		
Ranking for Laboratories and Testing	4	No off-site bacteriological testing
Ranking for Boil Water Advisories	1	No boil water advisories reported
Overall Ranking for Reporting	3	

SECTION Water	SECTION RANKING Water	RISK Water
E. Operators		
Overall Ranking for Operators	2	Not certified but trained and confident
F. Statistical Data		
Overall Ranking for Individual Wells	0	No data
Overall Ranking for the System	5	Medium 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 data available
B. Design		
Quality of Treated Effluent	0	No data
Ranking of Design of Sewage Plant	1	Meets requirements
Ranking of Concerns and Hazards within the Plant	1	
Condition of Laboratory Equipment	0	
Overall Ranking for Design	1	
C. Operations		
Ranking for Emergency Plan	0	
Overall Ranking for Operations	1	
D. Reporting		
Overall Ranking for Reporting	7	Chlorine residual is only tested. No testing for BOD, TSS, ptt
E. Operators		
Overall Ranking for Operators	2	Not certified but trained and confident
F. Statistical Data		
Overall Ranking for Individual Septic Tanks	0	
Overall Ranking for the Systems	7	Medium Risk

5.0 Communal Water Treatment Supply (25 houses)

5.1 Water Source

The raw water source is drawn from Berens River.

5.2 Design

The system is gravity fed from the Berens River to a small pump station. Raw water is pumped through a micro filtration ZeeWeed Zenon treatment process and pumped to the distribution system. There is a reservoir on site with a capacity of $300m^3$. Their rated design capacity of the treatment system is 2.7 litres/sec. The facility is a Class III system.

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. 28, 2001	Mar. 5, 2001	Nursing Station	Total Organic Carbon	5.3 mg/L	5.0 mg/L (AO)	Sample appearance was clear and slightly yellow.
			THMs	0.148 mg/L	0.10 mg/L	
			Aluminum	0.232 mg/L	0.10 mg/L (OG)	
			Hardness	38 mg/L	80 to 100 mg/L (OG)	
			Alkalinity	20 mg/L	30-50 mg/L (OG)	

AO = aesthetic objective, OG = operational guideline

There is an adequate designated chemical storage area. The facility has electric high flow fire pumps powered by a backup diesel generator. There is adequate safety equipment on site. There are adequate designated laboratory, office/filing and workshop areas in the plant.

There are some safety hazards in the plant including the need for a new railing at the top of the ZeeWeed platform.

The water and sewage facilities are on the same site.

5.3 Operations

Sodium hypochlorite is used for disinfection and the disinfection equipment is functional. There is a sufficient supply of the disinfectant on site.

There is an on-line chlorine residual analyzer. The operator checks the chlorine residual once per day. Other chemicals used in the treatment process include liquid caustic soda, alum and citrus acid. The chemicals are stored properly.

The facility has a colilert unit available but the operators do not sue it because they require more training on its use.

There are operation and maintenance manuals for the water treatment plant and as-built drawings on site.

There is an annual hydrant flushing and maintenance program in place. There is no annual main valve operating/maintenance program in place. Emergency spare parts are available on site and there is a contact list of technicians/trades people available. The response time of technicians/trades people is same day service.

5.4 Reporting

The operators of the water treatment plant take chlorine samples daily. There are no bacteriological samples sent off site. The sample results are kept at the plant and the Administration Office. No bacteriological test results were available from Health Canada.

No boil water advisories have been issued. Turbidity of treated water is recorded.

Sampling for all chemical substances of treated water is conducted once/year.

5.5 Operators

There are three operators qualified and available to run both facilities. Alvin Owen, Ennis Strang, and Danny Owen were listed as operators plus another part time operator is also available. **s.19(1)**

6.0 Deficiencies in the Communal Water Supply

1. There is no valve maintenance program.
2. The safety equipment is kept in different areas of the community and not centrally at the plant.
3. A new railing is needed on the ZeeWeed platform.
4. Colilert unit is available but not used due to lack of training.
5. Bacteriological tests are not being sent to an offsite lab.
6. High THMs, aluminum, total organic carbon exceed GCDWQ limits in the February 28, 2001 chemical analysis.

7.0 Communal Sewage Treatment Facilities (10 houses)

7.1 Effluent Receiver

The effluent is discharged to the Berens River.

7.2 Design

The Poplar Hill sewage facilities were built in 1999 and consists of a sewage (by gravity) collection system, and an RBC unit with aeration.

The plant is a Class II facility. There is adequate ventilation and chemical storage area. There is backup power run weekly but there is no safety equipment. There are laboratories, office and workshop areas.

There were no safety hazards noted.

7.3 Operations

Hypochlorite is used for disinfection and is functioning. There was sufficient chemical available and the chemicals were stored properly.

There are operation and maintenance manuals and as built drawings on site. The operators reports that there have been no improper discharges in the last two years and no reoccurring operational problems.

7.4 Reporting

The operator conducts daily effluent tests for chlorine residual. No tests are taken for Biological Oxygen Demand (BOD), Suspended Solids (SS) or pH. The results are kept in the Band Office.

No complaints of odour were recorded. There have been no disease outbreaks in the last two years and no improper discharges.

7.5 Operators

There are three operators qualified and available to run both facilities. Alvin Owen, Ennis Strang, and Danny Owen were listed as operators plus another part time operator is also available. s.19(1)

8.0 Deficiencies in the Communal Sewage Treatment Facilities

1. There is no safety equipment.

9.0 Recommendations

- Implement a training program that can lead to operator certification.
- Keep safety equipment at one location.
- Install new railing on top of the ZeeWeed platform.
- Train operators to use colilert unit and ensure bacteriological testing is conducted regularly.
- Establish a protocol for taking water samples at the water treatment, including raw water.
- Monitor THM and aluminum levels to ensure they do so exceed GCDWQ.
- Obtain operating and maintain manuals and as-built drawings.
- Implement a value maintenance program.

10.0 Plant Classification

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

Water Treatment Facility - Class III
Sewage Treatment Facility - Class II

11.0 Overall Community Risk Assessment

Water Category – Medium Risk

- **Medium Risk because of the following:**
  - Potential high THM problem in the treated water.

Sewage Category – Medium Risk

- **Medium Risk because of the following**:
  - No effluent testing.

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