

Thessalon First Nation (Band No. 202)

Date of Visit: March 5, 2001

By John McGhee (OCWA)

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Tribal Council Affiliation: North Shore Tribal Council

Operator: Victor Wabigwan

Location: The Thessalon First Nation community is located approximately 65 km west of Blind River on Hwy. 17

Population: 81 people in the community (November 2000 - INAC)

No. of Units: 35 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 Thessalon community is treated as follows:

- 79 people are serviced by a communal well system; and
- 2 people are not identified in CAIS.

- 34 houses are serviced by a communal well system; and
- 1 house is not identified in CAIS.

2.0 Description of the Community Sewage Facilities

Based on information supplied to OCWA, sewage from the houses in the Thessalon community is treated as follows:

- 81 people are serviced by individual septic tanks.
- 35 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	
B. Design		
Biological	7	21 exceedances out of 177 samples (12%)
Chemical	6	
Physical	5	Hardness exceedances
Risk to Public Health	9	No disinfection
Condition of Laboratory Equipment	0	
Overall Ranking for Design	10	High Risk
C. Operations		
Reservoir Cleanliness	0	
Emergency Plan	0	
Overall Ranking for Operations	6	No O & M manuals, as-built drawings, or disinfection
D. Reporting		
Ranking for Laboratories and Testing	3	Regular testing conducted
Ranking for Boil Water Advisories	10	Boil Water Advisory in effect
Overall Ranking for Reporting	8	

SECTION Water	SECTION RANKING Water	RISK Water
E. Operators		
Overall Ranking for Operators	9	No certification or training, and does not appear confident
F. Statistical Data		
Overall Ranking for Individual Wells	0	
Overall Ranking for the System	8	High Risk

4.0 Communal Water Supply (34 houses)

4.1 Water Source

The community's raw water is from groundwater in two wells.

4.2 Design

The community is serviced with a water system consisting of two wells located in the public works yard. Only one well is hooked up to a well pump which pumps to two pressure tanks located in the back of the works garage of the fire hall.

The following table summarizes the exceedances for treated water available from Health Canada:

Date	Exceedance	Result	GCDWQ Limit
Jan. 20, 1999	Hardness	65 mg/L	80 – 100 mg/L (OG)
	Phenol	0.002 mg/L	0.005 mg/L (MAC); 0.001 mg/L (AO)
Aug. 8, 2000	Hardness	67 mg/L	80 – 100 mg/L (OG)
	Phenol	<0.002 mg/L	0.005 mg/L (MAC); 0.001 mg/L (AO)
Sept. 27, 2001	Hardness	63 mg/L	80 – 100 mg/L (OG)

AO – aesthetic objective; OG – operational guideline; MAC – maximum acceptable concentration

4.3 Operations

No disinfection is used. The community has been on a boil water advisory since September 2000 (based on a board notice). According to the operator, the boil water advisory was issued in spring 2000.

Thessalon Township provides the backup power for the plant. There is no safety equipment at the plant and no designated lab, office or workshop areas.

There are no operating and maintenance manuals for plant equipment on site and no as-built drawings. Emergency repair parts are not available. There is no contact listing of technicians/trades people available but the response for such personnel is 'immediate'.

There is no annual hydrant flushing or maintenance program or main valve operating/maintenance program, but a contractor is hired to perform this function as needed.

In the last two years, service disruptions have been experienced due to power failures. Other re-occurring operational problems include low-pressure problems in the distribution system.

4.4 Reporting

Health Canada and the Band conduct bacteriological testing every month on the communal water system. The Band sends the samples to a private lab in Sault Ste. Marie. The results are kept in the Band Office and the Health Clinic.

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

Period	Frequency	Regularity	Total Coliform Exceedances
99/10/13 to 01/06/11	1 – 5 times per month	<ul style="list-style-type: none"> ▪ Months missing 2000: Jan., Mar., May, Oct. ▪ Months missing 2001: Jan., Feb., Apr., May. 	<ul style="list-style-type: none"> ▪ 2000/08/17 - Residence ▪ 2000/08/22 - Residence ▪ 2000/08/22 - Residence ▪ 2000/08/28 - Residence ▪ 2000/08/28 - Residence ▪ 2000/08/28 - Residence ▪ 2000/08/28 - Residence ▪ 2000/08/30 - Residence ▪ 2000/09/08 - Residence ▪ 2000/09/18 - Health Center ▪ 2000/09/18 - Residence ▪ 2000/09/18 - Residence ▪ 2000/09/18 - Residence ▪ 2000/09/18 - Residence ▪ 2000/09/18 - Residence ▪ 2000/09/21 - Residence ▪ 2000/11/09 - Residence ▪ 2000/11/27 - Residence ▪ 2000/12/14 - Residence ▪ 2001/06/11 - Residence

OCWA inspector noticed the community has been on boil water advisory since September 2000. According to the operator, the boil water advisory was issue sometime in Spring 2000.

The turbidity of the treated water is not recorded. A chemical analysis of the treated water is conducted once per year.

4.5 Operators

Victor Wabigwan operates the water treatment plant. [REDACTED]

[REDACTED] A comprehensive training program is required for the operator.

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There is no backup operator available to cover for vacation or sickness.

5.0 Deficiencies in the Communal Water Supply

1. Treatment plant does not use any disinfection.
2. The community has been on a boil water advisory since spring 2000.
3. Bacteriological results show 21 exceedances of total coliform out of 177 samples (12%)
4. There is no safety equipment available at the treatment plant.
5. There are no operation and maintenance manuals for plant equipment and no as-built drawings on site.

6. The operator does not perform a hydrant flushing and maintenance program or valve operating and maintenance program on the water distribution system. A contractor is hired to perform hydrant flushing on an as needed basis.
7. There is no written contingency plan available.
8. Service disruptions include power failures.
9. Low pressure in the distribution system is a problem.
10. The operator is not certified and has had no training. The operator should get more training. The operator has no backup personnel to fill in during vacations and sickness.

6.0 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 I

7.0 Recommendations

- Purchase a chlorinator.
- Address boils water advisory on community.
- Purchase safety equipment.
- Consider installation of a chlorine residual analyzer.
- Investigate pressure tanks and low-pressure problems in the system.
- Implement turbidity testing.
- Consider backup power for the water treatment plant.
- Implement a training program that can lead to certification of the operator.
- Establish and implement a protocol for taking water samples at the water treatment plants, including raw water samples.
- Consider designating storage/office space for operator and equipment.
- Develop a comprehensive operating and maintenance program on the water distribution system to address valve and hydrant maintenance.
- Develop a comprehensive contingency plan to address operational problems, breakdowns, vacations and sickness, main breaks and boil water advisories.
- Obtain as-built drawings and operating and maintenance manuals.
- Implement a sewage septic tank inspection program to inspect all septic tanks in the community for proper operations and meeting the required standards.

8.0 Overall Community Risk Assessment

Water Category – High Risk

- **High Risk because of the following:**
 - No chlorination (currently on boil water advisory); and
 - Low-pressure problems.

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