

Wahgoshig First Nation (Band No. 233)

Date of Visit: February 23, 2001

By John McGhee (OCWA)

Site Address: P.O. Box 722

Matheson, ON P0K 1N0

Phone No.: 705-273-2055

Tribal Council Affiliation: Wabun Tribal Council

Operator: Edward Black

Location: The Wahgoshig First Nation community is located approximately 100 km east of Timmins

Population: 115 people in the community (November 2000 - INAC)

No. of Units: 42 housing units (CAIS)

1.0 Description of the Community Water Supply

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

- 115 people are serviced by piped water
- 42 houses are serviced by a communal water system.

2.0 Description of the Community Sewage Facilities

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

- 115 people are serviced by individual septic tanks
- 42 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	7	Hardness out of GCDWQ range
Overall Ranking for Water Source	7	
B. Design		
Biological	2	
Chemical	2	
Physical	6	Hardness out of GCDWQ range
Risk to Public Health	6	
Condition of Laboratory Equipment		
Overall Ranking for Design	10	No disinfection equipment, no safety equipment, pumphouse in underground
C. Operations		
Reservoir Cleanliness	0	
Emergency Plan	0	
Overall Ranking for Operations	9	No chlorine residual analyzer No operation and maintenance manuals No as-built drawings on site No annual hydrant flushing service disruptions due to pressure drops

SECTION Water	SECTION RANKING Water	RISK Water
D. Reporting		
Ranking for Laboratories and Testing	0	
Ranking for Boil Water Advisories	0	
Overall Ranking for Reporting	10	Regular testing not conducted
E. Operators		
Overall Ranking for Operators	10	Received no training and are not confident in abilities to run facility
F. Statistical Data		
Overall Ranking for Individual Wells	0	
Overall Ranking for the System	8	High Risk

4.0 Communal Water Supply (42 houses)

4.1 Water Source

The community is serviced by a single well.

4.2 Design

The water supply system consists of a single well and two pressure tanks with no disinfection to a water distribution system. The water source is drawn from a groundwater well. The plant is not classified and does not have a water reservoir.

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

Date	Exceedance	Result	GCDWQ Limit
May 23, 2000	Hardness	48 mg/L	80 to 100 mg/L (OG)
Jul. 10, 2001	Hardness	48 mg/L	80 to 100 mg/L (OG)

AO = aesthetic objective, OG = operational guideline

There is no backup power generator for the water treatment plant. There is no safety equipment at the plant. There are three water tanks for fire protection that can be pulled by a 4x4 truck.

There is only one operator at the plant and there are a number of safety concerns. All equipment is located underground in a confined space area, and there is no confined space equipment. The electrical panel is also located in an underground chamber. Access to the underground chamber is by steps that consist of four by fours piled on top of each other. The operator has to lower himself through the hatch opening to reach the steps. There is accumulated dirt and debris. This configuration of an underground pumphouse is dangerous.

There is no designated laboratory, office/filing or maintenance area. There is no flow meter, on-line analyzers, and virtually no equipment of any kind.

4.3 Operations

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

There is no annual hydrant flushing or maintenance program, and no main valve operating and maintenance program. Hydrants were improperly installed, partially below ground level. There are dead ends (8" line) that have no way of being flushed.

In the last two years, service disruptions have been experienced due to power failures (three times). In addition, there are recurring pressure problems during periods of peak demand when the pressure drops to zero.

4.4 Reporting

Health Canada conducts bacteriological testing but **not** on a regular basis. The results are kept in the Band Office.

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

Period	Frequency	Regularity	Exceedances
Oct. 1999 – Oct 2001	Once per month from different locations	<ul style="list-style-type: none"> ▪ Months missing 2000: Jan, Feb, Apr, Aug, Oct, Dec ▪ Months missing 2001: Feb, Aug 	<ul style="list-style-type: none"> ▪ 0 exceedances out of 67 available samples

There have been no disease or health related outbreaks in the last two years and no boil water advisory.

The turbidity of the treated water is not recorded but chemical analysis of the treated water is conducted.

4.5 Operators

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Edward Black operates the water treatment plant.

A comprehensive training program is required for the operator.

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

5.0 Deficiencies in the Communal Water Supply

1. There is no method of disinfection.
2. The pumphouse is dangerous, as it is underground.
3. Pressure problems have been reported in the water distribution system.
4. There is no safety equipment available.
5. The water treatment plant does not have a backup power supply and there have been power failures.
6. There are no operation and maintenance manuals for plant equipment and there are no as-built drawings on-site.
7. Several safety hazards/concerns were noted on-site including confined space entry.
8. This water treatment plant needs to be cleaned and organized. Good housekeeping of the plant needs to be practiced.
9. The operator does not perform a hydrant flushing and maintenance program or valve operation and maintenance program on the water distribution system.
10. Record keeping needs improvement.
11. Health Canada does not take bacteriological sample on a regular basis.

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12. The operator should get more training. The operator has no backup personnel to fill in during vacations and sickness.

7.0 Summary of the Communal Sewage Treatment Facilities

1. Inspection of individual sewage septic tanks was outside the Terms of Reference of the OCWA study.

8.0 Recommendations

- Hire a professional engineer to immediately undertake a review of this system. Dangerous underground installation should be abandoned and replaced by an above ground facility.
- Increase frequency of bacteriological testing and implement chemical testing.
- Provide disinfection system.
- Consider adding a flow meter, pressure sensor, and alarm.
- Consider providing backup power.
- If disinfection is implemented, consider also providing lab/office/maintenance areas, safety equipment, flow monitoring, a chlorine analyzer, and alarms.
- Implement a training program that can lead to certification of the operator.
- Implement annual flushing, valve testing, and maintenance program on the water distribution system.
- Operator needs to implement a house cleaning and general maintenance program at the facilities.
- Develop a comprehensive contingency plan to address operational problems, breakdowns, vacations and sickness, main breaks and boil water advisories.
- Obtain as-built drawings and operations and maintenance manuals and keep on-site.
- Implement a sewage septic tank inspection program to inspect all septic tanks in the community for proper operations and meeting the required standards.

9.0 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

10.0 Overall Community Risk Assessment

Water Category - High Risk

- **High Risk because of the following:**
 - No disinfection equipment.
 - Pumphouse is dangerous.

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.