

Chippewas of Nawash First Nation (Band No. 122)

Date of Visit: April 6, 2001

by George Culhane (OCWA)

Site Address: R.R. #5

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Tribal Council Affiliation: Toronto Services Centre – Unaffiliated First Nations (South)

Operators: David Keeshig, Brian King

Location: The Chippewas of Nawash First Nation community is located on Georgian Bay 35 km northwest of Owen Sound

Population: 721 people in the community (December 2000 - INAC)

No. of Units: 185 housing units (CAIS)

1.0 Description of the Community Water Supply

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

- 655 people use piped water
- 31 people use individual water holding tanks with trucked water
- 8 people have no services
- 27 people are not identified in CAIS

- 168 houses are serviced by a communal water system;
- 8 houses are serviced by individual water holding tanks with trucked water;
- 2 houses have no water services; and
- 7 houses are not identified in CAIS.

2.0 Description of the Community Sewage Facilities

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

- 31 people use other services
- 680 people are not identified in CAIS

- 8 houses have other services; and
- 177 houses are not identified in CAIS.

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	Data not available
Chemical	1	No exceedances
Physical	4	Low hardness
Overall Ranking for Water Source	3	
B. Design		
Biological	8	12 total coliform and E.Coli exceedances noted out of 99 (12%)
Chemical	1	No exceedances
Physical	4	Low hardness
Risk to Public Health	1	No risk
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	4	
C. Operations		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Unknown
Overall Ranking for Operations	5	Re-occurring problem with power failures
D. Reporting		
Ranking for Laboratories and Testing	2	Bi-weekly by WTP operators
Ranking for Boil Water Advisories	1	No boil water advisories
Overall Ranking for Reporting	2	

SECTION Water	SECTION RANKING Water	RISK Water
E. Operators		
Overall Ranking for Operators	4	One operator certified, One operator with confidence but no training
F. Statistical Data		
Overall Ranking for Individual Wells	0	
Overall Ranking for the System	2	Low Risk

4.0 Communal Water Supply (168 houses)

4.1 Water Source

The raw water is surface water, drawn from Georgian Bay. The water intake has a zebra mussel problem. The intake is back flushed twice per year in the spring and in the fall.

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

Date	Location	Exceedances	Result	GCDWQ Limit
Jan. 21, 2000	Raw Surface	Hardness	32.9 mg/L	80 to 100 mg/L (OG)

OG = operational guideline

4.2 Design

According to information provided to OCWA at the time of our visit, there are now 236 houses connected to the communal water system.

The community is serviced by a water treatment plant constructed in 1991. The rated design capacity is 340 m³/day and the operator states the present usage of the system is at maximum capacity of the plant at times. It is a Class III plant, with a Class I distribution system.

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

Date	Location	Exceedances	Result	GCDWQ Limit
Jan. 21, 2000	Treated Water	Hardness	32.3 mg/L	80 to 100 mg/L (OG)

OG = operational guideline

The treatment plant consists of coagulation, flocculation, pressure filters, and an off-site water tower with 454 m³ of capacity.

At the time of the OCWA visit, plans were underway for a new expansion. This will include the installation of security equipment, safety equipment and new technical upgrades. A dialing system will be integrated with a cell phone as an alarm system. The low lift well will be drained and cleaned as will the water tower.

There is no backup power generator for fire protection or water treatment plant and power failures have occurred. There is also no diesel pump for fire protection. Safety equipment is adequate at the plant. There is a safety concern over the lack of storage space and the method of storing the chemicals. In the event of a spillage, chemical reactions could occur.

There is an annual hydrant flushing or maintenance program and main valve operating and maintenance program.

4.3 Operations

Sodium hypochlorite (12%) and ammonia sulfate are used for disinfection. The disinfection equipment is functional and there is enough disinfectant available on site. There is an on-line chlorine residual analyzer and it is calibrated once a year. There is also a colilert unit available and the operator uses it.

There are operating and maintenance manuals for plant equipment on site and as-built drawings. Space needs to be made for a laboratory area and workshop area. Emergency spare parts are available and there is a contact listing of technicians and trades people available. The response for such personnel is usually within 24 hours.

4.4 Reporting

The water treatment plant operators conduct bacteriological tests bi-weekly. Samples are also taken off-site to Warton Hospital for testing. The results are kept at the plant, the Band Office Health Center and at Health Canada.

There is an on-line turbidity meter. Readings are recorded, and there have been no exceedances.

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

Period	Frequency	Regularity	Exceedances
00/05/29 to 01/09/05	3 – 7 times per month from different locations	▪ Months missing 2000: Oct., Dec.	▪ 00/07/18 – total coliform and E.Coli at a personal residence. ▪ 00/08/16 – Makwa Tap – park ▪ 00/08/16 – Site #96 – park ▪ 00/08/07 – 9 total coliform and E.Coli exceedances at Park ▪ 00/08/16 2 E.Coli exceedances at Park

4.5 Operators

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David Keeshig and Bryan King operate the plant. [redacted]
[redacted] Bryan is the second operator and [redacted] Training is hands on.

David is familiar with calibrating and maintaining the disinfection equipment [redacted]
[redacted] David is training Bryan. There is currently no operator who assumes responsibility of the plant during vacation or sickness, although they are planning to hire a third operator.

5.0 Deficiencies in the Community Water Supply

1. There is no auxiliary power supply.
2. The water plant is working at full capacity at times.
3. The plant has problems with zebra mussels in the intake line.
4. There is lack of storage space.
5. There is no designated laboratory area.

6. The operators need more training, although one is certified.

6.0 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

7.0 Recommendations

- Implement a training program leading to operator certification.
- Address the zebra mussel issue.
- Construct separate storage for chemicals.
- Construct laboratory area.
- Provide backup power supply for the water treatment plant and fire.
- Implement a training program for water truck haulers.
- Develop a contingency plan for the total communal water supply system.
- Establish sampling responsibilities for the individual water holding tanks.
- Establish and implement a procedure for cleaning and disinfecting individual water holding tanks.
- 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 – Low Risk

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.