

Mishkeegogamang (Osnaburgh) First Nation (Band No. 203)

Date of Visit: March 22, 2001

By P. Doig (OCWA)

Site Address: Osnaburgh House, ON P0V 2H0

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Tribal Council Affiliation: Thunder Bay Services Centre - Unaffiliated First Nations (North)

Operators: Mathias Panachese, Teddy Wassay Kresic

Location: The Mishkeegogamang First Nation community is located on the shore of Lake St. Joseph, 313 km northwest of Thunder Bay

Population: 965 people in the community (November 2000 - INAC)

No. of Units: 100 housing units (CAIS)

1.0 Description of the Community Water Supply

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

- 579 people use piped water
- 280 people use communal wells
- 106 people have individual wells

- 60 houses are serviced by a communal surface water system in New Osnaburgh;
- 20 houses are serviced by a communal well in 10 House Area;
- 9 houses are serviced by communal wells in Ace Lake and Eric Lake; and
- 11 houses are serviced by individual wells.

2.0 Description of the Community Sewage Facilities

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

- 965 people use septic tanks

- 100 houses are serviced by 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.

3.1 Surface

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 data available
Chemical	6	Aluminum exceedance
Physical	6	Hardness is not within GCDWQ
Risk to Public Health	1	No risk
Condition of Laboratory Equipment	0	Not inspected
Overall Ranking for Design	5	
C. Operations		
Reservoir Cleanliness	0	Not inspected
Emergency Plan	0	Unknown
Overall Ranking for Operations	4	No as-built drawings available
D. Reporting		
Ranking for Laboratories and Testing	0	
Ranking for Boil Water Advisories	1	No boil water advisory
Overall Ranking for Reporting	1	

SECTION Water	SECTION RANKING Water	RISK Water
E. Operators		
Overall Ranking for Operators	0	No data available
F. Statistical Data		
Overall Ranking for Individual Wells	0	No data available
Overall Ranking for the System	3	Low Risk

3.2 Well

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	1	No exceedances
Physical	6	Hardness exceedances
Risk to Public Health	10	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	6	No as-built drawings, service disruption due to broken filter, re-occurring problem with color
D. Reporting		
Ranking for Laboratories and Testing	8	Irregular testing
Ranking for Boil Water Advisories	10	Do Not Drink Water advisory issued
Overall Ranking for Reporting	9	
E. Operators		
Overall Ranking for Operators	4	Some training
F. Statistical Data		
Overall Ranking for Individual Wells	0	
Overall Ranking for the System	10	High Risk

4.0 Communal Surface Water Supply (60 houses)

The information provided below is limited to the fact that the operators of the water treatment plant were unavailable at the time of the OCWA visit. Gord Santorossa, a technical person, assisted with answering the OCWA questionnaire.

4.1 Water Source

The raw water is drawn from Lake Couchessmoskog.

4.2 Design

The plant was recently constructed in 2000 and commissioned in 2001. The rated design capacity of the water treatment plant is 215 m³/day, and the present usage of the system is being met.

The treatment process utilizes membrane technology along with chemical addition. Disinfection involves the use of UV pre-treatment and chlorination (sodium hypochlorite) post-treatment.

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

Date	Location	Exceedances	Result	GCDWQ Limit
Oct. 20, 2000	Band Office	Hardness	223 mg/L	80 to 100 mg/L (OG)
		Aluminum	0.68 mg/L	0.1 mg/L (OG)
Apr. 25, 2001	Water Treatment Plant	Hardness	40 mg/L	80 to 100 mg/L (OG)

OG - operational guideline

Power generators for backup power supply and for fire protection exist. There is safety equipment at the plant and adequate space for office, laboratory and workshop.

4.3 Operations

The disinfection equipment is functional and there is sufficient chlorine on site. There is an on-line chlorine residual analyzer.

There are operating and maintenance manuals for plant equipment, but no as-built drawings are available on-site.

The water distribution system has six and eight inch diameter piping.

4.4 Reporting

No data is available.

4.5 Operators

No data is available.

At the surface water treatment plant, housekeeping and cleanliness is not a problem as this is a new facility still being run by the contractor. The contractor will be training the operators before the plant is turned over.

5.0 Deficiencies in the Communal Water Supply

1. As-built drawings are not on site.
2. Operators were unavailable to answer questions about training.

6.0 10 House Area Communal Well Supply (20 houses)

6.1 Water Source

The raw water source is drawn from wells.

6.2 Design

Raw water is drawn from wells and is treated with pressure filters and chlorination. Rated design capacity is unknown. There is an on-site water reservoir. The system was built in 1998.

The disinfection equipment is functional and there is sufficient chlorine on site.

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

Date	Location	Exceedances	Result	GCDWQ limit
May 17, 2001	Water Plant	Hardness	216 mg/L	80 to 100 mg/L (OG)

OG - operational guideline

There is no diesel-operated pump for fire protection or for backup power supply for the plant. Safety equipment is insufficient, and there is no equipment for confined space entry. The plant has no designated office area. Emergency spare parts are not readily available, there is a contact listing of technicians /trades people but the average response time of these personnel is unacceptable.

The water distribution system has six inch diameter piping.

There is an annual hydrant flushing program or fire hydrant maintenance program is in place, but there is no annual main valve operating and maintenance program.

6.3 Operations

However, it is unknown how long the chemicals have been onsite. It is also unknown how often the on-line chlorine residual analyzer is calibrated or how often chlorine residuals in the treated water are checked. Potassium permanganate is also used in the treatment process. Chemicals are stored properly according to MOE guidelines but there is possible fuel contamination. There are insufficient test reagents with a current shelf life available. Water colour is a recurring problem.

There are operating and maintenance manuals for the plant and plant equipment, but there are no as-built drawings readily available. Service disruptions have occurred in the last two years due to broken parts in the filter that allowed the filter media into the system.

6.4 Reporting

Health Canada conducts bacteriological testing, but it is unknown how often. The results are kept at the nursing station. Turbidity readings of the water are recorded weekly, but it is unknown whether there have been exceedances.

Chemical analyses of the treated water is done once a year, and it was found that hardness exceeded GCDWQ. The operator reported that there had been exceedances in aluminum but no data was available.

There has been a "Do Not Drink Water" advisory issued on Oct. 19, 2001 due to the continuous low chlorine levels.

6.5 Operators

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Mathias Panachese and Teddy Wassaykeesic are the operators of the treatment plant for the wells.

7.0 Deficiencies in the Communal Well Supply

1. There are insufficient test reagents available.
2. Broken parts in a filter allowed filter media into the water system causing service disruption.
3. There are no emergency spare parts readily available on site.
4. The response time of technicians/trades people is lengthy.
5. Turbidity of the water is taken weekly, but it is unknown whether the levels exceeded guidelines.
6. There has been aluminum and hardness exceedances in the water according to GCDWQ.
7. Operators are not certified, but were trained by Circuit Rider Training Program.
8. Do Not Drink Water advisory issued.
9. Possible fuel contamination.
10. Continuous low chlorine levels

8.0 Recommendations

- Obtain as-built drawings.
- Purchase confined space entry equipment.
- Acquire sufficient test reagents.
- Investigate reasons and prevent the filter media entering the water supply system.
- Purchase emergency spare parts.
- Address the recurring problem of water colour at the communal well site.
- Implement an annual main valve operating and maintenance program.

- Record turbidity readings on a daily basis.
- Investigate aluminum exceedances in the communal well site.
- Implement training program for operators that leads to certification.
- Implement a training program for water truck haulers.
- Establish and implement a protocol for taking water samples.
- Develop a comprehensive operating and maintenance program to address operational problems, break doors, vacations and sickness, etc., including the individual water tanks.
- Develop a comprehensive operating and maintenance program for the total community water systems.
- Implement a sewage septic tank inspection program to inspect all septic tanks in the community for proper operations and meeting the required standards.
- Proper chlorine levels with daily chlorine tests and weekly Colilert tests are required.
- Proper record keeping is required.

9.0 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 (Surface) - Class II
- Water Treatment Facility (Well) - Class I (10 house area)

10.0 Overall Community Risk Assessment

Water Category

- **Surface Water Facility – Low Risk**
 - **Well Water Facility – High Risk (10 house area)**
 - **High Risk because of the following:**
 - Do Not Drink Water advisory
- **No information is available for Ace Lake and Eric Lake communal well systems.**

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.