

Mohawks of the Bay of Quinte (Tyendinaga) (Band No. 164)

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By Mike Newland (OCWA)

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Tribal Council Affiliation: Unaffiliated First Nations (South)

Operator: Steve Maracle

Location: The Mohawks of the Bay of Quinte community are located approximately 10 km east of Belleville on Hwy. 2

Population: 1,908 people in the community (November 2000 - INAC)

No. of Units: 718 housing units (CAIS)

1.0 Description of Community Water Supply

Based on the CAIS report and information obtained from the community, water to the houses in the Mohawks of the Bay of Quinte community is treated as follows:

- 569 people are serviced by the Deseronto communal water system;
 - 16 people are serviced by the airport communal water system;
 - 1,308 people are serviced by individual wells;
 - 13 people are serviced by individual water holding tanks with trucked water; and
 - 2 people have no service.
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- 214 houses are serviced by the Deseronto communal water system;
 - 6 houses are serviced by the airport communal water system;
 - 492 houses are serviced by individual wells;
 - 5 houses are serviced by individual water holding tanks with trucked water; and
 - 1 house has no service.

2.0 Description of Community Sewage Facilities

Based on the CAIS report, sewage from the houses within the Mohawks of the Bay of Quinte community is treated as follows:

- 535 people are serviced by the Deseronto communal sewage system;
 - 1302 people are serviced by individual septic tanks; and
 - 71 people have no service.
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- 202 houses are serviced by the Deseronto communal sewage system;
 - 515 houses are serviced by individual septic tanks; and
 - 1 house has no service.

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.

Airport Communal Water Supply

SECTION Water	SECTION RANKING Water	RISK Water
A. Water Source		
Biological	0	
Chemical	0	
Physical	0	
Overall Ranking for Water Source	0	No information available
B. Design		
Biological	0	
Chemical	0	
Physical	0	
Risk to Public Health	10	Permanent boil water advisory
Condition of Laboratory Equipment	0	
Overall Ranking for Design	10	
C. Operations		
Reservoir Cleanliness	0	
Emergency Plan	0	
Overall Ranking for Operations	8	No chlorine residual analyzer, no back-up power, inadequate ventilation, no O & M manuals.
D. Reporting		
Ranking for Laboratories and Testing	10	Tested twice per year by Indian Health Services
Ranking for Boil Water Advisories	10	Presently under boil water advisory

SECTION Water	SECTION RANKING Water	RISK Water
Overall Ranking for Reporting	10	
E. Operators		
Overall Ranking for Operators	5	Some training, no backup operator
F. Statistical Data		
Overall Ranking for Individual Wells	0	
Overall Ranking for the System	10	High Risk

4.0 Overall Assessment for Communal Sewage Treatment Facilities

4.1 Deseronto Sewage Collection System

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	0	Information not available
B. Design		
Quality of Treated Effluent	0	
Ranking of Design of Sewage Plant	0	Town of Deseronto Responsibility
Ranking of Concerns and Hazards within the Plant	0	
Condition of Laboratory Equipment	0	
Overall Ranking for Design of Pumping Stations	6	No on-site safety equipment, no back-up power
C. Operations		
Ranking for Emergency Plan	0	
Overall Ranking for Operations	0	
D. Reporting		
Overall Ranking for Reporting	0	OCWA staff complete all sampling
E. Operators		
Overall Ranking for Operators	5	Some training, no backup operator
F. Statistical Data		
Overall Ranking for Individual Septic Tanks	0	

SECTION Sewage	SECTION RANKING Sewage	RISK Sewage
Overall Ranking for the Systems	5	Medium Risk

5.0 Communal Water Supply from Town of Deseronto (214 houses)

A municipal water treatment plant in the Town of Deseronto services the community. There is a meter at the Town boundary that records the water used by the Mohawks of the Bay of Quinte community.

5.1 Communal Water Supply at the Airport (6 houses)

5.1.1 Water Source

The raw water source is from the Bay of Quinte.

5.1.2 Design

There is a communal water supply at the airport originally constructed for firefighting. At the present time, six houses have been connected to this communal system and a students' residence.

The plant consists of a raw water intake from the Bay of Quinte, a pumping station and chlorination. There is a water reservoir on site of an unknown volume. There is one large pump for fire protection. A small submersible pump in the wetwell and pressure tanks supply water to the six houses. There is no overflow control or chlorine residual. Fire trucks and water trucks load at this location, and the scouring action of the increased water flow increases the turbidity dramatically such that the chlorine residual drops to zero. Therefore unchlorinated surface water goes out to the distribution system. All houses on this system have received a letter from the Band Council stating not to drink the water unless it is boiled first. There is a permanent boil water advisory on this communal system.

5.1.3 Operations

Sodium hypochlorite is used for disinfection. The disinfection equipment is functional. There is no on-line chlorine residual analyzer but the chlorine residual is checked on a daily basis. The plant has a colilert unit but the operator does not have any training to use it.

There is no backup power generator for the water treatment plant. The plant has adequate safety equipment on site. There is inadequate ventilation for the plant and chemical storage. Laboratory and office areas are not adequate in the plant, but there is a workshop area.

There are no operations and maintenance manuals for plant equipment on site, but there are as-built drawings on-site. Emergency spare parts are not available on-site. There is a contact listing of technicians/trades people available with an average response time of two hours.

There is an annual hydrant flushing and maintenance program, as well as an annual main valve operating and maintenance program.

5.1.4 Reporting

The Indian Health Services conducts bacteriological testing twice per year. The results are kept in the Band Office.

The Band has issued a permanent boil water advisory to all residences on the airport communal system.

The turbidity of the treated water at the airport system is recorded on a daily basis and has exceeded the GCDWQ. A chemical analysis of the treated water is conducted once per year. Test results were not available to OCWA from Health Canada.

6.0 Communal Sewage Facilities (202 Houses)

The community is serviced by a municipal sewage treatment plant from the Town of Deseronto. The collection system for this community consists of seven pumping stations that pump the raw sewage to the sewage treatment plant in the Town. This sewage plant is operated by OCWA.

The pumping stations do not have backup power. On-site safety equipment is inadequate.

The pump stations are cleaned twice per year. There have not been any raw sewage bypasses at the pumping stations.

6.1 Reporting

OCWA staff at the Town of Deseronto sewage treatment plant complete all sampling.

7.0 Personnel

Steve Maracle is responsible for operating the airport communal water system. The operator [REDACTED] s.19(1)
[REDACTED] A comprehensive training program is required for the operator.

There is no backup operator available to cover for vacation or illnesses. [REDACTED]
[REDACTED]

8.0 Deficiencies in the Communal Water Supply

1. The Band Council has placed a permanent boil water advisory on the airport water supply system. The airport system is mainly used for fire protection, but six houses are connected to the system.
2. There is no on-line chlorine residual analyzer.
3. The plant does not have any backup power.
4. Ventilation for the plant and chemical storage is inadequate.
5. Laboratory and office areas are inadequate but there is a workshop area available.
6. A spare chlorine pump needs to be purchased and kept on-site.
7. There are no operations and maintenance manuals for plant equipment, but there are as-built drawings on-site.
8. Emergency spare parts are not available.
9. There is no on-line chlorine residual analyzer.

10. Turbidity on the treated water is recorded on a daily basis and has exceeded the GCDWQ at the airport water system.
11. The operator is not certified and reports that he has had minimal training. The operator should get more training. The operator has no backup personnel to fill in during vacations and illnesses.

9.0 Deficiencies of the Communal Sewage Treatment Facilities

1. The pumping stations have no backup power.
2. On-site safety equipment is inadequate.

10.0 Classification

Airport System

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

11.0 Recommendations

- Address permanent boil water advisory on the airport water system.
- Consider installation of a chlorine residual analyzer. This could save operator time in sampling everyday.
- Consider backup power for the airport water treatment plant.
- Review ventilations in the facilities.
- Consider additional laboratory/office areas.
- Purchase a spare chlorine feed pump as backup.
- Implement a training program that can lead to certification of the operator.
- Develop a comprehensive contingency plan to address operational problems, breakdowns, vacations and sickness, main breaks and boil water advisories.
- Obtain operation and maintenance manuals.
- Implement a training program for water truck haulers.
- Develop a contingency plan for the individual water supply systems.
- Establish sampling responsibilities for the individual water holding tanks.
- Establish and implement a procedure for cleaning and disinfecting individual water holding tanks.
- Consider backup power for sewage pumping stations.
- Purchase complete set of safety equipment.

12.0 Overall Community Risk Assessment

Water Category - Water Supply from Deseronto System – Low Risk

Water Category- Water Supply from Airport System – High Risk

High Risk because of the following:

- Community is on a permanent boil water advisory; and
- Turbidity exceedances.

Sewage Category – Communal Sewage Collection System – Medium Risk

Medium Risk because of the following:

- No backup power for pumping stations;
- No safety equipment; and
- No backup operator.

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