

Naicatchewenin First Nation (Band No. 128)

Date of Visit: March 13, 2001

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Tribal Council Affiliation: Pwi-di-goo-zing Ne-yaa-zhing Tribal Council

Operator: Fred Smith

Location: The Naicatchewenin community is located on Highway 613 North approximately 60 km northwest of Fort Frances

Population: 223 people in the community (November 2000 - INAC)

No. of Units: 47 housing units (CAIS)

1.0 Description of the Community Water Supply System

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

- 223 people use piped water
- 47 houses are serviced by a communal water system.

2.0 Description of the Community Sewage System

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

- 223 people use piped sewage
- 47 houses are serviced by a communal sewage system.

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 | No data available |
| B. Design | | |
| Biological | 1 | No exceedances |
| Chemical | 8 | Phenolics exceedance |
| Physical | 6 | Dissolved organic carbon exceedances, low hardness exceedances |
| Risk to Public Health | 8 | |
| 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 | 7 | No chlorine residual analyzer, no maintenance manuals, no as-built drawings, power failures |
| D. Reporting | | |
| Ranking for Laboratories and Testing | 1 | Regular bacteriological and chemical testing |
| Ranking for Boil Water Advisories | 1 | No boil water advisories reported |

| SECTION Water | SECTION RANKING Water | RISK Water |
|--------------------------------------|----------------------------------|--------------------------------|
| Overall Ranking for Reporting | 1 | |
| E. Operators | | |
| Overall Ranking for Operators | 4 | Little training but confidence |
| F. Statistical Data | | |
| Overall Ranking for Individual Wells | 0 | |
| Overall Ranking for the System | 4 | Low Risk |

4.0 Overall Assessment for Communal Sewage Treatment Facilities

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 | |
| B. Design | | |
| Quality of Treated Effluent | 0 | No effluent sample data available |
| Ranking of Design of Sewage Plant | 1 | |
| Ranking of Concerns and Hazards within the Plant | 5 | No safety equipment |
| Condition of Laboratory Equipment | 0 | |
| Overall Ranking for Design | 3 | |
| C. Operations | | |
| Ranking for Emergency Plan | 0 | |
| Overall Ranking for Operations | 5 | No operation manuals, no as-built drawings, no emergency parts, no maintenance |
| D. Reporting | | |
| Overall Ranking for Reporting | 1 | |
| E. Operators | | |
| Overall Ranking for Operators | 4 | Little training but confidence |
| F. Statistical Data | | |
| Overall Ranking for Individual Septic Tanks | 0 | |
| Overall Ranking for the Systems | 3 | Low Risk |

5.0 Communal Water Treatment Plant (47 houses)

5.1 Water Source

Raw water for the community of Naicatchewenin is taken from the Footprint River.

5.2 Design

The treatment plant was built in 1985 and consists of low lift pumps, slow sand filters, chlorination equipment, high lift pumps, one 4,500 litre reservoir and two reservoirs with 15,000 litre capacity for a total of 34,500 reservoir capacity, and a water distribution system. There is no reservoir for fire protection.

The plant ventilation system is inadequate. Office/filing, laboratory, and workshop areas are inadequate. There is no washroom facilities at the plant. The plant does not have a diesel generator to provide backup power. Power failures have occurred resulting in disruption in service. There is no diesel operated pump for fire protection.

The operator flushes the watermain two times a year. There is no annual main valve operating and maintenance program for the water distribution system. Emergency spare parts are available on site.

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

| Date | Location | Exceedances | Result | GCDWQ Limit |
|---------------|-----------------------|--------------------------|------------|---------------------|
| June 23, 1999 | Health Centre | Hardness | 55.3 mg/L | 80 to 100 mg/L (OG) |
| | | Dissolved Organic Carbon | 7 mg/L | 5 mg/L (AO) |
| July 27, 2000 | Treated Surface Water | Colour | 16 TCU | 15 TCU (AO) |
| | | Hardness | 55 mg/L | 80 to 100 mg/L (OG) |
| | | Dissolved Organic Carbon | 8 mg/L | 5 mg/L (AO) |
| | | Phenolics | 0.007 mg/L | 0.005 mg/L (HL) |

AO = aesthetic objective, HL = health limit, OG = operational guideline

5.3 Operations

The disinfection equipment is functional. There is only one chlorinator on site. A backup chlorinator should be purchased. Sodium hypochlorite has been on site for one month and there is sufficient test reagent with sufficient shelf life. Chemicals are properly stored. There is a chlorine colour, which suggests some maintenance on the chlorinator may be required.

As-built drawings are on site but no operating and maintenance manuals. A recurring operational problem involves one low lift pump that is not producing enough pressure.

5.4 Reporting

Health Canada conducts bacteriological tests at least twice per month. The results are kept at the Band Office and the Health Canada office on Agency 1 land. Health Canada conducts chemical analysis sampling once a year.

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

| Period | Frequency | Regularity | Exceedances |
|---------------------------|-------------------------|--|--|
| 99/11/16 to 2001/08/30 | 2 to 9 times a month | <ul style="list-style-type: none">▪ 1 month missing in 1999▪ 4 months missing in 2000▪ No months missing in 2001 | <ul style="list-style-type: none">▪ No exceedances |

The chlorine residual is checked twice daily. There is no on line chlorine residual analyzer or colilert unit and incubator.

5.5 Operators

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Fred Smith looks after the water and sewage systems. Curtis Smith is the backup operator for the water system. Little formal instruction has been provided. and a new operator will be required.

The operator has received training in the following areas: wastewater, surface water and confined spaces. Contractors and CRTP provided the instructions. New operator should be trained in laboratory procedures, electrical, pump maintenance, sewage collection, water distribution, and confined space entry.

There is a list of technicians and trades people with an average response time of one day.

6.0 Deficiencies in the Community Water Supply

1. Safety equipment is needed on site. There is concern with plant ventilation, particularly around the disinfection area where there is a strong chlorine odour.
2. There is no diesel pump for fire protection.
3. The water treatment plant does not have a backup power supply and there have been power failures.
4. One low lift pump is not operating properly, lacks power.
5. There are no operating and maintenance manuals for plant equipment but there are as-built drawings on site, kept at the water treatment plant.
6. Consider constructing storage/office/lab/workshop/washroom area.
7. There is no on line chlorine analyzer. A backup chlorinator should be purchased.
8. Phenolics have exceeded the GCDWQ in 2000
9. are on the Circuit Rider Training Program. and another person will have to be hired and trained to operate the facilities. There is a backup operator for vacation or sickness.

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7.0 Communal Sewage Facilities (47 houses)

7.1 Effluent Receiver

No information is available.

7.2 Design

The community is serviced by a sewage collection system consisting of two sewage lift stations and a two-cell lagoon, which was built in 1997.

The sewage system is generally well operated but wet wells need regular cleaning out. The lagoons are tested and discharged twice a year. The lagoon berms are in good condition but one of the lagoon cells having excessive reed growth. The sewage pumps should get regular maintenance.

There is a list of technicians and trades people with an average response time of one day.

7.3 Operations

There is no safety equipment, or operating and maintenance manuals on-site but there are as built.

7.4 Reporting

No information or effluent testing is available.

7.5 Operators

s.19(1) Fred Smith looks after the water and sewage systems. Curtis Smith is the backup operator for the water system. [REDACTED] Little formal instruction has been provided. [REDACTED] a new operator will be required.

The operator has received training in the following areas: wastewater, surface water and confined spaces. Contractors and CRTP provided the instructions. New operator should be trained in laboratory procedures, electrical, pump maintenance, sewage collection, water distribution, and confined space entry.

8.0 Deficiencies in the Community Sewage Facilities

1. There is excessive reed growth in one of the lagoon cells.
2. Power outages have occurred, though no bypasses or basement flooding has resulted.
3. [REDACTED]
4. No operating and maintenance manuals.

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9.0 Recommendations

- Repair chlorinator leak.
- Purchase backup chlorinator.
- Hire and train new operator and backup operator.
- Implement a training program that can lead to certification of the operator.
- Investigate and correct low lift pump pressure problem.
- Investigate phenolics exceedance in 2000.
- Establish and implement a protocol for taking water samples at the water treatment plants, including raw water samples.
- Consider backup power for the water treatment plant.
- Consider constructing space for an office, lab and workshop.
- Provide required spare parts.
- Undertake a regular maintenance program for pumps.
- Remove excessive reed growth in one sewage lagoon cell.
- Develop a comprehensive contingency plan to address operational problems, breakdowns, vacations and sickness, and boil water advisories.

10.0 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, OCWA classified these plants as follows:

Water Treatment Facility - Class I
Sewage Treatment Facility - Class I

11.0 Overall Community Risk Assessment

Water Category – Low Risk
Sewage Category – Low Risk

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