Ontario

Ministry of the Environment, Conservation and Parks

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January 31, 2025 by email: Karin.Pratte@northbay.ca

Ms. Karin Pratte
Director, Water, Wastewater and Environmental Services
The Corporation of the City of North Bay
200 McIntyre Street East
North Bay, ON
P1B 8V6

RE: Inspection of North Bay Drinking Water System at 248 Lakeside Drive, North Bay on November 5, 2024
Planned Event No. 1-334412325

Attached to this letter is the report for the unannounced inspection completed at North Bay Drinking Water System at 248 Lakeside Drive, North Bay on November 5, 2024, and the corresponding Incident Rating Report (IRR) and Risk Methodology document. This report provides an assessment of compliance and conformance based on observations and information available during the inspection review period only.

One instance of non-compliance was identified during the inspection. The owner and operating authority took necessary steps to bring the system into compliance therefore there are no required actions to address this non-compliance. This non-compliance is described in the "Non-compliance" section within the report.

Additional findings and applicable comments, where provided, will be found within the report.

The IRR is a summarized quantitative measure of the drinking water system's annual inspections and is published in the Ministry's Chief Drinking Water Inspector's Annual Report. The Risk Methodology document describes the risk rating methodology which has been applied to the findings of the Ministry's municipal residential drinking water system inspection results. Please find attached the corresponding IRR in Appendix A and Risk Methodology document.

Attached in Appendix B is a document titled "DWS Components Information" and in Appendix C is a document titled "Key Reference and Guidance Material for Municipal Residential Drinking Water Systems".

Electronic copies of this inspection report have been sent to the North Bay Parry Sound District Health Unit and North Bay Mattawa Conservation Authority in accordance with the Ministry's Municipal Drinking Water Inspection Protocol.

Thank you for your co-operation. If you have any questions about this inspection report, please contact me at (705) 491-2781 or by email at vesna.alimpic@ontario.ca.

Sincerely,

Vesna Alimpic
Water Compliance Officer
Provincial Officer Badge No. 1882
Drinking Water and Environmental Compliance Division
Ministry of the Environment, Conservation and Parks
North Bay Office

c: Scott Taggart, Operations Manager, Public Works Water and Wastewater, City of North Bay
Jonathan Dewey, Operations Supervisor, Water and Wastewater Facilities, City of North Bay
Robert A‑Muhong, Manager of Environmental Health, North Bay Parry Sound District Health Unit
Drinking Water Source Protection, North Bay Mattawa Conservation Authority
Sherry Ilersich, Water Compliance Supervisor, Timmins/North Bay, Northern Region, Drinking Water and Environmental Compliance Division, Ministry of the Environment, Conservation and Parks

NORTH BAY DRINKING WATER SYSTEM
Physical Address: 248 LAKESIDE DR, , NORTH BAY, ON P1A 3E3

INSPECTION REPORT

System Number:	220000460
Entity:	THE CORPORATION OF THE CITY OF NORTH BAY
Inspection Start Date:	November 05, 2024
Site Inspection Date:	November 05, 2024
Inspection End Date:	January 15, 2025
Inspected By:	Vesna Alimpic
Badge #:	1882

VAlimpic

_____
(signature)

INTRODUCTION

Purpose

This unannounced focused inspection was conducted to confirm compliance with Ministry of the Environment, Conservation and Parks' (MECP) legislation and conformance with ministry drinking water policies and guidelines.

Scope

The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as management and the operation of the system.

The inspection of the drinking water system included both the physical inspection of the component parts of the system listed in section 4 "Systems Components" of the report and the review of data and documents associated with the operation of the drinking water system during the review period.

This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O. Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

Facility Contacts and Dates

The drinking water system is owned and operated by The City of North Bay.

The system serves an estimated population of 52,000 and is categorized as a large municipal residential system. Information reviewed for this inspection covered the time period of December 4, 2023 to November 4, 2024.

As part of the inspection process, the water inspector met with Karin Pratte, Director, Water, Wastewater and Environmental Services, City of North Bay, and Jonathan Dewey, Operations Supervisor Water & Wastewater, City of North Bay, who is also the overall responsible operator for the North Bay Water Treatment Plant.

Systems/Components

All locations associated with primary disinfection were visited as part of this inspection. The following sites were visited as part of the inspection of the drinking water system: North Bay Water Treatment Plant.

An outstation is a component of a drinking water system that is not located at either a water treatment plant or a well supply and is generally not associated with primary treatment, for example reservoirs, booster stations, and re-chlorination facilities located within the distribution system. Outstations may be visited on a rotational basis as part of a ministry inspection. This inspection included the inspection of list outstations visited as part of this inspection:
- Birchs Road Standpipe and Re-chlorination System,
- Judge Avenue Valve Chamber and Re-chlorination Station,
- Ellendale Reservoir, High Lift Pump Station and Re-chlorination Facility,
- Cedar Heights Booster Pumping Station and
- Larocque Standpipe.

Permissions/Approvals

This drinking water system was subject to specific conditions contained within the following permissions and/or approvals at the time of the inspection in addition to the requirements of the SDWA and its regulations: Municipal Drinking Water Licence (MDWL) No. 196-101, Issue No. 6 dated November 24 2021 and Drinking Water Works Permit (DWWP) No. 196-201, Issue No. 6 dated February 2, 2022.

NON-COMPLIANCE

The following item(s) have been identified as non-compliance, based on a "No" response captured for a legislative question(s). For additional information on each question see the Inspection Details section of the report.

Ministry Program: DRINKING WATER | **Regulated Activity:** DW Municipal Residential

Item	Question	Compliance Response/Corrective Action(s)
NC-1	**Question ID:** DWMR1115001 Were the inspection questions sufficient to address other non-compliance items identified during the inspection period?	The following instance(s) of non-compliance were noted during the inspection: One residential sample for lead was missed during the required sampling period. The missed sample was collected outside of the required period. The City of North Bay provided documentation to the inspecting officer confirming that action has been taken to ensure that the required number of samples will be taken within the required sampling period. No further action required.

RECOMMENDATIONS

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

Ministry Program: DRINKING WATER | **Regulated Activity:** DW Municipal Residential

Question ID	DWMR1012001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Did the owner have a harmful algal bloom monitoring plan in place that met the requirements of the Municipal Drinking Water Licence?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had a harmful algal bloom monitoring plan in place which met the requirements.

Question ID	DWMR1014001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Was flow monitoring performed as required by the Municipal Drinking Water Licence or Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Flow monitoring was performed as required.

Question ID	DWMR1016001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Was the owner in compliance with the conditions associated with maximum flow rate or the rated/operational capacity in the Municipal Drinking Water Licence?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner was in compliance with the conditions associated with maximum flow rate and/or the rated/operational capacity conditions.

Question ID	DWMR1018001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Did the owner ensure that equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner ensured that equipment was installed as required.

Question ID	DWMR1020001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Were Form 1 documents prepared as required?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Form 1 documents were prepared as required.

Question ID	DWMR1021001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Were Form 2 documents prepared as required?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Form 2 documents were prepared as required.

Question ID	DWMR1025001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Were all parts of the drinking water system that came in contact with drinking water disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All parts of the drinking water system were disinfected as required.

Question ID	DWMR1023001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-2 | (2);

Question:
Did records indicate that the treatment equipment was operated in a manner that achieved the design capabilities prescribed by O. Reg. 170/03, Drinking Water Works Permit and/or Municipal Drinking Water Licence at all times that water was being supplied to consumers?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities prescribed.

The North Bay WTP is designed to achieve the performance criteria using microfiltration (0.1 micron pore size), ultraviolet (UV) disinfection and chlorine disinfection as per Section 1-3 of Schedule 1 to O. Reg. 170/03. The MDWL identifies log removal/inactivation credits assigned to the three (3) processes as the following:
- Microfiltration receives 2-log for Cryptosporidium oocysts and 2.5-log for Giardia cysts;
- UV disinfection receives 0.5 log Giardia cysts;
- Chlorination receives 4 log viruses.

In order to receive full log credits the treatment process must be fully operational and meet the following credit assignment identified in Schedule E of the MDWL:

Microfiltration:

1. Maintain effective backwash procedures, including filter-to-waste or an equivalent procedure, to ensure that the effluent turbidity requirements are met at all times;
2. Monitor integrity of the membrane by continuous particle counting or by an equivalently effective means (e.g. intermittent pressure decay measurements) (NOTE: intermittent pressure decay monitored at the North Bay WTP);
3. Continuously monitor filtrate turbidity; and
4. Meet the performance criterion for filtered water turbidity of less than or equal to 0.1 NTU in 99% of the measurements each month for each filter train.

UV Disinfection:

1. Duty UV sensor shall be checked at least monthly against a reference sensor; or at a frequency recommended by the UV manufacturer.
2. When comparing the duty UV sensor to the reference sensor, the calibration ration must be equal to or below 1.2.

3. If the calibration ration is greater than 1.2 the duty sensor shall be replaced with a calibrated unit or a UV sensor correction factor shall be applied until the problem has been resolved.
4. Reference sensor shall be checked against a Master Reference Assembly at a minimum frequency of once every three (3) years or on a more frequent basis depending on recommendation of the equipment manufacturer.

Chlorination

1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment.
2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.

Note: The two chlorine contact tanks can be operated separately or in sequence and still provide the required 4 log removal. This facility is equipped with online CT calculation. This program automatically takes data from several sources (flow, temperature, free chlorine residual, pH, water depth in contact tank and which contact tanks are in service) and then calculates the log removal credits achieved for Giardia & viruses.

Based on the review of data provided during the inspection relating to integrity testing and turbidity monitoring, UV calculated dosage, UV reference checks, free chlorine residual level after the contact tank and the online CT calculation, performance criteria for microfiltration, UV disinfection and chlorination were satisfied at all times during the inspection period.

Question ID	DWMR1026001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-6 | (2);

Question:
If primary disinfection equipment did not use chlorination or chloramination, was the equipment equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 1-6 of O. Reg. 170/03?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Primary disinfection equipment was equipped with alarms or shutoff mechanisms that satisfied the standards.

Section 1-6 of Schedule 1 to O. Reg. 170/03 requires that in the event the UV disinfection system loses power, malfunctions or ceases to provide the appropriate level of disinfection that the system either has a feature that ensures that no water is directed to users or immediately cause an alarm to sound at the following locations:
1. The building or structure where the disinfection equipment is installed.
2. A location where a person is present, if a person is not always present at the building or structure where the disinfection equipment is installed.

At the time of the inspection, the ultraviolet (UV) reactors for the primary and secondary disinfection systems were equipped with a shut down mechanism in the event that the calculated dose dropped below the minimum required. The primary UV system is required to provide a minimum ultraviolet dosage of 10 mJ/cm², the shut down setpoint was set at 12 mJ/cm². The secondary UV system is required to provide a minimum ultraviolet dosage of 15 mJ/cm², the shut down setpoint was set at 15 mJ/cm². In addition, UV reactors are set to alarm to an on-call operator when the UV units reach the setpoint of 20 mJ/cm².

Question ID	DWMR1024001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-2 | (2);

Question:
Did records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection was operated as required?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection was operated as required.

There were two events with low chlorine residuals during the inspection period. The City of North Bay provided documentation demonstrating that the low chlorine residuals were caused by low water use (0.00 mg/L, October 9, 2024, Rita Rd) and use of an inline filter in a private residence (0.03 mg/L, October 28, 2024, Campbell Ave). The City of North Bay flushed watermains at both locations and achieved satisfactory chlorine residuals in the distribution system.

Question ID	DWMR1033001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-2 | (3); SDWA | O. Reg. 170/03 | 7-2 | (4);

Question:
Was secondary disinfectant residual tested as required for the large municipal residential distribution system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Secondary disinfectant residual was tested as required.

As of December 14, 2021, the owner has designated the Judge Avenue Valve free chlorine analyzer as the regulatory analyzer used to monitor secondary disinfection in the distribution system. Based on the review of the trends of free chlorine residuals at Judge Avenue Valve for the inspection period, it appears that the continuous monitoring met the requirements in terms of the required minimum testing and recording frequency.

Secondary disinfection residual was additionally monitored in at least 17 locations in the distribution system each week during collection of weekly bacteriological samples.

Question ID	DWMR1030001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-2 | (1); SDWA | O. Reg. 170/03 | 7-2 | (2);

Question:
Was primary disinfection chlorine monitoring being conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit or at/near a location where the intended CT had just been achieved?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Primary disinfection chlorine monitoring was conducted as required.

Question ID	DWMR1032001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-3 | (2);

Question:
If the drinking water system obtained water from a surface water source and provided filtration, was continuous monitoring of each filter effluent line performed for turbidity?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Continuous monitoring of each filter effluent line was performed for turbidity.

Question ID	DWMR1035001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4;

Question:
Were operators examining continuous monitoring test results and did they examine the results within 72 hours of the test?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Operators were examining continuous monitoring test results as required.

Question ID	DWMR1038001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4;

Question:
Was continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements performing tests for the parameters with at least the minimum frequency and

recording data with the prescribed format?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency and recording data with the prescribed format.

Question ID	DWMR1037001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)5-10; SDWA | O. Reg. 170/03 | 6-5 | (1.1);

Question:
Were all continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, equipped with alarms or shut-off mechanisms that satisfied the standards described in Schedule 6?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All required continuous monitoring equipment utilized for sampling and testing were equipped with alarms or shut-off mechanisms that satisfied the standards

Section 6-5 of Schedule 6 of O. Reg. 170/03 requires that the continuous monitoring equipment must have a feature that ensures that no water is directed to users or cause an alarm to signal at a location where the equipment conducts tests and where a person is always present in the event a test result for a parameter is above the maximum alarm standard or below the minimum alarm standard specified in the Table to this section for the parameter and in the event the equipment malfunctions or loses power or malfunctions.

The maximum alarm standard for turbidity is 1.0 Nephelometric Turbidity Units (NTU). The minimum alarm standard for free chlorine residual required to achieve primary disinfection is 0.1 mg/L less than the concentration of free chlorine residual that is required to achieve primary disinfection. The minimum alarm standard for continuous monitoring of free chlorine residual secondary disinfection is required to be set at 0.05 mg/L.

The regulatory free chlorine residual low level alarm after primary disinfection (i.e. analyzer after contact tank # 2) was set at 0.70 mg/L and would immediately trigger a plant shutdown. This facility also had a low low level alarm for virus log removal after primary disinfection set at 5.0 log removal and would immediately trigger a plant shutdown.

All thirteen turbidity analyzers on filter racks were set to alarm and shut down at high high turbidity at 0.10 NTU without delay.

The continuous free chlorine analyzer at Judge Ave Valve was set to alarm at 0.3 mg/L without delay.

Question ID	DWMR1040001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4; SDWA | O. Reg. 170/03 | 6-5 | (1)5-10;

Question:
Were all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All continuous analysers were calibrated, maintained, and operated as required.

Continuous chlorine and turbidity analyzers are verified or calibrated monthly.

Question ID	DWMR1108001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)5-10; SDWA | O. Reg. 170/03 | 6-5 | (1.1);

Question:
Where continuous monitoring equipment used for the monitoring of free chlorine residual, total chlorine residual, combined chlorine residual or turbidity, required by O. Reg. 170/03, Municipal Drinking Water Licence, Drinking Water Works Permit, or order triggered an alarm or an automatic shut-off, did a qualified person respond as required and take appropriate actions?

Compliance Response(s)/Corrective Action(s)/Observation(s):
A qualified person responded as required and took appropriate actions.

Question ID	DWMR1039001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-6 | (3);

Question:
If primary disinfection equipment that does not use chlorination or chloramination was used, did the owner and operating authority ensure the equipment had a recording device that continuously recorded the performance of the disinfection equipment?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner and operating authority ensured that the primary disinfection equipment had a recording device that continuously recorded the performance of the disinfection equipment.

Question ID	DWMR1109001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-6 | (1); SDWA | O. Reg. 170/03 | 1-6 | (2);

Question:
If the system used equipment for primary disinfection other than chlorination or chloramination and the equipment malfunctioned, lost power, or ceased to provide the appropriate level of disinfection, causing an alarm or an automatic shut-off, did a certified operator respond as required and take appropriate actions?

Compliance Response(s)/Corrective Action(s)/Observation(s):
A certified operator responded as required and took appropriate actions.

Question ID	DWMR1042001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
If UV disinfection was used, were duty sensors and reference UV sensors checked and calibrated as per the requirements of Schedule E of the Municipal Drinking Water Licence or at a frequency as otherwise recommended by the UV equipment manufacturer?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All UV sensors were checked and calibrated as required.

Question ID	DWMR1099001	Question Type	Information

Legislative Requirement(s):
Not Applicable

Question:
Do records show that water provided by the drinking water system met the Ontario Drinking Water Quality Standards?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records showed that not all water sample results met the Ontario Drinking Water Quality Standards.

There were two events when the drinking water did not meet the Ontario Drinking Water Quality Standards (ODWQS):

1. A sample collected on April 3, 2024, had presence of total coliforms (ODWQS for total coliforms is 'not detectable'). The sample was collected after repairs on the distribution system and was suspected to be contaminated. Corrective actions were to restore disinfection, flush, resample and test. Two sets of three resamples were collected and their

results met the ODWQS. This adverse water quality incident (AWQI) was reported under no. 164743.

2. A sample collected on October 11, 2024, exceeded the Ontario Drinking Water Quality Standard for lead at 0.012 mg/L (the standard for lead is 0.010 mg/L).The sample was collected from plumbing in a private residence. The City of North Bay instructed the residents to flush the water lines before using water. A resample was not collected as this plumbing sample is not representative of the lead concentrations in the distribution system. This AWQI was reported under no. 166686.

Question ID	DWMR1083001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 10-3;

Question:
Were treated microbiological sampling requirements prescribed by Schedule 10-3 of O. Reg. 170/03 for large municipal residential systems met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Treated microbiological sampling requirements were met.

Section 10-3 of Schedule 10 of O. Reg. 170/03 requires the owner of a drinking-water system and the operating authority for the system must ensure that a treated water sample is taken at least once every week and tested for Escherichia coli, total coliforms and general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).

During the inspection period, samples of treated water were collected once every week and tested for Escherichia coli, total coliforms and HPC.

Question ID	DWMR1081001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 10-2 | (1); SDWA | O. Reg. 170/03 | 10-2 | (2); SDWA | O. Reg. 170/03 | 10-2 | (3);

Question:
Were distribution microbiological sampling requirements prescribed by Schedule 10-2 of O. Reg. 170/03 for large municipal residential systems met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Distribution microbiological sampling requirements were met.

Subsection 10-2(1)(a) to Schedule 10 of O. reg. 170/03 requires that if a system serves 100,000 people or less, at least 8 distribution samples, plus 1 additional distribution sample for every 1,000 people served by the system, are taken each month, with at least 1 of the samples being taken in each week.

Based on the 2021 census population of North Bay (52,662), at least 61 samples are required

to be taken each month. During the inspection period, at least 17 samples from distribution were collected weekly and tested for E. coli and total coliforms, resulting in 68 to 85 monthly samples. Every week, five distribution samples were tested for HPC, meeting the requirement to have at least 25 per cent of the samples tested for this parameter.

Question ID	DWMR1096001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-3 | (1);

Question:
Did records confirm that chlorine residual tests were conducted at the same time and location as microbiological samples?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records confirmed that chlorine residual tests were conducted as required.

Question ID	DWMR1084001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-2;

Question:
Were inorganic parameter sampling requirements prescribed by Schedule 13-2 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Inorganic parameter sampling requirements were met.

Subsection 13-2 of Schedule 13 of O. Reg. 170/03 requires that owner of a large municipal residential system and the operating authority for the system must ensure that at least one water sample is taken every 12 months, if the system obtains water from a raw water supply that is surface water and that each of the samples is tested for every parameter set out in Schedule 23.

A sample was collected and tested for every parameter set out in Schedule 23 on July 15, 2024.

Question ID	DWMR1085001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-4 | (1); SDWA | O. Reg. 170/03 | 13-4 | (2); SDWA | O. Reg. 170/03 | 13-4 | (3);

Question:
Were organic parameter sampling requirements prescribed by Schedule 13-4 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Organic parameter sampling requirements were met.

Subsection 13-4 of Schedule 13 of O. Reg. 170/03 requires the owner of a large municipal residential system and the operating authority for the system shall ensure that at least one water sample is taken every 12 months, if the system obtains water from a raw water supply that is surface water and tested for every parameter set out in Schedule 24.

A sample was collected and tested for every parameter set out in Schedule 24 on July 15, 2024.

Question ID	DWMR1086001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-6.1 | (1); SDWA | O. Reg. 170/03 | 13-6.1 | (2); SDWA | O. Reg. 170/03 | 13-6.1 | (3); SDWA | O. Reg. 170/03 | 13-6.1 | (4); SDWA | O. Reg. 170/03 | 13-6.1 | (5); SDWA | O. Reg. 170/03 | 13-6.1 | (6);

Question:
Were haloacetic acid sampling requirements prescribed by Schedule 13-6 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Haloacetic acid sampling requirements were met.

Section 13-6.1 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system that provides chlorination and the operating authority for the system must ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water systems distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of haloacetic acids and tested for haloacetic acids (HAAs). O. Reg. 170/03 defines the "calendar quarter" as the three-month period that begins on January 1, April 1, July 1 or October 1. Ontario Drinking Water Quality Standard for HAAs is 0.08 mg/L (80 µg/L) and is expressed as a running annual average (RAA) of quarterly results.

Samples were collected and tested for HAAs from the distribution system in the three-month periods meeting the requirements of O. Reg. 170/03. The RAA for the period December 5, 2023 to September 4, 2024 was 0.045 mg/L (45.5 µg/L).

Question ID	DWMR1087001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-6 | (1); SDWA | O. Reg. 170/03 | 13-6 | (2); SDWA | O. Reg. 170/03 | 13-6 | (3); SDWA | O. Reg. 170/03 | 13-6 | (4); SDWA | O. Reg. 170/03 | 13-6 | (5); SDWA | O. Reg. 170/03 | 13-6 | (6);

Question:
Were trihalomethane sampling requirements prescribed by Schedule 13-6 of O. Reg. 170/03

met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Trihalomethane sampling requirements were met.

Subsection 13-6 of Schedule 13 of O. Reg. 170/03 requires the owner of a drinking water system that provides chlorination and the operating authority for the system must ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water system's distribution system that is likely to have an elevated potential for the formation of trihalomethanes and tested for trihalomethanes (THMs). O. Reg.169/03 sets the standard for THMs at 0.100 mg/L (100 µg/L) expressed as a RAA for THMs for a drinking water system.

The municipality has conducted extensive THM sampling program to assess where they are being formed and what the THM values are throughout the distribution system. Samples are collected and tested for THM monthly at the WTP at the point of entry and at 12 locations in the distribution system: at the entry and exit of water into the Ellendale High Lift Pump Station and 10 locations throughout the distribution system. In 2024, THM concentrations ranged from 35 to 139 µg/L in the distribution system. As of November 4, 2024, the running annual average (RAA) for THM of all samples collected in the distribution system was 71 µg/L (0.0716 mg/L).

Question ID	DWMR1088001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-7;

Question:
Were nitrate/nitrite sampling requirements prescribed by Schedule 13-7 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Nitrate/nitrite sampling requirements were met.

Section 13-7 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system and the operating authority for the system must ensure that at least one water sample is taken every three months and tested for nitrate and nitrite.

Data review confirmed that samples of treated water were collected and tested for nitrate/nitrite with the required frequency.

Question ID	DWMR1089001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-8;

Question:
Were sodium sampling requirements prescribed by Schedule 13-8 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Sodium sampling requirements were met.

Section 13-8 of Schedule 13 requires that the owner of a drinking water system and the operating authority for the system must ensure that at least one treated water sample is taken every 60 months and tested for sodium.

Samples for sodium are collected annually, with the most recent sample collected on July 15, 2024.

Question ID	DWMR1091001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-4;

Question:
Where fluoridation is practiced, were fluoride sampling requirements prescribed by Schedule 7-4 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Fluoride sampling requirements were met.

Question ID	DWMR1094001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Were water quality sampling requirements imposed by the Municipal Drinking Water Licence and Drinking Water Works Permit met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Water quality sampling requirements were met.

Section 5 to Schedule C of the North Bay DWS MDWL requires that quarterly samples are taken of at a minimum 11 perfluorinated alkyl substances (PFAS) parameters in raw and treated water. Samples are to be collected in accordance with subsection 6-1.1(4) of Schedule 6 to O. Reg. 170/03, i.e. the owner must ensure that a sample is taken at least 60 days and not more than 120 days after a sample was taken for the previous three month period.

A review of the sampling records confirmed that sampling for the required parameters was done with the required frequency for both raw and treated water.

Question ID	DWMR1104001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 16-6 | (1); SDWA | O. Reg. 170/03 | 16-6 | (2); SDWA | O. Reg. 170/03 | 16-6 | (3); SDWA | O. Reg. 170/03 | 16-6 | (3.1); SDWA | O. Reg. 170/03 | 16-6 | (3.2); SDWA | O. Reg. 170/03 | 16-6 | (4); SDWA | O. Reg. 170/03 | 16-6 | (5); SDWA | O. Reg. 170/03 | 16-6 | (6);

Question:
Were immediate verbal notification requirements for adverse water quality incidents met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Immediate verbal notification requirements for adverse water quality incidents were met.

1. Adverse Water Quality Incident (AWQI) no. 164743

On April 4, 2024, a bacteriological sample was collected from distribution system at 170 6th Ave W. The sample results showed presence of total coliforms and Escherichia coli (total coliform plate overgrown with target). Based on the information in section 2A, Near North Labs informed the City of North Bay of the adverse result at 14:45 on April 5, 2024. the City of North Bay provided a verbal notification of the adverse to Spills Action Centre at 15:18 and to the North Bay Parry Sound District Health Unit (NBPSDHU) at 15:26.

2. AWQI no. 166610

On October 9, 2024, a free chlorine residual of 0.00 mg/L was measured at 110 Rita Rd. The provided complaint form does not indicate at what time the sample was collected. The operator who took the sample informed their supervisor of the adverse at 11:48. Based on the information in section 2A, The City of North Bay provided a verbal notification of the adverse to SAC at 12:09 and to NBPSDHU at 12:02.

3. AWQI no. 166766

On October 28, 2024, a free chlorine residual of 0.03 mg/L was measured in a private home at 52 Campbell Ave at 10:20. Based on the information in section 2A, The City of North Bay provided a verbal notification of an adverse water quality incident to SAC at 11:50 and to NBPSDHU at 12:00.

The City of North Bay informed the inspecting officer that sampling protocol instructs operators to take samples from residential units only if there is an appropriate sample point that would be representative of water in the distribution system. In case of the water quality complaint at 52 Campbell Ave, the operator took a free chlorine sample downstream of an inline filter with purpose to educate the homeowner of the removal of chlorine by the device.

Subsection 16-2(2) to schedule 18 of O. Reg. 170/03 specifies that the duty to report an adverse test result does not apply to the drinking water test that is conducted on a sample that was taken from plumbing, if the test is conducted solely for the purpose of determining the quality of the water in the plumbing.

Ministry's Technical Bulletin Residential Water Testing (https://www.ontario.ca/page/residential-water-testing-technical-bulletin) specifies that when a chlorine residual or total coliform (TC) sample is taken without a period of flushing, adverse test results may be attributed to the water within the plumbing itself. For example, a low chlorine residual result may represent a problem within plumbing rather than in the distribution system, and an adverse TC indicator test may indicate contamination of the source supply or distribution lines or microbiological re-growth within the plumbing system itself.

Therefore, the Ministry accepts that a municipality may wish to determine whether an adverse chlorine residual or TC result represents a problem solely in a consumer's plumbing, and that the Schedule 16 exemption for drinking water samples taken from plumbing solely to determine the quality of the water in plumbing is available.

Note: The owner is reminded that Subsection 6-10(1) to Schedule 6 of O. Reg. 170/03 requires that the owner and the operating authority for a drinking system must ensure that, for every sample required by this Regulation or by an approval, municipal drinking water licence or order, including an OWRA order, a record is made of the date and time the sample was taken, the location where the sample was taken and the name of the person who took the sample.

Question ID	DWMR1101001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 17-1; SDWA | O. Reg. 170/03 | 17-10 | (1); SDWA | O. Reg. 170/03 | 17-11; SDWA | O. Reg. 170/03 | 17-12; SDWA | O. Reg. 170/03 | 17-13; SDWA | O. Reg. 170/03 | 17-14; SDWA | O. Reg. 170/03 | 17-2; SDWA | O. Reg. 170/03 | 17-3; SDWA | O. Reg. 170/03 | 17-4; SDWA | O. Reg. 170/03 | 17-5; SDWA | O. Reg. 170/03 | 17-6; SDWA | O. Reg. 170/03 | 17-9;

Question:
For large municipal residential systems, were corrective actions, including any steps directed by the Medical Officer of Health, taken to address adverse conditions?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Corrective actions were taken to address adverse conditions.

1. AWQI no. 164743, presence of total coliforms in a microbiological sample on April 4, 2024

Subsection 17-6 to Schedule 17 of O. Reg. 170/03 requires that if an adverse report is made in respect of total coliforms, the owner and the operating authority of the drinking water must ensure that the first corrective action to be taken is to resample and test as soon as reasonably possible at three locations: upstream, downstream and at the location where adverse sample was collected and take other steps as directed by the medical officer of health.

For this adverse, North Bay Parry Sound District Health Unit (NBPSDHU) requested two sets of samples for each site including the location of the adverse at least 24 hours apart. The City

of North Bay flushed the distribution lines and collected two sets of samples upstream, downstream and the location of the adverse more than 24 hours apart. The City of North Bay stated that the reason for this adverse was the presence of an aerator on the sampling tap.

2. AWQI no. 166610, low free chlorine residual in the distribution system on October 9, 2024 and

Subsection 17-4 to Schedule 17 of O. Reg. 170/03 requires that if an adverse report is made in respect of free chlorine residual, the owner and the operating authority of the drinking water must ensure that the first corrective action to be taken is to immediately flush the watermains and restore secondary disinfection to ensure that a free chlorine residual of at least 0.05 mg/L is achieved at all points in the affected parts of the distribution system and to take other steps as directed by the medical officer of health.

For this adverse, NBPSDHU requested to flush the hydrant next to the residence where the low free chlorine was measured and to take a bacteriological sample from the residence. The City of North Bay flushed the hydrant, restored the secondary disinfection and collected a sample from the residence. The City of North Bay stated that the reason for this adverse was a section of slow-moving water in that part of the distribution system.

3. AWQI no. 166766, low free chlorine residual in the distribution system on October 28, 2024.

For this adverse, NBPSDHU requested to confirm chlorine residual downstream from the location where low chlorine residual result was measured. The City of North Bay flushed the distribution lines and tested for free chlorine residual downstream and at the location of the low chlorine with satisfactory results. The City of North Bay stated that the reason for this adverse was that the sample was collected from a residence that uses an in-home treatment system that reduces free chlorine residual.

Question ID	DWMR1114001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Did the owner have evidence that, when required, all legal owners associated with the drinking water system were notified of the requirements of the Municipal Drinking Water Licence and Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had evidence that the required notifications were made.

The municipality's Engineering Department is responsible for communication of requirements of the MDWL and DWWP to the legal owners.

Question ID	DWMR1045001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Did the owner update the document describing the distribution components within 12 months of completion of alterations to the system in accordance with the Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had up-to-date documents describing the distribution components.

Question ID	DWMR1060001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Did the operations and maintenance manual(s) meet the requirements of the Municipal Drinking Water Licence?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The operations and maintenance manual(s) met the requirements of the Municipal Drinking Water Licence.

Question ID	DWMR1062001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-5;

Question:
Did records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment was done by a certified operator, water quality analyst, or person who met the requirements of Schedule 7-5 of O. Reg. 170/03?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was done by a certified operator, water quality analyst, or person who met the requirements of Schedule 7-5 of O. Reg. 170/03.

Question ID	DWMR1071001	Question Type	BMP

Legislative Requirement(s):
Not Applicable

Question:
Did the owner provide security measures to protect components of the drinking water system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner provided security measures to protect components of the drinking water system.

The WTP and all of the DS components were equipped with locked doors and intruder alarms.
The following locations include additional measures:
- North Bay WTP – key-card swipe sensors to enter building and to enter the treatment area, video surveillance of the property, exterior lighting and fenced in area;
- Airport Road Standpipe – located in a fenced in area;
- Larocque Standpipe - located in fenced in area;
- Birchs Road Standpipe – located in a fenced in area and gated entry to roadway;
- Cedar Heights Pump Station - located in fenced in area;
- Ellendale Reservoir – video surveillance, double steel door for main entrance and single door security gate on access door to the reservoir, both equipped with locks and fencing around the reservoir access to prevent unauthorized entry into the reservoir.
- Judge Ave Valve – located in a locked building equipped with intrusion alarm.

Question ID	DWMR1073001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 23 | (1);

Question:
Was an overall responsible operator designated for all subsystems which comprise the drinking water system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
An overall responsible operator was designated for all subsystem.

During the inspection period, Jonathan Dewey was designated as the overall responsible operator for the North Bay Water Treatment Plant subsystem and Scott Taggart as the overall responsible operator for the North Bay Water Distribution subsystem.

Question ID	DWMR1074001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 25 | (1);

Question:
Were operators-in-charge designated for all subsystems which comprise the drinking water system?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Operators-in-charge were designated for all subsystems.

Question ID	DWMR1075001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 128/04 | 22;

Question:
Were all operators certified as required?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All operators were certified as required.

Question ID	DWMR1076001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-2 | (2);

Question:
Were adjustments to the treatment equipment only made by certified operators?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Adjustments to the treatment equipment were only made by certified operators.

The City of North Bay provided documentation demonstrating that operators in training were making adjustments to the treatment equipment under direction of overall responsible operator and operators in charge.

Question ID	DWMR1115001	Question Type	Legislative

Legislative Requirement(s):
Not Applicable

Question:
Were the inspection questions sufficient to address other non-compliance items identified during the inspection period?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The following instance(s) of non-compliance were noted during the inspection:

One residential sample for lead was missed during the required sampling period.

The missed sample was collected outside of the required period. The City of North Bay provided documentation to the inspecting officer confirming that action has been taken to ensure that the required number of samples will be taken within the required sampling period.

No further action required.

North Bay DWS qualified for reduced lead sampling on October 16, 2011. As per subsection 15.1-5 of Schedule 15.1 of O. Reg. 170/03 the reduced sampling regime requires a system serving a population of 50,000 or more to sample the number of locations identified below every winter and summer period:
- At least 40 samples collected from points in plumbing that serves private residences connected to the distribution system.
- At least four (4) samples collected from points in plumbing that do not serve private residences connected to the distribution system.
- At least 8 (eight) samples collected from points in the distribution system.

Subsection 15.1.4 defines the winter period as the period from December 15 to April 15 and spring period as period from June 15 to October 15.

On May 17, 2024, the City of North Bay informed the inspecting officer by email that during the winter round of lead sampling, one residential sample was missed. The missing sample was collected outside of the winter sampling period, on May 16, 2024.

The lead samples for the City of North Bay are collected by Near North Lab, which indicated that moving forward, they plan to confirm the number of samples prior to the end of the sampling window to ensure that the correct number of samples is collected.

No further action required.

Question ID	DWMR1117001	**Question Type**	Information

Legislative Requirement(s):
Not Applicable

Question:
Were there any other items related to the drinking water system that should be recognized in the report?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The following items were noted as being relevant to the drinking water system:

Until the 1990s, Canadian Forces Base in North Bay had fire training facilities where foams containing per- and polyfluoroalkyl substances (PFAS) were used for practice drills. This resulted in contamination of Trout Lake, City of North Bay's drinking water source with PFAS. The existing drinking water treatment at North Bay is not capable of removing PFAS from the drinking water. The City of North Bay is mandated by its DWWP to take quarterly samples of 11 PFAS parameters in raw and treated water. Total PFAS levels in raw and treated water are consistently about 60 ng/L.

There are no Ontario drinking water standards for PFAS. The ministry has developed an

interim advice value (IAV) of 70 ng/L for the sum of 11 toxicologically relevant PFAS. In August 2024, Health Canada established a drinking water objective of 30 ng/L (for the sum total of 25 specific PFAS) to reduce exposure to PFAS in drinking water.

The city has undertaken a treatability study to provide options for treatment of PFAS to respond to potential future regulatory changes related to PFAS.

APPENDIX A

INSPECTION RATING REPORT

Ministry of the Environment, Conservation and Parks - Inspection Summary Rating Record (Reporting Year - 2024-25)

DWS Name:	NORTH BAY DRINKING WATER SYSTEM
DWS Number:	220000460
DWS Owner:	THE CORPORATION OF THE CITY OF NORTH BAY
Municipal Location:	NORTH BAY
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Focused
Compliance Assessment Start Date:	Nov-5-24
Ministry Office:	North Bay Area Office

Maximum Risk Rating: 564

Inspection Module	Non Compliance Risk (X out of Y)
Capacity Assessment	0/30
Certification and Training	0/42
Distribution System	0/4
Logbooks	0/14
Operations Manuals	0/14
Other Inspection Findings	0/0
Reporting & Corrective Actions	0/91
Source	0/0
Treatment Processes	0/257
Water Quality Monitoring	0/112
Overall - Calculated	**0/564**

Inspection Risk Rating:	**0.00%**

Final Inspection Rating:	**100.00%**

Inspection Rating Record Generated On 2025-01-31 (Inspection ID: 1-334412325)

DWS Name:	NORTH BAY DRINKING WATER SYSTEM
DWS Number:	220000460
DWS Owner Name:	THE CORPORATION OF THE CITY OF NORTH BAY
Municipal Location:	NORTH BAY
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Focused
Compliance Assessment Start Date:	Nov-5-24
Ministry Office:	North Bay Area Office

Non-Compliance Question(s)	Non Compliance Risk
Other Inspection Findings	
Were the inspection questions sufficient to address other non-compliance items identified during the inspection period?	0
Overall - Total	**0**

Maximum Question Rating: 564

Inspection Risk Rating:	**0.00%**
FINAL INSPECTION RATING:	**100.00%**

APPENDIX B

DRINKING WATER SYSTEM COMPONENTS

DWS Component Information Report for 220000460

as of 30-JAN-2025

Drinking Water System Profile Information

DWS #	220000460
MOE Assigned Name	North Bay Drinking Water System
Category	LMRS
Regulation	O.REG 170/03
DWS Type	Water Treatment Plant
Source Type	Surface Water
Address	248 Lakeside Drive, North Bay, Ontario, P1A 3E3, Canada
Region	Northern Region
District	North Bay Area Office
Municipality	North Bay
Public Health Unit	North Bay Parry Sound District Health Unit

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
Raw Water Intake	Source	Surface	248 Lakeside Drive,	The North Bay Water Treatment Plant (WTP) draws its raw water from Trout Lake which is part of the Mattawa River watershed. The intake structure is located in Delaney Bay, approximately 300 m from shore, at a depth of 21.5 meters. The plant's intake facilities consist of a 1,200 mm diameter polyethylene pipe extending 300 m into Trout Lake to an intake structure located approximately 3.6 meters off the lake bottom with a capacity of 80,000m³/day. The North Bay Water Treatment Plant is also equipped with another intake pipe and structure described as follows: a 900 mm iron intake (not in service) extending 122 m into Trout Lake at a depth of 7.6 meters, 1.5 meters off the lake bottom, with a capacity of 50,000m³/day.
Cfb Reservoir	Other	Reservoir	North End Manston Crescent,	The Canadian Forces Base (CFB) Reservoir comprised of 1820m³ reservoir and pumping facilities. The building also has an on-line continuous water quality analyzer for free chlorine and a standby diesel generator. However, since the addition of the Airport Standpipe this facility is only used for water storage. Note: In October 2021, this reservoir was decommissioned and replaced by the CFB Standpipe.
Airport Road Standpipe	Other	Reservoir		The Airport Road Standpipe and Booster Pumping Station are located at the intersection of Airport Road and Airport Way in North Bay. Based on information contained in the DWWP, the standpipe is 26.2m high by 13.7m in diameter. Its capacity is 3,862m³ intended to provide storage for fire, equalization and emergency purposes for pressure Zones 4 and 5. The pumping station is supplied water from Zone 3 to pressure Zone 4 via a new 500 mm water main. The pump house is equipped with three (3) pumps for this Pressure Zone 4 and four (4) pumps for Pressure Zone 5. The pump house is also equipped with two (2) high capacity pumps, a sodium hypochlorite rechlorination system and a 350 kW diesel generator set for emergency power. The standpipe and pumping station was commissioned in the fall of 2009.

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				Note: Under normal operation, Zone 4 is fed via gravity from the standpipe via the new 500 mm water main.
Ellendale Reservoir	Other	Reservoir	East End Ellendale Drive,	The Ellendale Reservoir is a double cell, 18,200 m³ capacity reservoir equipped with two sodium hypochlorite re-chlorination systems and four (4) high lift pumps to maintain pressure in the system. The facility is also comprised of on-line, continuous water quality analyzers for free chlorine and turbidity and a stand-by power system to operate the entire facility during power outages.
Birchs Road Standpipe And Rechlorination Station	Other	Reservoir	Southwest Corner Birchs & Booth Roads,	The Birchs Road Standpipe and Rechlorination Station is an 11,775 m³ capacity, steel unbaffled treated water standpipe equipped with a sodium hypochlorite rechlorination system. The facility is also comprised of on-line, continuous water quality analyzers for free chlorine residual and turbidity and standby power to run the entire facility during a power outage. Note: On December 19, 2014 a Schedule C amendment to the DWWP was approved which permitted the installation of a submersible mixer at the Birchs Road standpipe.
Canadore Pumping Station	Other	Other		The Canadore Pumping Station is a facility located at the corner of Gormanville Road and McKeown Avenue. The facility is equipped with three (3) high lift pumps and a fire pump all for the purpose of maintaining pressure in the distribution system. The building also has an on-line continuous water quality analyzer for free chlorine, pressure tanks and a standby diesel generator. Note: The pump station has been offline since the date the Cedar Height Booster Pumping Station was brought online.
Judge Avenue Valve Chamber And Rechlorination Station	Other	Other	Northeast Corner Judge Avenue & Lakeshore Drive,	The Judge Avenue Valve Chamber and Rechlorination Station is equipped with a sodium hypochlorite re-chlorination system. The facility has continuous water quality analyzers for free chlorine and turbidity, standby power to run the entire facility during power outages and a UPS battery with three hours of standby power to maintain the SCADA system. Note: The rechlorination equipment is kept off site as it is not presently in-use.
Cedar Heights Booster Pumping Station (Bps)	Other	Other		The Cedar Height BPS is a facility located on College Drive. The facility is equipped with two (2) centrifugal pumps for the purpose of maintaining pressure in the distribution system. The building also has an on-line continuous water quality analyzer for free chlorine, pressure tanks and a standby diesel generator. The booster station was commissioned 2019.

DWS Component Information Report for 220000460

as of 30-JAN-2025

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
Cfb Standpipe (New 2021)	Other	Reservoir		The CFB Standpipe is a glass fused to steel un-baffled tank with an electric mixer inside, it is located on the Airport Standpipe property and shares all the buildings resources such as the PLC and standby generator. This Standpipe has a volume of 2,280m3 and supplies water to zone 3 and to the Airport Standpipe. The piping at this facility allows this standpipe to also supply water for zone 5 during emergencies and maintenance activities.
North Bay Water Treatment Plant	Treated Water Poe	Treatment Facility		The North Bay WTP went into service on February 17, 2010. This facility operates on a multi-barrier approach which consists of microfiltration membrane filtration followed by ultraviolet (UV) radiation, chlorination, a high lift pumping station, and a fluoridation system. This facility has two treatment systems (i.e. primary and secondary) both with separate microfiltration racks and separate UV disinfection systems with different dosages. Raw water enters the water plant through an intake/junction chamber and passes through five 300 micron automatic feed strainers before being directed to the primary membrane filtration system. The primary treatment system has 11 filter racks (with 64 modules each) and three UV reactors dosing at 10 millijoules/cm² (mJ/cm²). Treated water is then directed to the contact chamber for chlorination. The secondary treatment system is fed from the non-chemical backwash water of the primary microfiltration system and has two filter racks (with 40 modules each) and two UV reactors dosing at 15 mJ/cm². Treated water from the secondary UV system is then directed to the primary UV system for additional treatment prior to entering the contact chamber for chlorination. The chlorine contact chamber consists of two tanks which can be operated in series or separately. Tank # 1 has a storage volume of 688 m³ and Tank # 2 a storage volume of 502 m³. Once water has passed through the contact chamber it is directed to the high lift pump wet wells. Wet well # 1 has the capacity of 240 m³ and is equipped with one variable speed pump and two constant speed vertical turbine pumps. Wet well # 2 has a capacity of 240 m³ and is equipped with one variable speed pump and one constant speed turbine pump. This facility is also equipped with a dual fuel (natural gas/diesel) generator for backup power with a rating of 2050 kW to supply power during emergencies and high demand periods. Chemical wastewater generated on-site is directed to the neutralization tank where the pH and chlorine concentration are adjusted. Note: On March 28, 2011 a Schedule C amendment to Drinking Water Works Permit (DWWP) No. 196-201 was approved which permitted the installation of piping and valving for bypassing the membrane filtration system in

DWS Component Information Report for 220000460

as of 30-JAN-2025

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				the event of a catastrophic membrane-SCADA failure.
Larocque Water Storage Standpipe	Other	Reservoir		The Larocque Water Storage Standpipe is located on Larocque Road and has a capacity of 4,100 m^3. The standpipe was commissioned in December 2019.

APPENDIX C

REFERENCE MATERIALS

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are available to help you operate your drinking water system. Below is a list of key materials owners and operators of municipal residential drinking water systems frequently use.

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Ministry if you need assistance or have questions at 1-866-793-2588 or waterforms@ontario.ca.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater

PUBLICATION TITLE	PUBLICATION NUMBER
FORMS: Drinking Water System Profile Information Laboratory Services Notification Adverse Test Result Notification	 012-2149E 012-2148E 012-4444E
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	Website
Procedure for Disinfection of Drinking Water in Ontario	Website
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids	Website
Filtration Processes Technical Bulletin	Website
Ultraviolet Disinfection Technical Bulletin	Website
Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments	Website
Certification Guide for Operators and Water Quality Analysts	Website
Guide to Drinking Water Operator Training Requirements	9802E
Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption	Website
Drinking Water System Contact List	7128E01
Ontario's Drinking Water Quality Management Standard - Pocket Guide	Website
Watermain Disinfection Procedure	Website
List of Licensed Laboratories	Website

Ontario

Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment. Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le ministère au 1-866-793-2588, ou encore à waterforms@ontario.ca si vous avez des questions ou besoin d'aide.

Pour plus de renseignements sur l'eau potable en Ontario, consultez le site www.ontario.ca/eaupotable

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Renseignements sur le profil du réseau d'eau potable Avis de demande de services de laboratoire Avis de résultats d'analyse insatisfaisants et de règlement des problèmes	012-2149F 012-2148F 012-4444F
Prendre soin de votre eau potable - Un guide destiné aux membres des conseils municipaux	Site Web
Marche à suivre pour désinfecter l'eau portable en Ontario	Site Web
Stratégies pour minimiser les trihalométhanes et les acides haloacétiques de sous-produits de désinfection	Site Web
Filtration Processes Technical Bulletin (en anglais seulement)	Site Web
Ultraviolet Disinfection Technical Bulletin (en anglais seulement)	Site Web
Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable	Site Web
Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable	Site Web
Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable	9802F
Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption	Site Web
Liste des personnes-ressources du réseau d'eau potable	Site Web
L'eau potable en Ontario - Norme de gestion de la qualité - Guide de poche	Site Web
Procédure de désinfection des conduites principales	Site Web
Laboratoires autorisés	Site Web

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