

Ministry of the Environment, Conservation and Parks / Ministère de l'Environnement, de la Protection de la nature et des Parcs

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October 14th, 2022

by Email

Don McArthur
Clerk-Administrator
The Corporation of the Village of South River
63 Marie Street
South River, ON P0A 1X0

**RE: 2022-23 Inspection Report for the South River Drinking Water System
DWS No. 220013562
Inspection Report No. 1-107834742**

On September 21st, 2022, Water Inspector Erin Spires conducted the annual inspection of the South River Drinking Water System. The inspection included a physical inspection of the water treatment plant, data review and interview with Darren Aljoe and Josh Gravelle for the inspection period of October 26th, 2021 to September 14th, 2022. The resulting inspection report is attached.

Two sections of the report, namely, "Actions Required" and "Recommended Actions" identify aspects of the drinking water system's operation with the potential for improvement.

Please note that "Actions Required" are linked to incidents of non-compliance with regulatory requirements contained within an Act, a Regulation, or site-specific approvals, orders or instructions. Such violations could result in the issuance of mandatory abatement instruments including orders, tickets, penalties, or referrals to the ministry's Investigations and Enforcement Branch.

"Recommended Actions" convey information that the owner or operating authority should strongly consider implementing in order to advance efforts already in place to address such issues as emergency preparedness and conformance with existing and emerging industry standards. Please note that items which appear as recommended actions do not, in themselves, constitute violations.

Electronic copies of this inspection report have been sent to the North Bay Parry Sound District Health Unit and the Ministry of Natural Resources and Forestry in accordance with the ministry's Municipal Inspection Protocol.

Please note that as of June 29, 2018 the Ministry of the Environment and Climate Change's name has changed to the Ministry of the Environment, Conservation and Parks. This name change will take some time to be reflected in ministry materials and systems.

Please note that due to a change in IT systems, the **Inspection Rating Report (IRR) cannot be generated at the same time as the inspection report.** The IRR will be sent separately and prior to any public release (typically within 1-2 month of the completion of the inspection).

Thank you for your co-operation. If you have any questions or comments about this inspection, please contact me at (705) 358-1316 or by email at erin.spires@ontario.ca.

Sincerely,



Erin Spires
Provincial Officer #1540 and Water Inspector
Drinking Water and Environmental Compliance Division
Ministry of the Environment, Conservation and Parks
North Bay Area Office

Attachments

C:

- P. Dryda, Sr. Operations Manager Near North Cluster – Ontario Clean Water Agency (OCWA)
- D. Aljoe, Overall Responsible Operator – OCWA
- J. Gravelle, Process and Compliance Technician - OCWA
- Y. Rondeau, Safety, Process and Compliance Manager - OCWA
- R. A-Muhong, Manager – Environmental Health Programs – North Bay Parry Sound District Health Unit
- S. Ilersich, Supervisor – MECP – DWECD - Timmins/North Bay Office
- M. Baldwin, District Manager – Ministry of Natural Resources and Forestry – North Bay Office
- D. Ellingwood, Supervisor - North Bay-Mattawa Conservation Authority



SOUTH RIVER DRINKING WATER SYSTEM
28 HOWARD ST, SOUTH RIVER, ON, P0A 1X0
Inspection Report

System Number: 220013562
Entity: ONTARIO CLEAN WATER
AGENCY
CORPORATION OF THE VILLAGE
OF SOUTH RIVER
Inspection Start Date: 09/21/2022
Inspection End Date: 09/28/2022
Inspected By: Erin Spires
Badge #: 1540


(signature)

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NON-COMPLIANCE/NON-CONFORMANCE ITEMS

The following item(s) have been identified as non-compliance/non-conformance, based on a "No" response captured for a legislative or best management practice (BMP) question (s), respectively.

Question Group: Other Inspection Findings

Question ID	MRDW1037001	Question Type	Legislative
Question:			
Are all continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or MDWL or DWWP or order, equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6?			
Legislative Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10; SDWA O. Reg. 170/03 6-5 (1.1);		
Observation/Corrective Action(s)			
<p>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, were not equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.</p> <p>Section 5-1(1.1)1 of Schedule 6 of O. Reg. 170/03 requires that continuous monitoring equipment must cause an alarm to signal immediately at a location where the equipment conducts tests and at a location where a person is present if the equipment malfunctions, loses power or a test result for free chlorine residual is below the minimum alarm standard.</p> <p>The South River WTP Alarm Setpoint sheet indicates that:</p> <p>There is a high filter effluent turbidity alarm set at 0.4 NTU with a 1 minute delay. At 1 NTU, the package plant will shutdown without delay and alarm out.</p> <p>A backwash is triggered when filter effluent turbidity reaches 0.5 NTU.</p> <p>There is a low free chlorine alarm set at 1.75 mg/L which triggers an alarm without delay. Clearwell No. 1 has a low chlorine alarm of 2 mg/L for operational purposes.</p> <p>There is a low clearwell level alarm which is triggered at 2.7 m.</p> <p>A review of the continuous trends, Maximo Alarm Summary, and information provided by the operating authority indicates that for the majority of the inspection period the filter effluent turbidity alarm and the free chlorine analyzer alarms were operational.</p>			

However, there were several occasions between June 3rd to June 17th, 2022 where there was a low free chlorine residual after power fluctuations. The low free chlorine residuals did not trigger an alarm and were observed during the 72-hour review.

Failure to ensure that the free chlorine analyzer caused an alarm to signal immediately at a location where a person is present if a test result for free chlorine residual is below the minimum alarm standard is a violation of Section 5-1(1.1)1.(i)and(ii) of Schedule 6 of O. Reg. 170/03.

Corrective Actions:

The operating authority investigated including reviewing the alarm system and replacing the keypad, installing a solenoid valve to control the pH fluctuations on the chlorine analyzer during loss of power events, replacing the free chlorine analyzer, and the sample point was moved 16 ft. away from the soda ash injection point.

These actions have resolved soda ash being drawn into the chlorine analyzer sample line and negatively impacting the pH concentration. It was also indicated during the inspection that the alarm programming was not triggering an alarm as the low chlorine residual was restored too quickly for the programming to signal.

No further action is required.

Question ID	MRDW1115001	Question Type	Legislative
Question:			
Were the inspection questions sufficient to address other non-compliance items identified during the inspection period?			
Legislative Requirement	Not Applicable		
Observation/Corrective Action(s)			
The following instance(s) of non-compliance were also noted during the inspection:			
Condition 10.1 of the Licence states that "Nothing in this licence or the drinking water works permit shall be read as to permit the discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect."			
Condition 31(1) of the Safe Drinking Water Act, 2002, specifies that no person shall use or operate a municipal drinking-water system that was established after this section comes into force except under the authority of and in accordance with an municipal drinking water licence.			
Waste streams from the facility are treated in the facility's wastewater system. The sludge from the clarifier blowdown is directed to the wastewater surge tank. The supernatant for			

the wastewater surge tank is directed to the clarification tank. The settled solids are directed to the sludge holding tank. The filter backwash water discharges to the clarification tank. The supernatant from the clarification tank is decanted and discharges to a storm sewer which discharges to the lake.

Sludge built up in the clarification cell is pumped to the sludge holding tank. The tanks are equipped with level monitors triggering the pumping of supernatant to a storm sewer that discharges to the lake. Sludge from the sludge thickening tank is pumped to the bagging system and polymer is added. This dries out the sludge which is then disposed of at the landfill.

The previous inspection report indicates that from 2011 to 2021 there have been fourteen (14) reported events of spills from the wastewater system. The volume of spilled supernate ranged from 0.05 to 280 m³.

An action plan was submitted on January 7th, 2022 to address the spills including additional alarming, pumping out the waste tanks more frequently to better maintain a sludge blanket, modifying the waste decant pump operation to ensure that wastewater is pumped out quickly after a backwash sequence, and replacing the level sensor for increased accuracy. Replacing the level sensor is the remaining item that has not been completed due to delays with obtaining equipment.

On June 14th, 2022 from 6:45 pm to 7:15 pm there was spill of 1.5 m³ supernatant to a drainage ditch. High turbidity after a backwash caused a second backwash which overwhelmed the waste system causing the spill. Operators responded and disabled the plant to allow the waste system to drain.

Failure to ensure that the drinking water system was operated in accordance with the Municipal Drinking Water Licence is a violation of the Condition 10(1) of the Licence and Section 31(1) of the Safe Drinking Water Act, 2002.

THIS IS A REPEAT VIOLATION.

By no later than November 30th, 2022, the owner and operating authority is required to install the level sensor and provide written confirmation that the sensor has been replaced and is operational to Water Inspector Erin Spires, Ministry of the Environment, Conservation, and Park's North Bay Office.

INSPECTION DETAILS

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

Ministry Program: DRINKING WATER | **Regulated Activity:**

Question ID	MRDW1001001	Question Type	Information
Question:			
What was the scope of this inspection?			
Legislative Requirement	Not Applicable		
Observation			
<p>The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period. 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 practices.</p> <p>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.</p> <p>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.</p> <p>On September 21st, 2022, Ministry of the Environment, Conservation and Parks' Water Inspector Erin Spires were accompanied during the unannounced, focused inspection of the South River Drinking Water System (DWS) by Darren Aljoe, Operator with Overall Responsibility, Ontario Clean Water Association (OCWA). Josh Gravelle, Process and Compliance Technician with OCWA, provided documentation for the inspection.</p> <p>The Corporation of the Village of South River is the owner of the South River Drinking Water System. OCWA is the operating authority for the system.</p> <p>The drinking water system inspection included a physical inspection of the treatment plant and document review. Ministry records indicate that the last inspection occurred on October 26th, 2021. The inspection period is from October 26th, 2021 to September 21st, 2022.</p>			

Specifically, this included a review and assessment of operating practices in relation to the following documents:

- Drinking Water System Regulation O. Reg. 170/03
- Certification of Drinking Water Systems Operators Regulation O. Reg. 128/04
- Permit to Take Water (PTTW) No. 4340-BA6RUQ dated March 19th, 2019
- Municipal Drinking Water Licence (Licence) No. 200-101 (Issue No. 4) dated January 15th, 2021
- Drinking Water Works Permit (Permit) No. 200-201 (Issue No. 4) dated January 15th, 2021
- Previous ministry inspection reports dated December 9th, 2020 and October 26th, 2021

Question ID	MRDW1000001	Question Type	Information
Question: Does this drinking water system provide primary disinfection?			
Legislative Requirement	Not Applicable		
Observation			
This Drinking Water System provides for both primary and secondary disinfection and distribution of water.			

Question ID	MRDW1018001	Question Type	Legislative
Question: Has the owner ensured that all equipment is installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?			
Legislative Requirement	SDWA 31 (1);		
Observation			
The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.			

Question ID	MRDW1020001	Question Type	Legislative
Question: Is the owner/operating authority able to demonstrate that, when required during the inspection period, Form 1 documents were prepared in accordance with their Drinking Water Works Permit?			

Legislative Requirement	SDWA 31 (1);
Observation	
The owner/operating authority was in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period.	

Question ID	MRDW1021001	Question Type	Legislative
Question:			
Is the owner/operating authority able to demonstrate that, when required during the inspection period, Form 2 documents were prepared in accordance with their Drinking Water Works Permit?			
Legislative Requirement	SDWA 31 (1);		
Observation			
The owner/operating authority was in compliance with the requirement to prepare Form 2 documents as required by their Drinking Water Works Permit during the inspection period.			
A Form 2 provided for the inspection period indicates that on June 20, 2022 the chlorine analyzer sample line was repositioned 16ft. upstream.			

Question ID	MRDW1025001	Question Type	Legislative
Question:			
Were all parts of the drinking water system that came in contact with drinking water (added, modified, replaced or extended) disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?			
Legislative Requirement	SDWA 31 (1);		
Observation			
All parts of the drinking water system were disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit.			

Question ID	MRDW1024001	Question Type	Legislative
Question:			
Do records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated as required?			
Legislative Requirement	SDWA O. Reg. 170/03 1-2 (2);		

Observation
Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.

Question ID	MRDW1038001	Question Type	Legislative
Question:			
Is continuous monitoring equipment that is being utilized to fulfill O. Reg. 170/03 requirements performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format?			
Legislative Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4;		
Observation			
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 specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.			

Question ID	MRDW1035001	Question Type	Legislative
Question:			
Are operators examining continuous monitoring test results and are they examining the results within 72 hours of the test?			
Legislative Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10;		
Observation			
Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.			

Question ID	MRDW1037001	Question Type	Legislative
Question:			
Are all continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or MDWL or DWWP or order, equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6?			
Legislative Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg.		

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

Observation

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, were not equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.

Section 5-1(1.1)1 of Schedule 6 of O. Reg. 170/03 requires that continuous monitoring equipment must cause an alarm to signal immediately at a location where the equipment conducts tests and at a location where a person is present if the equipment malfunctions, loses power or a test result for free chlorine residual is below the minimum alarm standard.

The South River WTP Alarm Setpoint sheet indicates that:

There is a high filter effluent turbidity alarm set at 0.4 NTU with a 1 minute delay. At 1 NTU, the package plant will shutdown without delay and alarm out.

A backwash is triggered when filter effluent turbidity reaches 0.5 NTU.

There is a low free chlorine alarm set at 1.75 mg/L which triggers an alarm without delay. Clearwell No. 1 has a low chlorine alarm of 2 mg/L for operational purposes.

There is a low clearwell level alarm which is triggered at 2.7 m.

A review of the continuous trends, Maximo Alarm Summary, and information provided by the operating authority indicates that for the majority of the inspection period the filter effluent turbidity alarm and the free chlorine analyzer alarms were operational.

However, there were several occasions between June 3rd to June 17th, 2022 where there was a low free chlorine residual after power fluctuations. The low free chlorine residuals did not trigger an alarm and were observed during the 72-hour review.

Failure to ensure that the free chlorine analyzer caused an alarm to signal immediately at a location where a person is present if a test result for free chlorine residual is below the minimum alarm standard is a violation of Section 5-1(1.1)1.(i)and(ii) of Schedule 6 of O. Reg. 170/03.

Corrective Actions:

The operating authority investigated including reviewing the alarm system and replacing the keypad, installing a solenoid valve to control the pH fluctuations on the chlorine analyzer during loss of power events, replacing the free chlorine analyzer, and the sample point was moved 16 ft. away from the soda ash injection point.

These actions have resolved soda ash being drawn into the chlorine analyzer sample line

and negatively impacting the pH concentration. It was also indicated during the inspection that the alarm programming was not triggering an alarm as the low chlorine residual was restored too quickly for the programming to signal.

No further action is required.

Question ID	MRDW1040000	Question Type	Legislative
Question: Are all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?			
Legislative Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10;		
Observation			
All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.			
A review of the work order summary and discussions with the operating authority indicate that the POE chlorine analyzer is verified twice a week and calibrated as needed.			
The filter effluent turbidity analyzers are verified weekly and calibrated as needed.			
The clearwell free chlorine analyzer is verified weekly.			

Question ID	MRDW1108001	Question Type	Legislative
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, an Order, MDWL, or DWWP issued under Part V, SDWA, has triggered an alarm or an automatic shut-off, did a qualified person respond in a timely manner and take appropriate actions?			
Legislative Requirement	SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10; SDWA O. Reg. 170/03 6-5 (1.1);		
Observation			
Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.			

Question ID	MRDW1033001	Question Type	Legislative
Question: Is the secondary disinfectant residual measured as required for the large municipal residential distribution system?			
Legislative Requirement	SDWA O. Reg. 170/03 7-2 (3); SDWA O. Reg. 170/03 7-2 (4);		
Observation			
<p>The secondary disinfectant residual was measured as required for the large municipal residential distribution system.</p> <p>A review of the South River Distribution System chlorine residual sheets indicates that the lowest free chlorine residual for the inspection period occurred on August 22nd, 2022 at 0.07 mg/L.</p>			

Question ID	MRDW1081001	Question Type	Legislative
Question: For LMR systems, are all microbiological water quality monitoring requirements for distribution samples being met?			
Legislative Requirement	SDWA O. Reg. 170/03 10-2 (1); SDWA O. Reg. 170/03 10-2 (2); SDWA O. Reg. 170/03 10-2 (3);		
Observation			
<p>All microbiological water quality monitoring requirements prescribed by legislation for distribution samples in a large municipal residential system were being met.</p> <p>Section 10-2 of Schedule 10 of O. Reg. 170/03 requires that the owner and operating authority for the drinking water system must ensure that at least eight distribution samples are taken every month, with at least one of the samples being taken each week. The owner and operating authority must ensure that each of the samples are tested for E.coli, total coliforms, and that at least 25% of the samples are tested for general bacteria population expressed as colony counts on a heterotrophic plate count (HPC).</p> <p>A review of the certificates of analysis for the inspection period indicate that at least 12 distribution samples were collected each month (three per week) and tested for E.coli and total coliforms as required. One distribution sample was also tested for HPC each week as required.</p>			

Question ID	MRDW1096001	Question Type	Legislative
Question:			

Do records confirm that chlorine residual tests are being conducted at the same time and at the same location that microbiological samples are obtained?	
Legislative Requirement	SDWA O. Reg. 170/03 6-3 (1);
Observation	
Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.	

Question ID	MRDW1086001	Question Type	Legislative
Question:			
Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?			
Legislative Requirement	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);		
Observation			
All haloacetic acid water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.			
Section 13-6.1 of Schedule 13 of O. Reg. 170/03 requires the owner and operating authority of the drinking water system that provides chlorination must ensure that at least one distribution sample is taken in each calendar quarter, from a point in the distribution 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 "calendar quarter" as the three-month period that begins on January 1, April 1, July 1, or October 1.			
Effective January 1, 2020, the standard for HAAs of 0.08 mg/L (80 ug/L) was introduced and is expressed as a running annual average (RAA) of quarterly results.			
A review of the certificates of analysis for the inspection period indicates that sampling for HAAs occurred on October 25th, 2021 (57.1 ug/L), January 25th, 2022 (29 ug/L), and April 19th, 2022 (31.7 ug/L), and July 11th, 2022 (41.2 ug/L).			
The RAA for HAAs at the time of the inspection is 40 ug/L.			

Question ID	MRDW1087001	Question Type	Legislative
Question:			

Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location?	
Legislative Requirement	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);
Observation	
<p>All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.</p> <p>Section 13-6 of Schedule 13 of O. Reg. 170/03 requires the owner and operating authority of drinking water system that provides chlorination must ensure that at least one distribution sample is taken in each calendar quarter from a point in the 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 as 0.1 mg/L (100 ug/L) expressed as a RAA.</p> <p>RAA is defined as "the running annual average of quarterly results".</p> <p>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.</p> <p>A review of the certificates of analysis for the inspection period indicates that sampling for THMs occurred on October 25th, 2021 (88 ug/L), January 25th, 2022 (42 ug/L), and April 19th, 2022 (39 ug/L), and July 11th, 2022 (64 ug/L).</p> <p>The RAA for THMs at the time of the inspection is 58.25 ug/L.</p>	

Question ID	MRDW1094001	Question Type	Legislative
Question:			
Are all water quality monitoring requirements imposed by the MDWL and DWWP being met?			
Legislative Requirement	SDWA 31 (1);		
Observation			
<p>All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were being met.</p> <p>Condition 5.4 of Schedule C of the Licence requires the owner and operating authority of the drinking water system to take monthly composite samples of the backwash wastewater facility's point of discharge and test for suspended solids.</p>			

Condition 1.5 of Schedule C of the Licence states that the annual average concentration of suspended solids shall not exceed 25 mg/L.

A review of the certificates of analysis for the inspection period indicates that monthly samples of the backwash wastewater facility's point of discharge were taken and tested for suspended solids.

The annual average concentration of suspended solids from January to September 2022 is 24.2 mg/L.

Question ID	MRDW1101001	Question Type	Legislative
Question:			
For LMR Systems, have corrective actions (as per Schedule 17 of O. Reg. 170/03) been taken to address adverse conditions, including any other steps as directed by the Medical Officer of Health?			
Legislative Requirement	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;		
Observation			
Corrective actions (as per Schedule 17), including any other steps that were directed by the Medical Officer of Health, had been taken to address adverse conditions.			
AWQI No. 159950 – On September 12th, 2022, a watermain was cut resulting in loss of pressure.			
AWQI No. 159971 – On September 14th, 2022, there was a loss of pressure during watermain maintenance.			
For both AWQIs, the ministry's Spills Action Center and North Bay Parry Sound District Health Unit were notified and corrective actions including resampling, flushing and notifying users of the boil water advisory were taken.			

Question ID	MRDW1104000	Question Type	Legislative
Question:			
Were all required verbal notifications of adverse water quality incidents immediately provided as per O. Reg. 170/03 16-6?			

Legislative Requirement	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);
Observation	All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.

Question ID	MRDW1059000	Question Type	Legislative
Question: Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system?			
Legislative Requirement	SDWA O. Reg. 128/04 28;		
Observation	The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.		

Question ID	MRDW1060000	Question Type	Legislative
Question: Do the operations and maintenance manuals meet the requirements of the DWWP and MDWL issued under Part V of the SDWA?			
Legislative Requirement	SDWA 31 (1);		
Observation	The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.		

Question ID	MRDW1061001	Question Type	Legislative
Question: Are logbooks properly maintained and contain the required information?			
Legislative Requirement	SDWA O. Reg. 128/04 27 (1); SDWA O. Reg. 128/04 27 (2); SDWA O. Reg. 128/04 27 (3); SDWA O. Reg. 128/04 27 (4); SDWA O. Reg. 128/04 27 (5); SDWA O. Reg. 128/04 27 (6); SDWA O. Reg. 128/04 27 (7);		

Observation
Logbooks were properly maintained and contained the required information.

Question ID	MRDW1062001	Question Type	Legislative
Question:			
Do records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment is being done by a certified operator, water quality analyst, or person who meets the requirements of O. Reg. 170/03 7-5?			
Legislative Requirement	SDWA O. Reg. 170/03 7-5;		
Observation			
Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.			

Question ID	MRDW1071000	Question Type	BMP
Question:			
Has the owner provided security measures to protect components of the drinking water system?			
Legislative Requirement	Not Applicable		
Observation			
The owner had provided security measures to protect components of the drinking water system.			
The South River Water Treatment Plant is kept locked when operators are not onsite, has an intruder alarm, flood lights are located around the building, and "authorized vehicles only" signs are posted at the driveways. The lowlift pump building has video surveillance.			

Question ID	MRDW1073001	Question Type	Legislative
Question:			
Has the overall responsible operator been designated for all subsystems which comprise the drinking water system?			
Legislative Requirement	SDWA O. Reg. 128/04 23 (1);		
Observation			

The overall responsible operator had been designated for each subsystem.

Darren Aljoe and Dan Finnigan act as Operators with Overall Responsibility for the South River Drinking Water System and alternate the responsibility on a weekly basis.

Question ID	MRDW1074001	Question Type	Legislative
Question: Have operators-in-charge been designated for all subsystems for which comprise the drinking water system?			
Legislative Requirement	SDWA O. Reg. 128/04 25 (1);		
Observation			
Operators-in-charge had been designated for all subsystems which comprise the drinking water system.			

Question ID	MRDW1075001	Question Type	Legislative
Question: Do all operators possess the required certification?			
Legislative Requirement	SDWA O. Reg. 128/04 22;		
Observation			
All operators possessed the required certification.			

Question ID	MRDW1076001	Question Type	Legislative
Question: Do only certified operators make adjustments to the treatment equipment?			
Legislative Requirement	SDWA O. Reg. 170/03 1-2 (2);		
Observation			
Only certified operators made adjustments to the treatment equipment.			

Question ID	MRDW1115001	Question Type	Legislative
Question: Were the inspection questions sufficient to address other non-compliance items identified			

during the inspection period?

Legislative Requirement

Not Applicable

Observation

The following instance(s) of non-compliance were also noted during the inspection:

Condition 10.1 of the Licence states that "Nothing in this licence or the drinking water works permit shall be read as to permit the discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect."

Condition 31(1) of the Safe Drinking Water Act, 2002, specifies that no person shall use or operate a municipal drinking-water system that was established after this section comes into force except under the authority of and in accordance with an municipal drinking water licence.

Waste streams from the facility are treated in the facility's wastewater system. The sludge from the clarifier blowdown is directed to the wastewater surge tank. The supernatant for the wastewater surge tank is directed to the clarification tank. The settled solids are directed to the sludge holding tank. The filter backwash water discharges to the clarification tank. The supernatant from the clarification tank is decanted and discharges to a storm sewer which discharges to the lake.

Sludge built up in the clarification cell is pumped to the sludge holding tank. The tanks are equipped with level monitors triggering the pumping of supernatant to a storm sewer that discharges to the lake. Sludge from the sludge thickening tank is pumped to the bagging system and polymer is added. This dries out the sludge which is then disposed of at the landfill.

The previous inspection report indicates that from 2011 to 2021 there have been fourteen (14) reported events of spills from the wastewater system. The volume of spilled supernate ranged from 0.05 to 280 m3.

An action plan was submitted on January 7th, 2022 to address the spills including additional alarming, pumping out the waste tanks more frequently to better maintain a sludge blanket, modifying the waste decant pump operation to ensure that wastewater is pumped out quickly after a backwash sequence, and replacing the level sensor for increased accuracy. Replacing the level sensor is the remaining item that has not been completed due to delays with obtaining equipment.

On June 14th, 2022 from 6:45 pm to 7:15 pm there was spill of 1.5 m3 supernatant to a drainage ditch. High turbidity after a backwash caused a second backwash which overwhelmed the waste system causing the spill. Operators responded and disabled the plant to allow the waste system to drain.

Failure to ensure that the drinking water system was operated in accordance with the

Municipal Drinking Water Licence is a violation of the Condition 10(1) of the Licence and Section 31(1) of the Safe Drinking Water Act, 2002.

THIS IS A REPEAT VIOLATION.

By no later than November 30th, 2022, the owner and operating authority is required to install the level sensor and provide written confirmation that the sensor has been replaced and is operational to Water Inspector Erin Spires, Ministry of the Environment, Conservation, and Park's North Bay Office.

Question ID	MRDW1012001	Question Type	Legislative
Question:			
Does the owner have a harmful algal bloom monitoring plan in place that meets the requirements of the MDWL?			
Legislative Requirement	SDWA 31 (1);		
Observation			
The owner had a harmful algal bloom monitoring plan in place.			
Condition 6 of Schedule C of the Licence requires that the owner shall develop and keep up to date a Harmful Algal Bloom (HAB) monitoring, reporting and sampling plan, to be implemented when a potential harmful algal bloom is suspected or present.			
A review of the Operations and Maintenance Manuals indicates that there is a Standard Operating Procedure for Responding to a Blue-Green Algae Bloom (dated May 2021).			
A review of the certificates of analysis for raw and treated water samples indicate that weekly sampling for microcystins occurred for the inspection period. Only raw water samples are processed unless microcystins are detected.			
A review of the elogbook indicates that weekly monitoring of the raw water source, Forest Lake, for HABs occurred from May 31st, 2022 to September 13th, 2022.			

Question ID	MRDW1014001	Question Type	Legislative
Question:			
Is there sufficient monitoring of flow as required by the MDWL or DWWP issued under Part V of the SDWA?			
Legislative Requirement	SDWA 31 (1);		
Observation			

There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.

Condition 2 of Schedule C of the Licence requires continuous flow measurement and recording for the flow rate and daily volume of: treated water that flows from the treatment subsystem to the distribution system, and water that flows into the treatment subsystem.

There is a raw water flowmeter located on the raw watermain. There is a treated water flowmeter located on the discharge line.

Question ID	MRDW1016001	Question Type	Legislative
Question:			
Is the owner in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the MDWL issued under Part V of the SDWA?			
Legislative Requirement	SDWA 31 (1);		
Observation			
The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.			
Condition 1.1 of Schedule C of the Licence specifies the rated capacity as 1 680 m ³ /day of treated water that flows from the treatment subsystem to the distribution system.			
A review of the WISKI data provided for the inspection period indicates that the maximum daily treated water volume was 861.7 m ³ /day in April 2022.			

Question ID	MRDW1023001	Question Type	Legislative
Question:			
Do records indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a DWWP and/or MDWL issued under Part V of the SDWA at all times that water was being supplied to consumers?			
Legislative Requirement	SDWA O. Reg. 170/03 1-2 (2);		
Observation			
Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under O. Reg. 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.			

The Procedure for Disinfection of Drinking Water in Ontario requires the treatment process of surface water to consist of chemically assisted filtration and disinfection and achieve an overall performance that provides (at a minimum) 2-log (99%) removal or inactivation of *Cryptosporidium* oocysts, a 3-log (99.9%) removal or inactivation of *Giardia* cysts and a 4-log (99.99%) removal or inactivation of viruses prior to the first consumer. In addition, at least 0.5-log removal or inactivation of *Giardia* cysts and a 2-log removal or inactivation of viruses must be provided through disinfection.

Conventional Filtration

Conventional filtration provides 2 log inactivation credit for *Cryptosporidium* oocysts, 2.5 log inactivation credits for *Giardia* cysts, and 2 log removal credit for viruses when:

1. A chemical coagulant is used at all times when the treatment plant is in operation.
2. Chemical dosages are monitored and adjusted in response to variations in raw water quality.
3. Effective backwash procedures, including the filter-to-waste, to ensure that the effluent turbidity requirements are met at all times.
4. Filtrate turbidity is continuously monitored from each filter, and;
5. Performance Criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month shall be met for each filter.

Chlorination

Chlorination is required to provide the remaining 0.5 log inactivation credit for *Giardia* Cysts and 2 log inactivation credits for viruses.

The Standard Operating Procedure (SOP) for CT (Chlorine Concentration x Time) at the South River Drinking Water System, dated December 3rd, 2018, indicates that a CT of 70.29 mg/L*min would be achieved under the following worst-case conditions:

- Free chlorine residual below: 1 mg/L
- Treated flow above: 85 L/sec
- Clearwell level of 2.5 m
- pH above 8.5

A review of the continuous trends, filter performance reports, and elogbooks indicates that primary disinfection was achieved for the inspection period.

Question ID	MRDW1030000	Question Type	Legislative
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Question:	
Is primary disinfection chlorine monitoring being conducted at a location approved by MDWL and/or DWWP issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved?	
Legislative Requirement	SDWA O. Reg. 170/03 7-2 (1); SDWA O. Reg. 170/03 7-2 (2);
Observation	
Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved.	
The POE chlorine analyzer is located at the high lift header at the point of entry of treated water into the distribution system and is used to confirm that the intended CT has been achieved.	

Question ID	MRDW1032001	Question Type	Legislative
Question:			
If the drinking water system obtains water from a surface water source and provides filtration, is continuous monitoring of each filter effluent line being performed for turbidity?			
Legislative Requirement	SDWA O. Reg. 170/03 7-3 (2);		
Observation			
Continuous monitoring of each filter effluent line was being performed for turbidity.			

Question ID	MRDW1083001	Question Type	Legislative
Question:			
For LMR systems, are all microbiological water quality monitoring requirements for treated samples being met?			
Legislative Requirement	SDWA O. Reg. 170/03 10-3;		
Observation			
All microbiological water quality monitoring requirements prescribed by legislation for treated samples were being met.			
Section 10-3 of Schedule 10 of O. Reg. 170/03 requires the owner and operating authority of the drinking water system must ensure that a treated water sample is taken at least once every week and tested for E.coli, total coliforms and HPC.			

A review of the certificates of analysis for the inspection period indicates that one treated water sample was taken each week and tested for E.coli, total coliforms, and HPC.

Question ID	MRDW1084001	Question Type	Legislative
Question: Are all inorganic water quality monitoring requirements prescribed by legislation conducted within the required frequency?			
Legislative Requirement	SDWA O. Reg. 170/03 13-2;		
Observation			
All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.			
Section 13-2 of Schedule 13 of O. Reg. 170/03 requires that the owner and operating authority for the system must ensure that at least one treated 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 23 (Inorganics).			
A review of the certificates of analysis indicates that treated water samples were taken and tested for Inorganics on January 25th, 2022.			

Question ID	MRDW1088000	Question Type	Legislative
Question: Are all nitrate/nitrite water quality monitoring requirements prescribed by legislation conducted within the required frequency for the DWS?			
Legislative Requirement	SDWA O. Reg. 170/03 13-7;		
Observation			
All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.			
Section 13-7 of Schedule 13 of O. Reg. 170/03 requires that the owner and operating authority of the drinking water systems must ensure that at least one water sample is taken every three months and tested for nitrate and nitrite.			
A review of the certificates of analysis for the inspection period indicate that treated water samples were tested for nitrate and nitrite on October 25th, 2021, January 25th, 2022, April 19th, 2022, and July 11th, 2022.			

Question ID	MRDW1089000	Question Type	Legislative
Question: Are all sodium water quality monitoring requirements prescribed by legislation conducted within the required frequency?			
Legislative Requirement	SDWA O. Reg. 170/03 13-8;		
Observation			
All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.			
Section 13-8 of Schedule 13 of O. Reg. 170/03 requires that the owner and operating authority for the drinking water system must ensure that at least one treated water sample is taken every 60 months and tested for sodium.			
The most recent sodium sample was taken on January 18th, 2021 at 49.3 mg/L. The North Bay Parry Sound District Health Unit requires notices of the elevated sodium levels to be posted in public locations since the first sodium exceedance in 2013.			

Question ID	MRDW1090000	Question Type	Legislative
Question: Where fluoridation is not practiced, are all fluoride water quality monitoring requirements prescribed by legislation conducted within the required frequency?			
Legislative Requirement	SDWA O. Reg. 170/03 13-9;		
Observation			
All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.			
Section 13-9 of Schedule 13 of O. Reg. 170/03 requires the owner and operating authority for the drinking water system must ensure that at least one treated water sample is taken every 60 months and tested for fluoride.			
The most recent fluoride sample was collected on January 18th, 2021.			

Question ID	MRDW1085001	Question Type	Legislative
Question: Are all organic water quality monitoring requirements prescribed by legislation conducted within the required frequency?			
Legislative Requirement	SDWA O. Reg. 170/03 13-4 (1); SDWA O. Reg. 170/03		

| 13-4 | (2); SDWA | O. Reg. 170/03 | 13-4 | (3);

Observation

All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.

Section 13-4 of Schedule 13 of O. Reg. 170/03 requires that the owner and operating authority for the system must ensure that at least one treated 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 (Organics).

A review of the certificates of analysis indicates that treated water samples were taken and tested for Organics on January 25th, 2022.

DWS Component Information Report for 220013562

as of 29-SEP-2022

Drinking Water System Profile Information

DWS # 220013562
MOE Assigned Name South River Drinking Water System
Category LMRS
Regulation O.REG 170/03
DWS Type Water Treatment Plant
Source Type Surface Water
Address 28 Howard Street, South River, Ontario, POA 1X0, Canada
Region Northern Region
District North Bay Area Office
Municipality South River
Public Health Unit North Bay Parry Sound District Health Unit

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
Distribution System	Other	Class I		<ul style="list-style-type: none"> - The South River distribution system supplies approximately 1110 people according to the 2016 census. It is classified as a Class I Water Distribution Subsystem (#1497). - As of December 2021, there were 508 total service connections: 454 residential and multi-residential services; 38 commercial connections (mix of commercial, industrial and institutional); and 16 separate residential services in Machar Township fed from a watermain in South River Village. - Two service additions are planned in 2021 (one residential and one commercial). - There are 30 customers who do not receive water, but who are billed for fire protection. - The distribution system infrastructure consists of a mixture of cast iron, ductile iron, asbestos and PVC piping. Pipes range in diameter from 300 mm down to 100 mm. The installed length of pipe in the entire distribution system is not currently known. - Fire protection is provided. - There are 11 dead end locations, approximately 60 main valves and 66 fire hydrants. There are no water storage facilities, no rechlorination facilities, pressure boosting facilities, flow monitoring or residual monitoring facilities. There are no known pressure sustaining or regulating valves. - There are no DWSs which receive water from this distribution system and there other DWSs supplying water to this DWS.
Chemical Addition Systems	Other	Treatment Facility	28 Howard St.,	<p>Chemical Addition Systems –</p> <ul style="list-style-type: none"> - All of the solution chemical tanks are situated on or in secondary containment vessels. - All of the pumps are variable speed and chemical addition is flow paced. - Coagulant System – Currently feeding potassium chloride into the raw water header prior to the in-line mixer. There are two metering pumps (one duty and one standby) each rated at approximately 5 L/hour. There is a polyethylene bulk storage tank (approximately 15000 L capacity) which is filled from the exterior of the plant by tanker and which is vented to the exterior of the WTP. A transfer pump, drawing from the bulk tank and controlled

DWS Component Information Report for 220013562

as of 29-SEP-2022

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				<p>by a float switch in the adjacent, approximately 450 L day tank, maintains solution level in the day tank. Coagulant is fed continuously while the SCADA system registers raw water flows. A failure of this system will shut-down water production at the WTP.</p> <p>- pH Adjustment System – Currently feeding sodium carbonate (soda ash) into the raw water header prior to the in-line mixer and the HLPW discharge. Bagged, dry powdered is batched on site in a mixing tank using distribution water. It is transferred to the day tank/bulk tank and withdrawn by three metering pumps (on pre-package plant, one post HLPW and one standby) each rated at approximately 3 L/hour.</p> <p>The pre-filtration pumps are triggered by raw water flows and the post HLPW pump is triggered by treated water flows).</p> <p>- Iron and Manganese Control System - Currently feeding potassium permanganate into the raw water header prior to the in-line mixer. There is a single metering pump (converted pre-filter chlorine pump) rated at approximately 3 L/hour. There is a polyethylene storage tank (approximately 1500 L capacity) with an in-tank mixer. Material is received in 220 L drums and transferred to the day tank.</p> <p>Chemical is fed continuously while the SCADA system registers raw water flows.</p> <p>- Polymer Feed System – Flocculation aid and sludge thickening agent – Currently feeding 'Mag 25' into the recirculation chambers in both package plants and into the sludge holding/thickening tank. There are three metering pumps (one for each package plant and one for the sludge thickening tank) each rated at approximately 6 L/hour. There is a polyethylene mixing, aging and storage tank (approximately 450 L capacity). Chemical is batched on-site and transferred to the storage tank and fed continuously while the SCADA registers raw water flows for the package plants and when backwashing occurs. Additional application may occur during sludge thickening practices.</p> <p>- Sodium Hypochlorite Feed System – Primary and Secondary Disinfection – Feeding liquid sodium hypochlorite into the common filter effluent line prior to the clearwells and into the treated water header prior to the final free chlorine residual analyzer (if needed). There are three metering pumps (two duty, one standby) each rated at approximately 3 L/hour. Material is received in 220 L drums and transferred to the approximately 350 L day tank. Chemical is fed continuously to the filter effluent line while the SCADA system registers raw water flows and manually to the HLP discharge line as desired. A failure of both pumps will lock-out the LLPs and effectively stop water production.</p>
Forest Lake (South River)	Source	Surface	Tom Thomson Lane,	<p>- The intake facilities consist of a 300 mm diameter intake pipe extending 232 m into Forest Lake, with a flared elbow in a wooden and concrete crib located at a depth of 4.5 m. An isolation valve is located in the low lift pumping station (LLPS). Two plastic, 15 mm lines (unused) reportedly run from the LLPS to the intake, one for pre-chlorination for zebra muscle control (with diffuser) and the second for raw water sampling.</p>

DWS Component Information Report for 220013562

as of 29-SEP-2022

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				<ul style="list-style-type: none"> - The LLPS is located approximately 170 m south of the eastern end of Howard Street, at the south end of Tom Thomson Lane. The locked, entry alarmed building contains a 4.2 m deep raw water well, dual manual screens which separate the low lift intake well and the low lift pump well. There are continuous level monitors trended to the Sensory Control and Data Acquisition (SCADA) system at the water treatment plant (WTP) on either side of the screens. There are three submersible electric-driven low lift pumps (LLPs), each rated at 10 L/s, which typically operate automatically (manual control is possible) and sequentially in response to clearwell level sensors. Each LLP discharge is equipped with backflow prevention and manual valves. A low lift pressure control valve will return water to the intake pipe if there is too much pressure in the raw water main to the WTP. The LLPs will lock-out on a low level alarm from the low lift pump well level switch. - The raw watermain to the WTP is 200 mm diameter stainless steel with an isolation valve at the LLPS discharge point. It runs approximately 400 m subsurface to the WTP. At the WTP inlet, there is a continuously monitored magnetic flow meter, a mechanical control valve, a raw water sample tap, and a supply line feeding the raw water turbidity analyzer and pH meter, both continuously monitored through SCADA. - Chemical addition begins immediately after the analyzer supply line. Analyzer discharge is directed to the roadside ditch.
Generator	Stand-By Power Generation		28 Howard St.,	Emergency backup power is provided by a 135 kW radiator cooled diesel generator housed in a separate building located approximately 20 m to the east of the WTP. The fuel is contained in a double walled storage tank outside and to the rear of the generator building. The generator is programmed for automatic starts and stops on power interruptions and restoration. It is monitored and alarmed for operational parameters.
Treated Water	Plant Classification	Class Iii	28 Howard St.,	<ul style="list-style-type: none"> - Treatment consists of chemical addition, coagulation, flocculation, sedimentation, filtration and disinfection by chlorination with contact time. The WTP has a rated capacity of 1680 m3/day. All of the processes are completed within the approximately 26 m long, 21 m wide enclosed WTP building located at 28 Howard Street, the Village of South River, District of Parry Sound, Ontario. - Raw water passes the raw water analyzers and is injected with liquid potassium permanganate (iron and manganese control by oxidation/precipitation), sodium carbonate (soda ash – for elevation of pH (powder batched on-site)) and liquid potassium chloride (coagulant). These chemical feeds are triggered by raw water flows and are flow paced. After chemical injection and prior to entering the package plants the water passes through an in-line mixer. - A coagulant feed failure will lock-out the LLPs and effectively stop treatment. - Water is then typically directed equally into two Napier Reid package treatment plants via individual headers and

DWS Component Information Report for 220013562

as of 29-SEP-2022

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				<p>automated valves (plants can operate individually).</p> <ul style="list-style-type: none"> - Within the separate package plants, water flows into flocculation tanks, each equipped with a flash mixer (0.38 kW variable speed motor), a vertical flocculator (0.56 kW variable speed motor) and a floc recirculator (0.56 kW variable speed motor). The flocculation tanks provide a 30 minute detention time. - A polymer is injected into the flocculator chambers (at the recirculator) as a coagulant aid. - Continuous pH monitoring is completed within the mixing/flocculation chamber. An unused pH analyzer is also located at each package plant inlet. - Following flocculation, the water flows into two semi-circular settling/clarification chambers. Each chamber has level monitoring, inclined tube settlers, 150 mm inlet piping and 150 mm sludge collection and recirculation headers. Each tank is designed for an overflow rate of 2.4 m/hour. Settled sludge is drawn down via an automated valve to the backwash clarification tank. - The clarified water overflows from the tube settlers in the clarifiers into gravity fed, individual multi-media filters consisting of garnet, silica sand and granulated activated carbon (GAC) with gravel underlayers. There is continuous level monitoring on the surface of each filter. Continuous turbidity monitoring is completed on each filter effluent line with programmable LLP lock-outs on high/high alarm set point for the affected plant(s) to effectively stop water production. Continuous flow monitoring is also completed on each filter effluent line. - Filter backwashes are triggered on programmed pass through volume (typical), time, filtered water turbidity and/or head-loss pressure monitoring. Backwashes are completed using chlorinated water from the clearwells via two submersible, 15 HP pumps. Each backwash line has continuous flow monitoring, automated valving and backflow prevention. - Filter-to-waste is completed during filter ripening. Backwash water is directed to the backwash effluent handling system (backwash clarification tank). - Filtered water is directed into a common header and injected with a 12% sodium hypochlorite solution for primary and secondary disinfection. Continuous, pre-contact free chlorine residual monitoring (operational purposes) is completed on this water. The header splits and chlorinated water is directed equally (typical, but manual valving exists to isolate individual cells) into a two celled (each with an approximate capacity of 573 m3), subsurface, concrete walled, baffled clear well reservoir beneath the WTP. Each cell is equipped with continuous level monitoring (controls LLPs), low level lock-outs for emergency low levels and valved lines feeding the high lift pump well (HLPW) by gravity and high lift pump (HLP) draw down. Overflows are directed to the roadside ditch. - The HLPW has an estimated capacity of 140 m3. Six (6) vertical turbine HLPs (two rated at 7 L/s at 45 m total dynamic head (TDH) with 5.6 kW motors; two rated at 14 L/s at 45 m TDH with 11.2 kW motors; and two fire pumps (one duty, one standby) rated at 56 L/s at 38 m TDH with 22 kW motors) are situated above and draw from this tank (sequential starts on system pressure monitoring set

DWS Component Information Report for 220013562

as of 29-SEP-2022

LWIS Component Name	LWIS Component Type	LWIS Component Sub-Type	Component Address	Comments
				<p>points). These pumps direct treated water to the common discharge header which is equipped with a post-contact sodium hypochlorite injection point, a sodium carbonate injection point (post treatment pH adjustment), a continuously monitored treated water turbidity analyzer, a treated water/distributed water continuously monitored magnetic flow meter, continuous distribution system /treated water discharge pressure monitoring, continuous treated water pH monitoring, a plant supply line with flow monitoring and backflow prevention, and, a continuously monitored treated water free chlorine residual analyzer. Treated water leaves the WTP is directed underground into the South River Distribution System.</p> <ul style="list-style-type: none"> - The SCADA system continuously collects and monitors information from instruments and sensor throughout the works and automatically controls plant processes and generates alarms. - There is an on-site septic system.
Wastewater Treatment System	Other	Dewatered	28 Howard St.,	<ul style="list-style-type: none"> - The South River Water Treatment Plant Process generates wastewater through: filter backwashing, and clarifier blow-down to remove sludge. - Filter backwash water is directed to the clarification tank. The supernatant from the clarification tank is decanted and discharged to a storm sewer which discharges to the lake. The settled solids from the clarification tank are pumped to the sludge holding tank.. - Clarifier blow-down is directed to the wastewater surge tank. Supernatant from the wastewater surge tank is directed to the clarification tank, while the settled solids are directed to the sludge holding tank. - The sludge holding tank receives settled solids from both the clarification tank and the waste surge tank. Supernatant from the sludge holding tank is directed to the clarification tank. The settled solids from the sludge holding tank are pumped to the sludge bagging system 3-5 times/week for disposal at Machar Township Landfill. - There are two process wastewater polymer systems; one system consists of a storage tank, mechanical mixer, and a single metering pump that injects polymer into the package plant waste effluent line (common pipe for both clarifier blowdown and filter backwash water). The second system forms part of the twelve (12) bag sludge dewatering system. - A description of process wastewater equipment is available in Section 1 of Drinking Water Works Permit No.200-201.

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

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	012-2149F
Avis de demande de services de laboratoire	012-2148F
Avis de résultats d'analyse insatisfaisants et de règlement des problèmes	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 potable 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