Ministry of the Environment, Conservation & Parks

Owen Sound District Office

101 17th Street East, 3rd Floor
Owen Sound ON N4K 0A5
Tel.: 519-371-2901
Fax.: 519-371-2905

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Bureau de district d'Owen Sound

101 17ème rue Est, 3e étage
Owen Sound ON N4K 0A5
Tél. : 519-371-2901
Téléc. : 519-371-2905

February 9, 2021

Sent by Email: lara.widdifield@southbrucepeninsula.com

Town of South Bruce Peninsula
315 George Street,
PO Box 310,
Wiarton, Ontario,
N0H 2T0

Attention: Lara Widdifield,
Director of Public Works

Dear Ms. Widdifield,

Re: 2020/2021 Wiarton Drinking Water System Inspection Report No. 1-PAZEV
Municipal Drinking Water Licence No. 094-102, Issue No. 4
Drinking Water Works Permit No. 094-202, Issue No. 4

The enclosed report documents findings of the inspection that was performed on December 22, 2020. Two sections of the report, namely “Actions Required” and “Recommended Actions”, specify due dates for the submission of information or plans to my attention. 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; “Recommended Actions” convey information that the owner or operating authority should consider implementing in order to conform with existing and emerging industry standards.

The report includes an Inspection Summary Rating Record as an appendix. This record forms part of the ministry’s comprehensive, risk-based inspection process. The rating provides a quantitative measure of the inspection results for this specific drinking water system for the reporting year. An inspection rating that is less than 100 per cent does not mean that the drinking water from the system is unsafe. The primary goals of this assessment are to encourage ongoing improvement of drinking water systems and to measure this progress from year to year.

I would like to remind you that Section 19 of the Safe Drinking Water Act, 2002 (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems, including members of municipal councils. “Taking Care of Your Drinking Water: A guide for members of municipal council”, a publication found on the Drinking Water Ontario website (https://www.ontario.ca/page/taking-care-your-drinkingwaterguidemembers-municipal-councils), provides further information about these obligations. Should you have any questions regarding the content of the enclosed report, please do not hesitate to contact me.

Yours truly,

Bob Graham
Water Compliance Inspector
Ministry of the Environment, Conservation and Parks
Phone: 519-374-0216
e-mail: Robert.g.graham@ontario.ca

Enclosure

ec: Carl Seider, Project Manager, Source Water Protection Program
Leo-Paul Frigault, Senior Operations Manager, OCWA
Karla Young, Process Compliance Technician, OCWA
Mark Smith, Water Compliance Supervisor, MECP
Dr. Ian Arra, Medical Officer of Health, GBHU

c: File SI-BR-SBP-BS-540 (2020)

Ontario

Ministry of the Environment, Conservation and Parks

WIARTON DRINKING WATER SYSTEM

Inspection Report

Site Number:	220002681
Inspection Number:	1-PAZEV
Date of Inspection:	Dec 22, 2020
Inspected By:	Robert Graham

OWNER INFORMATION:

Company Name:	SOUTH BRUCE PENINSULA, THE CORPORATION OF THE TOWN OF		
Street Number:	315	**Unit Identifier:**	Box 310
Street Name:	GEORGE St		
City:	WIARTON		
Province:	ON	**Postal Code:**	N0H 2T0

CONTACT INFORMATION

Type:	Owner	**Name:**	CAO CAO
Phone:	(519) 534-1400 x122	**Fax:**	(519) 534-4976
Email:	tsbpcao@bmts.com		
Title:	Chief Administrative Officer		

Type:	Operating Authority	**Name:**	Leo-Paul Frigault
Phone:	(519) 534-1600	**Fax:**	
Email:	lfrigault@ocwa.com		
Title:	OCWA - Operations Manager, West Highlands Hub.		

Type:	Owner	**Name:**	Lara Widdifield
Phone:	(519) 534-1400	**Fax:**	(519) 534-4976
Email:	tsbppwmanager@bmts.com		
Title:	Director of Public Works		

INSPECTION DETAILS:

Site Name:	WIARTON DRINKING WATER SYSTEM
Site Address:	897 BAYVIEW Street WIARTON ON N0N 0N0
County/District:	THE SOUTH BRUCE PENINSULA
MECP District/Area Office:	Owen Sound Area Office
Health Unit:	GREY BRUCE HEALTH UNIT
Conservation Authority:	Grey Sauble Conservation Authority
MNR Office:	Owen Sound Regional Office
Category:	Large Municipal Residential
Site Number:	220002681
Inspection Type:	Announced
Inspection Number:	1-PAZEV
Date of Inspection:	Dec 22, 2020
Date of Previous Inspection:	Jan 31, 2020

COMPONENTS DESCRIPTION

Site (Name):	MOE DWS Mapping		
Type:	DWS Mapping Point	**Sub Type:**	

Site (Name): Raw Water

Type: Source **Sub Type:** Surface Water
Comments:
The Wiarton drinking water system is supplied by two 450 mm diameter polyethylene raw water intakes extending into Colpoy's Bay. The main intake extends approximately 180 metres into the bay. The second (back up) intake extends approximately 45 metres into the bay.
Both intakes are equipped with zebra mussel control (sodium hypochlorite).

Site (Name): Treatment Facility
Type: Treated Water POE **Sub Type:** Treatment Facility
Comments:
Treatment at the Wiarton drinking water system includes: pH adjustment using sodium bisulphate; chemically-assisted filtration (flocculation and dual media filters) using polyaluminium chloride; pre and post chlorination (sodium hypochlorite) and UV irradiation.
An activated carbon feed system is also available for taste and odour control but is not currently in use. CT calculation provided by the OA.The total treatment credits as listed in the Wiarton Disinfection Performance Assessment are; Crypto is achieved by 2 log filtration and 24 log UV credits, Giardia is achieved by 2 log filtration, 0.1 log chlorine contact and 24 log UV credits, viruses is achieved by 1 log filtration, 3 log chlorine contact and 3 log UV credits. According to the Procedure for Disinfection if Drinking Water in Ontario for a 3 log (99.99%) Inactivation of Viruses by Free Chlorine with a Raw Water temperature of 0.5 degrees Celsius, with a pH between 6 – 9 is required for a CT value = 9
Clearwell capacity =751 m3
Minimum clearwell level =60%
Baffle ratio = 0.3
Flow rate = 5400 m3/day (3.75 m3/min)
Effective Contact time = (751 x 0.6 x 0.3) / 3.75
Effective Contact Time = 135.18 / 3.75 = 36.04 min
CT (required) = Disinfection Residual Concentration (mg/L) x Effective contact time (min)
Minimum Disinfection Residual (mg/L) = CT (required) / Effective contact time (min)
Minimum Disinfection Residual (mg/L) = 9 / 36.04 = 0.249
A minimum Free Chlorine Concentration of 0.25 mg/L is required to meet primary disinfection with a minimum clearwell volume of 450.6 m3 (60%).

Site (Name): Water Distribution System
Type: Other **Sub Type:** Other
Comments:
The Wiarton distribution system has approximately 1062 service connections and serves an estimated population of 2,300 residents. There are approximately 23.5 kilometres of watermains and approximately 87 fire hydrants. Approximately 54% of the watermains are constructed of PVC with the remainder constructed of cast iron and ductile iron.
The standpipe and booster station are located in a fenced area near the intersection of Jenny and Gould Streets. The standpipe has a volume of greater than two days water storage (2,893 cubic metres).The booster station services a pressure zone in the area of Gould Street, Daniel Street and Jenny Street.
The Wiarton Water Treatment Plant also serves the Oxenden Distribution System located east of the Town of Wiarton. This distribution system is owned by the Township of Georgian Bluffs and operated by OCWA Oxenden is a residential area with population of less than 500 consumers.

INSPECTION SUMMARY:

Introduction

- **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 related 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.**

  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 report is based on a "focused" inspection of the system. Although the inspection involved fewer activities than those normally undertaken in a detailed inspection, it contained critical elements required to assess key compliance issues. This system was chosen for a focused inspection because the system's performance met the ministry's criteria, most importantly that there were no deficiencies as identified in O.Reg. 172/03 over the past 3 years. The undertaking of a focused inspection at this drinking water system does not ensure that a similar type of inspection will be conducted at any point in the future.

  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.

  On December 22, 2020, Ministry of the Environment, Conservation and Parks (MECP) Provincial Officer Bob Graham conducted an announced focused inspection of the Wiarton Drinking Water System (DWS). The Wiarton DWS is owned by the Town of South Bruce Peninsula (Owner) and operated by the Ontario Clean Water Agency (OCWA). Assistance with the inspection was provided by Leo-Paul Frigault, OCWA Senior Operations Manager, Daniel Caesar, OCWA Operator, Dan Madill, OCWA Operator and Karla Young, OCWA Process & Compliance Technician. During the inspection review period, from February 1, 2020, to the date of inspection, December 22, 2020, there were no Adverse Water Quality Incidents (AWQIs) reported to the MECP Spills Action Centre (SAC).

Source

- **The owner had a harmful algal bloom monitoring plan in place.**

  Condition 6.0, Schedule C of the amended Licence issued March 6, 2020, requires the Owner to develop a Harmful Algal (Cyanobacteria) Bloom monitoring, reporting and sampling plan on or before November 16, 2020. A Harmful Algal Bloom Monitoring, Reporting And Sampling Plan Standard Operating Procedure was implemented on 2013-07-02 and was subsequently revised on 2020-11-16, 2020-12-18 and 2020-12-22 to meet the above-referenced amended Licence.

- **The owner did have a harmful algal bloom monitoring plan in place that met the requirements of the Municipal Drinking Water Licence condition.**

Capacity Assessment

- **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.**

- **The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity**

Capacity Assessment

conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.

The Wiarton DWS has the following control documents in place associated with maximum flow rate or the rated capacity conditions:
Municipal Drinking Water Licence Number: 094-102 Issue Number: 4 issued March 6, 2020 with a rated capacity of 5,400 m3/d;
Drinking Water Works Permit 094-202 Issue Number: 4 issued March 6, 2020;
Permit to Take Water (PTTW) 5181-9DFR4C with a drinking water source from Colpoy's Bay, expiring November 14, 2023, with a maximum water taking of 5394 cubic metres/day (3764 Litres/minute). It's noted the owner can increase the maximum water taking to 4500 L/m for not greater than one hour for pump start up circumstances. The document holder shall document any readings greater than 3764 Litres/minute and the rationale for each exceedance.

Treatment Processes

- **The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.**

  The equipment installed at the Wiarton DWS plant compares favourably to the equipment listed in the DWWP issued for the Wiarton DWS. The process flow diagram included in Schedule D of the Permit also appears to be accurate. All equipment described in the Permit appeared to be installed and operating on the date of this inspection, with exception of the the activated carbon feed system for taste and odour control (which is described as typically not used). There were no reported alterations undertaken during this inspection review period which required a Form 2 – Record of Modification or Replacement document to be prepared, nor did the Municipality undertake any alterations to the works which required Director Notifications to be made under Condition 2.4, Schedule B of the Permit. Watermain additions or modifications were undertaken which necessitated the completion of a Form 1 document during this inspection review period. There have been no modifications undertaken or additions made which required the completion of any Form 3 documents.

- **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.**

  Watermain additions or modifications were undertaken which necessitated the completion of a Form 1 document during this inspection review period. Construction of a new single 300 mm diameter watermain to replace two existing 150 mm diameter watermains on Berford Street from George Street to Division Street including the transfer of water service connections, as part of Contract No. 20-16, in the community of Wiarton in the Town of South Bruce Peninsula.

- **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 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.**

  Treatment for a surface water source is required to achieve 2-log removal or inactivation of Cryptosporidium oocysts, a 3-log removal or inactivation of Giardia cysts and a 4-log removal or inactivation of viruses. These requirements are reportedly met by coagulation, clarification and filtration followed by UV disinfection and chlorination with sodium hypochlorite for both primary and secondary disinfection purposes. According to Schedule E of the Licence, the direct filtration process is credited with 2 log Giardia cyst removal, 2 log Cryptosporidium oocyst removal and 1 log virus removal credits, if the filtration process meets the following criteria:
  -a chemical coagulant is used at all times when the treatment plant is in operation;
  -chemical dosages are monitored and adjusted in response to variations in raw water quality;
  -effective backwash procedures are maintained, including filter-to-waste or an equivalent procedure during filter ripening to ensure that the effluent turbidity requirements are met at all times;
  -filtrate turbidity is continuously monitored from each filter; and,

Treatment Processes

-the performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month are met for each filter.
The UV disinfection process is credited with 3 log Giardia cyst removal, 2 log Cryptosporidium oocyst removal and 2 log virus removal credits, if the UV disinfection process meets Licence Schedule E UV treatment criteria. The Chlorination process is credited with 1+ log virus removal credits if the chlorination process meets Licence Schedule E chlorination treatment criteria.
Records reviewed indicate that the Wiarton Water Treatment Plant was operated to achieve the necessary UV criteria, CT requirements and filter performance criteria for primary disinfection purposes during the inspection cycle.

- **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.**

  Following completion of the intended chlorine contact time for primary disinfection purposes, free available chlorine residual is maintained out and into the distribution system for secondary disinfection purposes to reduce the potential for microbial re-growth within the distribution system, and in accordance with section 1-5 of Schedule 1, O.Reg.170/03. During the inspection review period, the free chlorine residual in the distribution system exceeded the minimum distribution system chlorine residual regulatory limit of 0.05 mg/L, ranging between a high free chlorine residual concentration level of 1.52 mg/L to a low free chlorine residual concentration level of 0.30 mg/L.

- **Where an activity has occurred that could introduce contamination, all parts of the drinking water system were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit.**

  In accordance with Section 2.3, Schedule B of the Permit, the owner has developed Standard Operating Procedure (SOP) G-30, which provides operational staff directives regarding Watermain Distribution Repairs, and incorporates the procedures set out in the Ministry's Watermain Disinfection Procedure, dated November 2015. The Ministry recently updated the Watermain Disinfection Procedure on August 1, 2020; and, pursuant to Condition 2.3 of the Permit, the owner is required to ensure they are complying with the August 1, 2020 Watermain Disinfection Procedure by February 1, 2021. The owner is encouraged to review their existing SOP to ensure the SOP complies with the amended watermain disinfection procedures and is committed to ensuring this review and changes are implemented prior to the deadline set out in the Permit. In addition to implementing the appropriate disinfection procedures during watermain installation and repair activities, the owner also continues to ensure that the applicable AWWA procedures are followed when disinfecting the water treatment facilities and storage facilities that comprise the Wiarton DWS.

- **The primary disinfection equipment was equipped with alarms or shut-off mechanisms that satisfied the standards described in Section 1-6 (1) of Schedule 1 of Ontario Regulation 170/03.**

  The UV units and filters are equipped with alarms and automatic shut-offs. When the UV fails and causes an alarm to be generated, operators are called to the facility.The operators conduct a CT calculation to determine if disinfection has been achieved and in the event that it is not they are to follow the emergency SOP for Adverse Water Quality Incidents.

Treatment Process Monitoring

- **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.**

  A minimum Free Chlorine Concentration of 0.25 mg/L is required to meet primary disinfection with a minimum clearwell volume of 450.6 m3 (60%) as per the owner's CT calculation provided by OCWA. OCWA is reminded that Schedule E of the current MDWL, issued March 6, 2020, states that at all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned. Gaps in data should correlate to times when the plant was not treating water, or for maintenance of the analyzer. After a review of records provided by

Treatment Process Monitoring

OCWA, these requirements have been met.

- **Continuous monitoring of each filter effluent line was being performed for turbidity.**

  For large municipal residential systems that use surface water or GUDI as the source and are required to provide filtration, Reg.170/03, Schedule 7 section 7(3)(2) requires continuous monitoring equipment of each filter effluent line. Continuous monitoring for turbidity is required only of the filter effluent that is directed to the next treatment process/stage (and eventually to the distribution system). Gaps in data should correlate to times when the plant was not treating water, or for maintenance of the analyzer; this is being met. The filter train alarms are present to help ensure compliance with the Procedure for Disinfection of Drinking Water in Ontario effluent turbidity requirements of being less than or equal to 0.30 NTU in 95% of the measurements recorded each month on each filter effluent line. The turbidimeter installed to measure the treated water is configured to initiate a high alarm at 0.30 NTU notifying operators and a high high alarm at 0.80 NTU at which time the plant shuts down.

- **The secondary disinfectant residual was measured as required for the distribution system.**

  The Wiarton drinking water system, provides chlorination for secondary disinfection purposes in accordance with Section 1-5, Schedule 1, Ontario Regulation (O.Reg.) 170/03. There is currently no continuous monitoring of secondary disinfectant occurring within the distribution system and the municipality is required to conduct secondary disinfection monitoring by grab samples.
  Subsection 7-2 (3), Schedule 7, O.Reg.170/03 requires the Municipality to ensure that at least seven distribution samples are taken each week and that those samples be tested immediately for free chlorine residual. Where secondary disinfection chlorine testing is not being conducted on a daily basis or by continuous monitoring, Subsection 7-2 (4), Schedule 7, O.Reg.170/03 requires that:
  1. At least four of the samples must be taken on one day of the week, at least 48 hours after the last sample was taken in the previous week.
  2. At least three of the samples must be taken on a second day of the week, at least 48 hours after the last sample was taken on the day referred to in paragraph 1.
  3. When more than one sample is taken on the same day of the week under paragraph 1 or 2, each sample must be taken from a different location.

  Records provided by OCWA and reviewed during the inspection indicate that OCWA complied with these requirements, typically testing free chlorine residual for secondary disinfection monitoring purposes from 2 locations 7 days a week. Based on the records that have been made, the recorded distribution system free chlorine residual concentrations ranged between 0.30 mg/L and 1.52 mg/L, during this inspection review period. On the date of this inspection, OCWA operators measured the free available chlorine residual in the drinking water within the distribution system at two locations in the distribution system and found the free available chlorine residual to be adequate with a results 1.04 mg/L and 1.14 mg/L being measured at extremities within the system.

- **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**

- **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 equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.**

  The Wiarton water treatment plant is equipped with continuous analyzers and alarms for free chlorine and turbidity. The alarm set points for the clearwell water chlorine analyzer is low 0.75 mg/L and low/low 0.70 mg/L.; when triggered the system locks out ceasing water production, ensuring the system meets their CT requirements and allows time for an operator to intervene. The turbidity set points on the two filter trains is high 0.30 NTU and high/high 0.8 NTU at which time the plant shuts down ceasing water production until recified. In both instances, the alarms are sent to OCWA operators notifying of the plant shutdown.

Treatment Process Monitoring

- **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.**

  Schedule 6, O.Reg.170/03, outlines the recording frequency requirements for continuous monitoring equipment. It requires that the free chlorine residual for primary disinfection be tested and recorded with a frequency of every five minutes. Turbidity monitoring must be performed with a minimum frequency of at least once every 15 minutes. Complying with these requirements, continuous monitoring data is recorded and trended on the SCADA system at five to ten second intervals.

- **The owner and operating authority ensured that the primary disinfection equipment had a recording device that continuously recorded the performance of the disinfection equipment.**

- **All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.**

  The potable water plant is equipped with continuous analysers for pH, chlorine residual, turbidity, and temperature. Analyzer verifications are completed a minimum of at least once per month, or as needed to exceed the manufacturer's recommendations, to ensure effective operation and accuracy. The information is noted in the Monthly Process & Compliance Status Reports and in the log books. A third party is retained to perform annual verifications and calibrations to primary standards. These annual verifications/calibrations were last completed on June 8, 2020.

- **All UV sensors were checked and calibrated as required.**

Operations Manuals

- **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**

- **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.**

  Condition 16, Schedule B of the Licence prescribes that the operations and maintenance manual include at a minimum:
  -the requirements of the licence and associated procedures;
  -the requirements of the drinking water works permit for the drinking water system;
  -a description of the processes used to achieve primary and secondary disinfection within the drinking water system, including where applicable a copy of the CT calculations that were used as the basis for primary disinfection under worst case operating conditions; -procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;
  -procedures for the operation and maintenance of monitoring equipment;
  -contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown; and,
  -procedures for the dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint.
  Procedures necessary for the operation and maintenance of any alterations to the drinking water system must also be incorporated into the operations and maintenance manual prior to the alterations coming into operation.
  Operations and maintenance manuals are available to staff at the potable water plant. The Owner has also developed and maintains standardized SOPs for each of their drinking water systems, which are maintained and made fully available in an electronic format. The contents of the SOPs and manuals appear to be sufficient, enabling staff to safely operate the drinking water system. As it pertains to the CT provisions, operators are familiar

Operations Manuals

with the operational criteria necessary to achieve primary disinfection.

Logbooks

- **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.**

  Records that were made during this inspection review period, indicate that only certified operators are the individuals that are performing the operational tests throughout the system. Operator certification was verified with the Ontario Water Wastewater Certification Office and all operators were in possession of valid certificates. Several operators have certificates set to expire in 2021. Those individuals are required to renew those certificates.

Security

- **The owner had provided security measures to protect components of the drinking water system.**

Certification and Training

- **The overall responsible operator had been designated for each subsystem.**
- **Operators-in-charge had been designated for all subsystems which comprised the drinking water system.**
- **All operators possessed the required certification.**

  Operator certification is posted at locations from where the drinking water subsystems are managed. Operator certification was verified with the Ontario Water Wastewater Certification Office and all operators were in possession of valid certificates.

- **Only certified operators made adjustments to the treatment equipment.**

  Records provided for review indicate that the Wiarton DWS certified operators appear to be the only persons who are adjusting water treatment equipment and processes at the potable water plant.

Water Quality Monitoring

- **All microbiological water quality monitoring requirements for distribution samples were being met.**

  The owner of a large municipal residential drinking water system shall ensure that if the system serves a population of 100,000 or less, at least 8 distribution samples plus one for every thousand people served by the system are taken every month. At least one of the samples must be taken each week. As Wiarton's DWS population is estimated to be 2300 residents, ten samples must be collected from the distribution system on a monthly basis at a minimum. These samples are required to be tested for E.Coli. and total coliform; and at least 25 percent of the samples are required to be tested for general bacteria populations expressed as colony counts on a heterotrophic plate count. Records indicate that the Owner is routinely collecting three distribution samples each week in order to comply with, and exceed, the regulatory requirement. Each of those samples were tested for E.Coli., total coliform, and approximately one third of the samples were tested for general bacteria populations expressed as colony counts on a heterotrophic plate count. There were no concerns identified with the results obtained.

- **All microbiological water quality monitoring requirements for treated samples were being met.**

  Section 10-3 of Schedule 10, O.Reg.170/03 requires the municipality to ensure samples are collected at least once every week from the system's treated water at the point of entry into the distribution system. The samples collected are required to be tested for E.Coli and total coliform, and general bacteria populations expressed as colony counts

Water Quality Monitoring

on a heterotrophic plate count. Records reviewed in the course of this inspection indicate that the Owner complied with these requirements. There were no concerns identified with the results obtained.

- **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Sampling and testing for inorganic parameters has been conducted for the Wiarton drinking water system in accordance with Schedule 13-2 of Ontario Regulation 170/03. The regulation requires that samples are to be collected every 12 months and tested for each parameter listed in Schedule 23; this requirement has been met. The most recent samples were collected on January 7, 2020 and there were no concerns identified from the results obtained.

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

  Sampling and testing for organic parameters has been conducted for the Wiarton drinking water system in accordance with Schedule 13-4 of Ontario Regulation 170/03. The regulation requires that samples are to be collected every 12 months and tested for each parameter listed in Schedule 24; this requirement has been met.The most recent samples were collected on January 7, 2020 and there were no concerns identified from the results.

- **All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.**

  Section 13-6.1 (1)of Schedule 13, O.Reg.170/03 requires the Owner and OCWA (Operating Authority) to ensure that at least one distribution sample is taken every 3 months from a point in the drinking water system's distribution system that is connected to the drinking water system, that is likely to have an elevated potential for the formation of Haloacetic Acids (HAA), and tested for HAAs. Section 6-1.1 of Schedule 6, O.Reg.170/03 requires that these samples be taken at least 60 days, and not more than 120 days, after a sample was taken for that purpose in the previous three month period. A drinking water quality standard of 80 micrograms per Litre (ug/L) for haloacetic acids took effect under O.Reg.169/03 "Ontario Drinking Water Quality Standards" (ODWQS) on January 1, 2020. It is expressed as a Running Annual Average (RAA), where the RAA is defined as the average for quarterly HAA results for a drinking water system. HAAs will generally form at the beginning of the distribution system. Sampling occurred April 6, July 6 and October 5, 2020. There were no concerns identified with the sample results.

- **All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.**

  Section 13-6 of Schedule 13, O.Reg.170/03 requires the Owner and OCWA (Operating Authority) to ensure that at least one distribution sample is taken every 3 months from a point in the drinking water system's distribution system, or in plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of Trihalomethanes (THMs), and tested for THMs. Section 6-1.1 of Schedule 6, O.Reg.170/03 requires that these samples be taken at least 60 days, and not more than 120 days, after a sample was taken for that purpose in the previous three month period. The Owner complied with these requirements when they conducted the required monitoring on Section 13-6 of Schedule 13, O.Reg.170/03 requires the Owner and the Operating Authority to ensure that at least one distribution sample is taken every 3 months from a point in the drinking water system's distribution system, or in plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of Trihalomethanes (THMs), and tested for THMs. Section 6-1.1 of Schedule 6, O.Reg.170/03 requires that these samples be taken at least 60 days, and not more than 120 days, after a sample was taken for that purpose in the previous three month period. The Owner complied with these requirements when they conducted the required sampling on April 6, July 6 and October 5, 2020. There were no concerns identified with the sample results.

- **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**

Water Quality Monitoring

Section 13-7 of Schedule 13, O.Reg.170/03 requires the Owner and OCWA (Operating Authority) to ensure that at least one water sample is taken every three months and tested for nitrates and nitrites. Section 6-1.1 of Schedule 6, O.Reg.170/03 requires that these samples be taken at least 60 days, and not more than 120 days, after a sample was taken for that purpose in the previous three month period. The Owner complied with these requirements when they conducted the required monitoring on April 6, July 6 and October 5, 2020. There were no concerns identified with the sample results.

- **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-8 of Schedule 13, O.Reg.170/03 requires that the Owner and OCWA (Operating Authority) ensure that a treated water sample is taken every 60 months and is tested for sodium. Records provided by the Owner and reviewed during the inspection, indicate that OCWA conducted sampling for sodium on January 8, 2018 with a result of 7.41 mg\L.

- **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-9 of Schedule 13, O.Reg.170/03 requires the Owner and OCWA (Operating Authority) to ensure that at least one water sample is taken every 60 months and tested for Fluoride. OCWA last conducted Fluoride sampling on January 8, 2018 and achieved a result of 0.07 mg/L.

- **All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were not being met.**

  Wastewater from the backwash process for the chemically-assisted filtration system is discharged to a wastewater sedimentation tank where suspended solids are permitted to settle. MDWL Schedule C, Table 3 identifies that the annual average concentration of Backwash Wastewater Facility Suspended Solids discharged from the holding tank shall not exceed 25 mg/L and the annual average concentration of total chlorine residual shall not exceed 0.02 mg/L. Table 7 identifies that Backwash Wastewater Suspended Solids and total chlorine residual parameters shall be comprised of manual composite samples taken monthly at the point of discharge from the filter backwash tank.

  During the inspection review period this requirement was not met. On June 5, 2020, OCWA notified the MECP of non-compliance with MDWL Schedule C, Condition 1.5 (Residuals Management). OCWA reported that operators missed undertaking the required monthly filter backwash samples for Total Suspended Solids and Total Chlorine Residual. Samples were taken April 6, 2020 and the next monthly sample was taken May 31, 2020 which was 55 days later, exceeded the time frame of a monthly sample specified under O. Reg 170/03. Ontario Regulation 170/03 Requirement: Schedule 6
  Operational Checks, Sampling and Testing – General section 6-1.1 (3) identifies, If this Regulation or an approval, municipal drinking water license or order, including an OWRA approval or OWRA order, requires at least one water sample to be taken every month and tested for a parameter, the owner of the drinking water system and the operating authority for the system shall ensure that at least one sample that is taken during a month for the purpose of being tested for that parameter is taken at least 20 days, and not more than 40 days, after a sample was taken for that purpose in the previous month.

  See "Non- Compliance with Regulatory Requirements and Actions Required" below.

- **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**

  Subsection 6-3 (1) of Schedule 6 of O.Reg.170/03 prescribes that if a microbiological sample required by the regulation is taken, that another sample must be taken at the same time from the same location and tested immediately for free chlorine residual. Records made during this inspection review period, indicate that the Owner ensured that a free chlorine residual was taken at the same time of all microbiological samples. Operational staff

Water Quality Monitoring

recorded the free available chlorine residual test results directly on the Laboratory Sample Submission / Chain of Custody Form at the same time that microbiological samples were obtained. The chlorine residuals associated with microbiological sample were then included by the laboratory on the analytical report associated with results of the microbiological test.

Water Quality Assessment

- **Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O.Reg. 169/03).**

  The standards for drinking water quality in Ontario are prescribed in O.Reg.169/03 "Ontario Drinking Water Quality Standards" (ODWQS). Background and supporting information for each of the standards can be found in the Ministry's "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines". During this inspection review period, there were no Adverse Water Quality Incidents (AWQI) reported for the drinking water system. All results for sampling conducted during this inspection review period met the microbiological and chemical requirements of O.Reg.169/03, and there were no reports made relating to adverse chlorine or turbidity monitoring.

Reporting & Corrective Actions

- **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.**

  Following a review of the SCADA and log book entries for the inspection review period, where required, operators appeared to have responded to and took appropriate measures, where necessary, in response to alarm conditions. Explanations appear to have been consistently provided for power interruptions, maintenance activities, process operation alarm calls, and any communication errors that triggered alarms. Any after hours alarm calls appear to have been responded to in a timely fashion by the utility operators and notes have been entered in the log book of their actions taken.

- **When the primary disinfection equipment, other than that used for chlorination or chloramination, has failed causing an alarm to sound or an automatic shut-off to occur, a certified operator responded in a timely manner and took appropriate actions.**

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

1. **All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were not being met.**

   Action(s) Required:

   On June 5, 2020, the OA notified the MECP of non-compliance with MDWL Schedule C, Condition 1.5 (Residuals Management). The OA reported that operators missed undertaking the required monthly filter backwash samples for Total Suspended Solids and Total Chlorine Residual. Samples were taken April 6, 2020 and the next monthly sample was taken May 31, 2020 which was 55 days later, exceeded the time frame of a monthly sample specified under O. Reg 170/03. Ontario Regulation 170/03 Requirement: Schedule 6
   Operational Checks, Sampling and Testing – General section 6-1.1 (3) identifies, If this Regulation or an approval, municipal drinking water license or order, including an OWRA approval or OWRA order, requires at least one water sample to be taken every month and tested for a parameter, the owner of the drinking water system and the operating authority for the system shall ensure that at least one sample that is taken during a month for the purpose of being tested for that parameter is taken at least 20 days, and not more than 40 days, after a sample was taken for that purpose in the previous month.

   Corrective Actions have been implemented by the AO to ensure that all water quality monitoring requirements imposed by the MDWL and DWWP are being met. Specifically, A reminder email will be sent out to all operations staff about the monthly filter backwash samples that came into effect March 2020. Table 7 of Municipal Drinking Water License Environmental Discharge Parameter Sampling Frequency and the Sampling Schedule for the Wiarton Drinking Water System were both attached for reference information (completed on June 8, 2020).
   • A new schedule has been set up to compensate for the shift in sampling dates in accordance with O. Reg 170/03 and communicated/emailed to operations staff (completed on June 8, 2020).
   • Reminder emails will be sent out before samples are to be taken.

   No further Actions are required at this time.

SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.

Not Applicable

SIGNATURES

Inspected By:

Robert Graham

Signature: (Provincial Officer)

Reviewed & Approved By:

Mark Smith

Signature: (Supervisor)

Mark Smith

Digitally signed by Mark Smith
DN: cn=Mark Smith, o=MECP, ou=Water Compliance Unit, email=mark.smith@ontario.ca, c=CA
Date: 2021.02.09 12:51:50 -05'00'

Review & Approval Date:

February 9, 2021

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.

Ontario

Ministry of the Environment, Conservation and Parks
Drinking Water Inspection Report

APPENDIX A

INSPECTION SUMMARY RATING RECORD

Ontario

Ministry of the Environment, Conservation and Parks
Drinking Water Inspection Report

APPENDIX B

REFERENCE GUIDE FOR STAKEHOLDERS

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2020-2021)

DWS Name:	WIARTON DRINKING WATER SYSTEM
DWS Number:	220002681
DWS Owner:	South Bruce Peninsula, The Corporation Of The Town Of
Municipal Location:	The South Bruce Peninsula
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	December 22, 2020
Ministry Office:	Owen Sound District Office

Maximum Question Rating: 566

Inspection Module	Non-Compliance Rating
Source	0 / 0
Capacity Assessment	0 / 30
Treatment Processes	0 / 102
Operations Manuals	0 / 28
Logbooks	0 / 14
Certification and Training	0 / 42
Water Quality Monitoring	0 / 112
Reporting & Corrective Actions	0 / 87
Treatment Process Monitoring	0 / 151
TOTAL	**0 / 566**

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 08-FEB-21 (Inspection ID: 1-PAZEV).

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2020-2021)

DWS Name:	WIARTON DRINKING WATER SYSTEM
DWS Number:	220002681
DWS Owner:	South Bruce Peninsula, The Corporation Of The Town Of
Municipal Location:	The South Bruce Peninsula
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	December 22, 2020
Ministry Office:	Owen Sound District Office

Non-compliant Question(s)	Question Rating
Water Quality Monitoring	
Are all water quality monitoring requirements imposed by the MDWL and DWWP being met?	0
TOTAL QUESTION RATING	0

Maximum Question Rating: 566

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

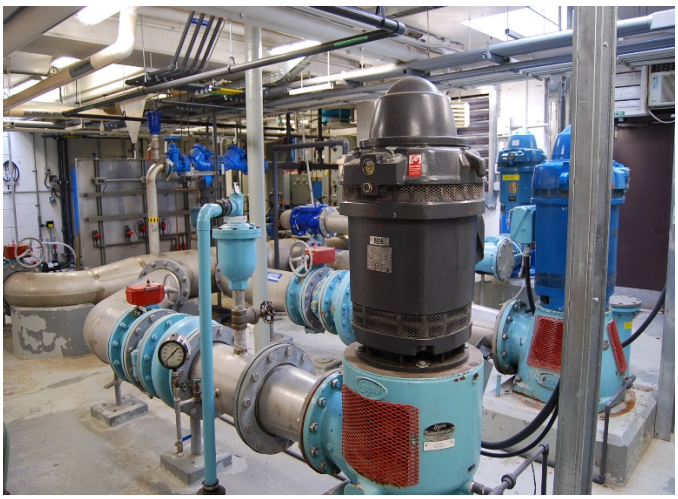
Inspection Rating Record Generated On 08-FEB-21 (Inspection ID: 1-PAZEV).

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

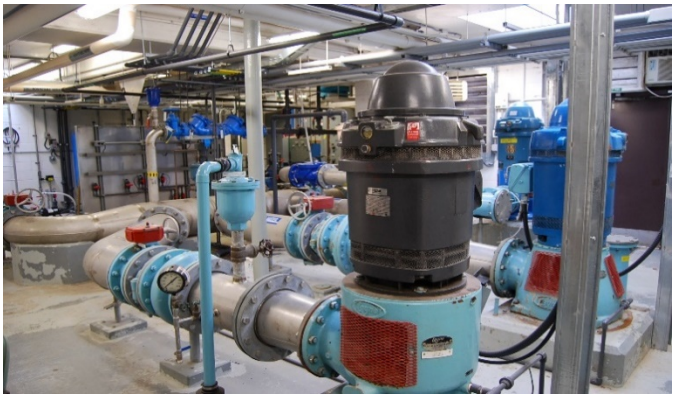


PUBLICATION TITLE	PUBLICATION NUMBER
FORMS: Drinking Water System Profile Information Laboratory Services Notification Adverse Test Result Notification	 012-2149E 012-2148E 012-4444E
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	Website
Procedure for Disinfection of Drinking 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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