



Scott Point Drinking Water System

2022 Annual Water Summary Report

1. INTRODUCTION AND BACKGROUND

The municipality owns and operates drinking water systems to provide residents with safe, potable water. These municipal drinking water systems are regulated under various legislation and legal documents including the Safe Drinking Water Act and Ontario Regulation 170/03 Drinking Water Systems. O. Reg. 170 requires that the municipality complete an annual water report (Section 11) and an annual summary report (Schedule 22). The information required for each of these reports has been combined into this one report. This annual water summary report will be made available for inspection as per O. Reg. 170 subsection 12 (4).

The reports are available free of charge on the municipal website at www.kincardine.ca or by contacting the Environmental Services Department at waterservice@kincardine.ca. Requests will also be received in person or by telephone at the Municipal Administration Centre (1475 Concession 5, 519-396-3468) or the Environmental Services Office (155 Durham Street, Kincardine, 519-396-4660).

1.1. System Description

Drinking-Water System Number:	220007043
Drinking-Water System Name:	Scott Point Drinking Water System
Drinking-Water System Owner:	Municipality of Kincardine
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	Year 2022

The Scott Point Drinking Water System (DWS) is a non-GUDI well system (which means that it is a secure well and not under the influence of surface water) consisting of one well, with a capacity of 0.9 L/s. The treatment works consists of a raw water flow meter, sodium hypochlorite (NSF approved) for disinfection, an oxidation tank and two multi-media pressure filters for iron removal, a 45 m³ baffled reservoir and a treated water flow meter. There is on-line monitoring of treated water for free chlorine residual. Pressure for the distribution system is supplied by pressure storage tanks. Two high lift pumps supply water to the pressure tanks and distribution system as well as the backwash filters. The backwash wastewater is directed to a two-stage tank buried on municipal property. The water system serves less than 40 households. There is a backup generator on-site.

1.2. Major Expenses

The system incurred expenses necessary to install, repair or replace required equipment as follows:

- Drill new well \$95,319.64
- Other Major expenses:
- Reservoir inspection \$2,218.36
- Building Maintenance \$3,698.64

2. WATER QUALITY MONITORING

Each municipal drinking water system is required to do testing to ensure that the water supplied to consumers is safe for consumption. Some of these tests such as chlorine residuals are done on site while others, like microbiological testing, must be performed by a licenced laboratory.

2.1. Microbiological Testing

O. Reg. 170 Schedule 11, requires the Scott Point DWS to take a minimum of one sample per month of raw water from the well, and one sample every two weeks of distribution water and have them tested for Escherichia coli (E. coli) and total coliforms (TC). The distribution samples must also be tested for heterotrophic plate count (HPC). Our internal sampling schedule exceeds the minimum requirements by having operations staff collect one treated and one distribution sample every week and have them tested for E. coli, total coliform and HPC.

Any E. coli or total coliform results above zero (0) in treated or distribution water must be reported to the Ministry of the Environment, Conservation and Parks (MECP) and Medical Officer of Health (MOH).

Heterotrophic plate count is a colony count of general bacteria population. There is no adverse limit for HPC samples. Results over 500 colonies per 1 mL may indicate a change in water quality but it is not considered an indicator of unsafe water.

The results from the 2022 sampling program are shown in the table below.

Water Source	Number of TC/EC Samples	Range of Total Coliform Results (#-#)	Range of E. coli Results (#-#)	Number of HPC Samples	Range of HPC Results (#-#)
Raw	12	0 – 0	0 – 0	12	0 – 1
Treated	52	0 – 0	0 – 0	52	0 – 2
Distribution	52	0 – 0	0 – 0	52	0 – 16

2.2. Chemical Testing

The Safe Drinking Water Act Reg 170 Schedule 13 requires periodic testing of the water for chemical parameters. The Scott Point DWS is required to test for nitrite/nitrate and haloacetic acids on a quarterly basis. Until recently, trihalomethanes were tested for quarterly but due to the low levels, they are now only required to be tested on a quarterly basis every third year. The tables below outline other inorganic and organic parameters that are required to be tested every five years and include the date and result of the most recent test. Any result displayed as less than (<) are below the method detection limit of the lab.

Sodium and fluoride levels exceed the Ontario Drinking Water Quality Standards, but they are naturally occurring in the groundwater and do not need to be tested more frequently than every five years.

If the concentration of a parameter is above half of the Maximum Acceptable Concentration (MAC) under the Ontario Drinking Water Quality Standards, an increased testing frequency of once every three months is required by O. Regulation 170. There were no parameters above the half MAC that were required to be tested for quarterly in 2022.

Inorganic Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	July 16/18	<0.02	µg/L	No
Arsenic	July 16/18	<0.02	µg/L	No
Barium	July 16/18	8.34	µg/L	No
Boron	July 16/18	249	µg/L	No
Cadmium	July 16/18	0.009	µg/L	No
Chromium	July 16/18	0.41	µg/L	No
Mercury	July 16/18	0.03	µg/L	No
Selenium	July 16/18	< 0.04	µg/L	No
Sodium	October 12/22 October 18/22	37.2 33.3	mg/L	Yes
Uranium	July 16/18	0.157	µg/L	No
Fluoride	April 9/18 April 17/18	1.77 1.77	mg/L	Yes
Nitrite	January 10/22 April 11/22 July 11/22 October 12/22	< 0.003 0.264 < 0.003 < 0.003	mg/L	No
Nitrate	January 10/22 April 11/22 July 11/22 October 12/22	<0.006 0.164 < 0.006 0.009	mg/L	No

Organic Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	July 16/18	< 0.02	µg/L	No
Atrazine + N-dealkylated metabolites	July 16/18	< 0.01	µg/L	No
Azinphos-methyl	July 16/18	< 0.05	µg/L	No
Benzene	July 16/18	< 0.32	µg/L	No
Benzo(a)pyrene	July 16/18	< 0.004	µg/L	No
Bromoxynil	July 16/18	< 0.33	µg/L	No
Carbaryl	July 16/18	< 0.05	µg/L	No
Carbofuran	July 16/18	< 0.01	µg/L	No
Carbon Tetrachloride	July 16/18	< 0.16	µg/L	No
Chlorpyrifos	July 16/18	< 0.02	µg/L	No
Diazinon	July 16/18	< 0.02	µg/L	No
Dicamba	July 16/18	< 0.20	µg/L	No
1,4-Dichlorobenzene	July 16/18	< 0.36	µg/L	No
1,2-Dichlorobenzene	July 16/18	< 0.41	µg/L	No
1,2-Dichloroethane	July 16/18	< 0.35	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	July 16/18	< 0.33	µg/L	No
Dichloromethane	July 16/18	< 0.35	µg/L	No
2-4 Dichlorophenol	July 16/18	< 0.15	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	July 16/18	< 0.19	µg/L	No
Diclofop-methyl	July 16/18	< 0.40	µg/L	No
Dimethoate	July 16/18	< 0.03	µg/L	No
Diquat	July 16/18	< 1	µg/L	No
Diuron	July 16/18	< 0.03	µg/L	No
Glyphosate	July 16/18	< 1	µg/L	No
Malathion	July 16/18	< 0.02	µg/L	No
2 methyl-4-chlorophenoxyacetic acid (MCPA)	July 16/18	<0.00012	µg/L	No
Metolachlor	July 16/18	< 0.01	µg/L	No
Metribuzin	July 16/18	< 0.02	µg/L	No
Monochlorobenzene	July 16/18	< 0.3	µg/L	No
Paraquat	July 16/18	< 1	µg/L	No
Pentachlorophenol	July 16/18	< 0.15	µg/L	No
Phorate	July 16/18	< 0.01	µg/L	No
Picloram	July 16/18	< 1	µg/L	No
Polychlorinated Biphenyls (PCB)	July 16/18	0.04	µg/L	No
Prometryne	July 16/18	< 0.03	µg/L	No
Simazine	July 16/18	< 0.01	µg/L	No
Terbufos	July 16/18	< 0.01	µg/L	No
Tetrachloroethylene	July 16/18	< 0.35	µg/L	No
2,3,4,6-Tetrachlorophenol	July 16/18	< 0.20	µg/L	No
Triallate	July 16/18	< 0.01	µg/L	No
Trichloroethylene	July 16/18	< 0.44	µg/L	No
2,4,6-Trichlorophenol	July 16/18	< 0.25	µg/L	No
Trifluralin	July 16/18	< 0.02	µg/L	No
Vinyl Chloride	July 16/18	< 0.17	µg/L	No

Trihalomethane (THM) distribution sampling is required quarterly every third year and must also be expressed as a running annual average. The limit as set in the Ontario Drinking Water Quality Standards is 100 µg/L. Trihalomethanes are a by-product of the disinfection process. Trihalomethane sampling was not required in 2022.

Date Sampled	THM Result Value (µg/L)	Running Annual Average (µg/L)	Exceedance
January 11/21	14	14.0	No
April 26/21	13	13.5	No
July 12/21	16	14.3	No
October 18/21	19	15.5	No

Sampling and testing for haloacetic acids (HAA) in the distribution system is a new requirement as of 2017. The limit as set in the Ontario Drinking Water Quality Standards is 80 µg/L and starting in 2020 must also be expressed as a running annual average. Haloacetic acids are a by-product of the disinfection process. HAA sampling was not required in 2022.

Date Sampled	HAA Result Value (µg/L)	Running Annual Average (µg/L)	Exceedance
January 13/20	<5.3	5.3	No
April 20/20	<5.3	5.3	No
July 13/20	<5.3	5.3	No
October 13/20	<5.3	5.3	No

The Scott Point DWS does not have significant levels of lead and so is currently under a reduced-sampling program. Under this sampling program, O. Reg 170 Schedule 15.1 requires sampling for lead every three years and lead-related parameters (pH and alkalinity) every year. PH and Alkalinity sampling was completed in 2022, below are the results.

Date Sampled	Location Type	Number of Samples	Parameter	Results
March 14, 2022	Distribution	1	pH	7.7
			Alkalinity (mg/L)	99
August 15, 2022	Distribution	1	pH	7.1
			Alkalinity (mg/L)	95

2.3. Operational Monitoring

Sodium hypochlorite is used for primary and secondary disinfection. The free chlorine residual is monitored continuously on the treated water and must be checked a minimum of twice per week in the distribution system.

As a target, the free chlorine residual should be above 0.20 mg/L. A distribution free chlorine level lower than 0.05 mg/L must be reported and corrective action taken.

Our internal sampling schedule exceeds the minimum requirements by having operations staff collect one distribution free chlorine residual every day. Distribution residuals were not obtained on February 19 and December 24 due to inclement weather and road closures.

Free Chlorine Residual	Number of Grab Samples	Range of Results (#-#)
Treated Water	Continuous monitoring	0.31 – 2.41
Distribution Water	363	0.37 – 1.68

O. Reg 170 Schedule 7 requires that turbidity in the raw water is tested at least once every month. Consistent turbidity results greater than 5 NTU could indicate surface water influence on the well.

Raw Water	Number of Grab Samples	Range of Results (#-#)
Turbidity	45	0.13 – 0.76

3. WATER QUANTITY

The following tables list the quantities and flow rates of the water supplied to the distribution system during the reporting period covered by this report, including monthly average and maximum daily flows and a comparison to the rated capacity specified in the system Municipal Drinking Water Licence. The rated capacity of the treatment system is 77.76 m³/day. There is no maximum flow rate specified for water supplied to the distribution system.

Month	Average Daily Flow (m³/day)	% Average Day/Rated Capacity (m³/day)	Maximum Daily Flow (m³/day)	% Maximum Day/Rated Capacity (m³/day)
January	15	20%	19	24%
February	15	20%	26	34%
March	15	19%	19	25%
April	15	19%	19	25%
May	18	23%	25	33%
June	22	28%	44	56%
July	22	28%	37	48%
August	21	26%	34	44%
September	18	23%	27	34%
October	15	20%	19	25%
November	16	20%	23	29%
December	15	19%	18	23%
Annual	17	22%	44	56%

Month	Average Daily Flow Rate (L/s)	Maximum Daily Flow Rate (L/s)
January	0.18	2.57
February	0.18	1.70
March	0.18	1.89
April	0.17	2.38
May	0.21	2.57
June	0.25	2.57
July	0.25	2.56
August	0.24	2.56
September	0.20	2.58
October	0.18	1.84
November	0.18	2.58
December	0.17	2.58
Annual	0.20	2.58

4. ADVERSE WATER QUALITY INCIDENTS AND NON-COMPLIANCE FINDINGS

Any adverse results from microbiological samples, chemical samples or observations of operational conditions that indicate adverse water quality are reported to the Spills Action Centre (SAC) of the Ministry of the Environment, Conservation and Parks and the Medical Officer of Health (MOH). All adverse conditions are responded to immediately and corrective actions taken. There was one reportable incident in 2022 for Sodium Adverse.

Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
October 18, 2022 AWQI# 160344	Sodium above MAC limit of 20mg/L	37.2mg/L	Resampled and annual notification given to system users	October 18, 2022

The annual Ministry of the Environment, Conservation and Parks Inspection took place on December 8, 2022 for the period of February 2 to December 8, 2022. The final MECP inspection report included 2 non-compliance items listed in the table below.

Incident Date	Requirements the System Failed to Meet	Result	Corrective Action	Corrective Action Date
Feb 2 to Dec 8, 2022 Inspection period	O. Reg 170/03 6-5 (1) 5 states continuous monitoring equipment must be designed and operated in accordance with the standards described in subsection 1.1 or i. the continuous monitoring equipment must have a feature that ensures that no water is directed to users of water sampled by the equipment in the event that the equipment malfunctions or loses power or a test result for a parameter is above the maximum alarm standard or below the minimum alarm standard specified in the table to this section for the parameter.	Low cl2 alarm 0.5mg/L, High lift lockout 0.4mg/L, Three pressure tanks still drain to system after high lift pump lockout	Installing a solenoid valve that will automatically close based on the low chlorine lockout value on site. This will not allow the pressure tanks to drain to system after high lift pump locks out. MECP directive: This valve shall be installed by no later than February 20, 2023 with written confirmation when the work is completed to the Provincial Officer.	February 17, 2023

Incident Date	Requirements the System Failed to Meet	Result	Corrective Action	Corrective Action Date
Feb 2 to Dec 8, 2022 Inspection period	Logbooks were not properly maintained and/or did not contain the required information. Operators are not logging the required information as per S. 27 (5) 5-6. During low cl2 alarm call outs operators are not documenting whether the high lift pumps have ceased operation as designed for the low chlorine lockout procedures.	--	The Standard Operating Procedure for Log Books was revised to include wording specific to items required to be recorded for low cl2 alarm situations. Staff will attend a training session specific to logbook training for water operators. Session is scheduled for March 21, 2023. MECP Directive: Until further notice the Owner shall submit to the MECP Provincial Officer all documentation kept for low chlorine alarm events. The owner shall submit the required documents within 72 hours of the event. This shall commence on the date the report is received by the owner.	February 17, 2023

O. Reg 170 Schedule 22 requires the municipality to identify any requirements of the Act, Regulations, Drinking Water Works Permit, Municipal Drinking Water Licence and any Order that the system failed to meet during the reporting period.

Drinking Water Legislation	Requirements the System Failed to Meet	Duration	Corrective Actions
O. Reg. 170, Schedule 6, Section 10. 1. ii	The continuous monitoring equipment would not signal an alarm to call out to a location where a person is present due to telecommunications outage	December 23 at 1953 to December 26 approx. 65 hours	Called Bruce Telecom Dec 24 to repair telephone and internet. Inclement weather and road closures prevented the repair being completed until December 26.