



Centre Wellington

Township of Centre Wellington

Annual Water Report

Centre Wellington Drinking Water System - 20000086

Prepared:

February 2023

Annual Water Report

For the period of January 1, 2022 – December 31, 2022

Centre Wellington Drinking Water System – 220000086

Annual Report Introduction:

As prescribed in the Safe Drinking Water Act, 2002 Ontario Regulation 170/03 Section 11, an Annual Report must be prepared for the period from January 1 to December 31 and must be completed not later than February 28 of the following year.

The Annual Report must include:

- a brief description of the drinking water system;
- a list of water treatment chemicals used;
- a summary of the most recent water test results required under O. Regulation 170/03 or an Approval, Municipal Drinking Water Licence or an Order;
- a summary of adverse test results and other issues reported to the Ministry of Environment, Conservation and Parks (MECP) including corrective actions taken;
- a description of major expenses incurred to install, repair or replace required equipment;
- the locations where this report is available for inspection.

A copy of the report is available for viewing at:

- Infrastructure Services Office, 7444 County Road 21, Elora
- Municipal Civic Centre, 1 MacDonald Square, Elora
- Online at www.centrewellington.ca

Drinking Water System Description

The Centre Wellington Drinking Water System is a large municipal residential system and is supplied by nine groundwater well sources. One source well is off line and does not contribute to the system at this time (Fergus Well 2). Additionally, Fergus Well 5 was off line throughout 2022 and did not contribute water to the distribution system.

The distribution system covers the village of Elora and the town of Fergus and is connected by a booster station. It serves a population of approximately 23,000 people and it is comprised of the following infrastructure:

- 128 km of buried watermain;
- 4 elevated storage towers; and
- Watermain valves, service valves, fire hydrants, and water meters.

Water Treatment Chemicals

The raw water is treated with chlorine gas at all production well sites. If needed, re-chlorination is achieved using sodium hypochlorite at the booster station and two tower locations, one in Fergus and one in Elora.

Drinking Water Test Results

From January 1 to December 31, 2022, all regulatory microbiological and chemical quality samples were collected throughout the drinking water system by certified Operators and tests were performed by an accredited, licensed laboratory.

- 1) Adverse test results reported under the Safe Drinking Water Act, 18(1) or O. Regulation 170/03, Schedule 16-4.
 - a) Adverse Water Quality Incidents (AWQI) refers to any unusual test result that does not meet a provincial water quality standard or a situation where the disinfection of the drinking water may be compromised.

Table 1: Adverse Water Quality Incidents

Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
September 1, 2022	Total Coliform	1	MPN/100 mL	Temporary watermain All reporting, and sampling was completed as required.	September 9, 2022
September 8, 2022	Total Coliform	3	MPN/100 mL	Temporary watermain All reporting, and sampling was completed as required.	September 19, 2022
October 20, 2022	Total Coliform	1	MPN/100 mL	Treated water sample. All reporting, and sampling was completed as required.	October 25, 2022

- 2) Microbiological testing completed under O. Regulation 170/03, Schedule 10.

- a) The Owner of the drinking water system must ensure water samples are taken at least once every week from the raw water supply, before any treatment has been applied to the water. Raw water samples are taken at all well sites and are tested for Total Coliform and Escherichia coli (E.coli).
- b) The Owner of the drinking water system must ensure water samples are taken at least once every week from the treated water supply. Treated water samples are taken at all well sites and are tested for Total Coliform, Heterotrophic Plate Count (HPC) and E.coli.
- c) The Owner of the drinking water system must ensure water samples are taken from the distribution system once every week and the number of samples is based on population served. Distribution water samples are tested for Total Coliform, Heterotrophic Plate Count (HPC) and E.coli.

Table 2: Microbiological Test Results

Type of Sample	Number of Samples	Range (minimum – maximum)	Unit of Measure
Raw – Total Coliform	364	0 – 2	MPN/100 mL
Raw – E.coli	364	0 – 0	MPN/100 mL
Treated – Total Coliform	364	0 – 1	MPN/100 mL
Treated – E.coli	364	0 – 0	MPN/100 mL
Treated – HPC	361	0 – 50	cfu/mL
Distribution – Total Coliform	482	0 – 0	MPN/100 mL
Distribution – E.coli	482	0 – 0	MPN/100 mL
Distribution – HPC	472	0 – 44	cfu/ mL

*MPN = most probably number; cfu = colony forming units

- 3) Operational checks completed under O. Regulation 170/03, Schedule 7
 - a) The Owner of a drinking water system that provides chlorination for primary disinfection must ensure that sampling and testing for free chlorine residual is carried out by continuous monitoring equipment. The representative number of samples taken through continuous monitoring is considered to be 8,760.
 - b) The Owner of a drinking water system must ensure that a water sample is taken at least once per month, from a location before raw water enters the treatment system and is tested for turbidity. If the system obtains water from a raw water supply that is groundwater, then a sample must be taken from each well that is supplying water to the system.

Table 3: Chlorine and Turbidity Results

Parameter	Number of Samples	Range (minimum – maximum)	Unit of measure
Chlorine	8,760	0.70 – 3.13	mg/L
Turbidity	362	0.05 – 0.96	NTU

* mg/L = milligrams/Litre; NTU = Nephelometric Turbidity unit

- 4) Treated water quality results under O. Regulation 170/03, Schedule 13-6 and 13-7
 - a) The Owner of a drinking water system that provides chlorination must ensure that at least one distribution sample is taken in each calendar quarter and tested for trihalomethanes (THMs). The sample must be taken at a point in the system that is likely

to have an elevated potential for the formation of THMs. The annual report value is based on a running annual average (RAA) of quarterly THMs results.

- b) The Owner of a drinking water system that provides chlorination must ensure that at least one distribution sample is taken in each calendar quarter and tested for haloacetic acids (HAAs). The sample must be taken at a point in the system that is likely to have an elevated potential for the formation of HAAs. The annual report value is based on a running annual average (RAA) of quarterly HAAs results.
- c) The Owner of a drinking water system must ensure that at least one water sample is taken every three months and tested for nitrate and nitrite. Samples were taken at every well site that is supplying water to the system.
- d) The Drinking Water Standard (STND) for the parameters are listed as per O. Regulation 169/03 Schedule 2.

Table 4: Trihalomethanes Running Annual Average (RAA)

Location	Date	THMs RAA	THMs STND	Unit of Measure
Distribution	2022 Sampling	13.8	100	ug/L

* ug/L = micrograms/Litre

Table 5: Haloacetic Acids Running Annual Average (RAA)

Location	Date	HAAs RAA	HAAs STND	Unit of Measure
Distribution	2022 Sampling	3.8	80	ug/L

Table 6: Nitrate and Nitrite Results (4th sampling round in 2022)

Location	Date	Nitrate (as Nitrogen)	Nitrate STND	Nitrite (as Nitrogen)	Nitrite STND	Unit of Measure
Fergus Well 1	December 16, 2022	0.409	10	<0.010	1.0	mg/L
Fergus Well 4	December 15, 2022	0.141	10	<0.010	1.0	mg/L
Fergus Well 5	Off line during 2022	NA	10	NA	1.0	mg/L
Fergus Well 6	December 15, 2022	<0.100	10	<0.050	1.0	mg/L
Fergus Well 7	December 15, 2022	<0.020	10	<0.010	1.0	mg/L
Elora Well 1	December 15, 2022	<0.020	10	<0.010	1.0	mg/L
Elora Well 3	December 15, 2022	<0.100	10	<0.050	1.0	mg/L
Elora Well 4	December 15, 2022	<0.020	10	<0.010	1.0	mg/L

5) Treated water quality results under O. Regulation 170/03, Schedule 13-2

- a) The Owner of a drinking water system must ensure that at least one water sample is taken every 36 months and tested for Schedule 23, Inorganics. Samples were taken at every well site that is supplying water to the system.
- b) The Drinking Water Standards (STND) for the parameters are listed as per O. Regulation 169/03 Schedule 2.

Table 7: Fergus Well 1 Schedule 23 Inorganic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Antimony	March 15, 2021	<0.60	6	ug/L
Arsenic	March 15, 2021	<1.0	10	ug/L
Barium	March 15, 2021	54	1,000	ug/L
Boron	March 15, 2021	<50	5,000	ug/L
Cadmium	March 15, 2021	<0.10	5	ug/L
Chromium	March 15, 2021	<1.0	50	ug/L
Mercury	March 15, 2021	<0.10	1	ug/L
Selenium	March 15, 2021	<5.0	50	ug/L
Uranium	March 15, 2021	<5.0	20	ug/L

Table 8: Fergus Well 4 Schedule 23 Inorganic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Antimony	March 15, 2021	<0.60	6	ug/L
Arsenic	March 15, 2021	1.1	10	ug/L
Barium	March 15, 2021	31	1,000	ug/L
Boron	March 15, 2021	76	5,000	ug/L
Cadmium	March 15, 2021	<0.10	5	ug/L
Chromium	March 15, 2021	<1.0	50	ug/L
Mercury	March 15, 2021	<0.10	1	ug/L
Selenium	March 15, 2021	<5.0	50	ug/L
Uranium	March 15, 2021	<5.0	20	ug/L

Table 9: Fergus Well 5 Schedule 23 Inorganic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Antimony	March 15, 2021	<0.60	6	ug/L
Arsenic	March 15, 2021	<1.0	10	ug/L
Barium	March 15, 2021	50	1,000	ug/L
Boron	March 15, 2021	<50	5,000	ug/L
Cadmium	March 15, 2021	<0.10	5	ug/L
Chromium	March 15, 2021	<1.0	50	ug/L
Mercury	March 15, 2021	<0.10	1	ug/L
Selenium	March 15, 2021	<5.0	50	ug/L
Uranium	March 15, 2021	<5.0	20	ug/L

Table 10: Fergus Well 6 Schedule 23 Inorganic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Antimony	March 15, 2021	<0.60	6	ug/L
Arsenic	March 15, 2021	<1.0	10	ug/L
Barium	March 15, 2021	17	1,000	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Boron	March 15, 2021	91	5,000	ug/L
Cadmium	March 15, 2021	<0.10	5	ug/L
Chromium	March 15, 2021	<1.0	50	ug/L
Mercury	March 15, 2021	<0.10	1	ug/L
Selenium	March 15, 2021	<5.0	50	ug/L
Uranium	March 15, 2021	<5.0	20	ug/L

Table 11: Fergus Well 7 Schedule 23 Inorganic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Antimony	April 27, 2021	<0.60	6	ug/L
Arsenic	April 27, 2021	2.5	10	ug/L
Barium	April 27, 2021	33	1,000	ug/L
Boron	April 27, 2021	<50	5,000	ug/L
Cadmium	April 27, 2021	<0.10	5	ug/L
Chromium	April 27, 2021	<1.0	50	ug/L
Mercury	April 27, 2021	<0.10	1	ug/L
Selenium	April 27, 2021	<5.0	50	ug/L
Uranium	April 27, 2021	<5.0	20	ug/L

Table 12: Elora Well 1 Schedule 23 Inorganic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Antimony	March 15, 2021	<0.60	6	ug/L
Arsenic	March 15, 2021	<1.0	10	ug/L
Barium	March 15, 2021	25	1,000	ug/L
Boron	March 15, 2021	51	5,000	ug/L
Cadmium	March 15, 2021	<0.10	5	ug/L
Chromium	March 15, 2021	<1.0	50	ug/L
Mercury	March 15, 2021	<0.10	1	ug/L
Selenium	March 15, 2021	<5.0	50	ug/L
Uranium	March 15, 2021	<5.0	20	ug/L

Table 13: Elora Well 3 Schedule 23 Inorganic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Antimony	March 15, 2021	<0.60	6	ug/L
Arsenic	March 15, 2021	<1.0	10	ug/L
Barium	March 15, 2021	31	1,000	ug/L
Boron	March 15, 2021	<50	5,000	ug/L
Cadmium	March 15, 2021	<0.10	5	ug/L
Chromium	March 15, 2021	<1.0	50	ug/L
Mercury	March 15, 2021	<0.10	1	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Selenium	March 15, 2021	<5.0	50	ug/L
Uranium	March 15, 2021	<5.0	20	ug/L

Table 14: Elora Well 4 Schedule 23 Inorganic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Antimony	March 15, 2021	<0.60	6	ug/L
Arsenic	March 15, 2021	<1.0	10	ug/L
Barium	March 15, 2021	21	1,000	ug/L
Boron	March 15, 2021	<50	5,000	ug/L
Cadmium	March 15, 2021	<0.10	5	ug/L
Chromium	March 15, 2021	<1.0	50	ug/L
Mercury	March 15, 2021	<0.10	1	ug/L
Selenium	March 15, 2021	<5.0	50	ug/L
Uranium	March 15, 2021	<5.0	20	ug/L

- 6) Treated water quality results under O. Regulation 170/03, Schedule 13-8 and 13-9
- The Owner of a drinking water system must ensure that at least one water sample is taken every 60 months and tested for sodium. Samples were taken at every well site that is supplying water to the system.
 - The Owner of a drinking water system must ensure that at least one water sample is taken every 60 months and tested for fluoride. Samples were taken at every well site that is supplying water to the system.
 - The Drinking Water Standards (STND) for the parameters are listed as per O. Regulation 169/03 Schedule 2.
 - The aesthetic objective (AO) for sodium in drinking water is 200 mg/L. The local Medical Officer of Health must be notified when the sodium concentration exceeds 20 mg/L.

Table 15: Sodium and Fluoride Results

Location	Sample Date	Sodium	Sodium AO	Fluoride	Fluoride STND	Unit of Measure
Fergus Well 1	Apr 15, 2021	83.2	200	0.46	1.5	mg/L
Fergus Well 4	Apr 15, 2021	27.4	200	0.86	1.5	mg/L
Fergus Well 5	Apr 15, 2021	10.3	200	0.12	1.5	mg/L
Fergus Well 6	Apr 15, 2021	40.1	200	0.34	1.5	mg/L
Fergus Well 7	Apr 27, 2021	18.9	200	0.36	1.5	mg/L
Elora Well 1	Apr 15, 2021	20.3	200	0.28	1.5	mg/L
Elora Well 3	Apr 15, 2021	12.2	200	0.28	1.5	mg/L
Elora Well 4	Apr 15, 2021	15.6	200	0.24	1.5	mg/L

- 7) Treated water quality results under O. Regulation 170/03, Schedule 13-4
- The Owner of a drinking water system must ensure that at least one water sample is taken every 36 months and tested for Schedule 24, Organics. Samples were taken at every well site that is supplying water to the system.

b) The Drinking Water Standards (STND) for the parameters are listed as per O. Regulation 169/03 Schedule 2.

Table 16: Fergus Well 1 Schedule 24 Organic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Alachlor	Apr 21, 2021	<0.10	5	ug/L
Atrazine + N-dealkylated metabolites	Apr 21, 2021	<0.20	5	ug/L
Azinphos-methyl	Apr 21, 2021	<0.10	20	ug/L
Benzene	Apr 21, 2021	<0.50	1	ug/L
Benzo(a)pyrene	Apr 21, 2021	<0.0050	0.01	ug/L
Bromoxynil	Apr 21, 2021	<0.20	5	ug/L
Carbaryl	Apr 21, 2021	<0.20	90	ug/L
Carbofuran	Apr 21, 2021	<0.20	90	ug/L
Carbon Tetrachloride	Apr 21, 2021	<0.20	2	ug/L
Chlorpyrifos	Apr 21, 2021	<0.10	90	ug/L
Diazinon	Apr 21, 2021	<0.10	20	ug/L
Dicamba	Apr 21, 2021	<0.20	120	ug/L
1,2-Dichlorobenzene	Apr 21, 2021	<0.50	200	ug/L
1,4-Dichlorobenzene	Apr 21, 2021	<0.50	5	ug/L
1,2-Dichloroethane	Apr 21, 2021	<0.50	5	ug/L
1,1-Dichloroethylene (vinylidene chloride)	Apr 21, 2021	<0.50	14	ug/L
Dichloromethane	Apr 21, 2021	<5.0	50	ug/L
2,4-Dichlorophenol	Apr 21, 2021	<0.30	900	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 21, 2021	<0.20	100	ug/L
Diclofop-methyl	Apr 21, 2021	<0.20	9	ug/L
Dimethoate	Apr 21, 2021	<0.10	20	ug/L
Diquat	Apr 21, 2021	<1.0	70	ug/L
Diuron	Apr 21, 2021	<1.0	150	ug/L
Glyphosate	Apr 21, 2021	<5.0	280	ug/L
Malathion	Apr 21, 2021	<0.10	190	ug/L
2 Methyl-4-chlorophenoxyacetic acid	Apr 21, 2021	<0.20	100	ug/L
Metolachlor	Apr 21, 2021	<0.10	50	ug/L
Metribuzin	Apr 21, 2021	<0.10	80	ug/L
Monochlorobenzene	Apr 21, 2021	<0.50	80	ug/L
Paraquat	Apr 21, 2021	<1.0	10	ug/L
Pentachlorophenol	Apr 21, 2021	<0.50	60	ug/L
Phorate	Apr 21, 2021	<0.10	2	ug/L
Picloram	Apr 21, 2021	<0.20	190	ug/L
Polychlorinated Biphenyls (PCB)	Apr 21, 2021	<0.035	3	ug/L
Prometryne	Apr 21, 2021	<0.10	1	ug/L
Simazine	Apr 21, 2021	<0.10	10	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Terbufos	Apr 21, 2021	<0.20	1	ug/L
Tetrachloroethylene	Apr 21, 2021	<0.50	10	ug/L
2,3,4,6-Tetrachlorophenol	Apr 21, 2021	<0.50	100	ug/L
Triallate	Apr 21, 2021	<0.10	230	ug/L
Trichloroethylene	Apr 21, 2021	<0.50	5	ug/L
2,4,6-Trichlorophenol	Apr 21, 2021	<0.50	5	ug/L
Trifluralin	Apr 21, 2021	<0.10	45	ug/L
Vinyl Chloride	Apr 21, 2021	<0.20	1	ug/L

Table 17: Fergus Well 4 Schedule 24 Organic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Alachlor	Apr 21, 2021	<0.10	5	ug/L
Atrazine + N-dealkylated metabolites	Apr 21, 2021	<0.20	5	ug/L
Azinphos-methyl	Apr 21, 2021	<0.10	20	ug/L
Benzene	Apr 21, 2021	<0.50	1	ug/L
Benzo(a)pyrene	Apr 21, 2021	<0.0050	0.01	ug/L
Bromoxynil	Apr 21, 2021	<0.20	5	ug/L
Carbaryl	Apr 21, 2021	<0.20	90	ug/L
Carbofuran	Apr 21, 2021	<0.20	90	ug/L
Carbon Tetrachloride	Apr 21, 2021	<0.20	2	ug/L
Chlorpyrifos	Apr 21, 2021	<0.10	90	ug/L
Diazinon	Apr 21, 2021	<0.10	20	ug/L
Dicamba	Apr 21, 2021	<0.20	120	ug/L
1,2-Dichlorobenzene	Apr 21, 2021	<0.50	200	ug/L
1,4-Dichlorobenzene	Apr 21, 2021	<0.50	5	ug/L
1,2-Dichloroethane	Apr 21, 2021	<0.50	5	ug/L
1,1-Dichloroethylene (vinylidene chloride)	Apr 21, 2021	<0.50	14	ug/L
Dichloromethane	Apr 21, 2021	<5.0	50	ug/L
2,4-Dichlorophenol	Apr 21, 2021	<0.30	900	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 21, 2021	<0.20	100	ug/L
Diclofop-methyl	Apr 21, 2021	<0.20	9	ug/L
Dimethoate	Apr 21, 2021	<0.10	20	ug/L
Diquat	Apr 21, 2021	<1.0	70	ug/L
Diuron	Apr 21, 2021	<1.0	150	ug/L
Glyphosate	Apr 21, 2021	<5.0	280	ug/L
Malathion	Apr 21, 2021	<0.10	190	ug/L
2 Methyl-4-chlorophenoxyacetic acid	Apr 21, 2021	<0.20	100	ug/L
Metolachlor	Apr 21, 2021	<0.10	50	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Metribuzin	Apr 21, 2021	<0.10	80	ug/L
Monochlorobenzene	Apr 21, 2021	<0.50	80	ug/L
Paraquat	Apr 21, 2021	<1.0	10	ug/L
Pentachlorophenol	Apr 21, 2021	<0.50	60	ug/L
Phorate	Apr 21, 2021	<0.10	2	ug/L
Picloram	Apr 21, 2021	<0.20	190	ug/L
Polychlorinated Biphenyls (PCB)	Apr 21, 2021	<0.035	3	ug/L
Prometryne	Apr 21, 2021	<0.10	1	ug/L
Simazine	Apr 21, 2021	<0.10	10	ug/L
Terbufos	Apr 21, 2021	<0.20	1	ug/L
Tetrachloroethylene	Apr 21, 2021	<0.50	10	ug/L
2,3,4,6-Tetrachlorophenol	Apr 21, 2021	<0.50	100	ug/L
Triallate	Apr 21, 2021	<0.10	230	ug/L
Trichloroethylene	Apr 21, 2021	<0.50	5	ug/L
2,4,6-Trichlorophenol	Apr 21, 2021	<0.50	5	ug/L
Trifluralin	Apr 21, 2021	<0.10	45	ug/L
Vinyl Chloride	Apr 21, 2021	<0.20	1	ug/L

Table 18: Fergus Well 5 Schedule 24 Organic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Alachlor	Apr 21, 2021	<0.10	5	ug/L
Atrazine + N-dealkylated metabolites	Apr 21, 2021	<0.20	5	ug/L
Azinphos-methyl	Apr 21, 2021	<0.10	20	ug/L
Benzene	Apr 21, 2021	<0.50	1	ug/L
Benzo(a)pyrene	Apr 21, 2021	<0.0050	0.01	ug/L
Bromoxynil	Apr 21, 2021	<0.20	5	ug/L
Carbaryl	Apr 21, 2021	<0.20	90	ug/L
Carbofuran	Apr 21, 2021	<0.20	90	ug/L
Carbon Tetrachloride	Apr 21, 2021	<0.20	2	ug/L
Chlorpyrifos	Apr 21, 2021	<0.10	90	ug/L
Diazinon	Apr 21, 2021	<0.10	20	ug/L
Dicamba	Apr 21, 2021	<0.20	120	ug/L
1,2-Dichlorobenzene	Apr 21, 2021	<0.50	200	ug/L
1,4-Dichlorobenzene	Apr 21, 2021	<0.50	5	ug/L
1,2-Dichloroethane	Apr 21, 2021	<0.50	5	ug/L
1,1-Dichloroethylene (vinylidene chloride)	Apr 21, 2021	<0.50	14	ug/L
Dichloromethane	Apr 21, 2021	<5.0	50	ug/L
2,4-Dichlorophenol	Apr 21, 2021	<0.30	900	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 21, 2021	<0.20	100	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Diclofop-methyl	Apr 21, 2021	<0.20	9	ug/L
Dimethoate	Apr 21, 2021	<0.10	20	ug/L
Diquat	Apr 21, 2021	<1.0	70	ug/L
Diuron	Apr 21, 2021	<1.0	150	ug/L
Glyphosate	Apr 21, 2021	<5.0	280	ug/L
Malathion	Apr 21, 2021	<0.10	190	ug/L
2 Methyl-4-chlorophenoxyacetic acid	Apr 21, 2021	<0.20	100	ug/L
Metolachlor	Apr 21, 2021	<0.10	50	ug/L
Metribuzin	Apr 21, 2021	<0.10	80	ug/L
Monochlorobenzene	Apr 21, 2021	<0.50	80	ug/L
Paraquat	Apr 21, 2021	<1.0	10	ug/L
Pentachlorophenol	Apr 21, 2021	<0.50	60	ug/L
Phorate	Apr 21, 2021	<0.10	2	ug/L
Picloram	Apr 21, 2021	<0.20	190	ug/L
Polychlorinated Biphenyls (PCB)	Apr 21, 2021	<0.035	3	ug/L
Prometryne	Apr 21, 2021	<0.10	1	ug/L
Simazine	Apr 21, 2021	<0.10	10	ug/L
Terbufos	Apr 21, 2021	<0.20	1	ug/L
Tetrachloroethylene	Apr 21, 2021	<0.50	10	ug/L
2,3,4,6-Tetrachlorophenol	Apr 21, 2021	<0.50	100	ug/L
Triallate	Apr 21, 2021	<0.10	230	ug/L
Trichloroethylene	Apr 21, 2021	<0.50	5	ug/L
2,4,6-Trichlorophenol	Apr 21, 2021	<0.50	5	ug/L
Trifluralin	Apr 21, 2021	<0.10	45	ug/L
Vinyl Chloride	Apr 21, 2021	<0.20	1	ug/L

Table 19: Fergus Well 6 Schedule 24 Organic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Alachlor	Apr 21, 2021	<0.10	5	ug/L
Atrazine + N-dealkylated metabolites	Apr 21, 2021	<0.20	5	ug/L
Azinphos-methyl	Apr 21, 2021	<0.10	20	ug/L
Benzene	Apr 21, 2021	<0.50	1	ug/L
Benzo(a)pyrene	Apr 21, 2021	<0.0050	0.01	ug/L
Bromoxynil	Apr 21, 2021	<0.20	5	ug/L
Carbaryl	Apr 21, 2021	<0.20	90	ug/L
Carbofuran	Apr 21, 2021	<0.20	90	ug/L
Carbon Tetrachloride	Apr 21, 2021	<0.20	2	ug/L
Chlorpyrifos	Apr 21, 2021	<0.10	90	ug/L
Diazinon	Apr 21, 2021	<0.10	20	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Dicamba	Apr 21, 2021	<0.20	120	ug/L
1,2-Dichlorobenzene	Apr 21, 2021	<0.50	200	ug/L
1,4-Dichlorobenzene	Apr 21, 2021	<0.50	5	ug/L
1,2-Dichloroethane	Apr 21, 2021	<0.50	5	ug/L
1,1-Dichloroethylene (vinylidene chloride)	Apr 21, 2021	<0.50	14	ug/L
Dichloromethane	Apr 21, 2021	<5.0	50	ug/L
2,4-Dichlorophenol	Apr 21, 2021	<0.30	900	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 21, 2021	<0.20	100	ug/L
Diclofop-methyl	Apr 21, 2021	<0.20	9	ug/L
Dimethoate	Apr 21, 2021	<0.10	20	ug/L
Diquat	Apr 21, 2021	<1.0	70	ug/L
Diuron	Apr 21, 2021	<1.0	150	ug/L
Glyphosate	Apr 21, 2021	<5.0	280	ug/L
Malathion	Apr 21, 2021	<0.10	190	ug/L
2 Methyl-4-chlorophenoxyacetic acid	Apr 21, 2021	<0.20	100	ug/L
Metolachlor	Apr 21, 2021	<0.10	50	ug/L
Metribuzin	Apr 21, 2021	<0.10	80	ug/L
Monochlorobenzene	Apr 21, 2021	<0.50	80	ug/L
Paraquat	Apr 21, 2021	<1.0	10	ug/L
Pentachlorophenol	Apr 21, 2021	<0.50	60	ug/L
Phorate	Apr 21, 2021	<0.10	2	ug/L
Picloram	Apr 21, 2021	<0.20	190	ug/L
Polychlorinated Biphenyls (PCB)	Apr 21, 2021	<0.035	3	ug/L
Prometryne	Apr 21, 2021	<0.10	1	ug/L
Simazine	Apr 21, 2021	<0.10	10	ug/L
Terbufos	Apr 21, 2021	<0.20	1	ug/L
Tetrachloroethylene	Apr 21, 2021	<0.50	10	ug/L
2,3,4,6-Tetrachlorophenol	Apr 21, 2021	<0.50	100	ug/L
Triallate	Apr 21, 2021	<0.10	230	ug/L
Trichloroethylene	Apr 21, 2021	<0.50	5	ug/L
2,4,6-Trichlorophenol	Apr 21, 2021	<0.50	5	ug/L
Trifluralin	Apr 21, 2021	<0.10	45	ug/L
Vinyl Chloride	Apr 21, 2021	<0.20	1	ug/L

Table 20: Fergus Well 7 Schedule 24 Organic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Alachlor	April 27, 2021	<0.10	5	ug/L
Atrazine + N-dealkylated metabolites	April 27, 2021	<0.20	5	ug/L
Azinphos-methyl	April 27, 2021	<0.10	20	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Benzene	April 27, 2021	<0.50	1	ug/L
Benzo(a)pyrene	April 27, 2021	<0.0050	0.01	ug/L
Bromoxynil	April 27, 2021	<0.20	5	ug/L
Carbaryl	April 27, 2021	<0.20	90	ug/L
Carbofuran	April 27, 2021	<0.20	90	ug/L
Carbon Tetrachloride	April 27, 2021	<0.20	2	ug/L
Chlorpyrifos	April 27, 2021	<0.10	90	ug/L
Diazinon	April 27, 2021	<0.10	20	ug/L
Dicamba	April 27, 2021	<0.20	120	ug/L
1,2-Dichlorobenzene	April 27, 2021	<0.50	200	ug/L
1,4-Dichlorobenzene	April 27, 2021	<0.50	5	ug/L
1,2-Dichloroethane	April 27, 2021	<0.50	5	ug/L
1,1-Dichloroethylene (vinylidene chloride)	April 27, 2021	<0.50	14	ug/L
Dichloromethane	April 27, 2021	<5.0	50	ug/L
2,4-Dichlorophenol	April 27, 2021	<0.30	900	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	April 27, 2021	<0.20	100	ug/L
Diclofop-methyl	April 27, 2021	<0.20	9	ug/L
Dimethoate	April 27, 2021	<0.10	20	ug/L
Diquat	April 27, 2021	<1.0	70	ug/L
Diuron	April 27, 2021	<1.0	150	ug/L
Glyphosate	April 27, 2021	<5.0	280	ug/L
Malathion	April 27, 2021	<0.10	190	ug/L
2 Methyl-4-chlorophenoxyacetic acid	April 27, 2021	<0.20	100	ug/L
Metolachlor	April 27, 2021	<0.10	50	ug/L
Metribuzin	April 27, 2021	<0.10	80	ug/L
Monochlorobenzene	April 27, 2021	<0.50	80	ug/L
Paraquat	April 27, 2021	<1.0	10	ug/L
Pentachlorophenol	April 27, 2021	<0.50	60	ug/L
Phorate	April 27, 2021	<0.10	2	ug/L
Picloram	April 27, 2021	<0.20	190	ug/L
Polychlorinated Biphenyls (PCB)	April 27, 2021	<0.035	3	ug/L
Prometryne	April 27, 2021	<0.10	1	ug/L
Simazine	April 27, 2021	<0.10	10	ug/L
Terbufos	April 27, 2021	<0.20	1	ug/L
Tetrachloroethylene	April 27, 2021	<0.50	10	ug/L
2,3,4,6-Tetrachlorophenol	April 27, 2021	<0.50	100	ug/L
Triallate	April 27, 2021	<0.10	230	ug/L
Trichloroethylene	April 27, 2021	<0.50	5	ug/L
2,4,6-Trichlorophenol	April 27, 2021	<0.50	5	ug/L
Trifluralin	April 27, 2021	<0.10	45	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Vinyl Chloride	April 27, 2021	<0.20	1	ug/L

Table 21: Elora Well 1 Schedule 24 Organic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Alachlor	Apr 21, 2021	<0.10	5	ug/L
Atrazine + N-dealkylated metabolites	Apr 21, 2021	<0.20	5	ug/L
Azinphos-methyl	Apr 21, 2021	<0.10	20	ug/L
Benzene	Apr 21, 2021	<0.50	1	ug/L
Benzo(a)pyrene	Apr 21, 2021	<0.0050	0.01	ug/L
Bromoxynil	Apr 21, 2021	<0.20	5	ug/L
Carbaryl	Apr 21, 2021	<0.20	90	ug/L
Carbofuran	Apr 21, 2021	<0.20	90	ug/L
Carbon Tetrachloride	Apr 21, 2021	<0.20	2	ug/L
Chlorpyrifos	Apr 21, 2021	<0.10	90	ug/L
Diazinon	Apr 21, 2021	<0.10	20	ug/L
Dicamba	Apr 21, 2021	<0.20	120	ug/L
1,2-Dichlorobenzene	Apr 21, 2021	<0.50	200	ug/L
1,4-Dichlorobenzene	Apr 21, 2021	<0.50	5	ug/L
1,2-Dichloroethane	Apr 21, 2021	<0.50	5	ug/L
1,1-Dichloroethylene (vinylidene chloride)	Apr 21, 2021	<0.50	14	ug/L
Dichloromethane	Apr 21, 2021	<5.0	50	ug/L
2,4- Dichlorophenol	Apr 21, 2021	<0.30	900	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 21, 2021	<0.20	100	ug/L
Diclofop-methyl	Apr 21, 2021	<0.20	9	ug/L
Dimethoate	Apr 21, 2021	<0.10	20	ug/L
Diquat	Apr 21, 2021	<1.0	70	ug/L
Diuron	Apr 21, 2021	<1.0	150	ug/L
Glyphosate	Apr 21, 2021	<5.0	280	ug/L
Malathion	Apr 21, 2021	<0.10	190	ug/L
2 Methyl-4-chlorophenoxyacetic acid	Apr 21, 2021	<0.20	100	ug/L
Metolachlor	Apr 21, 2021	<0.10	50	ug/L
Metribuzin	Apr 21, 2021	<0.10	80	ug/L
Monochlorobenzene	Apr 21, 2021	<0.50	80	ug/L
Paraquat	Apr 21, 2021	<1.0	10	ug/L
Pentachlorophenol	Apr 21, 2021	<0.50	60	ug/L
Phorate	Apr 21, 2021	<0.10	2	ug/L
Picloram	Apr 21, 2021	<0.20	190	ug/L
Polychlorinated Biphenyls (PCB)	Apr 21, 2021	<0.035	3	ug/L
Prometryne	Apr 21, 2021	<0.10	1	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Simazine	Apr 21, 2021	<0.10	10	ug/L
Terbufos	Apr 21, 2021	<0.20	1	ug/L
Tetrachloroethylene	Apr 21, 2021	<0.50	10	ug/L
2,3,4,6-Tetrachlorophenol	Apr 21, 2021	<0.50	100	ug/L
Triallate	Apr 21, 2021	<0.10	230	ug/L
Trichloroethylene	Apr 21, 2021	<0.50	5	ug/L
2,4,6-Trichlorophenol	Apr 21, 2021	<0.50	5	ug/L
Trifluralin	Apr 21, 2021	<0.10	45	ug/L
Vinyl Chloride	Apr 21, 2021	<0.20	1	ug/L

Table 22: Elora Well 3 Schedule 24 Organic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Alachlor	Apr 21, 2021	<0.10	5	ug/L
Atrazine + N-dealkylated metabolites	Apr 21, 2021	<0.20	5	ug/L
Azinphos-methyl	Apr 21, 2021	<0.10	20	ug/L
Benzene	Apr 21, 2021	<0.50	1	ug/L
Benzo(a)pyrene	Apr 21, 2021	<0.0050	0.01	ug/L
Bromoxynil	Apr 21, 2021	<0.20	5	ug/L
Carbaryl	Apr 21, 2021	<0.20	90	ug/L
Carbofuran	Apr 21, 2021	<0.20	90	ug/L
Carbon Tetrachloride	Apr 21, 2021	<0.20	2	ug/L
Chlorpyrifos	Apr 21, 2021	<0.10	90	ug/L
Diazinon	Apr 21, 2021	<0.10	20	ug/L
Dicamba	Apr 21, 2021	<0.20	120	ug/L
1,2-Dichlorobenzene	Apr 21, 2021	<0.50	200	ug/L
1,4-Dichlorobenzene	Apr 21, 2021	<0.50	5	ug/L
1,2-Dichloroethane	Apr 21, 2021	<0.50	5	ug/L
1,1-Dichloroethylene (vinylidene chloride)	Apr 21, 2021	<0.50	14	ug/L
Dichloromethane	Apr 21, 2021	<5.0	50	ug/L
2,4-Dichlorophenol	Apr 21, 2021	<0.30	900	ug/L
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 21, 2021	<0.20	100	ug/L
Diclofop-methyl	Apr 21, 2021	<0.20	9	ug/L
Dimethoate	Apr 21, 2021	<0.10	20	ug/L
Diquat	Apr 21, 2021	<1.0	70	ug/L
Diuron	Apr 21, 2021	<1.0	150	ug/L
Glyphosate	Apr 21, 2021	<5.0	280	ug/L
Malathion	Apr 21, 2021	<0.10	190	ug/L
2 Methyl-4-chlorophenoxyacetic acid	Apr 21, 2021	<0.20	100	ug/L
Metolachlor	Apr 21, 2021	<0.10	50	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
Metribuzin	Apr 21, 2021	<0.10	80	ug/L
Monochlorobenzene	Apr 21, 2021	<0.50	80	ug/L
Paraquat	Apr 21, 2021	<1.0	10	ug/L
Pentachlorophenol	Apr 21, 2021	<0.50	60	ug/L
Phorate	Apr 21, 2021	<0.10	2	ug/L
Picloram	Apr 21, 2021	<0.20	190	ug/L
Polychlorinated Biphenyls (PCB)	Apr 21, 2021	<0.035	3	ug/L
Prometryne	Apr 21, 2021	<0.10	1	ug/L
Simazine	Apr 21, 2021	<0.10	10	ug/L
Terbufos	Apr 21, 2021	<0.20	1	ug/L
Tetrachloroethylene	Apr 21, 2021	<0.50	10	ug/L
2,3,4,6-Tetrachlorophenol	Apr 21, 2021	<0.50	100	ug/L
Triallate	Apr 21, 2021	<0.10	230	ug/L
Trichloroethylene	Apr 21, 2021	<0.50	5	ug/L
2,4,6-Trichlorophenol	Apr 21, 2021	<0.50	5	ug/L
Trifluralin	Apr 21, 2021	<0.10	45	ug/L
Vinyl Chloride	Apr 21, 2021	<0.20	1	ug/L

Table 23: Elora Well 4 Schedule 24 Organic Results

Parameter	Sample Date	Result	STND	Unit of Measure
Alachlor	Apr 21, 2021	<0.10	5	ug/L
Atrazine + N-dealkylated metabolites	Apr 21, 2021	<0.20	5	ug/L
Azinphos-methyl	Apr 21, 2021	<0.10	20	ug/L
Benzene	Apr 21, 2021	<0.50	1	ug/L
Benzo(a)pyrene	Apr 21, 2021	<0.0050	0.01	ug/L
Bromoxynil	Apr 21, 2021	<0.20	5	ug/L
Carbaryl	Apr 21, 2021	<0.20	90	ug/L
Carbofuran	Apr 21, 2021	<0.20	90	ug/L
Carbon Tetrachloride	Apr 21, 2021	<0.20	2	ug/L
Chlorpyrifos	Apr 21, 2021	<0.10	90	ug/L
Diazinon	Apr 21, 2021	<0.10	20	ug/L
Dicamba	Apr 21, 2021	<0.20	120	ug/L
1,2-Dichlorobenzene	Apr 21, 2021	<0.50	200	ug/L
1,4-Dichlorobenzene	Apr 21, 2021	<0.50	5	ug/L
1,2-Dichloroethane	Apr 21, 2021	<0.50	5	ug/L
1,1-Dichloroethylene (vinylidene chloride)	Apr 21, 2021	<0.50	14	ug/L
Dichloromethane	Apr 21, 2021	<5.0	50	ug/L
2,4-Dichlorophenol	Apr 21, 2021	<0.30	900	ug/L

Parameter	Sample Date	Result	STND	Unit of Measure
2,4-Dichlorophenoxy acetic acid (2,4-D)	Apr 21, 2021	<0.20	100	ug/L
Diclofop-methyl	Apr 21, 2021	<0.20	9	ug/L
Dimethoate	Apr 21, 2021	<0.10	20	ug/L
Diquat	Apr 21, 2021	<1.0	70	ug/L
Diuron	Apr 21, 2021	<1.0	150	ug/L
Glyphosate	Apr 21, 2021	<5.0	280	ug/L
Malathion	Apr 21, 2021	<0.10	190	ug/L
2 Methyl-4-chlorophenoxyacetic acid	Apr 21, 2021	<0.20	100	ug/L
Metolachlor	Apr 21, 2021	<0.10	50	ug/L
Metribuzin	Apr 21, 2021	<0.10	80	ug/L
Monochlorobenzene	Apr 21, 2021	<0.50	80	ug/L
Paraquat	Apr 21, 2021	<1.0	10	ug/L
Pentachlorophenol	Apr 21, 2021	<0.50	60	ug/L
Phorate	Apr 21, 2021	<0.10	2	ug/L
Picloram	Apr 21, 2021	<0.20	190	ug/L
Polychlorinated Biphenyls (PCB)	Apr 21, 2021	<0.035	3	ug/L
Prometryne	Apr 21, 2021	<0.10	1	ug/L
Simazine	Apr 21, 2021	<0.10	10	ug/L
Terbufos	Apr 21, 2021	<0.20	1	ug/L
Tetrachloroethylene	Apr 21, 2021	<0.50	10	ug/L
2,3,4,6-Tetrachlorophenol	Apr 21, 2021	<0.50	100	ug/L
Triallate	Apr 21, 2021	<0.10	230	ug/L
Trichloroethylene	Apr 21, 2021	<0.50	5	ug/L
2,4,6-Trichlorophenol	Apr 21, 2021	<0.50	5	ug/L
Trifluralin	Apr 21, 2021	<0.10	45	ug/L
Vinyl Chloride	Apr 21, 2021	<0.20	1	ug/L

- 8) Lead results under O. Regulation 170/03, Schedule 15.1-5
- The Owner of a drinking water system must ensure that the distribution system is sampled and tested for lead concentrations. For systems that continuously demonstrate good results, the regulation allows for reduced sampling. The Center Wellington DWS qualifies for reduced sampling. The samples must be taken during the period of December 15 – April 15 (winter sampling) and during the period of June 15 – October 15 (summer sampling) every 36 months.
 - The Drinking Water Standards (STND) for the parameters are listed as per O. Regulation 169/03 Schedule 2.
 - The Owner of a drinking water system must ensure that the distribution system is sampled and tested for pH and total alkalinity during each of the sampling periods (summer sampling and winter sampling) in every 12 month period.
 - The Operational Guideline for pH is 6.5 - 8.5 and the Operational Guideline for alkalinity (as CaCO₃) is 30 - 500 mg/L.

Table 24: Schedule 15.1 Lead Results

Location	Sample Date	Lead Result	Lead STND	Unit of Measure
Distribution Location 1	April 13, 2022	<1.0	10	ug/L
Distribution Location 2	April 13, 2022	<1.0	10	ug/L
Distribution Location 3	April 13, 2022	<1.0	10	ug/L
Distribution Location 4	April 13, 2022	<1.0	10	ug/L
Distribution Location 1	September 21, 2022	<1.0	10	ug/L
Distribution Location 2	September 21, 2022	<1.0	10	ug/L
Distribution Location 3	September 21, 2022	<1.0	10	ug/L
Distribution Location 4	September 21, 2022	<1.0	10	ug/L

Table 25: Schedule 15.1 pH and Alkalinity Results (Sampling Required Only)

Location	Sample Date	pH Result	Alkalinity Result (as CaCO ₃)	Alkalinity Unit of Measure
Distribution Location 1	April 13, 2022	7.51	221	mg/L
Distribution Location 2	April 13, 2022	7.64	166	mg/L
Distribution Location 3	April 13, 2022	7.54	215	mg/L
Distribution Location 4	April 13, 2022	7.58	207	mg/L
Distribution Location 1	September 21, 2022	7.67	220	mg/L
Distribution Location 2	September 21, 2022	7.65	176	mg/L
Distribution Location 3	September 21, 2022	7.53	219	mg/L
Distribution Location 4	September 21, 2022	7.59	213	mg/L

- 9) Summary of Additional Testing and Sampling as required under the Township's Municipal Drinking Water Licence (MDWL), Schedule C, Section 4.1, Table 5
 - a) The Township is required to complete quarterly raw water sampling for Trichloroethylene (TCE) at Fergus Well 1.
 - b) The Drinking Water Standard (STND) for TCE is listed as per O. Regulation 169/03 Schedule 2.

Table 26: MDWL Trichloroethylene Results (Raw Water)

Location	Sample Date	TCE Result	TCE STND	Unit of Measure
Fergus Well 1	March 3, 2022	11.2	5	ug/L
Fergus Well 1	June 28, 2022	10.2	5	ug/L
Fergus Well 1	Sept 14, 2022	11.0	5	ug/L
Fergus Well 1	December 16, 2022	2.97	5	ug/L

- 10) Review of the Data
 - a) The Annual Report must list any inorganic or organic parameter that exceeded half the standard ($\frac{1}{2}$ STND) prescribed in Schedule 2 of the Ontario Drinking Water Standards.

- b) The Drinking Water Standard (STND) was established for parameters which when present above a certain concentration, have known or suspected adverse health effects.
- c) The results of the organic parameter analysis are below the ½ STND for each parameter and the majority were under the laboratory’s MDL (minimum detection limit).
- d) The results of the inorganic parameter analysis are below the ½ STND for each parameter with the following exception:

Table 27: Inorganic and Organic Parameters Exceeding ½ STND

Parameter	Location	Result	STND	½ STND	Units
Fluoride	Fergus Well 4	0.86	1.5	0.75	mg/L

11) The Annual Report must describe any major expenses incurred during the year to install, repair or replace required equipment.

Table 28: Equipment Major Expenses

Location	Description	Cost
Fergus Well 1	Install New Monitoring Well and Well Level Transducer	\$50,000
Fergus Well 2	Install New Well	\$741,700
Fergus Well 5	Install New Well	\$682,000
Fergus Well 6	Repair Highlift Pump	\$29,500
Fergus Well 7	Install Filter System (80% Completion)	\$1,350,000