

2022 SECTION 11 ANNUAL REPORT

COLGAN
DRINKING WATER
SYSTEM



For the period of
January 1st, 2022 to December 31st, 2022

Prepared for the Corporation of the Township of Adjala-Tosorontio by the
Ontario Clean Water Agency



This report was prepared in accordance with the requirements of [O.Reg 170/03, Section 11, Annual reports](#) for the following system and reporting period:

Drinking Water System Number:	220009933
Drinking Water System Name:	Colgan Drinking Water System
Drinking Water System Owner:	The Corporation of the Township of Adjala-Tosorontio
Drinking Water System Category:	Small Municipal Residential
Reporting Period:	January 1, 2022 to December 31, 2022

Does the Drinking Water System serve more than 10,000 people?

No

Is the Annual Report available to the public at no charge on a website on the Internet?

Yes

Note: If a large municipal residential system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet. O. Reg. 170/03, Section 11. (10)

Location where Summary Report required under O. Reg 170/03, Schedule 22 will be available for inspection. (O. Reg 170/03, Section 11.(6)(f)):

- Township of Adjala-Tosorontio Municipal Office, 7855 Side Road 30, Alliston, ON
- <http://www.adjtos.ca>

Note: This is required for large municipal residential systems or small municipal residential systems.

List all Drinking Water Systems (if any), which receive all of their drinking water from the system:

Drinking Water System Name	Drinking Water System Number
N/A	N/A

Is a copy of the annual report provided to all Drinking Water System owners that are connected to this system and to whom this system provides all of its drinking water?

N/A

How system users are notified that the annual report is available, and is free of charge. (O.Reg 170/03, Section 11.(7))

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Public access/notice via the web |
| <input checked="" type="checkbox"/> | Public access/notice via Government Office |
| <input type="checkbox"/> | Public access/notice via a newspaper |
| <input checked="" type="checkbox"/> | Public access/notice via Public Request |
| <input type="checkbox"/> | Public access/notice via a Public Library |

☐ Public access/notice via other method: _____

Note: The owner of a drinking water system shall ensure that a copy of an annual report for the system is given, without charge, to every person who requests a copy. ((O.Reg 170/03, Section 11.(7)):

Description of Drinking Water System (O.Reg 170/03, Section 11.(6)(a)):

The Colgan Drinking Water system is classified as a Small Municipal Residential, Class 1 Water Treatment and Class 2 Water Distribution Subsystem, servicing an approximate population of 225 persons through 75 service connections, including one public (primary) school in the Village of Colgan, Township of Adjala-Tosorontio. Water is supplied via three (3) municipal wells, one pumphouse, and one pumping station with an in-ground reservoir.

The source water for the Colgan Well Supply System, is classified as groundwater under direct influence (GUDI), with effective in situ filtration and is supplied by three wells, each equipped with submersible well pumps connected to the well pump header into the pumphouse. The water pumped from the wells is treated with sodium silicate (for iron sequestration) and a two stage primary disinfection system consisting of three ultraviolet (UV) units, one dedicated to each well, and a sodium hypochlorite chemical system. Chlorination is provided for secondary disinfection with contact time, provided by a dedicated chlorine contact main to the reservoir located at the pumping station. A standby generator is on site, situated outside of Pumphouse, to supply the works with power in the event of a power failure.

The Pumping station serves the distribution system and contains five (5) hydropneumatic tanks to maintain pressure and an in-ground two-celled reservoir. A stand-by diesel generator is situated outside the pumping station to supply the works with power during power failures.

List of water treatment chemicals used by the system during the reporting period (O.Reg 170/03, Section 11.(6)(a)):

- Sodium Hypochlorite 12% Solution
- Sodium Silicate

Significant expenses were incurred to:

- | | |
|-------------------------------------|---------------------------------------|
| <input checked="" type="checkbox"/> | Install required equipment |
| <input type="checkbox"/> | Repair required equipment |
| <input checked="" type="checkbox"/> | Replace required equipment |
| <input type="checkbox"/> | No significant expenses were incurred |

Description of major expenses during the reporting period to install, repair or replace required equipment (O.Reg 170/03, Section 11.(6)(e)):

- Install Eyewash Station Hot Water Tanks

- PLC replacements
- Three (3) new Sodium Hypochlorite chemical metering pumps- Replacement and installation
- Three (3) new Sodium Silicate dosing pumps- Replacement and installation
- Replacement of pumping Station #1 Stand-by Diesel Generator- Purchase and installation

Summary of any reports/notices submitted to the Ministry and/or Spills Action Centre in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg 170/03 during the reporting period, including a description of any corrective actions taken under Schedule 17 or 18 (O. Reg 170/03, Section 11.(6)(b),(d):

Incident Date (yyyy/mm/dd)	Parameter/ Notice of	Result	Unit of Measure	Reporting Summary, Corrective Actions & Resolution
N/A	N/A	N/A	N/A	N/A

Table 1. Microbiological testing done under the Schedule 10, 11 or 12 (as applicable) of O.Reg 170/03 during this reporting period (O.Reg 170/03, Section 11.(6)(c)).

Location	Number of Samples	Range of E. Coli or Fecal Results		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Samples	
		Min.	Max.	Min.	Max.		Min.	Max.
RW ^{1A} , Well CW1	12	0	0	0	0	0	N/A	N/A
RW ^{1A} , Well CW2	12	0	0	0	0	0	N/A	N/A
RW ^{1A} , Well CW3	12	0	0	0	0	0	N/A	N/A
Distribution	27 ^{1B}	0	0	0	0	27 ^{1B}	<10	10

Note: HPC = Heterotrophic Plate Count

Note: Units for E.Coli or Fecal Results are cfu/100 mL, units for Total Coliform Results are cfu/100 mL, units for HPC results are cfu/1mL

^{1A}RW = Raw Water

^{1B}O.Reg 170/03 Schedule 11-2.(1)(2) requires at least one distribution sample be taken every two weeks and be tested for E.Coli, Total Coliforms and HPC

Table 2. Operational testing done under Schedule 7, 8 or 9 (as applicable) O. Reg 170/03 during the period covered by this Annual Report (O. Reg 170/03, Section 11.(6)(c)).

Parameter & Location	Number of Samples	Range of Results	
		Min.	Max.
Turbidity, In-House (NTU) – RW, Well CW1 ^{2A}	12	0.22	0.58
Turbidity, In-House (NTU) – RW, Well CW2 ^{2A}	12	0.23	0.89
Turbidity, In-House (NTU) – RW, Well CW3 ^{2A}	12	0.12	0.64
Free Chlorine Residual, On-Line (mg/L) – TW ^{2B}	8760	0.52	4.98 ^{2D}
Free Chlorine Residual, Distribution (mg/L) – DW ^{2C}	103	0.98	2.50

Note: The number of samples used for continuous monitoring units is 8760.

^{2A}O.Reg 170/03 Section 7-3.(1)(1.1) requires a raw water sample be taken at least once every month if the drinking water system obtains water from a raw water supply that is ground water, and tested for turbidity.

^{2B}O.Reg 170/03 Schedule 7-2.(1) requires a drinking water system that provides chlorination for primary disinfection to sample and test for free chlorine residual with continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed

^{2C}O.Reg 170/03 Schedule 7-2.(5) requires a small municipal residential system that provides secondary disinfection to take at least two distribution samples each week and immediately tested for free chlorine residual, if the system provides chlorination and does not provide chloramination

^{2D}On February 5, 2022 electrical and mechanical issues caused chlorine to dose too high.

Table 3. Summary of additional testing and sampling results carried out in accordance with the requirement of an approval, municipal drinking water licence or order (including OWRA) or other legal instrument during the reporting period and if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter (O. Reg 170/03, Section 11.(6)(c)):

Legal Instrument & Issue Date (yyyy/mm/dd)	Sample Location & Parameter	Sampling Frequency	Allowable Result	Actual Result
N/A	N/A	N/A	N/A	N/A

Table 4. Summary of Inorganic parameters tested during this reporting period or the most recent sample results (O.Reg 170/03, Section 11.(6)(c))

Parameter & Location	Sample Date ^{4A} (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Antimony: Sb (µg/L) - TW	2019/10/07	<MDL 0.093	6.0	No
Arsenic: As (µg/L) - TW	2019/10/07	0.4	10.0	No
Barium: Ba (µg/L) - TW	2019/10/07	87.5	1000.0	No
Boron: B (µg/L) - TW	2019/10/07	10.0	5000.0	No
Cadmium: Cd (µg/L) - TW	2019/10/07	0.003	5.0	No
Chromium: Cr (µg/L) - TW	2019/10/07	0.16	50.0	No
Mercury: Hg (µg/L) - TW	2019/10/07	<MDL 0.01	1.0	No
Selenium: Se (µg/L) - TW	2019/10/07	<MDL 0.04	50.0	No
Uranium: U (µg/L) - TW	2019/10/07	0.131	20.0	No
Fluoride (mg/L) - TW	2019/10/07 ^{4B}	0.13	1.5	No
Nitrite (mg/L) – TW	2022/01/18	<MDL 0.003	1.0	No
Nitrite (mg/L) – TW	2022/04/19	<MDL 0.003	1.0	No
Nitrite (mg/L) – TW	2022/07/18	<MDL 0.003	1.0	No

Parameter & Location	Sample Date ^{4A} (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Nitrite (mg/L) – TW	2022/10/18	<MDL 0.003	1.0	No
Nitrate (mg/L) – TW	2022/01/18	<MDL 0.006	10.0	No
Nitrate (mg/L) – TW	2022/04/19	<MDL 0.006	10.0	No
Nitrate (mg/L) – TW	2022/07/18	<MDL 0.006	10.0	No
Nitrate (mg/L) - TW	2022/10/18	<MDL 0.006	10.0	No

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Aesthetic Objective (AO)	Exceedance	
				AO	> 20 mg/L
Sodium: Na (mg/L) - TW	2019/10/07 ^{4C}	11.3	200	No	No

Note: MDL = Minimum Detection Limit, TW = Treated Water

^{4A}Inorganic Parameters (Schedule 23) are required to be tested every 60 months for a small municipal residential system or non-municipal year-round residential system (O. Reg 170/03 Schedule 13-2.(3)). The last set of samples was collected and tested in 2019, the next set of samples is scheduled to be collected and tested in 2024.

^{4B}Fluoride is reportable every 60 months. The most recent Fluoride samples were tested in 2019, the next set of samples is scheduled to be tested in 2024.

Note: There is no regulatory Maximum Allowable Concentration (MAC) Sodium. The aesthetic objective (AO) for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

^{4C}Sodium is reportable every 60 months. The most recent Sodium samples were tested in 2019 the next set of samples is scheduled to be tested in 2024.

Table 5: Summary of lead testing under Schedule 15.1 during this reporting period (O.Reg 170/03, Section 11.(6)(g))

Location/Type & Parameter	Number of Samples ^{5A}	Range of Results		Number of Lead Exceedances
		Min.	Max.	MAC = 10 µ/L
Period: January 1 to April 15				
Plumbing – Lead (µg/L) ^{5B}	N/A	N/A	N/A	0
Distribution – Lead (µg/L) ^{5C}	N/A	N/A	N/A	0
Distribution – Alkalinity (mg/L as CaCO ₃)	1	205	205	N/A
Distribution – pH	1	7.10	7.10	N/A
Period: June 15 to October 15				
Plumbing – Lead (µg/L) ^{5B}	N/A	N/A	N/A	0
Distribution – Lead (µg/L) ^{5C}	N/A	N/A	N/A	0
Distribution – Alkalinity (mg/L as CaCO ₃)	1	201	201	N/A
Distribution – pH	1	7.65	7.65	N/A

Location/Type & Parameter	Number of Samples ^{5A}	Range of Results		Number of Lead Exceedances
		Min.	Max.	MAC = 10 µ/L
Period: December 15 to 31				
Plumbing – Lead (µg/L) ^{5B}	N/A	N/A	N/A	0
Distribution – Lead (µg/L) ^{5C}	N/A	N/A	N/A	0
Distribution – Alkalinity (mg/L as CaCO ₃)	N/A	N/A	N/A	N/A
Distribution - pH	N/A	N/A	N/A	N/A

Note: this is required for large municipal residential systems, small municipal residential systems or non-municipal year-round residential system. (O.Reg 170/03, Section 11.(6)(g))

^{5A} *The number of sampling points for the system is based on the population served by the system. The number of people served by the system is 225 persons (as confirmed with the Owner on November 15, 2021 and therefore requires one distribution sampling points per sampling period.*

^{5B} *Plumbing samples are not applicable as this system qualifies for the plumbing exemption per O. Reg 170/03 Schedule 15.1-5 (9) (10).*

^{5C} *This system follows a reduced sampling schedule (O.Reg 170/03, Section 15.1.5). Distribution lead samples are collected every 36 months. The most recent set of distribution lead samples were collected within the winter period of December 15, 2020 to April 15, 2021 and summer period of June 15, 2021 to October 15, 2021. The next set of distribution lead samples is scheduled to be collected within the winter period of December 15, 2023 to April 15, 2024 and summer period of June 15, 2024 to October 15, 2024.*

Table 6: Summary of Organic parameters sampled during this reporting period or the most recent sample results (O.Reg 170/03, Section 11.(6)(c)).

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Alachlor (µg/L) - TW	2019/10/07	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2019/10/07	<MDL 0.01	5.0	No
Azinphos-methyl (µg/L) - TW	2019/10/07	<MDL 0.05	20.0	No
Benzene (µg/L) - TW	2019/10/07	<MDL 0.32	1.0	No
Benzo(a)pyrene (µg/L) - TW	2019/10/07	<MDL 0.004	0.01	No
Bromoxynil (µg/L) - TW	2019/10/07	<MDL 0.33	5.0	No
Carbaryl (µg/L) - TW	2019/10/07	<MDL 0.05	90.0	No
Carbofuran (µg/L) - TW	2019/10/07	<MDL 0.01	90.0	No
Carbon Tetrachloride (µg/L) - TW	2019/10/07	<MDL 0.17	2.0	No
Chlorpyrifos (µg/L) - TW	2019/10/07	<MDL 0.02	90.0	No
Diazinon (µg/L) - TW	2019/10/07	<MDL 0.02	20.0	No
Dicamba (µg/L) - TW	2019/10/07	<MDL 0.2	120.0	No

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
1,2-Dichlorobenzene (µg/L) - TW	2019/10/07	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (µg/L) - TW	2019/10/07	<MDL 0.36	5.0	No
1,2-Dichloroethane (µg/L) - TW	2019/10/07	<MDL 0.35	5.0	No
1,1-Dichloroethylene (µg/L) - TW	2019/10/07	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2019/10/07	<MDL 0.35	50.0	No
2,4-Dichlorophenol (µg/L) - TW	2019/10/07	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2019/10/07	<MDL 0.19	100.0	No
Diclofop-methyl (µg/L) - TW	2019/10/07	<MDL 0.4	9.0	No
Dimethoate (µg/L) - TW	2019/10/07	<MDL 0.06	20.0	No
Diquat (µg/L) - TW	2019/10/07	<MDL 1.0	70.0	No
Diuron (µg/L) - TW	2019/10/07	<MDL 0.03	150.0	No
Glyphosate (µg/L) - TW	2019/10/07	<MDL 1.0	280.0	No
Malathion (µg/L) - TW	2019/10/07	<MDL 0.02	190.0	No
Metolachlor (µg/L) - TW	2019/10/07	<MDL 0.01	50.0	No
Metribuzin (µg/L) - TW	2019/10/07	<MDL 0.02	80.0	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2019/10/07	<MDL 0.3	80.0	No
Paraquat (µg/L) - TW	2019/10/07	<MDL 1.0	10.0	No
PCB (µg/L) - TW	2019/10/07	<MDL 0.04	3.0	No
Pentachlorophenol (µg/L) - TW	2019/10/07	<MDL 0.15	60.0	No
Phorate (µg/L) - TW	2019/10/07	<MDL 0.01	2.0	No
Picloram (µg/L) - TW	2019/10/07	<MDL 1.0	190.0	No
Prometryne (µg/L) - TW	2019/10/07	<MDL 0.03	1.0	No
Simazine (µg/L) - TW	2019/10/07	<MDL 0.01	10.0	No
Terbufos (µg/L) - TW	2019/10/07	<MDL 0.01	1.0	No
Tetrachloroethylene (µg/L) - TW	2019/10/07	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2019/10/07	<MDL 0.2	100.0	No
Triallate (µg/L) - TW	2019/10/07	<MDL 0.01	230.0	No
Trichloroethylene (µg/L) - TW	2019/10/07	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (µg/L) - TW	2019/10/07	<MDL 0.25	5.0	No

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/L) - TW	2019/10/07	<MDL 0.12	100.0	No
Trifluralin (µg/L) - TW	2019/10/07	<MDL 0.02	45.0	No
Vinyl Chloride (µg/L) - TW	2019/10/07	<MDL 0.17	1.0	No
Trihalomethane: Total (µg/L) Annual Average - DW	2022 (Quarterly)	10.8	100.0	No
HAA Total (µg/L) Annual Average - DW	2022 (Quarterly)	<MDL 5.3	80.0	No

Note: TW = Treated Water, DW = Distribution Water, MDL = Minimum Detection Limit, MAC = Maximum Allowable Concentration, HAA = Haloacetic Acids

^{6A}Organic Parameters (Schedule 24) are required to be tested every 60 months for a small municipal residential system or non-municipal year-round residential system (O. Reg 170/03 Schedule 13-4.(3)). The last set of samples was collected and tested in 2019, the next set of samples is scheduled to be collected and tested in 2024.

Table 7: List of Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards for the reporting period.

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result
N/A	N/A	N/A