



OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	220000031
Drinking-Water System Name:	Clifford Drinking Water System
Drinking-Water System Owner:	Town of Minto
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 to December 31, 2023

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [<input checked="" type="checkbox"/>]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [<input checked="" type="checkbox"/>] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Town of Minto 5941 Hwy #89 R.R. #1 Harriston, ON NOG 1Z0</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">N/A</div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">N/A</div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [<input checked="" type="checkbox"/>] No []</p>
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Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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

Drinking Water System Name	Drinking Water System Number
Clifford Drinking Water System	220000031

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water? Yes [] No []



Indicate how you notified system users that your annual report is available and is free of charge.

- Public access/notice via the web** Town of Minto Website
- Public access/notice via Government Offices**
- Public access/notice via a newspaper** Advertisements in Local Newspapers
- Public access/notice via Public Request**
- Public access/notice via a Public Library**
- Public access/notice via other method** Tax Letter

Describe your Drinking-Water System

Clifford is currently serviced by a municipal water system that consists of: three drilled well supplies, two pumphouses; a 1,275 m3 elevated storage facility and a distribution network. In the event of a prolonged power outage, a portable generator is available to Well #1, 3 & 4 to supply back-up power.

Well #3 is a deep overburden well and serves as the primary production well for the system. Well # 1 and #4 are bedrock wells and provide peak flows and redundancy to the system. Wells #3 and #4 are a combined supply and are not allowed to operate together. All three operating wells are equipped with submersible pumps; the pump in Well #3 is a variable speed pump. In the pumphouses, the raw water supply is injected with 12% sodium hypochlorite for disinfection and the chemical sodium silicate, for iron sequestering. The treated water from Well #1 leaves the pumphouse and enters an underground contact pipe and is discharged into the distribution system after adequate contact time is achieved. Treated water from Well #3 and #4 is discharged back into the elevated storage tank before being discharged into the distribution system.

The wells are controlled (start/stop) automatically based on elevated storage tank liquid levels and pressures in the distribution system. Each pumphouse is equipped with alarms for free chlorine low and high residuals (and corresponding lockout of well pumps), low water level and intrusion. Each wellhouse has a continuous monitoring analyzer for chlorine with lockouts and alarms.

SCADA provides continuous monitoring to this system.

List all water treatment chemicals used over this reporting period

- 12% Sodium Hypochlorite (disinfectant)
- Sodium Silicate (sequestering agent)

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment



Please provide a brief description and a breakdown of monetary expenses incurred

To continually meet the requirements of O. Reg. 170/03, upgrades, installation and replacement of various system components have been completed. However, maintaining the system includes repair and replacement of individual components as required.

2023 Capital Expenses
\$1,630 – Servicing Strategy

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

		Number of Samples	Range of Total Coliform Results (min #)-(max #)	Range of E.Coli Or Fecal Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	Well 1	52	0 - 0	0 - 0	N/A	N/A
	Well 3	52	0 - 0	0 - 0	N/A	N/A
	Well 4	52	0 - 0	0 - 0	N/A	N/A
Treated	Well 1	52	0 - 0	0 - 0	52	< 10 - 20
	Well 3	52	0 - 0	0 - 0	52	< 10 - 20
	Well 4	52	0 - 0	0 - 0	52	< 10 - 20
Distribution		156	0 - 0	0 - 0	156	< 10 - NDOGHPC

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

		Number of Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity Raw	Well 1	83	0.08 - 0.66	NTU
	Well 3	83	0.07 - 0.94	NTU
	Well 4	79	0.09 - 0.88	NTU
Chlorine	Well 1	365	0.80 - 1.85	mg/L
	Well 3	365	0.84 - 1.76	mg/L
	Well 4	365	0.93 - 1.59	mg/L
	Distribution	562	0.56 - 1.62	mg/L
Fluoride (If the DWS provides fluoridation)		N/A	N/A	N/A

NOTE: For continuous monitors use 8760 as the number of samples.



Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
N/A	N/A	N/A	N/A	N/A

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Clifford Well #1

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	24/05/22	< 0.6	ug/L	No
Arsenic	24/02/23	6.6	ug/L	No
Arsenic	12/05/23	7.1	ug/L	No
Arsenic	11/08/23	7.4	ug/L	No
Arsenic	10/11/23	6.5	ug/L	No
Barium	24/05/22	263	ug/L	No
Boron	24/05/22	23	ug/L	No
Cadmium	24/05/22	< 0.003	ug/L	No
Chromium	24/05/22	0.24	ug/L	No
Manganese	11/10/23	16.7	ug/L	No
Mercury	24/05/22	0.03	ug/L	No
Selenium	24/05/22	0.04	ug/L	No
Sodium	11/10/23	16.7	mg/L	No
Uranium	24/05/22	0.785	ug/L	No
Fluoride	24/05/22	0.52	mg/L	No
Nitrite	24/02/23	< 0.003	mg/L	No
Nitrite	12/05/23	< 0.003	mg/L	No
Nitrite	11/08/23	< 0.003	mg/L	No
Nitrite	10/11/23	< 0.003	mg/L	No
Nitrate	24/02/23	< 0.006	mg/L	No
Nitrate	12/05/23	< 0.006	mg/L	No
Nitrate	11/08/23	< 0.006	mg/L	No
Nitrate	10/11/23	0.008	mg/L	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Clifford Well #3

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	24/05/22	< 0.6	ug/L	No
Arsenic	24/02/23	1.0	ug/L	No
Arsenic	12/05/23	0.9	ug/L	No
Arsenic	11/08/23	0.9	ug/L	No
Arsenic	10/11/23	0.7	ug/L	No
Barium	24/05/22	149	ug/L	No
Boron	24/05/22	21	ug/L	No
Cadmium	24/05/22	< 0.003	ug/L	No
Chromium	24/05/22	0.25	ug/L	No



Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Manganese	11/10/23	27.5	ug/L	No
Mercury	24/05/22	0.07	ug/L	No
Selenium	24/05/22	< 0.04	ug/L	No
Sodium	11/10/23	16.4	mg/L	No
Uranium	24/05/22	0.543	ug/L	No
Fluoride	24/05/22	0.30	mg/L	No
Nitrite	24/02/23	< 0.003	mg/L	No
Nitrite	12/05/23	< 0.003	mg/L	No
Nitrite	11/08/23	< 0.003	mg/L	No
Nitrite	10/11/23	< 0.003	mg/L	No
Nitrate	24/02/23	0.436	mg/L	No
Nitrate	12/05/23	0.547	mg/L	No
Nitrate	11/08/23	0.468	mg/L	No
Nitrate	10/11/23	0.013	mg/L	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Clifford Well #4

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	24/05/22	< 0.6	ug/L	No
Arsenic	24/02/23	8.4	ug/L	No
Arsenic	12/05/23	8.1	ug/L	No
Arsenic	11/08/23	8.5	ug/L	No
Arsenic	10/11/23	7.4	ug/L	No
Barium	24/05/22	155	ug/L	No
Boron	24/05/22	16	ug/L	No
Cadmium	24/05/22	0.005	ug/L	No
Chromium	24/05/22	0.16	ug/L	No
Manganese	11/10/23	30.8	ug/L	No
Mercury	24/05/22	< 0.01	ug/L	No
Selenium	24/05/22	< 0.04	ug/L	No
Sodium	11/10/23	11.4	mg/L	No
Uranium	24/05/22	0.647	ug/L	No
Fluoride	24/05/22	0.31	mg/L	No
Nitrite	24/02/23	< 0.003	mg/L	No
Nitrite	12/05/23	< 0.003	mg/L	No
Nitrite	11/08/23	< 0.003	mg/L	No
Nitrite	10/11/23	< 0.003	mg/L	No
Nitrate	24/02/23	< 0.006	mg/L	No
Nitrate	12/05/23	< 0.006	mg/L	No
Nitrate	11/08/23	< 0.006	mg/L	No
Nitrate	10/11/23	0.416	mg/L	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems



Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Date	Number of Samples	Range of Lead Results (min#) – (max #)	Unit of Measure	Limit
Plumbing	Dec. 2013 – Apr. 2014	22	< 1.0 – 2.5	ug/L	10
Distribution	Winter Dec. 15/22 – Apr. 15/23	2	0.02 – 0.36	ug/L	10
Distribution	Summer Jun. 15/23 – Oct. 15/23	2	0.02 – 0.20	ug/L	10

No adverse results were identified.

Reduced Sampling

Town of Minto is now exempt from plumbing sampling for lead due to less than 10% of plumbing results exceeded 10 ug/L.

Distribution sampling is still required every “winter” and “summer” period.

- each year for pH and alkalinity
- once every 3 years for lead

	Sample Date	Number of Samples	Range of Results (min) – (max)	Unit of Measure	Limit
Winter Alkalinity	17/02/23	2	293 – 296	mg/L	30-500
Winter pH	17/02/23	2	7.05 – 7.28		
Summer Alkalinity	13/07/23	2	296 – 299	mg/L	30-500
Summer pH	13/07/23	2	7.54 – 7.64		

Summary of Organic parameters sampled during this reporting period or the most recent sample results.

Clifford Well #1

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	24/05/22	< 0.02	ug/L	No
Atrazine	24/05/22	< 0.01	ug/L	No
Desethyl Atrazine	24/05/22	< 0.01	ug/L	No
Atrazine + N-dealkylated metabolites	24/05/22	< 0.01	ug/L	No
Azinphos-methyl	24/05/22	< 0.05	ug/L	No
Benzene	24/05/22	< 0.32	ug/L	No
Benzo(a)pyrene	24/05/22	< 0.004	ug/L	No
Bromoxynil	24/05/22	< 0.33	ug/L	No
Carbaryl	24/05/22	< 0.05	ug/L	No
Carbofuran	24/05/22	< 0.01	ug/L	No
Carbon Tetrachloride	24/05/22	< 0.17	ug/L	No
Chlorpyrifos	24/05/22	< 0.02	ug/L	No
Diazinon	24/05/22	< 0.02	ug/L	No
Dicamba	24/05/22	< 0.2	ug/L	No
1,2-Dichlorobenzene	24/05/22	< 0.41	ug/L	No
1,4-Dichlorobenzene	24/05/22	< 0.36	ug/L	No
1,2-Dichloroethane	24/05/22	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	24/05/22	< 0.33	ug/L	No
Dichloromethane	24/05/22	< 0.35	ug/L	No



Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
2-4 Dichlorophenol	24/05/22	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	24/05/22	< 0.19	ug/L	No
Diclofop-methyl	24/05/22	< 0.4	ug/L	No
Dimethoate	24/05/22	< 0.06	ug/L	No
Diquat	24/05/22	< 1.0	ug/L	No
Diuron	24/05/22	< 0.03	ug/L	No
Glyphosate	24/05/22	< 1.0	ug/L	No
Malathion	24/05/22	< 0.02	ug/L	No
MCPA	24/05/22	< 0.00012	mg/L	No
Metolachlor	24/05/22	< 0.01	ug/L	No
Metribuzin	24/05/22	< 0.02	ug/L	No
Monochlorobenzene	24/05/22	< 0.3	ug/L	No
Paraquat	24/05/22	< 1.0	ug/L	No
Pentachlorophenol	24/05/22	< 0.15	ug/L	No
Phorate	24/05/22	< 0.01	ug/L	No
Picloram	24/05/22	< 1.0	ug/L	No
Polychlorinated Biphenyls (PCB) - Total	24/05/22	< 0.04	ug/L	No
Prometryne	24/05/22	< 0.03	ug/L	No
Simazine	24/05/22	< 0.01	ug/L	No
Terbufos	24/05/22	< 0.01	ug/L	No
Tetrachloroethylene (perchloroethylene)	24/05/22	< 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	24/05/22	< 0.2	ug/L	No
Triallate	24/05/22	< 0.01	ug/L	No
Trichloroethylene	24/05/22	< 0.44	ug/L	No
2,4,6-Trichlorophenol	24/05/22	< 0.25	ug/L	No
Trifluralin	24/05/22	< 0.02	ug/L	No
Vinyl Chloride	24/05/22	< 0.17	ug/L	No

Clifford Well #3

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	24/05/22	< 0.02	ug/L	No
Atrazine	24/05/22	< 0.01	ug/L	No
Desethyl Atrazine	24/05/22	< 0.01	ug/L	No
Atrazine + N-dealkylated metabolites	24/05/22	< 0.01	ug/L	No
Azinphos-methyl	24/05/22	< 0.05	ug/L	No
Benzene	24/05/22	< 0.32	ug/L	No
Benzo(a)pyrene	24/05/22	< 0.004	ug/L	No
Bromoxynil	24/05/22	< 0.33	ug/L	No
Carbaryl	24/05/22	< 0.05	ug/L	No
Carbofuran	24/05/22	< 0.01	ug/L	No
Carbon Tetrachloride	24/05/22	< 0.17	ug/L	No
Chlorpyrifos	24/05/22	< 0.02	ug/L	No
Diazinon	24/05/22	< 0.02	ug/L	No
Dicamba	24/05/22	< 0.2	ug/L	No
1,2-Dichlorobenzene	24/05/22	< 0.41	ug/L	No
1,4-Dichlorobenzene	24/05/22	< 0.36	ug/L	No



Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,2-Dichloroethane	24/05/22	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	24/05/22	< 0.33	ug/L	No
Dichloromethane	24/05/22	< 0.35	ug/L	No
2-4 Dichlorophenol	24/05/22	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	24/05/22	< 0.19	ug/L	No
Diclofop-methyl	24/05/22	< 0.4	ug/L	No
Dimethoate	24/05/22	< 0.06	ug/L	No
Diquat	24/05/22	< 1.0	ug/L	No
Diuron	24/05/22	< 0.03	ug/L	No
Glyphosate	24/05/22	< 1.0	ug/L	No
Malathion	24/05/22	< 0.02	ug/L	No
MCPA	24/05/22	< 0.00012	mg/L	No
Metolachlor	24/05/22	< 0.01	ug/L	No
Metribuzin	24/05/22	< 0.02	ug/L	No
Monochlorobenzene	24/05/22	< 0.3	ug/L	No
Paraquat	24/05/22	< 1.0	ug/L	No
Pentachlorophenol	24/05/22	< 0.15	ug/L	No
Phorate	24/05/22	< 0.01	ug/L	No
Picloram	24/05/22	< 1.0	ug/L	No
Polychlorinated Biphenyls (PCB) - Total	24/05/22	< 0.04	ug/L	No
Prometryne	24/05/22	< 0.03	ug/L	No
Simazine	24/05/22	< 0.01	ug/L	No
Terbufos	24/05/22	< 0.01	ug/L	No
Tetrachloroethylene (perchloroethylene)	24/05/22	< 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	24/05/22	< 0.2	ug/L	No
Triallate	24/05/22	< 0.01	ug/L	No
Trichloroethylene	24/05/22	< 0.44	ug/L	No
2,4,6-Trichlorophenol	24/05/22	< 0.25	ug/L	No
Trifluralin	24/05/22	< 0.02	ug/L	No
Vinyl Chloride	24/05/22	< 0.17	ug/L	No

Clifford Well #4

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	24/05/22	< 0.02	ug/L	No
Atrazine	24/05/22	< 0.01	ug/L	No
Desethyl Atrazine	24/05/22	< 0.01	ug/L	No
Atrazine + N-dealkylated metabolites	24/05/22	< 0.01	ug/L	No
Azinphos-methyl	24/05/22	< 0.05	ug/L	No
Benzene	24/05/22	< 0.32	ug/L	No
Benzo(a)pyrene	24/05/22	< 0.004	ug/L	No
Bromoxynil	24/05/22	< 0.33	ug/L	No
Carbaryl	24/05/22	< 0.05	ug/L	No
Carbofuran	24/05/22	< 0.01	ug/L	No
Carbon Tetrachloride	24/05/22	< 0.17	ug/L	No
Chlorpyrifos	24/05/22	< 0.02	ug/L	No
Diazinon	24/05/22	< 0.02	ug/L	No
Dicamba	24/05/22	< 0.2	ug/L	No



Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,2-Dichlorobenzene	24/05/22	< 0.41	ug/L	No
1,4-Dichlorobenzene	24/05/22	< 0.36	ug/L	No
1,2-Dichloroethane	24/05/22	< 0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	24/05/22	< 0.33	ug/L	No
Dichloromethane	24/05/22	< 0.35	ug/L	No
2-4 Dichlorophenol	24/05/22	< 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	24/05/22	< 0.19	ug/L	No
Diclofop-methyl	24/05/22	< 0.4	ug/L	No
Dimethoate	24/05/22	< 0.06	ug/L	No
Diquat	24/05/22	< 1.0	ug/L	No
Diuron	24/05/22	< 0.03	ug/L	No
Glyphosate	24/05/22	< 1.0	ug/L	No
Malathion	24/05/22	< 0.02	ug/L	No
MCPA	24/05/22	< 0.00012	mg/L	No
Metolachlor	24/05/22	< 0.01	ug/L	No
Metribuzin	24/05/22	< 0.02	ug/L	No
Monochlorobenzene	24/05/22	< 0.3	ug/L	No
Paraquat	24/05/22	< 1.0	ug/L	No
Pentachlorophenol	24/05/22	< 0.15	ug/L	No
Phorate	24/05/22	< 0.01	ug/L	No
Picloram	24/05/22	< 1.0	ug/L	No
Polychlorinated Biphenyls (PCB) - Total	24/05/22	< 0.04	ug/L	No
Prometryne	24/05/22	< 0.03	ug/L	No
Simazine	24/05/22	< 0.01	ug/L	No
Terbufos	24/05/22	< 0.01	ug/L	No
Tetrachloroethylene (perchloroethylene)	24/05/22	< 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	24/05/22	< 0.2	ug/L	No
Triallate	24/05/22	< 0.01	ug/L	No
Trichloroethylene	24/05/22	< 0.44	ug/L	No
2,4,6-Trichlorophenol	24/05/22	< 0.25	ug/L	No
Trifluralin	24/05/22	< 0.02	ug/L	No
Vinyl Chloride	24/05/22	< 0.17	ug/L	No

Clifford Distribution System

Summary of Organic parameters sampled during this reporting period or the most recent sample results.

Parameter	Sample Date	Result Value RAA	Unit of Measure	ODWS Criteria
THM (NOTE: latest quarterly average shown)	24/02/23	19	ug/L	100
	12/05/23	19		
	11/08/23	20.25		
	10/11/23	19.25		



Parameter	Sample Date	Result Value RAA	Unit of Measure	ODWS Criteria
HAA (NOTE: latest quarterly average shown)	24/02/23	< 5.3	ug/L	80
	12/05/23	< 5.3		
	11/08/23	< 5.3		
	10/11/23	< 5.3		

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Clifford Well #1

Parameter	Sample Date	Result Value	Unit of Measure	ODWS Criteria
Arsenic	24/02/23	6.6	ug/L	10
Arsenic	12/05/23	7.1	ug/L	10
Arsenic	11/08/23	7.4	ug/L	10
Arsenic	10/11/23	6.5	ug/L	10

Clifford Well #4

Parameter	Sample Date	Result Value	Unit of Measure	ODWS Criteria
Arsenic	24/02/23	8.4	ug/L	10
Arsenic	12/05/23	8.1	ug/L	10
Arsenic	11/08/23	8.5	ug/L	10
Arsenic	10/11/23	7.4	ug/L	10