



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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Shelburne, Ontario
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February 26, 2019

Mr. Nathan Hyde
CAO
Town of Erin
5684 Trafalgar Rd.
Hillsburgh Ont
N0B 1Z0

Re: Section 11 Reports of Ontario Regulation 170/03

Mr. Hyde;

Please find attached the 2018 Annual Reports for the Erin Water System, Waterworks # 220000013 and the Hillsburgh Water System, Waterworks # 220007285. The reports have been prepared as per Section 11 of O.Reg. 170/03 by the Ontario Clean Water Agency on behalf of the Corporation of the Town of Erin. These reports no longer have to be submitted to the Ministry of the Environment and Climate Change.

As per O.Reg. 170/03; Section 12 (4); these reports must be made available to any member of the public during normal business hours without charge at the office of the owner. If the office of the owner is not reasonably convenient to users of water from the system, the reports must be made available at a location that is reasonably convenient to those users.

Should you have any further questions regarding the attached report, please contact the undersigned at (519) 925-1938.

Sincerely,

A handwritten signature in blue ink, appearing to read "Don Irvine".

Don Irvine
Senior Operations Manager
Highlands Hub

DI/mc

cc: Melissa Cortes, PCT

Drinking-Water System Number:	220000013
Drinking-Water System Name:	Erin Drinking Water System
Drinking-Water System Owner:	The Corporation of the Town of Erin
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2018 – December 31, 2018

<u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u>	<u>Complete for all other Categories.</u>
<p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection. Office of Town of Erin 5684 Trafalgar Road Hillsburgh Ontario, NOB 1Z0</p>	<p>Number of Designated Facilities served: Not applicable.</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Not applicable.</p> <p>Number of Interested Authorities you report to: Not applicable.</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Not applicable.</p>

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
Not Applicable.	Not Applicable.

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?

Not applicable.

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

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method: _____

Describe your Drinking-Water System

The Erin Drinking Water System is a Class 3 Water Distribution and Supply Subsystem serving a population of approximately 3000 residential and commercial customers, located in the former Village of Erin. The distribution system has 26 km of water mains with 154 fire hydrants.

The water system is a ground water system supplied from two wells drilled into the fractured limestone bedrock, with a total rated capacity of 4,128 m³/day. The pressure in most of the Erin Drinking Water System is maintained by a 1,703 m³ water tower, however 65 residences in the Erin Heights Subdivision require a booster pump to maintain adequate pressure.

Well No. 7, located at 46 Shamrock Road (9555 Side Road 17), Erin, is a 260 mm diameter, 43m deep drilled ground water well, with casing to a depth of 19.1m. The well is located inside the pump house and is equipped with a submersible pump rated at 1,800 L/min. The neighboring land is used for both industrial and agricultural purposes. There is also undeveloped land in the vicinity of the Pumphouse.

Well No. 8, located on Lot 17, concession 8-9 (5555 Eighth Line), Erin, is a 200 mm diameter, 46 m deep drilled groundwater well, with double casing to depths of 6.7 m (outer casing) and 8.53 m (inner casing). The well is located approximately 4 m northwest of the pump house and is equipped with a submersible pump rated at 1,636 L/min. The neighboring land is used for both residential and agricultural purposes. A golf course runs adjacent to the Pumphouse along with undeveloped land.

List all water treatment chemicals used over this reporting period

- Gaseous Chlorine

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment
- No significant expenses were incurred

Please provide a brief description of any significant expenses incurred

- Online Cl2 Analyzers – SD Data Collection Cards with Probes/PH Adjustment
- Well 8 Generator Upgrade to meet TSSA refueling regulations
- Well 8 Security camera installation

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 (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
n/a	n/a	n/a	n/a	n/a	n/a

Table 1. Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

Location	Number of Samples	Range of E.coli Results		Range of Total Coliforms Results		Number of HPC Samples	Range of HPC Samples	
		Min.	Max.	Min.	Max.		Min.	Max.
Raw Water - Well E7	53	0	0	0	0	n/a	n/a	n/a
Raw Water - Well E8	53	0	0	0	0	n/a	n/a	n/a
Treated Water – Well E7	53	0	0	0	0	44	0	1
Treated Water – Well E8	53	0	0	0	0	44	0	3
DW location	212	0	0	0	0	176	0	4

Table 2. Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results	
		Minimum	Maximum
Raw Water			
Turbidity, Well E7 (NTU)	12	0.07	0.15
Turbidity, Well E8 (NTU)	12	0.05	0.13
Treated Water			
Free Chlorine Residual, TW E7 (mg/L)	8760	0.03	1.19
Free Chlorine Residual, TW E8 (mg/L)	8760	0.01	2.00
Distribution Water			
Free Chlorine Residual, DW (mg/L)	365	0.53	1.11

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

Table 3. 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

Table 4. Summary of Inorganic parameters tested during this reporting period or most recent sample results

TREATED WATER – Well E7	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (mg/L) - TW	2018/05/09	<MDL 0.0005	0.006	No	No
Arsenic: As (mg/L) - TW	2018/05/09	<MDL 0.0010	0.01	No	No
Barium: Ba (mg/L) - TW	2018/05/09	0.032	1.0	No	No
Boron: B (mg/L) - TW	2018/05/09	0.019	5.0	No	No
Cadmium: Cd (mg/L) - TW	2018/05/09	<MDL 0.0001	0.005	No	No
Chromium: Cr (mg/L) - TW	2018/05/09	<MDL 0.0050	0.05	No	No
Mercury: Hg (mg/L) - TW	2018/05/09	<MDL 0.0001	0.001	No	No
Selenium: Se (mg/L) - TW	2018/05/09	<MDL 0.0020	0.05	No	No
Uranium: U (mg/L) - TW	2018/05/09	0.00038	0.02	No	No

Additional Inorganics					
Fluoride (mg/L) - TW	2018/05/09	0.2	1.5	No	Yes
Nitrite (mg/L) - TW	2018/02/05	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/04/24	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/07/23	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/10/09	<MDL 0.010	1.0	No	No
Nitrate (mg/L) - TW	2018/02/05	<MDL 0.010	10.0	No	No
Nitrate (mg/L) - TW	2018/04/24	<MDL 0.010	10.0	No	No
Nitrate (mg/L) - TW	2018/07/23	0.12	10.0	No	No
Nitrate (mg/L) - TW	2018/10/09	<MDL 0.10	10.0	No	No
Sodium: Na (mg/L) - TW	2018/05/09	6.7	20*	No	Yes

*There is no "MAC" for Sodium. The aesthetic objective 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.

TREATED WATER – Well E8	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2018/05/09	<MDL 0.0005	0.006	No	No
Arsenic: As (ug/L) - TW	2018/05/09	<MDL 0.0010	0.01	No	No
Barium: Ba (ug/L) - TW	2018/05/09	0.046	1.0	No	No
Boron: B (ug/L) - TW	2018/05/09	0.013	5.0	No	No
Cadmium: Cd (ug/L) - TW	2018/05/09	<MDL 0.0001	0.005	No	No
Chromium: Cr (ug/L) - TW	2018/05/09	<MDL 0.0050	0.05	No	No
Mercury: Hg (ug/L) - TW	2018/05/09	<MDL 0.0001	0.001	No	No
Selenium: Se (ug/L) - TW	2018/05/09	<MDL 0.04	0.05	No	No
Uranium: U (ug/L) - TW	2018/05/09	0.0001	0.02	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018/05/09	0.26	1.5	No	Yes
Nitrite (mg/L) - TW	2018/02/05	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/04/24	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/07/23	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/10/09	<MDL 0.010	1.0	No	No
Nitrate (mg/L) - TW	2018/02/05	<MDL 0.010	10.0	No	No
Nitrate (mg/L) - TW	2018/04/24	<MDL 0.010	10.0	No	No
Nitrate (mg/L) - TW	2018/07/23	<MDL 0.010	10.0	No	No
Nitrate (mg/L) - TW	2018/10/09	<MDL 0.10	10.0	No	No
Sodium: Na (mg/L) - TW	2018/05/09	5.1	20*	No	No

*There is no "MAC" for Sodium. The aesthetic objective 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.

Table 5. 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	Number of Samples	Range of Results		MAC	Number of Exceedances
		Minimum	Maximum		
Distribution - Lead Results (µg/L)	6	ND	0.55	10	0
Distribution - Alkalinity (mg/L)	6	210	220	n/a	n/a
DW location - pH In-House	6	7.9	8.1	n/a	n/a

The Erin Drinking Water Systems qualifies for plumbing exemption.

Table 6. Summary of Organic parameters sampled during this reporting period or the most recent sample results

TREATED WATER – Well E7	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Azinphos-methyl (ug/L) - TW	2018/05/09	<MDL 2.0	20.00	No	No
Benzene (ug/L) - TW	2018/05/09	<MDL 0.10	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2018/05/09	<MDL 0.0090	0.01	No	No
Bromoxynil (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Carbaryl (ug/L) - TW	2018/05/09	<MDL 5.0	90.00	No	No
Carbofuran (ug/L) - TW	2018/05/09	<MDL 5.0	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2018/05/09	<MDL 0.10	2.00	No	No
Chlorpyrifos (ug/L) - TW	2018/05/09	<MDL 1.0	90.00	No	No
Diazinon (ug/L) - TW	2018/05/09	<MDL 1.0	20.00	No	No
Dicamba (ug/L) - TW	2018/05/09	<MDL 1.0	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2018/05/09	<MDL 0.20	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2018/05/09	<MDL 0.20	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2018/05/09	<MDL 0.20	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2018/05/09	<MDL 0.50	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2018/05/09	<MDL 0.25	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2018/05/09	<MDL 1.0	100.00	No	No
Diclofop-methyl (ug/L) - TW	2018/05/09	<MDL 0.90	9.00	No	No
Dimethoate (ug/L) - TW	2018/05/09	<MDL 2.5	20.00	No	No
Diquat (ug/L) - TW	2018/05/09	<MDL 14.0	70.00	No	No
Diuron (ug/L) - TW	2018/05/09	<MDL 10.0	150.00	No	No
Glyphosate (ug/L) - TW	2018/05/09	<MDL 10.0	280.00	No	No
Malathion (ug/L) - TW	2018/05/09	<MDL 5.0	190.00	No	No
Metolachlor (ug/L) - TW	2018/05/09	<MDL 5.0	50.00	No	No

Metribuzin (ug/L) - TW	2018/05/09	<MDL 5.0	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2018/05/09	<MDL 0.10	80.00	No	No
Paraquat (ug/L) - TW	2018/05/09	<MDL 2.0	10.00	No	No
PCB (ug/L) - TW	2018/05/09	<MDL 0.05	3.00	No	No
Pentachlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	60.00	No	No
Phorate (ug/L) - TW	2018/05/09	<MDL 0.50	2.00	No	No
Picloram (ug/L) - TW	2018/05/09	<MDL 5.0	190.00	No	No
Prometryne (ug/L) - TW	2018/05/09	<MDL 0.25	1.00	No	No
Simazine (ug/L) - TW	2018/05/09	<MDL 1.0	10.00	No	No
Terbufos (ug/L) - TW	2018/05/09	<MDL 0.50	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	100.00	No	No
Triallate (ug/L) - TW	2018/05/09	<MDL 1.0	230.00	No	No
Trichloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2018/05/09	<MDL 10.0	100.00	No	No
Trifluralin (ug/L) - TW	2018/05/09	<MDL 1.0	45.00	No	No
Vinyl Chloride (ug/L) - TW	2018/05/09	<MDL 0.20	1.00	No	No
DISTRIBUTION WATER					
Trihalomethane: Total (ug/L) Annual Average - DW	01/01/2018	6.19	100.00	No	No
HAA Total (ug/L) Annual Average - DW	01/01/2018	0.0		N/A	N/A

TREATED WATER – Well E8	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Azinphos-methyl (ug/L) - TW	2018/05/09	<MDL 2.0	20.00	No	No
Benzene (ug/L) - TW	2018/05/09	<MDL 0.10	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2018/05/09	<MDL 0.0090	0.01	No	No
Bromoxynil (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Carbaryl (ug/L) - TW	2018/05/09	<MDL 5.0	90.00	No	No
Carbofuran (ug/L) - TW	2018/05/09	<MDL 5.0	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2018/05/09	<MDL 0.10	2.00	No	No
Chlorpyrifos (ug/L) - TW	2018/05/09	<MDL 1.0	90.00	No	No
Diazinon (ug/L) - TW	2018/05/09	<MDL 1.0	20.00	No	No
Dicamba (ug/L) - TW	2018/05/09	<MDL 1.0	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2018/05/09	<MDL 0.20	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2018/05/09	<MDL 0.20	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2018/05/09	<MDL 0.20	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2018/05/09	<MDL 0.50	50.00	No	No

2,4-Dichlorophenol (ug/L) - TW	2018/05/09	<MDL 0.25	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2018/05/09	<MDL 1.0	100.00	No	No
Diclofop-methyl (ug/L) - TW	2018/05/09	<MDL 0.90	9.00	No	No
Dimethoate (ug/L) - TW	2018/05/09	<MDL 2.5	20.00	No	No
Diquat (ug/L) - TW	2018/05/09	<MDL 14.0	70.00	No	No
Diuron (ug/L) - TW	2018/05/09	<MDL 10.0	150.00	No	No
Glyphosate (ug/L) - TW	2018/05/09	<MDL 10.0	280.00	No	No
Malathion (ug/L) - TW	2018/05/09	<MDL 5.0	190.00	No	No
Metolachlor (ug/L) - TW	2018/05/09	<MDL 5.0	50.00	No	No
Metribuzin (ug/L) - TW	2018/05/09	<MDL 5.0	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2018/05/09	<MDL 0.10	80.00	No	No
Paraquat (ug/L) - TW	2018/05/09	<MDL 2.0	10.00	No	No
PCB (ug/L) - TW	2018/05/09	<MDL 0.05	3.00	No	No
Pentachlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	60.00	No	No
Phorate (ug/L) - TW	2018/05/09	<MDL 0.50	2.00	No	No
Picloram (ug/L) - TW	2018/05/09	<MDL 5.0	190.00	No	No
Prometryne (ug/L) - TW	2018/05/09	<MDL 0.25	1.00	No	No
Simazine (ug/L) - TW	2018/05/09	<MDL 1.0	10.00	No	No
Terbufos (ug/L) - TW	2018/05/09	<MDL 0.50	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	100.00	No	No
Triallate (ug/L) - TW	2018/05/09	<MDL 1.0	230.00	No	No
Trichloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2018/05/09	<MDL 10.0	100.00	No	No
Trifluralin (ug/L) - TW	2018/05/09	<MDL 1.0	45.00	No	No
Vinyl Chloride (ug/L) - TW	2018/05/09	<MDL 0.20	1.00	No	No

Table 7. List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards. (Only if DWS category is large municipal residential, small municipal residential, large municipal non-residential, non-municipal year round residential, large non municipal non-residential)

Refer to Table 4 and Table 5 for any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Drinking-Water System Number:	220007285
Drinking-Water System Name:	Hillsburgh Drinking Water System
Drinking-Water System Owner:	The Corporation of the Town of Erin
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2018 – December 31, 2018

<u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u>	<u>Complete for all other Categories.</u>
<p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection. Office of Town of Erin 5684 Trafalgar Road Hillsburgh Ontario, NOB 1Z0</p>	<p>Number of Designated Facilities served: Not applicable.</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Not applicable.</p> <p>Number of Interested Authorities you report to: Not applicable.</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Not applicable.</p>

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
Not Applicable.	Not Applicable.

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?

Not applicable.

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

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method: _____

Describe your Drinking-Water System

The Hillsburgh Drinking Water System is a Class 2 Water Distribution and Supply Subsystem and a Class 1 Water Treatment Subsystem. The water system serves a population of approximately 850 residential and commercial customers, located in the former Village of Hillsburgh. The distribution system has 7.2 km of water mains with 35 fire hydrants.

The water system is a ground water system supplied by two deep drilled wells, with a total rated capacity of 1,637 m³/day. The Hillsburgh water distribution system is divided into two pressure zones. There is a pressure reducing valve chamber at the intersection of Barbour Drive and Orangeville Street. The upper pressure zone has primarily been supplied by Well No. H2. The lower pressure zone has primarily been supplied by Well No. H3. The Frank Smedley Booster Station was completed in 2014 and mainly delivers water from the lower pressure zone to the upper pressure zone.

Well No. H2 is located at 5929 Trafalgar Road, Hillsburgh at the Hillsburgh Heights (HH2) Facility. It is an 88 m deep drilled groundwater well, constructed of steel casing of 200 mm diameter to a depth of 51 m. It is equipped with a submersible pump rated at 802 L/min at 52.7 m. It discharges through a 150 mm diameter line into a reservoir. A lead removal treatment system has been installed at the Hillsburgh Heights pumphouse.

Well No. H3 is located at Victoria Park, across the road from the Glendevon (GD3) Pumphouse. It is a 57.9 m deep drilled groundwater well, constructed of steel casing of 200 mm diameter to a depth of 20.1 m. It is equipped with a submersible pump rated at 456 L/min. It is connected to a 75 mm diameter discharge line leading to the reservoir.

List all water treatment chemicals used over this reporting period

- Sodium Hypochlorite 12% NSF
- Lead Removal (Hillsburgh Heights HH2)

Were any significant expenses incurred to?

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

Please provide a brief description of any significant expenses incurred

- Online Cl₂ Analyzers – SD Data Collection Cards with Probes/PH Adjustment
- Frank Smedley BPS PLC Work
- Pressure Switch Highlift Pump – Hillsburgh Heights
- Connect generator damper fail alarm at Hillsburgh Heights
- Hillsburgh Heights Generator Upgrades to meet TSSA refueling regulations
- Security camera installation at Glendevon and Hillsburgh Heights Well houses
- Transfer switch replacement

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 (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
n/a	n/a	n/a	n/a	n/a	n/a

Table 1. Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

Location	Number of Samples	Range of E.coli Results		Range of Total Coliforms Results		Number of HPC Samples	Range of HPC Samples	
		Min.	Max.	Min.	Max.		Min.	Max.
Raw Water - Well H2	52	0	0	0	0	n/a	n/a	n/a
Raw Water - Well H3	49	0	0	0	0	n/a	n/a	n/a
Treated Water – Well H2	54	0	0	0	0	43	0	2
Treated Water – Well H3	54	0	0	0	0	43	0	2
DW location	118	0	0	0	0	93	0	140

Table 2. Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results	
		Minimum	Maximum
Raw Water			
Turbidity, Well H2 (NTU)	12	0.10	0.72
Turbidity, Well H3 (NTU)	12	0.06	0.33
Treated Water			
Free Chlorine Residual, TW H2 (mg/L)	8760	0.14	2.00
Free Chlorine Residual, TW H3 (mg/L)	8760	0.36	2.00
Distribution Water			
Free Chlorine Residual, DW (mg/L)	365	0.61	1.22

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

Table 3. 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

Table 4. Summary of Inorganic parameters tested during this reporting period or most recent sample results

TREATED WATER – Well H2 (HH)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (mg/L) - TW	2018/05/09	<MDL 0.0005	0.006	No	No
Arsenic: As (mg/L) - TW	2018/05/09	<MDL 0.0010	0.01	No	No
Barium: Ba (mg/L) - TW	2018/05/09	0.050	1.0	No	No
Boron: B (mg/L) - TW	2018/05/09	0.019	5.0	No	No

Cadmium: Cd (mg/L) - TW	2018/05/09	<MDL 0.0001	0.005	No	No
Chromium: Cr (mg/L) - TW	2018/05/09	<MDL 0.0050	0.05	No	No
Mercury: Hg (mg/L) - TW	2018/05/09	<MDL 0.0001	0.001	No	No
Selenium: Se (mg/L) - TW	2018/05/09	<MDL 0.0020	0.05	No	No
Uranium: U (mg/L) - TW	2018/05/09	0.00032	0.02	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018/05/09	0.87	1.5	No	Yes
Nitrite (mg/L) - TW	2018/02/05	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/04/24	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/07/23	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/10/09	<MDL 0.010	1.0	No	No
Nitrate (mg/L) - TW	2018/02/05	1.08	10.0	No	No
Nitrate (mg/L) - TW	2018/04/24	1.06	10.0	No	No
Nitrate (mg/L) - TW	2018/07/23	1.14	10.0	No	No
Nitrate (mg/L) - TW	2018/10/09	1.03	10.0	No	No
Sodium: Na (mg/L) - TW	2018/05/09	14.0	20*	No	Yes

*There is no "MAC" for Sodium. The aesthetic objective 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.

TREATED WATER – Well H3 (GD)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2018/05/09	<MDL 0.0005	0.006	No	No
Arsenic: As (ug/L) - TW	2018/05/09	<MDL 0.0010	0.01	No	No
Barium: Ba (ug/L) - TW	2018/05/09	0.019	1.0	No	No
Boron: B (ug/L) - TW	2018/05/09	0.035	5.0	No	No
Cadmium: Cd (ug/L) - TW	2018/05/09	<MDL 0.0001	0.005	No	No
Chromium: Cr (ug/L) - TW	2018/05/09	<MDL 0.0050	0.05	No	No
Mercury: Hg (ug/L) - TW	2018/05/09	<MDL 0.0001	0.001	No	No
Selenium: Se (ug/L) - TW	2018/05/09	<MDL 0.0020	0.05	No	No
Uranium: U (ug/L) - TW	2018/05/09	0.00017	0.02	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018/05/09	0.6	1.5	No	Yes
Nitrite (mg/L) - TW	2018/02/05	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/04/24	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/07/23	<MDL 0.010	1.0	No	No
Nitrite (mg/L) - TW	2018/10/09	<MDL 0.010	1.0	No	No
Nitrate (mg/L) - TW	2018/02/05	<MDL 0.10	10.0	No	No
Nitrate (mg/L) - TW	2018/04/24	<MDL 0.10	10.0	No	No
Nitrate (mg/L) - TW	2018/07/23	<MDL 0.10	10.0	No	No
Nitrate (mg/L) - TW	2018/10/09	<MDL 0.10	10.0	No	No
Sodium: Na (mg/L) - TW	2018/05/09	11.0	20*	No	Yes

*There is no "MAC" for Sodium. The aesthetic objective 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.

Table 5. 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	Number of Samples	Range of Results		MAC	Number of Exceedances
		Minimum	Maximum		
Distribution - Lead Results (µg/L)	6	ND	2.7	10	0
Distribution - Alkalinity (mg/L)	6	180	220	n/a	n/a
DW location - pH In-House	6	8.0	8.5	n/a	n/a

The Moorefield Drinking Water Systems qualifies for plumbing exemption.

Table 6. Summary of Organic parameters sampled during this reporting period or the most recent sample results

TREATED WATER – Well H2 (HH)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Azinphos-methyl (ug/L) - TW	2018/05/09	<MDL 2.0	20.00	No	No
Benzene (ug/L) - TW	2018/05/09	<MDL 0.10	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2018/05/09	<MDL 0.0090	0.01	No	No
Bromoxynil (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Carbaryl (ug/L) - TW	2018/05/09	<MDL 5.0	90.00	No	No
Carbofuran (ug/L) - TW	2018/05/09	<MDL 5.0	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2018/05/09	<MDL 0.10	2.00	No	No
Chlorpyrifos (ug/L) - TW	2018/05/09	<MDL 1.0	90.00	No	No
Diazinon (ug/L) - TW	2018/05/09	<MDL 1.0	20.00	No	No
Dicamba (ug/L) - TW	2018/05/09	<MDL 1.0	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2018/05/09	<MDL 0.20	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2018/05/09	<MDL 0.20	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2018/05/09	<MDL 0.20	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2018/05/09	<MDL 0.50	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2018/05/09	<MDL 0.25	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2018/05/09	<MDL 1.0	100.00	No	No
Diclofop-methyl (ug/L) - TW	2018/05/09	<MDL 0.90	9.00	No	No
Dimethoate (ug/L) - TW	2018/05/09	<MDL 2.5	20.00	No	No

Diquat (ug/L) - TW	2018/05/09	<MDL 7.0	70.00	No	No
Diuron (ug/L) - TW	2018/05/09	<MDL 10.0	150.00	No	No
Glyphosate (ug/L) - TW	2018/05/09	<MDL 10.0	280.00	No	No
Malathion (ug/L) - TW	2018/05/09	<MDL 5.0	190.00	No	No
Metolachlor (ug/L) - TW	2018/05/09	<MDL 0.50	50.00	No	No
Metribuzin (ug/L) - TW	2018/05/09	<MDL 5.0	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2018/05/09	<MDL 0.10	80.00	No	No
Paraquat (ug/L) - TW	2018/05/09	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2018/05/09	<MDL 0.05	3.00	No	No
Pentachlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	60.00	No	No
Phorate (ug/L) - TW	2018/05/09	<MDL 0.50	2.00	No	No
Picloram (ug/L) - TW	2018/05/09	<MDL 5.0	190.00	No	No
Prometryne (ug/L) - TW	2018/05/09	<MDL 0.25	1.00	No	No
Simazine (ug/L) - TW	2018/05/09	<MDL 1.0	10.00	No	No
Terbufos (ug/L) - TW	2018/05/09	<MDL 0.50	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	100.00	No	No
Triallate (ug/L) - TW	2018/05/09	<MDL 1.0	230.00	No	No
Trichloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2018/05/09	<MDL 10.0	100.00	No	No
Trifluralin (ug/L) - TW	2018/05/09	<MDL 1.0	45.00	No	No
Vinyl Chloride (ug/L) - TW	2018/05/09	<MDL 0.20	1.00	No	No
DISTRIBUTION WATER					
Trihalomethane: Total (ug/L) Annual Average - DW	01/01/2018	11.67	100.00	No	No
HAA Total (ug/L) Annual Average - DW	01/01/2018	ND		N/A	N/A

TREATED WATER – Well H3 (GD)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Azinphos-methyl (ug/L) - TW	2018/05/09	<MDL 2.0	20.00	No	No
Benzene (ug/L) - TW	2018/05/09	<MDL 0.10	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2018/05/09	<MDL 0.0090	0.01	No	No
Bromoxynil (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
Carbaryl (ug/L) - TW	2018/05/09	<MDL 5.0	90.00	No	No
Carbofuran (ug/L) - TW	2018/05/09	<MDL 5.0	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2018/05/09	<MDL 0.10	2.00	No	No
Chlorpyrifos (ug/L) - TW	2018/05/09	<MDL 1.0	90.00	No	No
Diazinon (ug/L) - TW	2018/05/09	<MDL 1.0	20.00	No	No

Dicamba (ug/L) - TW	2018/05/09	<MDL 1.0	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2018/05/09	<MDL 0.20	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2018/05/09	<MDL 0.20	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2018/05/09	<MDL 0.20	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2018/05/09	<MDL 0.50	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2018/05/09	<MDL 0.25	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2018/05/09	<MDL 1.0	100.00	No	No
Diclofop-methyl (ug/L) - TW	2018/05/09	<MDL 0.90	9.00	No	No
Dimethoate (ug/L) - TW	2018/05/09	<MDL 2.5	20.00	No	No
Diquat (ug/L) - TW	2018/05/09	<MDL 14.0	70.00	No	No
Diuron (ug/L) - TW	2018/05/09	<MDL 10.0	150.00	No	No
Glyphosate (ug/L) - TW	2018/05/09	<MDL 10.0	280.00	No	No
Malathion (ug/L) - TW	2018/05/09	<MDL 5.0	190.00	No	No
Metolachlor (ug/L) - TW	2018/05/09	<MDL 0.50	50.00	No	No
Metribuzin (ug/L) - TW	2018/05/09	<MDL 5.0	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2018/05/09	<MDL 0.10	80.00	No	No
Paraquat (ug/L) - TW	2018/05/09	<MDL 2.0	10.00	No	No
PCB (ug/L) - TW	2018/05/09	<MDL 0.05	3.00	No	No
Pentachlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	60.00	No	No
Phorate (ug/L) - TW	2018/05/09	<MDL 0.50	2.00	No	No
Picloram (ug/L) - TW	2018/05/09	<MDL 5.0	190.00	No	No
Prometryne (ug/L) - TW	2018/05/09	<MDL 0.25	1.00	No	No
Simazine (ug/L) - TW	2018/05/09	<MDL 1.0	10.00	No	No
Terbufos (ug/L) - TW	2018/05/09	<MDL 0.50	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	100.00	No	No
Triallate (ug/L) - TW	2018/05/09	<MDL 1.0	230.00	No	No
Trichloroethylene (ug/L) - TW	2018/05/09	<MDL 0.10	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2018/05/09	<MDL 0.50	5.00	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2018/05/09	<MDL 10.0	100.00	No	No
Trifluralin (ug/L) - TW	2018/05/09	<MDL 1.0	45.00	No	No
Vinyl Chloride (ug/L) - TW	2018/05/09	<MDL 0.20	1.00	No	No

Table 7. List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards. (Only if DWS category is large municipal residential, small municipal residential, large municipal non-residential, non-municipal year round residential, large non municipal non-residential)

Refer to Table 4 and Table 5 for any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.