

**Part III Form 2
Section 11. ANNUAL REPORT.**

Drinking-Water System Number:	220006945
Drinking-Water System Name:	Thornton (Glen Avenue) Well Supply System
Drinking-Water System Owner:	Corporation of the Township of Essa
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2004 – December 31, 2004

<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"/> [X]</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"/> [X] 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;"> Essa Municipal Office 5786 Simcoe Rd. 21 Utopia, Essa Twp, On. L0M 1T0 Website: www.essatownship.on.ca </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input type="text"/></p> <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: <input type="text"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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List Drinking-Water Systems, which receive all of their drinking water from your system:

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?

Yes No [NA]

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

- [X] Public access/notice via the web
- [X] Public access/notice via Government Office
- [] Public access/notice via a newspaper

- [X] Public access/notice via Public Request
- [X] Public access/notice via a Public Library
- [X] Public access/notice via other method Public Notice made on water bills

Describe your Drinking-Water System
Raw Water Supply

The Thornton Well Supply System pumphouse is located on Glen Avenue in the Village of Thornton, Township of Essa. Raw water is supplied to the pumphouse by means of Four (4) drilled wells each equipped with submersible well pumps. Wells 1&2 are comprised of a 160mm diameter casings, extending to depths of 49.7 and 51.5 meters respectively. Wells 1&2 are located adjacent to the pump house each with a maximum pumping rate of 6.06 L/sec at a TDH of 55 m. Wells 3& 4 are located in the Thornton Creek Estate subdivision, North of the Glen Avenue pumphouse. Well #3 is comprised of a 300mm diameter casing extending to a depth of 32 meters, capable of pumping 5.7 L/sec at a TDH of 60m. Well #4 is comprised of a 160mm diameter casing extending to a depth of 31.4 meters, capable of pumping 3.8 L/sec at a TDH of 72m. Controls for wells #3&4 are located in an adjacent pre-fabricated vinyl building.

Disinfection

Water is pumped from the wells to the Glen Avenue pumphouse where it is disinfected with NSF certified 12% Sodium Hypochlorite Solution. The Sodium Hypochlorite Solution is stored in an 800L bulk storage tank and a 100L day tank. The solution is injected into the main header by one of Two (2) chemical feed pumps, each capable of pumping at least 2.5 L/hr. The maximum treated flow rate for the Glen Avenue pumphouse is 17.82 L/sec.

Storage and Distribution

Treated water is pumped to two (2) fused glass lined bolted steel above ground storage tanks, each with a capacity of 393 cubic meters. Water is pumped from the storage tanks to the distribution system by three (3) variable frequency drive high lift pumps, each with a rated pumping capacity of 25.85 L/sec.

Monitoring and Recording

On-line analyzers monitor treated water for free chlorine residual and turbidity. Operational data, including pump run hrs, flow rates; free chlorine residual and turbidity are recorded on a data logger located on the MCC panel. The logged data is down loaded periodically and stored on the main server at the Wasaga Beach office. The system is alarmed for a number of parameters and monitored continuously by Huronia Alarms, Midland On.

Auxiliary Power

The Glen avenue pumphouse is equipped with a 140 kVA diesel generator with automatic switch over. This supplies power to the plant in the event of a power failure.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite 12% Solution NSF, Disinfection

Were any significant expenses incurred to?

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

Describe

No significant expenses were incurred to the Thorton (Glen Ave.) system for the 2004 reporting period

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.

No reportable incidences occurred during the 2004 Reporting period.

Microbiological testing done under section 8-2 during this reporting period

Location	Number of Samples	E Coli or Fecal Results (# - #)	Total Coliform Results (# - #)	Number of HPC or Background Colony Counts	Range of HPC or Background Colony Counts
Raw - 1	52	0 - 0	0 - 0	1	0 - 0
Raw - 2	52	0 - 0	0 - 1	1	0 - 0
Raw - 3	51	0 - 0	0 - 1	27	0 - 73
Raw - 4	46	0 - 0	0 - 2	2	0 - 6
Treated -	52	0 - 0	0 - 0	51	0 - 1
Distribution -	103	0 - 0	0 - 0	53	0 - 0

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

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

	Number of Grab Samples	Range of Results (#-#)
Turbidity	8760	0 / 17.0 NTU
Chlorine	8760	0 / 5.0 mg/L
Chlorine Residual Distribution System	527	0.46 / 1.73 mg/L
Fluoride (If the DWS provides fluoridation)	NA	NA

NOTE: Record the unit of measure if it is **not** milligrams per litre.

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

Date of order or C of A	Parameter	Date Sampled	Result	Unit of Measure

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

Parameter	Sample Date	Result Value	Exceedance
Antimony: Sb (ug/L)	2003/08/26	0.60	No
Arsenic: As (ug/L)	2003/08/26	2.00	No
Barium: Ba (ug/L)	2003/08/26	66.00	No
Boron: B (ug/L)	2003/08/26	52.00	No
Cadmium: Cd (ug/L)	2003/08/26	0.10	No
Chromium: Cr (ug/L)	2003/08/26	3.00	No
Lead: Pb (ug/L)	2004/01/12	0.6	No
Mercury: Hg (ug/L)	2003/08/26	0.10	No
Selenium: Se (ug/L)	2003/08/26	3.00	No
Sodium: Na (mg/L)	2003/08/26	25.00	Yes
Uranium: U (ug/L)	2003/08/26	0.05	No
Fluoride Residual: Mean (mg/L)	2003/08/26	0.17	No
Nitrite (mg/L)	2004/01/12	0.01	No
Nitrite (mg/L)	2004/04/05	0.007	No
Nitrite (mg/L)	2004/07/07	0.005	No
Nitrite (mg/L)	2004/10/07	0.005	No
Nitrate (mg/L)	2004/01/12	0.02	No
Nitrate (mg/L)	2004/04/05	4.28	No
Nitrate (mg/L)	2004/07/07	4.72	No
Nitrate (mg/L)	2004/10/07	4.48	No

Summary of Organic parameters sampled during this reporting period or most recent

Parameter	Sample Date	Result Value	Exceedance
Alachlor (ug/L)	2003/04/28	0.09	No
Aldicarb (ug/L)	2003/04/28	0.76	No
Aldrin + Dieldrin (ug/L)	2003/04/28	0.05	No
Atrazine + N-dealkylated metabolites (ug/L)	2003/04/28	0.43	No
Azinphos-methyl (ug/L)	2003/01/27	0.59	No
Bendiocarb (ug/L)	2003/04/28	0.27	No
Benzene (ug/L)	2003/04/28	0.36	No
Benzo(a)pyrene (ug/L)	2003/08/26	0.004	No
Bromoxynil (ug/L)	2003/04/28	0.06	No

Carbaryl (ug/L)	2003/04/28	0.14	No
Carbofuran (ug/L)	2003/04/28	0.14	No
Carbon Tetrachloride (ug/L)	2003/04/28	0.34	No
Chlordane:Total (ug/L)	2003/04/28	0.20	No
Chlorpyrifos (ug/L)	2003/04/28	1.20	No
Cyanazine (ug/L)	2003/04/28	0.08	No
Diazinon (ug/L)	2003/04/28	0.41	No
Dicamba (ug/L)	2003/04/28	0.90	No
1,2-Dichlorobenzene (ug/L)	2003/04/28	0.56	No
1,4-Dichlorobenzene (ug/L)	2003/04/28	0.25	No
Dichlorodiphenyltrichloroethane(DDT) + metabolites (ug/L)	2003/04/28	0.46	No
1,2-Dichloroethane (ug/L)	2003/04/28	0.32	No
1,1-Dichloroethylene (ug/L)	2003/04/28	0.52	No
Dichloromethane (ug/L)	2003/04/28	1.17	No
2,4-Dichlorophenol (ug/L)	2003/04/28	0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2003/04/28	0.33	No
Diclofop-methyl (ug/L)	2003/04/28	0.84	No
Dimethoate (ug/L)	2003/04/28	0.10	No
Dinoseb (ug/L)	2003/04/28	0.42	No
Diquat (ug/L)	2003/04/28	1.00	No
Diuron (ug/L)	2003/04/28	0.66	No
Glyphosate (ug/L)	2003/04/28	6.00	No
Heptachlor+Hepachlor Epoxide (ug/L)	2003/04/28	0.20	No
Lindane: (ug/L)	2003/04/28	0.13	No
Malathion (ug/L)	2003/04/28	0.37	No
Methoxychlor (ug/L)	2003/04/28	0.64	No
Metolachlor (ug/L)	2003/04/28	0.58	No
Metribuzin (ug/L)	2003/04/28	0.50	No
Monochlorobenzene (ug/L)	2003/04/28	0.46	No
Paraquat (ug/L)	2003/01/27	1.00	No
Parathion (ug/L)	2003/04/28	1.20	No
Pentachlorophenol (ug/L)	2003/04/28	0.15	No
Phorate (ug/L)	2003/04/28	0.73	No
Picloram (ug/L)	2003/04/28	0.19	No
Polychlorinated Bichenysl(PCB) (ug/L)	2003/01/27	0.04	No
Prometryne (ug/L)	2003/04/28	0.16	No
Simazine (ug/L)	2003/04/28	0.18	No
THM (ug/L)	2004/01/14	28.0	No
THM (ug/L)	2004/04/05	10.0	No
THM (ug/L)	2004/07/07	34.0	No
THM (ug/L)	2004/10/07	12.0	No
Temephos (ug/L)	2003/04/28	0.25	No
Terbufos (ug/L)	2003/09/30	< 0.70	No
Tetrachloroethylene (ug/L)	2003/04/28	0.48	No
2,3,4,6-Tetrachlorophenol (ug/L)	2003/04/28	0.14	No
Triallate (ug/L)	2003/04/28	0.14	No
Trichloroethylene (ug/L)	2003/04/28	0.54	No
2,4,6-Trichlorophenol (ug/L)	2003/04/28	0.25	No
2,4,5-Trichlorophenoxy acetic acid (ug/L)	2003/04/28	0.47	No
Trifluralin (ug/L)	2003/04/28	0.35	No
Vinyl Chloride (ug/L)	2003/04/28	0.08	No

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

Parameter	Result Value	Unit of Measure	Date of Sample

(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)

