

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

Drinking-Water System Number:	260001013
Drinking-Water System Name:	Baxter Well Supply System
Drinking-Water System Owner:	Corporation Township of Essa
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1, 2003 through December 31, 2003

<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 [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 Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> Municipal Offices Corporation Township of Essa 5786 Simcoe County Rd. 21 Utopia, Essa Twp., Ontario L0M 1T0 Website: www.essatownship.on.ca </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 2px; width: fit-content;">None</div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No [] <u>N/A</u></p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; padding: 2px; width: fit-content;">None</div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No [] <u>N/A</u></p>
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List Drinking-Water Systems, which receive all of their drinking water from your system:

N/A

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 [] N/A

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

Describe your Drinking-Water System

The Baxter Well Supply System , (Township of Essa Baxter Water Distribution System II Water Distribution) obtains water via two production wells.

Well 1 was drilled in 1988 comprising of a 150mm diameter steel casing extending to 64.0 m below grade and a stainless steel assembly with 0.81 mm and 1.14 mm openings from 64.0 to 67.0 m below grade.

Well 2 was drilled in 1989 comprising of a 150 mm diameter steel casing extending to 61.0 m below grade and a stainless steel screen with 2.03 mm openings from 61.0 to 64.0 m below grade.

Groundwater is pumped to the treatment facility through two 75 mm discharge lines where it is disinfected with a sodium hypochlorite solution via injection points on the common line. The pumphouse consists of a disinfection system, five 450L hydro-pneumatic tanks, one 75mm flow meter and on-line monitoring equipment continuously monitoring free and total chlorine residual, turbidity and flows rates.

Contact time is achieved through a 50 m long pipe loop.

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

Datalogging equipment was installed to log flow data as required by Facility CofA.

All routine and preventative maintenance, was conducted as schedule.

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 mm/dd/yy	Parameter	Result	Unit of Meas.	Corrective Action	Corrective Action Date mm/dd/yy
01/16/03	Turbidity TDW	1.20	NTU	Instantaneous spike Reported as per 459/00	01/16/03

Drinking-Water Systems Regulation O. Reg. 170/03

02/07/03	Turbidity TDW	1.32	NTU	Instantaneous spike Reported as per 459/00	02/07/03
04/25/03	Turbidity TDW	>1.0	NTU	Instantaneous spike Reported as per 459/00	04/25/03
06/25/03	DDW Bacti Sample Total Coliforms	3	CFU/100ml	Reported as per O.Reg 170 to MOH and MOE, June 18, 2003, AWQI 10209. Set of Resamples collected June 18, 2003. Resamples showed no further indication adverse water, Issue of Resolution provided June 20, 2003.	06/25/03
07/03/03	DDW Bacti Sample Background Colonies	>1.0	NTU	Exceedence reported to MOH and MOE July 4, 2003, AWQI 11287. Instantaneous Spike, Analyzer Flushed and Cleaned Turbidity restored tto 0.37NTU.	07/03/03
08/15/03	Significant Drop in Pressure, Result of Provincial Wide Blackout. MOH issued Precautionary Boil Water.			All users immediately notified door to door, with Precautionary Boil Water Advisory, Users advised not to drink water. As requirement of BWA, following restoration of electrical power and system pressure. System chlorine residuals were tested and a set of bacti samples collected and analyzed. Samples showed no indication of adverse water BWA rescinded August 21, 2003. notices issued door to door.	08/15/03 through August 21, 2003

Microbiological testing done under section 8 (2) during this reporting period

	Number of Samples	Range of E.Coli or Fecal Results (#-#)	Range of Total Coliform Results (#-#)	Number of Background Samples	Range of Background Results (#-#)	Number of HPC Samples	Range of HPC Results (#-#)
Raw	106	0 - 0	0 - 0	N/A	N/A	N/A	N/A
Treated	53	0 - 0	0 - 0	22	0 - 0	30	0 - 406
Distribution	109	0 - 0	0 - 3	22	0 - 106	63	0 - 76

This Sampling was conducted as follows:
Microbiological parameters: RWW P1 (Raw Well Water)

Micro biological Parameters	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Reporting Period Summary	MAC / IMAC
Total Coliform														
# Samples	5	4	5	4	4	4	5	4	5	4	4	5	53	
# Detectable	0	0	0	0	0	0	0	0	0	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
E. Coli														
# Samples	5	4	5	4	4	4	5	4	5	4	4	5	53	
# Detectable	0	0	0	0	0	0	0	0	0	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	

Microbiological parameters: RWW P2 (Raw Well Water)

Micro biological Parameters	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Reporting Period Summary	MAC / IMAC
Total Coliform														
# Samples	5	4	5	4	4	4	5	4	5	4	4	5	53	
# Detectable	0	0	0	0	0	0	0	0	0	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
E. Coli														
# Samples	5	4	5	4	4	4	5	4	5	4	4	5	53	
# Detectable	0	0	0	0	0	0	0	0	0	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	

Drinking-Water Systems Regulation O. Reg. 170/03

Microbiological parameters: TDW Pumphouse (Treated Drinking Water)

Micro biological Parameters	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Reporting Period Summary	MAC / IMAC
Total Coliform														
# Samples	5	4	5	4	4	4	5	4	5	4	4	5	53	
# Detectable	0	0	0	0	0	0	0	0	0	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
E. Coli														
# Samples	5	4	5	4	4	4	5	4	5	4	4	5	53	
# Detectable	0	0	0	0	0	0	0	0	0	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
Background														
# Samples	5	4	5	4	4								22	
# Detectable	0	0	0	0	0								0	
Min / Max	0/0	0/0	0/0	0/0	0/0								0/0	200
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
HPC														
# Samples						4	5	4	5	4	4	5	30	
# Detectable						2	3	2	5	3	1	2	18	
Min / Max						0/5	0/3	0/21	5/99	0/16	406	0/26	0/406	500
Exceedences						0	0	0	0	0	0	0	0	

Microbiological parameters: DDW Baxter Distribution System

Micro biological Parameters	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Reporting Period Summary	MAC / IMAC
Total Coliform														
# Samples	10	8	10	8	8	11	10	8	10	8	8	10	109	
# Detectable	0	0	0	0	0	1	0	0	0	0	0	0	1	
Min / Max	0/0	0/0	0/0	0/0	0/0	0/3	0/0	0/0	0/0	0/0	0/0	0/0	0/3	0
Exceedences	0	0	0	0	0	1	0	0	0	0	0	0	1	
E. Coli														
# Samples	10	8	10	8	8	11	10	8	10	8	8	10	109	
# Detectable	0	0	0	0	0	0	0	0	0	0	0	0	0	
Min / Max	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
Background														
# Samples	5	4	5	4	4								22	
# Detectable	2	2	1	0	0								5	
Min / Max	0/106	0/6	0/2	0/0	0/0								0/106	200
Exceedences	0	0	0	0	0								0	
HPC														
# Samples						11	10	6	10	8	8	10	63	
# Detectable						7	8	5	8	7	5	5	45	
Min / Max						0/<10	0/34	0/19	0/36	0/32	0/76	0/2	0/76	500
Exceedences						0	0	0	0	0	0	0	0	

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

The Baxter Water System is equipped with Free Available Chlorine residual (mg/l), Total Chlorine Residual (mg/l) and Turbidity (NTU) continuous monitoring equipment analyzing the Treated Drinking Water. The continuous monitoring equipment is installed and operated in the treatment process at a location where the intended contact time has been completed, prior to entering the distribution system. As requested the following Table summarizes data collected by this continuous monitoring equipment:

Treated Drinking Water	Number of Grab Samples	Range of Results (#-#)
Turbidity NTU	8760	0.29 - >1
Free Chlorine mg/l	8760	0.05-2.08
Total Chlorine mg/l	8760	0.88-2.44
Fluoride	N/A	N/A

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

In addition to the continuous monitoring the following tables summarize additional sampling carried out in regards to Schedule 7:

Chlorine Residuals mg/l	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Reporting Period Summary	MAC / IMAC
Free Chlorine (Treated)														
Number of Samples	31	28	31	30	31	30	31	31	30	31	30	31	365	
Number of Detectable Results	31	28	31	30	31	30	31	31	30	31	30	31	365	
Min/Max	0.87/1.8	0.25/1.52	0.12/2.02	0.05/1.5	0.3/1.92	0.3/1.75	0.1/1.78	0.32/1.77	0.52/1.92	0.16/2.08	0.26/1.66	0.97/1.94	0.05/2.08	0.05/3.99
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Chlorine Residual (Treated)														
Number of Samples	31	28	31	30	31	30	31	31	30	31	30	31	365	
Number of Detectable Results	31	28	31	30	31	30	31	31	30	31	30	31	365	
Min/Max	0.88/1.81	1.1/2.15	1.25/2.37	1.13/1.95	1.22/2.44	1.36/1.89	1.15/2.13	1.33/2.76	1.47/2.02	1.48/2.04	0.95/1.78	1.62/2.12	0.88/2.44	0.05/3.99
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
Free Chlorine (System)														
Number of Samples	10	8	10	8	8	37	36	35	35	35	34	36	292	
Number of Detectable Results	10	8	10	8	8	37	36	35	35	35	34	36	292	
Min/Max	0.48/1.28	0.19/1.14	0.07/1.87	0.13/1.19	0.6/1.97	0.16/1.58	0.2/1.67	0.25/1.43	0.42/1.57	0.1/1.73	0.27/1.47	0.34/1.76	0.07/1.97	0.05/3.99
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Chlorine (System)														
Number of Samples	10	8	10	8	8	37	36	35	35	35	34	36	292	
Number of Detectable Results	10	8	10	8	8	37	36	35	35	35	34	36	292	
Min/Max	0.73/1.59	0.92/1.89	1.06/1.88	1.24/1.72	1.12/2.02	0.8/1.77	0.94/1.95	1.37/1.75	0.51/1.7	0.59/1.77	0.27/1.67	1.48/2.04	0.51/2.02	0.05/3.99
Exceedences	0	0	0	0	0	0	0	0	0	0	0	0	0	

Turbidity	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Reporting Period Summary	MAC / IMAC
Turbidity (RWW P1) NTU Number of Samples Min/ Max						1 0.83	3 0.38/ 1.84	1 1.45	4 0.27/ 0.41	2 0.23/ 0.31	4 0.19/ 0.53	2 0.39/ 0.46	17 0.19/1.84	
Turbidity (RWW P2) NTU Number of Samples Min/ Max						1 .44	4 0.19/ 0.79	1 2.41	4 0.15/ 0.28	2 0.18/ 0.32	4 0.25/ 0.49	2 0.44/ 0.48	17 0.15/2.41	
Turbidity (Treated) NTU Number of Samples Min/Max	31 0.35/ >1	28 0.36/ >1	31 0.34/ 0.42	30 0.34/ >1	31 0.35/ 0.5	30 0.32/ 1.52	31 0.31/ 0.43	31 0.32/ 0.43	30 0.31/ 0.39	31 0.29/ 0.6	30 0.31/ 0.38	31 0.32/ 0.76	365 0.29/ >1	1.0
Exceedences	1	1	0	1	0	0	0	0	0	0	0	0	3	

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

Ammonia (mg/l) is tested from each well on a weekly basis as per the facility CofA #4020-5SYLXR, issued November 6, 2003. This sampling is conducted due the formation of chloramines from the reaction of ammonia and sodium hypochlorite. The following table summarizes test results:

Ammonia mg/l	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Reporting Period Summary
(RWW P1) Number of Samples Min/ Max	5 0.6/ 0.99	4 0.6/ 0.78	5 0.6/ 0.79	4 0.66/ 0.8	4 0.23/ 0.28	4 0.53/ 1.37	5 0.56/ 1.04	4 0.64/ 0.86	5 0.6/ 0.74	4 0.56/ 0.66	4 0.55/ 0.8	5 0.62/ 1.03	53 0.23/1.37
(RWW P2) NTU Number of Samples Min/ Max	5 0.9/ 1.33	4 0.99/ 1.03	5 0.98/ 1.07	4 0.95/ 1.32	4 0.99/ 1.57	4 0.6/ 1.25	5 1.0/ 1.35	4 0.95/ 1.37	5 0.96/ 3.25	4 0.93/ 1.11	4 0.94/ 1.34	5 0.57/ 1.11	53 0.57/3.25

Summary of Inorganic parameters tested during this reporting period or most recent at the Baxter Facility

Parameter	Sample Date (mm/dd/yy)	Result Value	Sample Date (mm/dd/yy)	Result Value	Sample Date (mm/dd/yy)	Result Value	Sample Date (mm/dd/yy)	Result Value	Unit of Meas.	Exceedances
Antimony					08/26/03	0.6			ug/l	0
Arsenic					08/26/03	2.0			ug/l	0
Barium					08/26/03	68.0			ug/l	0
Boron					08/26/03	39.0			ug/l	0
Cadmium					08/26/03	0.1			ug/l	0
Chromium					08/26/03	3.0			ug/l	0
Lead					08/26/03	0.6			ug/l	0
Mercury					08/26/03	0.1			ug/l	0
Selenium					08/26/03	3.0			ug/l	0
Uranium					08/26/03	0.05			ug/l	0
Sodium					08/26/03	17.9			mg/l	0
Fluoride					08/26/03	0.12			mg/l	0
Nitrite	01/20/03	0.011	04/28/03	0.011	08/26/03	0.011	10/27/03	0.011	mg/l	0
Nitrate	01/20/03	0.021	04/28/03	0.021	08/26/03	0.021	10/27/03	0.021	mg/l	0

Summary of Organic parameters sampled during this reporting period or most recent at the Baxter Facility

Parameter	Sample Date (mm/dd/yy)	Result Value	Sample Date (mm/dd/yy)	Result Value	Sample Date (mm/dd/yy)	Result Value	Sample Date (mm/dd/yy)	Result Value	Unit of Meas	Exceed.
Alachlor	01/20/03	0.09	04/28/03	0.09					ug/l	0
Aldicarb	01/20/03	0.76	04/28/03	0.76					ug/l	0
Aldrin + Dieldrin	01/20/03	0.05	04/28/03	0.05					ug/l	0
Atrazine + N-dealkylated metabolites	01/20/03	0.43	04/28/03	0.43					ug/l	0
Azinphos-methyl	01/20/03	0.59	04/28/03	0.59					ug/l	0
Bendiocarb	01/20/03	0.27	04/28/03	0.27					ug/l	0
Benzene	01/20/03	0.36	04/28/03	0.36					ug/l	0
Benzo(a)pyrene					08/26/03	0.004			ug/l	0
Bromoxynil	01/20/03	0.06	04/28/03	0.06					ug/l	0
Carbaryl	01/20/03	0.14	04/28/03	0.14					ug/l	0
Carbofuran	01/20/03	0.14	04/28/03	0.14					ug/l	0
Carbon Tetrachloride	01/20/03	0.34	04/28/03	0.34					ug/l	0
Chlordane (Total)	01/20/03	0.2	04/28/03	0.2					ug/l	0
Chlorpyrifos	01/20/03	1.2	04/28/03	1.2					ug/l	0
Cyanazine	01/20/03	0.079	04/28/03	0.079					ug/l	0
Diazinon	01/20/03	0.41	04/28/03	0.41					ug/l	0
Dicamba	01/20/03	0.9	04/28/03	0.9					ug/l	0
1,2-Dichlorobenzene	01/20/03	0.56	04/28/03	0.56					ug/l	0
1,4-Dichlorobenzene	01/20/03	0.25	04/28/03	0.25					ug/l	0
Dichlorodiphenyltrichloroethane (DDT) + metabolites	01/20/03	0.46	04/28/03	0.46					ug/l	0

1,2-Dichloroethane	01/20/03	0.32	04/28/03	0.32					ug/l	0
1,1-Dichloroethylene (vinylidene chloride)	01/20/03								ug/l	0
Dichloromethane	01/20/03	1.17	04/28/03	1.17					ug/l	0
2,4-Dichlorophenol	01/20/03	0.15	04/28/03	0.15					ug/l	0
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/20/03	0.33	04/28/03	0.33					ug/l	0
Diclofop-methyl	01/20/03	0.84	04/28/03	0.84					ug/l	0
Dimethoate	01/20/03	0.1	04/28/03	0.1					ug/l	0
Dinoseb	01/20/03	0.42	04/28/03	0.42					ug/l	0
Diquat	01/20/03	1.0	04/28/03	1.0					ug/l	0
Diuron	01/20/03	0.66	04/28/03	0.66					ug/l	0
Glyphosate	01/20/03	6.0	04/28/03	6.0					ug/l	0
Heptachlor + Heptachlor Epoxide	01/20/03	0.2	04/28/03	0.2					ug/l	0
Linadane (Total)	01/20/03	0.13	04/28/03	0.13					ug/l	0
Malathion	01/20/03	0.37	04/28/03	0.37					ug/l	0
Methoxychlor	01/20/03	0.64	04/28/03	0.64					ug/l	0
Metolachlor	01/20/03	0.58	04/28/03	0.58					ug/l	0
Metribuzin	01/20/03	0.5	04/28/03	0.5					ug/l	0
Monochlorobenzene	01/20/03	0.46	04/28/03	0.46					ug/l	0
Paraquat	01/20/03	1.0	04/28/03	1.0					ug/l	0
Parathion	01/20/03	1.2	04/28/03	1.2					ug/l	0
Pentachlorophenol	01/20/03	0.15	04/28/03	0.15					ug/l	0
Phorate	01/20/03	0.73	04/28/03	0.73					ug/l	0
Picloram	01/20/03	0.19	04/28/03	0.19					ug/l	0
Polychlorinated Biphenyls(PCB)	01/20/03	0.04	04/28/03	0.04					ug/l	0
Promethyne	01/20/03	0.16	04/28/03	0.16					ug/l	0
Simazine	01/20/03	0.18	04/28/03	0.18					ug/l	0
THM DDW	01/20/03	.75	04/28/03	.75	08/26/03	.68	10/27/03	.76	ug/l	0
THM TDW Baxter	01/20/03	.66	04/28/03	.63					ug/l	0
Temphos	01/20/03	.25	04/28/03	.25					ug/l	0
Terbufos	01/20/03	0.73	04/28/03	0.73	09/30/03	0.7			ug/l	0
Tetrachloroethylene	01/20/03	0.48	04/28/03	0.48					ug/l	0
2,3,4,6-Tetrachlorophenol	01/20/03	0.14	04/28/03	0.14					ug/l	0
Triallate	01/20/03	0.14	04/28/03	0.14					ug/l	0
Trichloroethylene	01/20/03	0.54	04/28/03	0.54					ug/l	0
2,4,6-Trichlorophenol	01/20/03	0.25	04/28/03	0.25					ug/l	0

2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	01/20/03	0.47	04/28/03	0.47					ug/l	0
Trifluralin	01/20/03	0.35	04/28/03	0.35					ug/l	0
Vinyl Chloride	01/20/03	0.08	04/28/03	0.08					ug/l	0

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 category is large municipal residential, small municipal residential, large municipal non residential, small municipal non residential, large non municipal non residential)