

**APPENDIX A – 2018 WATER QUALITY
SUMMARY**

MONTH	POST TREATMENT	
	Free Cl ₂ mg/L	
January		
Minimum	0.83	
Maximum	1.29	
Average	1.03	
February		
Minimum	0.84	
Maximum	1.16	
Average	0.99	
March		
Minimum	0.85	
Maximum	1.55	
Average	1.06	
April		
Minimum	0.81	
Maximum	1.66	
Average	0.99	
May		
Minimum	0.76	
Maximum	1.27	
Average	1.00	
June		
Minimum	0.72	
Maximum	1.32	
Average	1.01	
July		
Minimum	0.68	
Maximum	2.77	
Average	1.25	
August		
Minimum	0.53	
Maximum	2.15	
Average	1.15	
September		
Minimum	0.67	
Maximum	1.95	
Average	1.16	
October		
Minimum	0.67	
Maximum	3.28	
Average	1.09	
November		
Minimum	0.84	
Maximum	1.59	
Average	1.06	
December		
Minimum	0.60	
Maximum	1.71	
Average	1.06	
Yearly Minimum	0.53	
Yearly Maximum	3.28	
Yearly Average	1.07	

Note: Chlorine residuals obtained from SCADA.

**APPENDIX B
AYLMER TOTAL DAILY FLOW - 2018**

Date	January m ³	February m ³	March m ³	April m ³	May m ³	June m ³	July m ³	August m ³	September m ³	October m ³	November m ³	December m ³
1	3481	3013	3717	3045	3918	4577	4481	3616	3624	4532	3959	4176
2	3283	3431	3664	2656	3790	4355	4475	3915	3681	5051	4642	4123
3	3297	3540	3597	2285	3853	4355	5520	3960	3632	5446	4638	4382
4	3254	3547	3446	2684	4252	3983	5031	4263	2862	4705	4597	4000
5	3184	3200	3446	2308	3735	3986	4534	3915	2813	4770	4512	4287
6	3727	3324	3472	2469	3592	3975	4458	3866	2824	4432	4482	3863
7	3266	3414	3468	2782	4255	3975	5711	3690	3053	4077	4234	4194
8	3439	3435	3354	2281	4530	4336	5218	3295	2200	4795	4504	4174
9	3375	3901	3152	3140	4368	4397	5779	3869	2253	5050	4358	4113
10	4073	3359	3706	3295	3703	4083	5770	3979	2834	4843	3952	3705
11	3995	3444	3185	3426	3675	4704	4939	4269	3003	4541	3799	4148
12	3499	3361	3185	3162	3641	4832	5414	3713	2939	4887	3601	4413
13	3642	3535	3355	3442	3729	3898	5152	4042	2728	4484	3879	4172
14	3398	3863	3487	3458	3902	5382	4655	4525	2927	4028	4547	4334
15	3431	3200	3542	2295	3282	5158	4638	4150	3902	3567	3999	4232
16	3447	3345	3565	3580	4276	5024	4228	3710	3644	4471	4113	4396
17	3663	3852	3499	3396	4218	5503	4650	3795	4416	4100	4500	4042
18	3809	3302	3431	3475	3378	4940	4756	3683	4213	4339	4001	4262
19	3532	3557	3525	3311	3722	4377	4378	3789	4601	4805	4258	4376
20	3583	3448	3507	3640	3742	4228	3756	3824	4829	4519	4214	4078
21	3571	3345	3511	3638	3819	4701	4315	3798	5339	4678	3884	4377
22	3560	3735	3728	3507	3671	3899	3450	3446	4864	4538	4053	4034
23	3475	3711	3484	3909	4649	4093	3740	3933	4021	4811	4351	4266
24	3385	3623	3517	3504	4296	3571	3694	3819	4554	4579	4125	4330
25	3545	3340	3661	3475	4021	4233	4219	4019	4468	4435	4393	3912
26	3610	3894	3535	3404	4717	4842	3924	3547	4748	4460	4204	4329
27	3579	3620	3616	3931	4154	4181	3728	3828	4778	4347	3626	3794
28	3670	3693	3271	3740	5182	4078	3523	3886	4867	4100	4212	4218
29	3512		3315	3675	4596	4727	3655	4186	4883	4112	3929	3841
30	3512		3449	3714	4821	4289	3933	3662	4468	4048	4377	3938
31	3582		3604		4625		3899	3785		4006		4081
Total	109,379	98,032	107,994	96,627	126,112	132,682	139,623	119,777	113,968	139,556	125,963	128,590
Minimum	3,184	3,013	3,152	2,281	3,282	3,571	3,450	3,295	2,200	3,567	3,601	3,705
Maximum	4,073	3,901	3,728	3,931	5,182	5,503	5,779	4,525	5,339	5,446	4,642	4,413
Average	3,528	3,501	3,484	3,221	4,068	4,423	4,504	3,864	3,799	4,502	4,199	4,148

APPENDIX C
AYLMER DAILY INSTANTANEOUS PEAK FLOW - 2018

Date	January L/s	February L/s	March L/s	April L/s	May L/s	June L/s	July L/s	August L/s	September L/s	October L/s	November L/s	December L/s
1	196	145	152	148	139	137	150	143	142	143	133	133
2	153	142	143	139	142	138	158	139	143	138	156	133
3	187	146	146	138	144	137	154	138	141	140	133	134
4	183	140	154	141	142	140	155	145	141	143	133	134
5	159	140	152	138	141	139	157	144	145	149	132	134
6	154	150	142	137	139	137	156	139	147	141	133	134
7	174	139	142	142	141	142	162	142	154	141	133	134
8	143	141	145	137	143	141	154	148	149	139	134	133
9	149	142	164	144	153	135	158	142	148	140	134	133
10	143	143	145	143	140	137	150	154	146	140	147	132
11	159	145	140	139	140	137	144	141	142	144	141	131
12	154	150	143	139	138	134	144	149	144	143	136	132
13	148	141	139	164	140	135	142	148	150	142	133	133
14	153	183	138	137	156	140	144	141	142	142	137	131
15	144	136	143	141	137	140	146	145	143	133	133	132
16	146	140	140	138	145	146	142	153	139	147	134	131
17	148	138	140	142	140	136	148	147	140	142	132	133
18	151	140	141	166	135	140	151	138	146	138	132	131
19	153	138	138	138	139	137	143	139	147	138	139	133
20	146	137	151	140	143	137	140	142	148	140	133	133
21	143	141	141	137	158	142	144	150	151	146	139	132
22	146	139	143	136	150	151	140	153	147	152	136	132
23	141	158	136	137	157	141	148	149	144	140	138	132
24	146	145	138	140	157	160	146	170	147	139	137	133
25	165	141	142	146	146	158	143	152	140	139	133	132
26	143	142	140	142	146	153	141	154	141	139	133	131
27	151	143	138	155	157	147	145	158	141	139	132	132
28	142	142	143	136	147	147	148	149	151	142	132	130
29	142		138	140	145	152	152	154	142	143	132	131
30	149		139	146	145	150	140	144	143	143	135	132
31	144		140		137		136	143		133		131
Minimum	141	136	136	136	135	134	136	138	139	133	132	130
Maximum	196	183	164	166	158	160	162	170	154	152	156	196
Average	153	144	143	142	145	142	148	147	145	141	136	143



Drinking-Water System Number:	260004722
Drinking-Water System Name:	Elgin Middlesex Pumping Station – Aylmer Area Secondary Water Supply System
Drinking-Water System Owner:	Aylmer Area Secondary Water Supply System Joint Board of Management c/o Township of Malahide
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2018 through December 31, 2018

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes No

Is your annual report available to the public at no charge on a web site on the Internet? Yes No

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Township of Malahide Office
87 John Street South
Aylmer, ON
N5H 2C3
www.malahide.ca

Elgin Area Primary Water Supply System
Treatment Plant
43665 Dexter Line, Union, ON

Complete for all other Categories.

Number of Designated Facilities served:

N/A

Did you provide a copy of your annual report to all Designated Facilities you serve? Yes No

Number of Interested Authorities you report to:

N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes No

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

Systems that receive their drinking water directly from the Aylmer EMPS:

Drinking Water System Name	Drinking Water System Number
Aylmer Area Secondary Water Supply System	260004722

Systems that receive their drinking water indirectly from the Aylmer EMPS:

Drinking Water System Name	Drinking Water System Number
Municipality of Central Elgin	260004761
Malahide Distribution System	260004774
Aylmer Distribution System	260002136



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

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
 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 Elgin Middlesex Pumping Station (EMPS) receives water from the Elgin Area Primary Water Supply System, which is located to the east of Port Stanley. Through various secondary water supply systems, the EMPS serves the Cities of London, St. Thomas, Town of Aylmer, and Municipalities of Central Elgin, Malahide and Southwold.

The EMPS is a shared facility encompassing a twin celled reservoir with a total capacity of 54,600m³. Booster pumps are dedicated to directing water to the City of London, St. Thomas Secondary and/or Aylmer Secondary Water Supply Systems. A gas chlorine system is utilized to provide re-chlorination for water being directed to the St. Thomas and Aylmer Area Secondary Supply Systems. The facility also houses a 600kW standby diesel generator that provides emergency power to pump water into the St. Thomas and Aylmer systems during a power interruption.

Three pipelines exit the EMPS: one pipeline exits to the South, to Highway 3 and then runs in an Easterly direction to service the municipalities on the Aylmer Area Secondary System; the second pipeline exits to the south of the EMPS property and extends west to service the St. Thomas Area Secondary System; the third pipeline runs North along Highbury Avenue, servicing the City of London distribution system.

List all water treatment chemicals used over this reporting period

Gas Chlorine

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

- Pump #2 replacement
- London & Aylmer interconnect valve actuator SCADA control



- Chlorinator System repairs
- Installed arc flash labels on MCC panels
- Installed Chlorine leak beacons and horns

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
N/A	N/A	N/A	N/A	N/A	N/A

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

	Number of Samples	Range of E.Coli Results (CFU/100 mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100 mL) (min #)-(max #)	Number of Heterotrophic Plate Count (HPC) Samples	Range of HPC Results (CFU/1 mL) (min #)-(max #)
Distribution	53	(0) – (0)	(0) – (0)	53	(<10)-(10)

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

Parameter	Number of Grab Samples (Continuous Monitoring)	Min	Max	Avg
Free Chlorine Residual (mg/L)	8760	0.53	3.28	1.07

Note: The free chlorine residual spiked on occasion during 2018. Each spike corresponded with a pump start-up. None of the spikes lasted longer than 5 minutes after pump start-up.

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
THM (NOTE: result value is based on one sample)	January 16, 2018	12	µg/L	NO
	April 5, 2018	13	µg/L	
	July 24, 2018	26	µg/L	
	October 16, 2018	24	µg/L	
THM Running Annual Average (RAA)	2018	21	µg/L	NO



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

HAA (NOTE: result value is based on one sample)	January 16, 2018 April 5, 2018 July 24, 2018 October 16, 2018	ND 7.3 21.4 9.8	$\mu\text{g/L}$ $\mu\text{g/L}$ $\mu\text{g/L}$ $\mu\text{g/L}$	NO
HAA Running Annual Average (RAA)	2018	9.6	$\mu\text{g/L}$	NO

ND = Non-detect

APPENDIX E 2018 EMPS Treatment	
Month	Total Chlorine Gas Usage - Kg
January	170.5
February	156.9
March	146.8
April	127.8
May	151.9
June	155.9
July	217.5
August	177.9
September	171.0
October	174.7
November	190.2
December	169.7
Yearly Total	2010.8

Please note: Aylmer and St.Thomas combined cl2 usage