Elgin Area
Primary Water Supply System

2016 COMPLIANCE REPORT

CONTACT INFO:

Owner:
Elgin Area Primary Water Supply System Board of Management
c/o City of London, Regional Water Supply Division
235 North Centre Road, Suite 200, London, ON N5X 4E7
519-930-3505

Operating Authority:
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PROFILE

WHO WE ARE

The Elgin Area Primary Water Supply System Board of Management owns and governs the drinking water system. The Board of Management is made up of members appointed from each of the seven member municipalities that are currently supplied with water from the Elgin Area Primary Water Supply System (EAPWSS). One of these member municipalities, the City of London, acts as the Administering Municipality. Accordingly, the City of London provides all associated administrative and management services on behalf of the Board. The Board of Management currently utilizes the services of an independent contracted Operating Authority.

The water system is operated and maintained by Ontario Clean Water Agency (OCWA) under contract to the Joint Board of Management.

OPERATING AUTHORITY: ONTARIO CLEAN WATER AGENCY / AGENCE ONTARIENNE DES EAUX

Elgin Area
Primary Water Supply System

EAPWSS Board Member Municipalities

City of London *(administering municipality)*
Town of Aylmer
Municipality of Bayham
Municipality of Central Elgin
Township of Malahide
City of St. Thomas
Township of Southwold

WHAT WE DO

Water Treatment & Supply

The Elgin Area Primary Water Supply System is responsible for the treatment and transmission of drinking water to seven (7) municipalities in southwestern Ontario. The population served by this system is approximately 130,000. Water is provided bulk wholesale to the municipalities who then distribute it to their customers.

The Elgin Area Water Treatment Plant (WTP) employs pre-chlorination, screening, powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, UV disinfection, post-chlorination, fluoridation and pH adjustment using both carbon dioxide and sodium hydroxide to treat raw water obtained from Lake Erie. After the water is treated it is pumped from the WTP to various communities or to the terminal storage reservoirs. The drinking water system is monitored at various locations throughout the system via a Supervisory Control and Data Acquisition (SCADA) system**.**

Elgin Area Primary Water Supply System: Assets

1 low lift pumping station
1 water treatment plant
2 surge facilities
1 in-ground storage reservoir (consists of 2 reservoir cells)
29.4 km of watermain (twinned 14.7 km pipelines)

Figure 1: Low Lift Pumping Station located on Lake Erie

WHAT'S IMPORTANT

Values of the Water System

The values of the Elgin Area Primary Water Supply System are the inherent beliefs or moral standards that generally reflect what the Elgin Area Primary Water Supply System Board of Management stands for and believes in:

- **Sustainable** - be financially, environmentally, socially, and physically sustainable;
- **Inclusive** - provide access to bulk drinking water for current and prospective members, in accordance with Board policy;
- **Fair and equitable** - balance the interests of individual members with the best interests of all members, as well as the needs of existing members with the needs of new members;
- **Vigilant** - ensure an adequate supply of safe and reasonably priced drinking water is available to members;
- **Innovative** - be receptive to and supportive of new ideas and opportunities for improvement;
- **Cooperative** – be supportive to the needs of the Elgin Area Primary Water Supply System;
- **Open and transparent –** conduct business in a manner that enables member municipalities and the public to review and provide input into major decisions as appropriate;
- **Public Ownership –** retain ownership of the water system in public hands.

ELGIN AREA PRIMARY WATER SUPPLY SYSTEM: AT A GLANCE

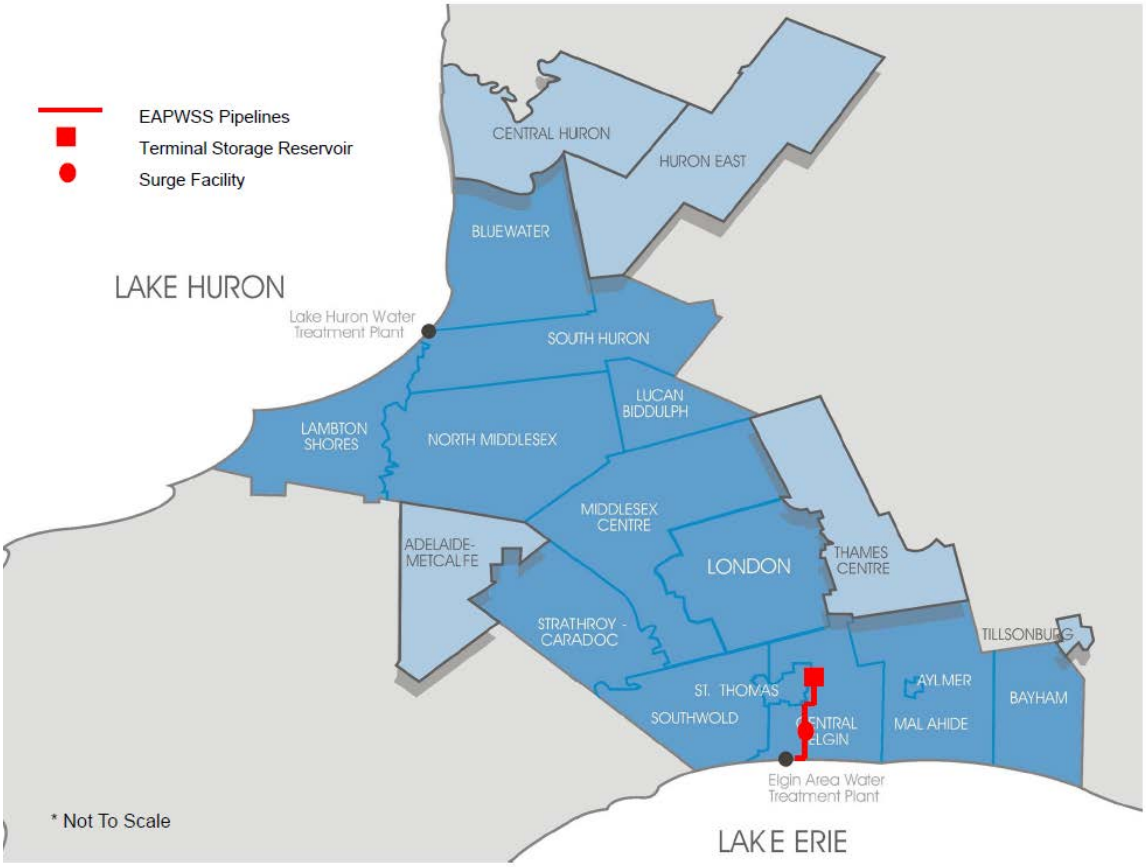

Figure 2: Elgin Area Primary Water Supply System Major Infrastructure Locations

THE WATER TREATMENT PROCESS

The following figure provides a general overview of the conventional water treatment process. The processes outlined below are very similar to the treatment at the Elgin Area Water Treatment Plant, although they are not an exact representation. Some details may vary.

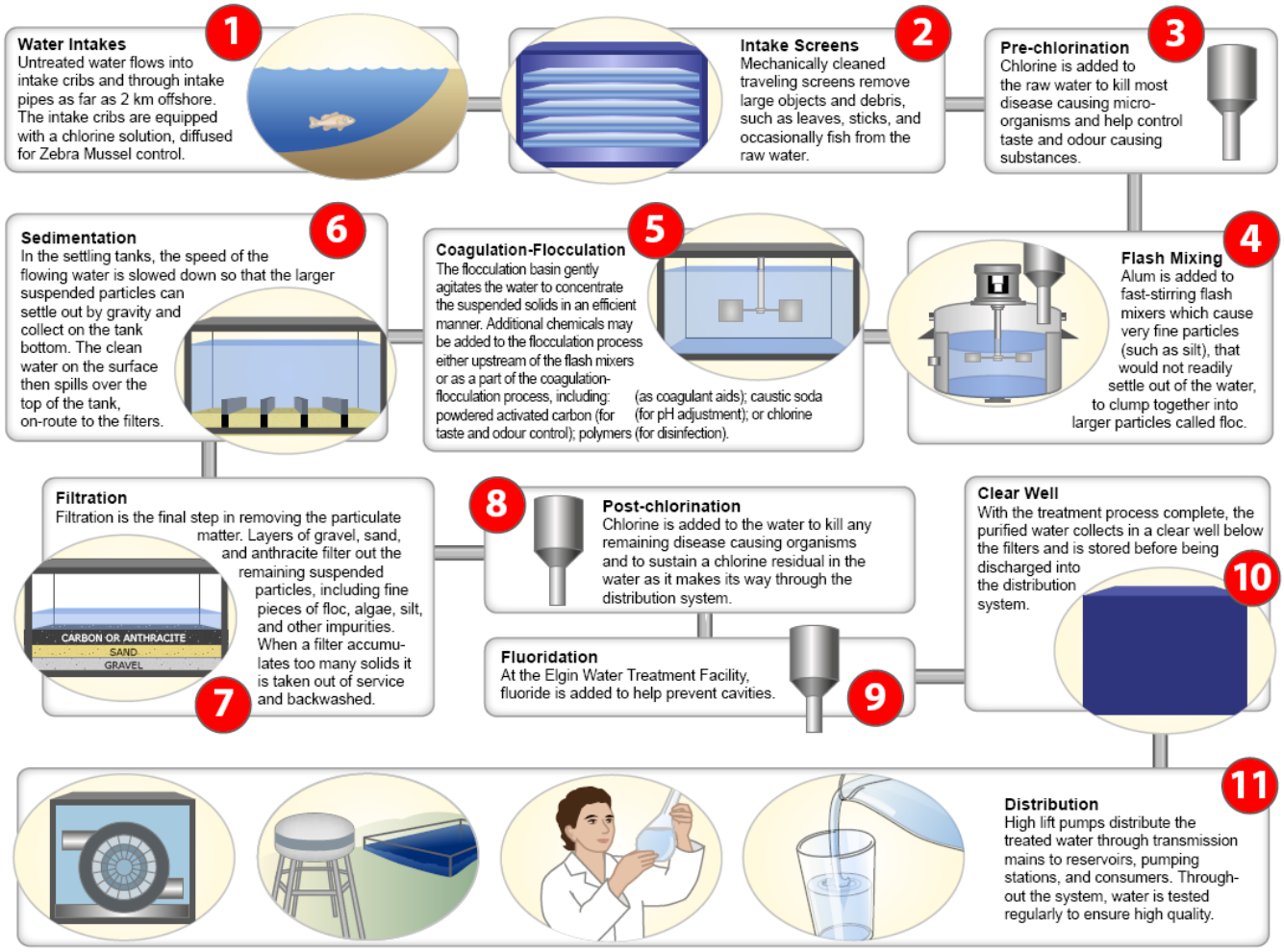

Figure 3: General Overview of the Water Treatment Process

At the Elgin Area Water Treatment Plant, several additional treatment steps take place:

- Carbon dioxide is injected prior to the flash mixing (Step 4) to lower the raw water pH in order to improve the treatment process effectiveness and efficiency.
- A UV reactor is located after each filter (Step 7) for additional disinfection when required.
- Sodium Hydroxide is added as the treated water leaves the water treatment plant and enters the transmission system (Step 11) to raise the treated water pH, resulting in reduced corrosion potential.

2016 HIGHLIGHTS

ALGAL TOXINS MONITORING PROGRAM

In recent years, Lake Erie has experienced severe blue-green algal (cyanobacteria) blooms. Algal blooms can create challenges for the water treatment plant by producing unpleasant taste and odours, interfering with treatment plant performance, and producing cyanotoxins which can impact human health.

The United States National Oceanic and Atmospheric Administration (NOAA) has indicated that the 2016 cyanobacteria bloom in Lake Erie was mild compared to the previous few years. Because of the relatively mild bloom, the areas of scum in Lake Erie were fewer, less dense and less toxic than in 2014 and 2015. As a result, the EAPWSS did not experience any major impacts to the water treatment plant or water quality due to the 2016 bloom.

Through the Ministry of the Environment and Climate Change (MOECC) Drinking Water Surveillance Program (DWSP), in 2016 the EAPWSS continued participation in an algal toxins monitoring program. The purpose of the research study was to monitor algal toxins to determine the levels of microcystins and Anatoxin-a in drinking water. Participation in the study took place for a six month period, June through November. A total of 25 samples of both raw and treated water were submitted to the MOECC laboratory for analysis. Of these samples, there were two detectable results for microcystins (total) in the raw water, which were trace at the detection limit of 0.15 µg/L. There were no detectable results in the treated drinking water.

For operational purposes, the EAPWSS also took an additional weekly microcystin-LR sample from July through the end of October. A total of 21 raw water samples were tested for microcystin-LR. Of these samples there was only one detectable result in the raw water, the value detected being 0.14 µg/L.

ASSET MANAGEMENT PLAN

The Asset Management Plan (AMP) update for the EAPWSS was awarded on December 3, 2015 to CH2M. The AMP progressed to the next tier of asset management through the incorporation of the customer level of service framework, risk mitigation framework, condition assessment and evaluation, as well as the Master Water Plan which was finalized in September 2015. The update provided accurate valuation of the assets for the Financial Plan update being undertaken concurrently, such that appropriate funding of maintenance and repair activities is in place, infrastructure life is maximized and additional costs of premature replacement are avoided. The update moved beyond the strategic level of asset management such that assets may be assessed at a tactical level.

The updated Asset Management Plan for the EAPWSS was finalized and endorsed at the October 6, 2016 Board Meeting. The final AMP report is available online.

FINANCIAL PLAN

The Financial Plan update for the EAPWSS was awarded on December 3, 2015 to Watson & Associates Economists Ltd. The project reviewed the pressures and challenges currently facing the water system and the solutions implemented through the previous 2007 Strategic Financial Plan. It updated all facets of the previous financial plan and considered tools to meet the challenges facing the Board based on the financial components in place and the findings and recommendations of studies completed or underway.

The update to the Financial Plan was undertaken to ensure that funds are available to meet required needs of the regional water system in a timely and planned way well into the future. It reviewed the policies, directions, and specific actions that are designed to be inclusive, fair, and equitable and renewed them to address current and anticipated pressures and opportunities facing the Board as detailed in recent and ongoing studies.

The update assists the Board in continuing to accomplish a number of key goals including continuing to move toward full lifecycle replacement funding structure and ensuring the ability to replace infrastructure at the end of its useful life. It also ensures compliance with Provincial legislation and continues to place the Board in very strong and robust financial position.

The updated Financial Plan confirms that the Board continues to move to appropriate funding of maintenance and repair activities, ensuring that infrastructure life is maximized and avoid the additional costs of premature replacement. It also considered the status of the reserve funds to ensure that they continue to remain strong in order to stabilize rates and minimize use of debt by accessing the Board reserves.

The updated Financial Plan for the EAPWSS was finalized and endorsed at the October 6, 2016 Board Meeting. The Financial Plan is available online.

2016 CAPITAL PROJECT HIGHLIGHTS

RESIDUALS MANAGEMENT FACILITY (RMF)

When the Elgin Area Water Treatment Plant was originally constructed in the mid 1960's by the Province of Ontario (via the Ontario Water Resources Commission), provision of a Residuals Management Facility (RMF) to treat the waste by-products from the treatment process was not required. At that time, it was typical practice to discharge the waste from sedimentation basins and the filter backwash processes of conventional water treatment plants back to the source water. With increased concern over environmental impacts, pollution, and general due diligence, the introduction of new environmental standards and regulations are now in place to prevent such practices from occurring with newly constructed water treatment facilities.

The need to install a RMF to address the treatment of residuals materials created during the water treatment processes was essential in order to meet the current legislated requirements for discharges to receiving water bodies. The lack of residuals management in concert with the practice of allowing residual materials to be discharged directly back to Lake Erie made the Elgin Area Water Treatment Plant non-compliant with existing environmental regulations. It is noted that the plant was operating under a Municipal Drinking Water Licence, and previously a Certificate of Approval, which allowed for this operating practice. The construction of an RMF for the Elgin Area Water Treatment Plant was required to improve the quality of process waste water returned to Lake Erie.

The detailed design for the RMF was completed by AECOM in 2012 - 2013. In October 2013, the project tender was awarded to Hayman Construction Inc. Construction began in January 2014 and the project was granted substantial completion in December 2016. On January 9, 2017 the operating authority began operating the new RMF under an initial three month operating "transition period".

Work completed on the RMF in 2016 included:

- Start-ups and integration of RMF components such as sludge pumps, polymer dosing systems, thickeners, centrifuges and truck loading systems;
- Development and testing of the RMF's Supervisory Control and Data Acquisition (SCADA) system;
- Facility wide testing and full commissioning of the RMF.

This project was included as one component of the HELP Clean Water initiative and has received grant funding from senior levels of government.

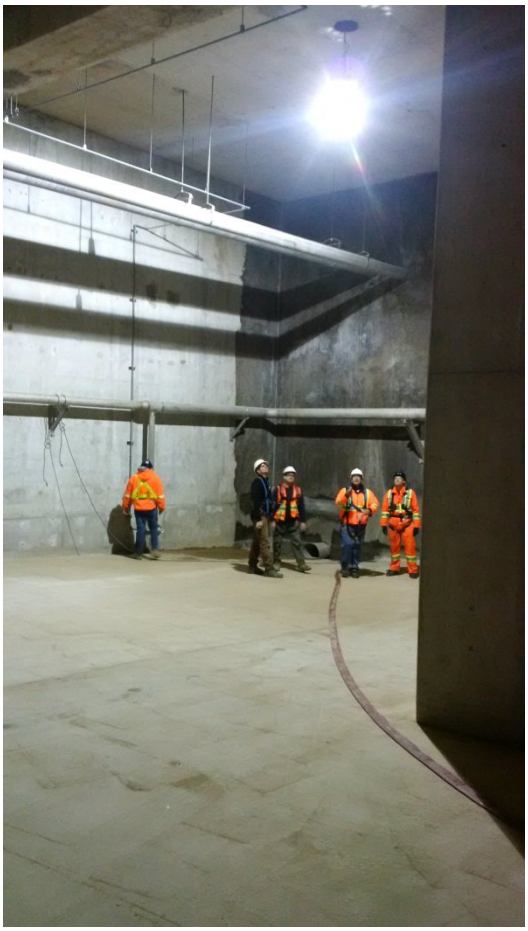

Figure 4a: February 2016 - Inspection of the backwash equalization tank.

Figure 4b: Residuals Management Facility – southwest elevation.

Figure 4c: Residuals Management Facility – northeast elevation.

Figure 4d: Centrifuge Room

Figure 4e: Pipe Gallery

STORAGE BUILDING

In June 2016 the EAPWSS Board of Management accepted a design-build proposal from Aveiro Constructors Limited for a Water Treatment Plant storage building. The new storage building replaces a small Quonset hut that was previously used for storage but removed as part of the RMF construction as the Quonset hut location was where the RMF building is now situated.

The new storage building incorporates both heated and unheated areas. In the unheated area, equipment and materials that are currently located at numerous locations will be consolidated and stored. In the heated area temperature sensitive equipment can be stored, and maintenance and repair activities can be undertaken. The storage building will also house various mobile equipment, including the system's off-road tracked vehicle used for pipeline and chamber inspections and maintenance activities.

The storage building was substantially completed in early 2017.

Figure 5: Exterior of the new storage building.

CARBON PUMPS

The Powder Activated Carbon (PAC) system was modernized in 2016. The work included replacement of four (4) 1995 vintage diaphragm feed pumps. The system was modernized with two (2) peristaltic type pumps able to feed through the complete plant design production range and provide improved dosage control. Included in the project was replacement of piping and flushing systems, cleanup of redundant control systems within the control panel and replacement of two (2) suction air actuated valves with electric actuated valves to reduce overall energy costs by moving away from compressed air operated equipment.

Figure 6: New carbon pumps

CHLORINE EMERGENCY ACTUATED VALVES

The four (4) chlorine tonners were fitted with emergency electric actuated operators that in the event of a chlorine gas leak detection the units will automatically close the tonner isolation valves. The installation of this system was completed as a risk mitigation measure to reduce potential negative impacts to the environment and public. The system includes four (4) control panels, backup power supply and integration to the plant SCADA system for control and monitoring purposes.


Figure 7: Chlorine tonners with emergency actuated valves

FILTER REPLACEMENTS

In December 2012, Filter #4 suffered a catastrophic failure of the media block and channels, and was subsequently replaced using a new stainless steel underdrain system. The replacement of Filter #4 was undertaken on an emergency basis. During the emergency repair, it was noticed that similar evidence of pending failure were observed for the remaining filters. In late 2014 a project was initiated to subsequently replace the three remaining original filters.

Construction began December 2015 with the removal of media and underdrains in Filter #3. At this stage it was noted that additional remediation would be required, with the concrete filter box structure requiring additional repairs and waterproofing. This additional work was required for all filters. Upon completion of the additional work on Filter #3, the new underdrains were installed and successfully tested. Work on Filter #2 began in April 2016 and was completed in May 2016. Work on Filter #1 began in May 2016 and was completed in June 2016.

The work on Filters #1, #2 and #3 included:

- Replacement of the existing filter underdrains and media to match the design of Filter #4,
- Removal of the existing bituminous coating and repair of any concrete cracking or spalling;
- Application of a waterproofing coating to the walls and floor;
- Modification of surface wash piping;
- Air scour system upgrades, including addition of new air scour supply connections from the existing header to Filters #1, #2 and #3.
- Various programming and instrumentation upgrades.

As previously noted, Filter #4 was replaced prior to this capital project as a result of its catastrophic failure in 2012. Due to the emergency scope of work at that time, Filter #4 concrete remediation and waterproofing was not undertaken as part of the previous emergency replacement, but was incorporated into this project. As a result, in July 2016 the media and underdrains in Filter #4 were removed and stored on-site while the concrete repairs were completed.

Concurrently to the underdrains and media being installed in all filters, new actuators were installed on the backwash pump control valve and a new air/surge relief valve was installed downstream of the backwash pumps to prevent damage to the new underdrains.

The project was substantially complete as of October 21, 2016 and minor deficiencies are currently being addressed.

This project was included as one component of the HELP Clean Water initiative and has received grant funding from senior levels of government.

Figure 8a: Removal of the previously existing filter media (sand and anthracite), exposing the old clay tile underdrains.

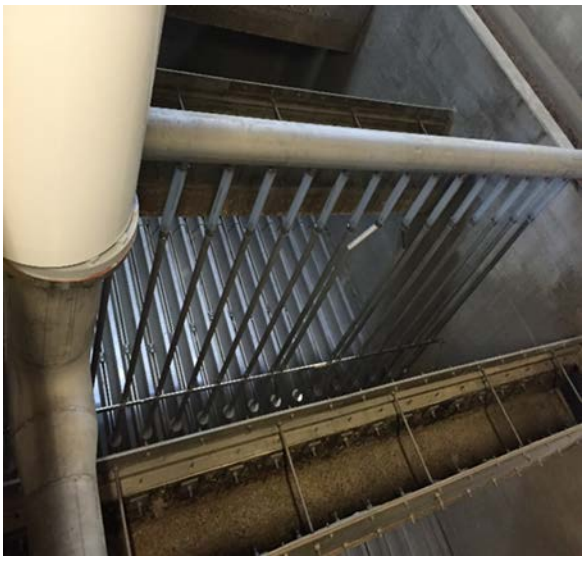

Figure 8b: Filter at the completion of the new stainless steel underdrain installation, prior to the filter media placement.

2016 FLOW SUMMARY

As per the water system's current Permit To Take Water (PTTW), the amount of raw water taken into the Elgin Area Water Treatment Plant cannot exceed 91.0 million litres/day or 63,194 litres/minute. This converts to 1053L/s.

The water taking in 2016 was approved under PTTW #6283-8QZM3N.

As per the water system's Municipal Drinking Water Licence (MDWL), the rated capacity of the Water Treatment Plant is 91.0 million litres/day. The maximum daily volume of treated water that flows from the treatment plant into the distribution system shall not exceed this value.

The following table contains a flow summary, with comparison to the system's rated capacity and permit limits in order to assess the capability of the system to meet existing and planned uses.

	Total Daily Flow (ML/day)	**Total Daily Flow (% of Capacity)**	**Daily Instantaneous Peak Flow (L/s)**
Permit To Take Water (PTTW) – permitted amount of raw water taking	91.0	100.00%	1053
Raw Water Flow – Average Day	45.359	49.85%	724
Raw Water Flow – Max. Day	68.219	74.97%	1187
Water Treatment Plant Rated Capacity	91.0	100.00%	1053
Treated Water Flow – Average Day	42.945	47.19%	725
Treated Water Flow – Max. Day	57.605	63.30%	1100

A complete flow summary for the Elgin Area Primary Water Supply System can be found in Appendix A.

Raw water instantaneous peak flow rates exceeded the requirements of the PTTW on one (1) occasion in 2016:

Date	**Raw Water Instantaneous Flow Rate**	**Reason**
August 25, 2016	1187 L/s	Maintenance – sedimentation basin cleaning

Treated water instantaneous peak flow rates exceeded the requirements of the MDWL on one (1) occasion in 2016, as listed in the table below.

Date	Treated Water Instantaneous Flow Rate	Reason
May 31, 2016	1100 L/s	Exceedance occurred when performing maintenance of high lift pumps.

The majority of the volume of treated drinking water from the EAPWSS is used by the City of London. As shown in Figure 9, London takes approximately 55.9% of the volume, with the other six municipalities using the remaining 44.1%.

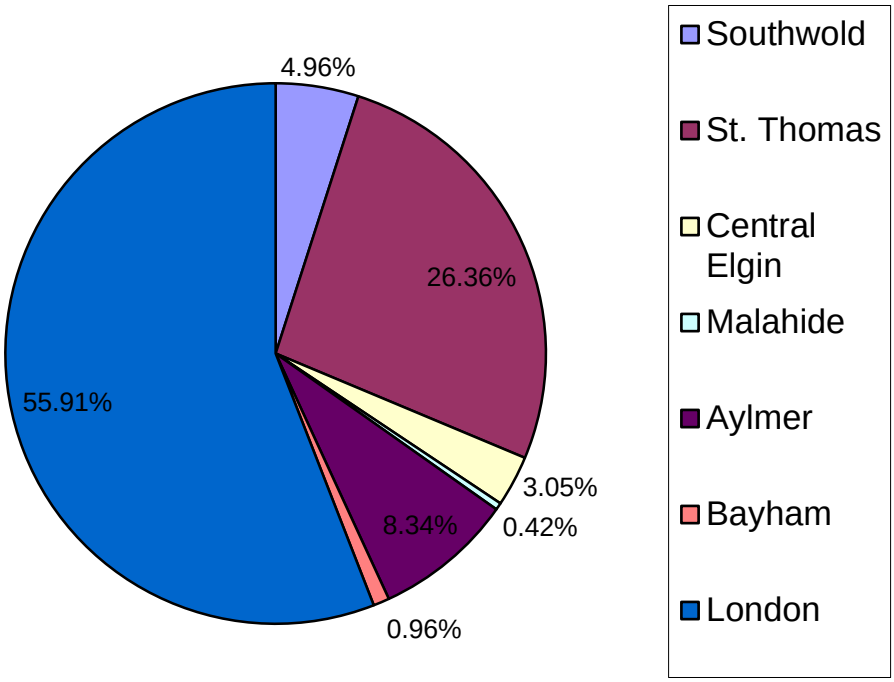

Figure 9: 2016 Treated Water Volume per Municipality

2016 CHEMICAL CONSUMPTION

A variety of water treatment chemicals are used at the Elgin Area Water Treatment Plant to ensure safe, clean drinking water. The following table outlines the chemicals most frequently used for the Elgin Area Primary Water Supply System. As part of the system's registered ISO14001 Environmental Management System, objectives and targets are currently in place to optimize chemical usage.

Chemical	Purpose	Total amount used in 2016
Aluminum sulphate	Coagulant	611,992 kg
Polymer	Coagulant	290 kg
Powdered activated carbon	Taste and odour control (seasonally)	14,220 kg
Chlorine gas	Primary disinfection	32,714 kg
Chlorine gas	Zebra mussel control at the intake crib	2,473 kg
Fluoride	Prevention of dental cavities	8,401 kg
Carbon Dioxide	pH adjustment - injected at the start of the treatment process to lower the raw water pH for improved treatment effectiveness and efficiency	167,634 kg
Sodium Hydroxide	pH adjustment – injected at the end of the treatment process to raise the treated water pH for reduced corrosion potential	265,100 L

2016 WATER QUALITY SUMMARY

WATER QUALITY SAMPLING AND MONITORING

The Elgin Area Primary Water Supply System (EAPWSS) consistently provides treated drinking water with water quality above the standards required by provincial regulation. Where desirable, the EAPWSS standards are more stringent than what is required by regulation. For example, the target at the Elgin Area Water Treatment Plant for treated water turbidity (a measure of the cloudiness of water) is 10 times more stringent than the provincial standard. The EAPWSS is practicing continual improvement to ensure that high drinking water standards are maintained and enhanced where possible.

All water quality sampling at the Elgin Area Primary Water Supply System (EAPWSS) is performed in accordance with the *Safe Drinking Water Act* and its associated regulations. All samples are collected by licensed operating authority personnel and are submitted to Canadian Association for Laboratory Accreditation (CALA)/ Standards Council of Canada (SCC) accredited laboratories for both bacterial and chemical analysis.

In 2016, a total of 517 microbiological samples were collected from raw, treated and distribution system water, and were tested for E Coli, total coliforms and heterotrophic plate count (HPC). There were no incidents of adverse microbiological test results in 2016. For more information please see the Annual Report, which is attached as Appendix B.

Annual samples are collected and tested for inorganics (metals) and organics which include herbicides, pesticides and volatile organic parameters. Quarterly sampling is also conducted for trihalomethanes, haloacetic acids, (disinfection by-products), nitrates and nitrite.

In addition, the water treatment plant operator samples the raw, in-process and treated water six times per day and carries out a battery of physical and chemical tests for operational control.

As required by regulation, the EAPWSS also prepares an Annual Report which includes a summary of water quality test results and a maintenance report. The Annual Report can be found in Appendix B.

RESEARCH & PARTNERSHIPS

The Elgin Area Primary Water Supply System acknowledges the importance of scientific research on water quality and the effects on human health. The EAPWSS has partnered with the Natural Sciences and Engineering Research Council (NSERC) Chair in Drinking Water Research at the University of Waterloo and University of Toronto to pursue research opportunities, as well as University of Western Ontario and is a member of the Water Research Foundation (WRF). In addition, the EAPWSS continues to evaluate and conduct specific research on the efficacy of the existing treatment processes, optimizing and improving treatment systems, and evaluating the potential and need of more advanced treatment alternatives. The EAPWSS also participates in the Ministry of the Environment's Drinking Water Surveillance Program (DWSP) and intake monitoring studies.

MINISTRY OF THE ENVIRONMENT AND CLIMATE CHANGE INSPECTION

ANNUAL INSPECTION

The Ontario Ministry of the Environment and Climate Change (MOECC) conducts an inspection of the Elgin Area Primary Water Supply System annually. A MOECC inspection took place in June 2016. The final inspection report was issued on July 26, 2016. A total of zero (0) non-compliance was identified in the inspection report. The final inspection rating received for the 2016-2017 reporting year was 100.00%.

Elgin Area
Primary Water Supply System

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APPENDIX A – 2016 FLOW SUMMARY

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1. RAW WATER INTAKE – FLOW (m^3/DAY)

MONTH DAY	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	47,397	52,750	43,049	46,338	40,270	46,559	45,925	44,921	40,541	48,233	43,947	52,836	
2	48,660	47,559	51,399	39,903	44,285	47,128	44,866	45,951	49,417	41,075	42,407	42,111	
3	48,612	42,981	48,402	47,839	46,691	50,652	52,339	47,430	49,234	46,875	42,075	46,464	
4	48,720	42,049	39,761	43,963	44,759	59,798	55,495	51,195	41,817	43,315	42,945	50,884	
5	48,949	49,573	51,296	41,877	22,234	48,114	45,620	51,386	48,873	51,984	47,745	34,724	
6	41,945	37,510	44,866	42,913	43,543	43,499	40,032	53,724	42,824	39,130	45,549	28,845	
7	45,168	48,504	48,824	41,476	50,228	28,016	57,918	44,520	48,697	51,729	47,625	36,364	
8	53,570	46,653	39,312	42,813	38,161	46,603	54,294	50,544	53,360	40,657	45,189	37,007	
9	47,155	38,992	46,100	48,637	45,359	48,090	46,178	45,933	42,873	48,167	47,789	46,204	
10	47,676	52,301	45,876	45,945	45,109	52,107	40,666	60,318	49,974	44,860	42,925	45,481	
11	34,685	39,825	39,705	39,338	42,184	51,293	48,977	35,813	41,046	50,604	42,517	44,424	
12	47,141	39,259	53,582	49,973	44,658	49,913	55,224	53,080	45,935	45,046	48,958	43,492	
13	48,536	55,743	43,178	28,696	45,494	46,734	33,864	44,145	48,943	45,510	48,392	25,732	
14	28,928	45,013	46,918	52,610	46,185	32,354	42,628	47,061	47,756	46,376	46,935	51,006	
15	45,975	42,184	46,880	42,085	37,096	27,691	45,280	39,146	33,053	46,129	50,008	25,865	
16	45,935	49,473	42,974	39,446	51,349	47,095	48,805	31,861	47,368	42,768	47,486	47,093	
17	46,236	47,257	44,819	48,467	42,988	48,131	51,237	45,138	47,312	50,814	45,450	44,759	
18	56,421	40,579	42,649	50,172	46,143	48,075	49,696	47,761	46,904	40,496	41,434	41,466	
19	34,056	48,160	48,520	44,582	54,477	48,808	27,363	47,384	49,872	48,632	49,393	28,943	
20	52,478	49,343	43,887	33,409	39,421	52,575	51,353	45,349	35,836	44,892	47,911	39,176	
21	47,985	43,253	53,075	42,241	47,357	54,576	48,066	48,770	49,486	21,263	44,912	46,864	
22	39,857	42,807	40,722	46,199	48,925	29,868	46,968	46,565	40,157	45,294	43,330	37,196	
23	39,246	47,535	50,003	47,417	51,416	47,061	55,458	48,292	49,447	38,593	51,627	47,273	
24	49,968	45,365	44,917	45,218	45,547	57,802	48,241	44,552	46,803	51,805	30,665	41,477	
25	50,437	47,032	45,407	49,115	44,576	55,590	32,029	51,062	45,039	39,128	43,748	39,416	
26	42,299	47,603	43,301	48,280	45,631	53,937	55,249	51,854	50,371	24,578	58,213	41,626	
27	48,437	45,686	45,439	46,964	36,390	50,750	31,824	40,717	44,755	44,324	45,707	39,281	
28	49,097	47,444	42,888	49,117	57,462	39,178	52,790	43,940	48,210	45,538	48,095	36,499	
29	39,452	52,060	48,048	44,663	53,534	52,959	52,987	51,293	40,108	45,132	40,158	36,892	
30	50,874		49,723	47,392	41,631	68,219	50,301	37,279	47,855	41,285	51,851	38,758	
31	43,768		31,477		49,549		46,676	45,534		49,202		45,843	
Total	1,419,663	1,334,493	1,406,997	1,337,088	1,392,652	1,433,175	1,458,349	1,442,518	1,373,866	1,363,434	1,374,986	1,264,001	16,601,222
Minimum	28,928	37,510	31,477	28,696	22,234	27,691	27,363	31,861	33,053	21,263	30,665	25,732	21,263
Maximum	56,421	55,743	53,582	52,610	57,462	68,219	57,918	60,318	53,360	51,984	58,213	52,836	68,219
Average	45,796	46,017	45,387	44,570	44,924	47,773	47,044	46,533	45,796	43,982	45,833	40,774	45,359

Note: (i) Elgin Area Primary Water Supply System Permit To Take Water #6283-8QZM3N permits the taking of 91MLD.

APPENDIX A – 2016 FLOW SUMMARY

2. RAW WATER INSTANTANEOUS PEAK FLOW (L/s)

MONTH / DAY	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	582	692	779	698	651	703	810	695	696	558	802	687	
2	564	770	696	699	717	768	752	701	696	799	773	884	
3	563	693	693	694	567	772	745	701	696	783	963	552	
4	693	792	737	380	666	792	754	699	808	805	976	684	
5	694	765	693	720	813	570	702	805	696	694	800	1,033	
6	582	560	771	569	682	622	702	762	809	803	689	894	
7	701	561	619	698	703	608	898	699	804	692	803	768	
8	693	561	693	698	703	701	897	755	716	796	782	796	
9	755	561	805	697	714	771	638	773	801	557	689	793	
10	562	796	694	754	703	901	802	898	851	803	689	794	
11	672	795	774	767	708	703	809	700	809	691	793	744	
12	698	560	770	699	704	702	771	702	809	800	688	794	
13	562	692	694	736	772	702	702	786	695	802	688	785	
14	690	793	694	701	707	702	700	773	697	804	714	676	
15	692	691	993	701	627	693	700	739	805	689	797	789	
16	692	692	698	763	704	701	710	769	771	804	687	740	
17	692	793	778	731	705	774	700	787	752	800	796	790	
18	692	560	774	702	754	567	565	769	667	802	795	790	
19	795	695	562	671	705	703	699	807	801	777	690	741	
20	692	694	756	687	703	761	700	698	805	798	553	794	
21	691	692	754	701	704	704	699	562	808	780	1,027	912	
22	787	691	711	699	704	702	698	776	806	799	793	810	
23	559	559	779	693	754	704	701	696	806	774	793	118	
24	691	687	594	805	800	701	701	695	805	690	781	782	
25	691	797	695	751	788	702	703	1,187	796	800	679	784	
26	646	694	695	704	848	705	772	807	694	689	835	775	
27	694	707	696	690	701	774	810	767	750	627	685	627	
28	692	561	731	733	703	702	810	808	558	799	794	681	
29	690	695	609	692	702	702	700	697	691	686	593	582	
30	692		696	664	738	810	699	722	558	797	684	661	
31	669		563		703		699	795		798		553	
Minimum	559	559	562	380	567	567	565	562	558	557	553	118	118
Maximum	795	797	993	805	848	901	898	1,187	851	805	1,027	1,033	1,187
Average	670	683	716	697	715	714	734	759	748	751	761	736	724

Note: (i) Elgin Area Primary Water Supply System Permit To Take Water #6283-8QZM3N permits the taking of 63,194 L/min. This converts to 1053 L/s.

APPENDIX A – 2016 FLOW SUMMARY

3. TREATED WATER FLOW (m^3/DAY)

MONTH / DAY	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	44,876	48,594	38,486	43,598	37,845	44,567	50,249	44,541	37,622	44,540	43,449	52,205	
2	47,278	42,341	47,663	36,440	41,485	44,433	44,677	44,455	48,464	38,435	40,220	41,285	
3	43,541	36,909	45,422	47,635	44,325	49,473	47,574	45,178	49,191	44,213	42,387	43,607	
4	46,335	34,353	35,392	38,850	44,119	57,472	52,506	49,723	39,401	42,190	41,857	46,745	
5	44,777	46,013	47,959	38,884	19,866	45,845	42,610	47,595	45,781	50,020	45,719	33,653	
6	39,509	34,493	42,373	42,220	40,634	37,552	37,528	51,990	42,691	37,460	43,325	30,801	
7	41,184	47,017	46,623	38,531	49,619	27,922	53,890	44,423	44,408	50,105	45,903	31,324	
8	51,786	44,419	36,636	38,696	35,113	44,535	52,619	50,129	50,981	40,815	43,872	35,756	
9	42,332	39,243	38,493	46,963	41,697	43,090	43,939	40,314	42,027	46,701	47,066	44,833	
10	45,098	47,757	43,812	43,675	42,767	49,755	38,149	57,605	48,702	40,159	40,276	41,986	
11	31,590	38,723	33,760	35,757	41,323	49,821	47,577	34,687	40,139	50,277	40,175	43,516	
12	42,376	35,388	51,342	48,197	40,465	46,381	52,484	50,794	43,663	43,828	46,354	40,885	
13	46,419	52,960	41,905	28,062	42,208	43,846	25,495	44,138	46,650	43,261	45,619	25,156	
14	26,394	45,704	39,120	48,118	45,160	31,516	41,174	45,959	44,772	45,725	46,077	47,279	
15	41,221	38,206	42,284	39,872	35,834	23,153	45,591	36,562	32,314	44,947	46,910	24,655	
16	44,506	45,329	37,516	39,550	47,413	46,895	46,546	31,656	46,401	39,941	45,089	46,045	
17	41,416	47,046	41,997	44,679	41,776	43,846	49,552	39,621	44,953	49,603	44,246	41,760	
18	53,114	38,262	39,745	47,046	42,356	46,703	47,284	46,093	44,167	40,588	39,521	38,316	
19	31,962	45,865	48,161	44,132	51,913	48,477	23,412	45,421	47,218	46,798	47,947	27,738	
20	48,537	44,539	40,595	29,588	38,465	44,549	49,644	43,400	34,808	42,883	45,612	37,479	
21	46,374	43,548	49,607	40,271	38,324	49,577	48,547	45,674	46,902	20,691	40,617	42,778	
22	35,515	39,500	38,949	43,514	51,210	28,571	44,025	42,685	39,701	44,894	42,149	37,563	
23	36,186	42,817	46,608	45,244	49,677	41,720	52,334	45,406	48,649	36,726	49,629	45,973	
24	48,078	45,070	42,089	43,212	41,203	53,424	48,439	42,910	44,991	48,655	29,827	37,797	
25	44,830	42,729	43,801	49,115	44,261	53,735	31,254	42,948	42,948	39,844	40,820	38,919	
26	40,247	43,939	42,652	41,734	43,492	52,166	51,137	50,017	51,199	25,012	55,439	40,376	
27	45,036	43,320	41,131	38,336	34,172	48,286	30,671	41,691	42,535	39,402	42,699	36,920	
28	45,044	45,560	41,921	49,038	56,369	37,190	49,187	41,950	46,225	44,351	45,177	33,491	
29	37,605	43,994	45,589	37,913	51,639	49,908	52,306	47,048	39,047	43,099	39,800	35,026	
30	47,540		46,893	45,774	40,277	57,104	49,033	34,558	47,968	39,349	47,254	36,604	
31	38,841		30,330		46,048		47,117	44,302		47,047		44,401	
Total	1,319,547	1,243,635	1,308,849	1,254,642	1,321,055	1,341,512	1,396,551	1,373,467	1,324,518	1,311,558	1,315,035	1,204,870	15,715,239
Minimum	26,394	34,353	30,330	28,062	19,866	23,153	23,412	31,656	32,314	20,691	29,827	24,655	19,866
Maximum	53,114	52,960	51,342	49,115	56,369	57,472	53,890	57,605	51,199	50,277	55,439	52,205	57,605
Average	42,566	42,884	42,221	41,821	42,615	44,717	45,050	44,305	44,151	42,308	43,834	38,867	42,945

Note: (i) As per the water system's current Municipal Drinking Water Licence, the rated capacity of the Water Treatment Plant is 91.0 million litres/day

APPENDIX A – 2016 FLOW SUMMARY

4. TREATED WATER INSTANTANEOUS PEAK FLOW (L/s)

MONTH DAY	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	825	925	848	614	694	887	852	643	744	692	598	813	
2	601	975	704	660	701	855	834	613	725	684	905	748	
3	600	596	839	561	565	838	742	845	639	549	784	630	
4	638	600	848	841	557	870	865	701	725	770	853	697	
5	632	801	814	746	884	554	808	764	594	735	703	857	
6	597	818	557	570	847	602	752	748	709	851	636	977	
7	1,024	615	826	597	588	599	728	818	721	733	883	776	
8	625	660	721	698	894	707	854	871	714	894	756	707	
9	711	611	703	715	871	848	740	862	855	549	552	710	
10	689	712	705	649	731	824	701	904	831	665	549	853	
11	823	637	731	556	603	718	850	934	699	741	762	771	
12	780	633	834	840	635	608	737	727	831	886	568	678	
13	628	705	763	745	648	750	740	686	720	788	611	708	
14	602	560	720	631	604	731	753	758	763	826	734	867	
15	723	633	769	634	829	872	750	769	894	605	742	743	
16	630	719	709	872	616	694	704	699	740	819	744	716	
17	716	558	754	729	695	685	641	873	604	619	784	759	
18	708	709	718	612	876	723	563	750	837	740	717	756	
19	796	613	729	632	592	627	640	844	762	724	607	559	
20	606	714	708	722	866	695	619	547	714	705	746	724	
21	712	693	696	732	824	747	923	586	722	861	639	860	
22	644	725	752	799	715	702	715	542	750	637	745	723	
23	654	611	836	593	877	721	848	736	855	591	746	543	
24	834	748	731	556	620	701	875	745	567	556	613	629	
25	869	668	657	864	853	872	947	867	598	640	725	746	
26	810	837	738	748	853	854	912	914	687	590	714	682	
27	634	665	702	670	724	844	893	737	808	661	622	663	
28	647	559	709	890	864	741	883	592	544	633	823	724	
29	739	748	636	686	750	850	931	541	610	707	565	608	
30	750		619	674	597	926	592	670	606	650	719	653	
31	659		641		1,100		746	762		688		612	
Minimum	597	558	557	556	557	554	563	541	544	549	549	543	541
Maximum	1,024	975	848	890	1,100	926	947	934	894	894	905	977	1,100
Average	707	691	733	695	744	755	779	743	719	703	705	726	725

(i) As per the water system's current Municipal Drinking Water Licence, the rated capacity of the Water Treatment Plant is 1053 litres/second.

APPENDIX B – 2016 ANNUAL REPORT

Drinking-Water System Number:	210000871
Drinking-Water System Name:	**Elgin Area Primary Water Supply System**
Drinking-Water System Owner:	Elgin Area Primary Water Supply System Joint Board of Management
Drinking-Water System Operating Authority:	Ontario Clean Water Agency (OCWA)
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2016 through December 31, 2016

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

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

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

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

Lake Huron and Elgin Area Water Supply Systems
c/o Regional Water Supply Division
235 North Centre Road, Suite 200
London, ON N5X 4E7
http://www.watersupply.london.ca

Elgin Area Water 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 EAPWSS:

Drinking Water System Name	Drinking Water System Number
City of London Distribution System	260004917
St. Thomas Area Secondary Water Supply System	260078897
Aylmer Area Secondary Water Supply System	260004722
Port Burwell Secondary Water Supply System	260004735
Municipality of Central Elgin	260004761
St. Thomas Distribution System	260002187

Systems that receive their drinking water indirectly from the EAPWSS:

Drinking Water System Name	Drinking Water System Number
Aylmer Distribution System	260002136
Malahide Distribution System	260004774
Dutton/Dunwich Distribution System	220002967
Municipality of Bayham	260004748
Southwold Distribution System	210001362
Ontario Police College Distribution System	260002161
St. Thomas Psychiatric Hospital Distribution Supply	260005255

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 [X] No [ ]

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
[ ] Public access/notice via a Public Library
[X] Public access/notice via other method ____News Release

Describe your Drinking-Water System

The Elgin Area Primary Water Supply System employs pre-chlorination, screening, process pH adjustment (utilizing carbon dioxide), powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, UV disinfection, post-chlorination, final pH adjustment (utilizing sodium hydroxide) and fluoridation to treat raw water obtained from Lake Erie. The WTP has a rated capacity of 91 ML/day (MLD). Water is pumped from the plant through two 750 mm and 900mm diameter water mains to various communities en route to the Elgin-Middlesex terminal reservoir located northeast of St. Thomas in the Municipality of Central Elgin. The drinking water system is monitored at various locations throughout the system via a Supervisory Control and Data Acquisition (SCADA) system.

List all water treatment chemicals used over this reporting period

Carbon Dioxide
Aluminum Sulphate
Cationic Polymer
Powder Activated Carbon
Chlorine Gas
Hydrofluosilicic Acid
Sodium Hydroxide

Were any significant expenses incurred to?

[X] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

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

Capital Projects:

- PAC system upgrades – new pumps and piping
- Filter rebuild project
- Replaced low lift valves #2 and #3
- Instrumentation replacement
- Installed chlorine tonner actuators (emergency shutoff)
- SCADA network communications
- SCADA security upgrades
- Residuals management facility
- Storage building
- Concrete crack injection
- Drain pipe replacements
- Flash mixer replacements
- Low lift and high lift tie breaker decommissioning
- Cell 1 level meter
- Settled water level meter

Maintenance Projects:

- Remedial work high lift pump #4
- Removed valve house control panel
- Increased low lift UPS battery capacity
- Replaced packing and lantern rings on high lift pumps #2, #3 and #4
- Replaced security cameras
- Installed new chlorinator controller
- Installed flushing valve on P042B main isolation valve
- Replaced fluoride pumps #1 and #2
- Replaced sodium hydroxide hot water tank
- Replaced surge tank safety relief valves
- Installed 5kv marker posts from plant to low lift
- Replaced compressor pump #3 and #4 in surge facility
- Security exterior lighting improvements
- Alum tank life cycle condition inspection

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 Report Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
NA	NA	NA	NA	NA	NA

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 (counts/100 mL) (min #)-(max #)	Range of Total Coliform Results (counts/100 mL) (min #)-(max #)	Range of HPC Results (counts/1 mL) (min #)-(max #)
Raw Water	103	(<10)-(200)	(0)-(50,000)	(<10)-(>2,000)
Treated Water (WTP)	258	(0)-(0)	(0)-(0)	(0)-(490)
Distribution (EMPS Valve House & Fruitridge Surge Facility)	156	(0)-(0)	(0)-(0)	(0)-(20)

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	Range of Results (min #)-(max #)
Treated Water Free Chlorine (mg/L)	Continuous Monitoring	(0.50)-(2.15)
	2025	(0.81)-(1.80)
Treated Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(2.00)
	2019	(0.016)-(0.477)
Treated Water Fluoride (mg/L)	Continuous Monitoring	(0.17)-(2.00)
	672	(0.28)-(0.80)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.008)-(2.000)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.010)-(0.880)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.003)-(0.704)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.006)-(1.213)
Combined Filtered Water Turbidity (NTU)	2024	(0.007)-(0.138)

NOTE:
Turbidity spikes above 1.00 NTU on filtered and treated water coincide with instrument calibrations, instrument flushing, pump start-ups, or maintenance. Filter effluent turbidity spikes did not exceed fifteen minutes on any of the filters.

Summary of Inorganic parameters tested during this reporting period

*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	January 5, 2016 August 30, 2016	0.11 0.31	µg/L µg/L	NO
Arsenic	January 5, 2016 August 30, 2016	Not Detected 0.3	µg/L µg/L	NO
Barium	January 5, 2016 August 30, 2016	21.8 24.7	µg/L µg/L	NO
Boron	January 5, 2016 August 30, 2016	23.9 18.0	µg/L µg/L	NO
Cadmium	January 5, 2016 August 30, 2016	0.009 0.012	µg/L µg/L	NO
Chromium	January 5, 2016 August 30, 2016	0.04 0.44	µg/L µg/L	NO
Lead *(EMPS Valve House)*	January 5, 2016 August 30, 2016	Not Detected 0.03	µg/L µg/L	NO
Mercury	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Selenium	January 5, 2016 August 30, 2016	0.14 0.20	µg/L µg/L	NO
Sodium	January 5, 2016	15.5	mg/L	NO
Uranium	January 5, 2016 August 30, 2016	0.027 0.051	µg/L µg/L	NO
Nitrite	January 18, 2016 April 5, 2016 July 5, 2016 October 11, 2016	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
Nitrate	January 18, 2016 April 5, 2016 July 5, 2016 October 11, 2016	0.303 0.218 0.116 0.096	mg/L mg/L mg/L mg/L	NO

Summary of Organic parameters sampled during this reporting period

*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Atrazine + N-dealkylated metobolites	January 5, 2016 August 30, 2016	0.11 0.05	µg/L µg/L	NO
Azinphos-methyl	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Benzene	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO

Benzo(a)pyrene	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Bromoxynil	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Carbaryl	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Carbofuran	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Carbon Tetrachloride	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Chlorpyrifos	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Diazinon	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Dicamba	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
1,2-Dichlorobenzene	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
1,4-Dichlorobenzene	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
1,2-Dichloroethane	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Dichloromethane	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
2-4 Dichlorophenol	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Diclofop-methyl	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Dimethoate	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Diquat	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Diuron	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Glyphosate	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Haloacetic Acids (HAA's) *(EMPS Valve House)*	January 5, 2016 April 5, 2016 July 5, 2016 October 11, 2016	Not Detected Not Detected Not Detected Not Detected	µg/L µg/L µg/L µg/L	NO
Malathion	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO

2-Methyl-4-chlorophenoxyacetic acid	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Metolachlor	January 5, 2016 August 30, 2016	0.02 Not Detected	µg/L µg/L	NO
Metribuzin	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Monochlorobenzene	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Paraquat	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Pentachlorophenol	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Phorate	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Picloram	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Polychlorinated Biphenyls (PCB)	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Prometryne	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Simazine	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Total Trihalomethanes (THMs) *(EMPS Valve House)*	January 5, 2016 April 5, 2016 July 5, 2016 October 11, 2016	9.2 11.0 15.0 17.0	µg/L µg/L µg/L µg/L	NO
Total Trihalomethanes (THMs) *(EMPS Valve House)* **Running Annual Average**	2016	13.1	µg/L	NO
Terbufos	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Tetrachloroethylene	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
2,3,4,6-Tetrachlorophenol	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Triallate	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Trichloroethylene	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
2,4,6-Trichlorophenol	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Trifluralin	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO
Vinyl Chloride	January 5, 2016 August 30, 2016	Not Detected Not Detected	µg/L µg/L	NO

NOTE: *During 2016, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.*