



CITY OF ELLIOT LAKE WATER TREATMENT PLANT 2019 ANNUAL REPORT

Drinking-Water System Number:	220002789
Drinking-Water System Name:	Elliot Lake Water Treatment Plant
Drinking-Water System Owner:	Corporation of the City of Elliot Lake
Drinking-Water System Category:	Water Treatment Subsystem Class 2
Period being reported:	January 01, 2019 - December 31, 2019

<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 [<input checked="" type="checkbox"/>] No []</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"/>] 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; margin-top: 10px;"> <p>The summary report is available at City Hall, the Water Treatment Plant, and is posted on the City's website at: http://cityofelliottlake.com/en/cityhall/operationsreports.asp</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" 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 style="width: 100px; height: 20px;" 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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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	

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 [] 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 City of Elliot Lake Water Treatment Plant is classified as a Class 2 plant. It is a direct filtration plant.

Water is drawn from the lake through an intake structure, located in approximately 12.2 m (40 ft) of water and is gravity fed through a 295 m long marine pipeline to the low lift pumping station wet well. The water is then pumped to the main facility at 200 Spine Road.

The raw water then passes through a raw water flow meter and into reactor/mixing tanks. At this point Polyaluminum Chloride (PAC) is added to the process to aid in the production of floc (particulate matter of sufficient size to be removed by the filters).

The water then continues into the hydraulic spiral flow flocculation tanks and afterwards passes through three rectangular filters with dual media (anthracite/sand). The filtered water is collected in an underdrain system and enters a 2,300 m³ Clearwell (storage reservoir) on site.

Chlorine is added to the treated water as it leaves the filters to achieve required disinfection.

Fluoride is also added at this point. Fluoride does not play a role in the treatment process, but rather acts as an agent in the prevention of tooth decay in young children.

High Lift pumps pump the now treated water from the Clearwell through a flow meter and into the distribution system. This treated water makes its way to consumers' homes, either directly or from the standpipe storage facilities.

Lime is added to the water as it leaves the plant to aid in the prevention of corrosion in the distribution system. The lime is also used for pH and alkalinity adjustment.



List all water treatment chemicals used over this reporting period

Chlorine, Polyaluminum Chloride (PAC), Lime, and Fluoride

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

Clearwell and Standpipe Inspections \$14,000
Valley and Hemlock water main relining \$800,000
Mandatory Training for Staff \$19,000

Repairing required equipment:

Low Lift pump motor refurbishment \$9500

Approximately \$4,000 was spent on maintaining existing infrastructure related to the drinking water system, such as fire hydrants and valves.

Approximately \$8,000 was spent on calibrating analyzers and flow meters.

\$10,000 went into maintaining the City's bi-annual water main flushing program.

Water main repair by a diving company \$30,000

Singer Valve for #4 high lift pump \$5668.00

Water Plant diesel load test \$4500

Backwash Rotork replacement \$8800

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	PARAMETER	RESULTS	UNIT OF MEASURE	CORRECTIVE ACTION	CORRECTIVE ACTION DATE
April-17-19	Sample Result - Microbiological	1 Total Coliform	CFU/100 mL	Re-sample Residence, sample upstream and downstream	April-23-19
May-06-19	Watermain Repair	Pressure Loss	PSI	Drinking Water Advisory – Flush and Two Sets of Samples	May-13-19
June-14-19	Watermain Repair	Pressure Loss	PSI	Drinking Water Advisory – Flush and Two Sets of Samples	June-25-19
June-18-19	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Aug-16-19
June-24-19	Hydrant Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	June-28-19
July-02-19	Water Isolated for Private Building Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	July-08-19
July-08-19	Installation of Two Hydrants	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	July-15-19
Aug-10-19	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Aug-16-19
Aug-23-19	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Aug-29-19
Sept-11-19	Watermain Installation	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Sept-16-19
Sept-26-19	Low Chlorine Residual	0.04	Mg/L	Boil Water Advisory – Flush and Two Sets of Samples	Nov-19-19
Oct-01-19	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Oct-07-19
Oct-03-19	Sample Result - Microbiological	2 Total Coliform	CFU/100 mL	Boil Water Advisory - Re-sample Residence, upstream and down	Oct-11-19
Oct-07-19	Watermain Installation	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of	Oct-12-19

				Samples	
Oct-21-19	Fluoride Analyzer Reading	Analyzer Reading 1.74	Mg/L	Handheld read 0.64 – Fluoride Shut Off	Ongoing
Oct-23-19	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Oct-31-19
Oct-28-19	Watermain Installation	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Nov-08-19
Oct-31-19	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Nov-08-19
Nov-29-19	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Dec-09-19
Dec-16-19	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory – Flush and Two Sets of Samples	Dec-20-19

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

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	0 - 6	0 - 40	N/A	N/A
Treated	52	N/D	N/D	52	N/D - 3
Distribution	297	N/D	0 - 2	119	N/D - 800

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

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity	8760	0.03 – 3.47	NTU
Chlorine	8760	0.95 – 2.09	mg/L
Fluoride	8760	0.02 – 1.92	mg/L

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

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
Municipal Drinking Water License 208-101 23 August 2011	Clarifier Overflow Suspended Solids	15-Jan-19	21	mg/L
		13-Feb-19	14	mg/L
		08-Mar-19	13	mg/L
		21-Apr-19	19	mg/L
		26-May-19	20	mg/L
		12-Jun-19	18	mg/L
		06-Jul-19	15	mg/L
		18-Aug-19	14	mg/L
		25-Sep-19	12	mg/L
		31-Oct-19	23	mg/L
		21-Nov-19	21	mg/L
05-Dec-19	21	mg/L		

The Annual Clarifier Overflow Suspended Solids Average For 2019 is 17.6 mg/L

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	28 January 2019	0.05	µg/L	no
Arsenic	28 January 2019	0.2	µg/L	no
Barium	28 January 2019	12.4	µg/L	no
Boron	28 January 2019	11	µg/L	no
Cadmium	28 January 2019	0.007	µg/L	no
Chromium	28 January 2019	0.12	µg/L	no
*Lead	not applicable for this reporting period			
Mercury	28 January 2019	0.01 <MDL	µg/L	no
Selenium	28 January 2019	0.04	µg/L	no
Sodium	not applicable for this reporting period			
Uranium	28 January 2019	0.095	µg/L	no
Fluoride	not applicable for this reporting period			
Nitrite	Annual Average	0.003 <MDL	mg/L	no
Nitrate	Annual Average	0.11	mg/L	no

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

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 Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Plumbing	not applicable for this reporting period			
Distribution	4	0.04 – 0.37	µg/L	None

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	28 January 2019	0.02 <MDL	µg/L	no
Altrazine	28 January 2019	0.01 <MDL	µg/L	no
Aldrin + Dieldrin	27 June 2018	0.01 < MDL	µg/L	no
Atrazine + N-dealkylatedmetabolites	28 January 2019	0.01 <MDL	µg/L	no
Azinphos-methyl	28 January 2019	0.05 <MDL	µg/L	no
Bendiocarb	27 June 2018	0.01 < MDL	µg/L	no
Benzene	28 January 2019	0.32 <MDL	µg/L	no
Benzo(a)pyrene	28 January 2019	0.004 <MDL	µg/L	no
Bromoxynil	28 January 2019	0.33 <MDL	µg/L	no
Carbaryl	28 January 2019	0.05 <MDL	µg/L	no
Carbofuran	28 January 2019	0.01 <MDL	µg/L	no
Carbon Tetrachloride	28 January 2019	0.16 <MDL	µg/L	no
Chlordane (Total)	27 June 2018	0.01 < MDL	µg/L	no
Chlorpyrifos	28 January 2019	0.02 <MDL	µg/L	no
Cyanazine	27 June 2018	0.03 < MDL	µg/L	no
Diazinon	28 January 2019	0.02 <MDL	µg/L	no
Dicamba	28 January 2019	0.20 <MDL	µg/L	no
1,2-Dichlorobenzene	28 January 2019	0.41 <MDL	µg/L	no
1,4-Dichlorobenzene	28 January 2019	0.36 <MDL	µg/L	no
Dichlorodiphenyltrichloroethane (DDT) + metabolites	27 June 2018	0.01 < MDL	µg/L	no
1,2-Dichloroethane	28 January 2019	0.35 <MDL	µg/L	no
1,1-Dichloroethylene (vinylidene chloride)	28 January 2019	0.33 <MDL	µg/L	no
Dichloromethane	28 January 2019	0.35 <MDL	µg/L	no
2-4 Dichlorophenol	28 January 2019	0.15 <MDL	µg/L	no
2,4-Dichlorophenoxy acetic acid (2,4-D)	28 January 2019	0.19 <MDL	µg/L	no
Diclofop-methyl	28 January 2019	0.40 <MDL	µg/L	no
Dimethoate	28 January 2019	0.06 <MDL	µg/L	no
Desethyl atrzine	28 January 2019	0.01 <MDL	µg/L	no
Diquat	28 January 2019	1 <MDL	µg/L	no
Diuron	28 January 2019	0.03 <MDL	µg/L	no
Glyphosate	28 January 2019	1 <MDL	µg/L	no
Heptachlor + Heptachlor Epoxide	27 June 2018	0.01 < MDL	µg/L	no
Lindane (Total)	27 June 2018	0.01 < MDL	µg/L	no
Malathion	28 January 2019	0.02 <MDL	µg/L	no
Methoxychlor	27 June 2018	0.01 < MDL	µg/L	no
Metolachlor	28 January 2019	0.01 <MDL	µg/L	no
Metribuzin	28 January 2019	0.02 <MDL	µg/L	no
Monochlorobenzene	28 January 2019	0.3 <MDL	µg/L	no

Paraquat	28 January 2019	1 <MDL	µg/L	no
Parathion	27 June 2018	0.02 < MDL	µg/L	no
Pentachlorophenol	28 January 2019	0.15 <MDL	µg/L	no
Phorate	28 January 2019	0.01 <MDL	µg/L	no
Picloram	28 January 2019	1 <MDL	µg/L	no
Polychlorinated Biphenyls (PCB)	28 January 2019	0.04 <MDL	µg/L	no
Prometryne	28 January 2019	0.03 <MDL	µg/L	no
Simazine	28 January 2019	0.01 <MDL	µg/L	no
THM (Annual Average)	2019	47.5	µg/L	no
MCPA	28 January 2019	0.00012 <MDL	µg/L	no
Temephos	27 June 2018	0.01 < MDL	µg/L	no
Terbufos	28 January 2019	0.01 <MDL	µg/L	no
Tetrachloroethylene	28 January 2019	0.35 <MDL	µg/L	no
2,3,4,6-Tetrachlorophenol	28 January 2019	0.20 <MDL	µg/L	no
Triallate	28 January 2019	0.01 <MDL	µg/L	no
Trichloroethylene	28 January 2019	0.44 <MDL	µg/L	no
2,4,6-Trichlorophenol	28 January 2019	0.25 <MDL	µg/L	no
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	27 June 2018	0.22 < MDL	µg/L	no
Trifluralin	28 January 2019	0.02 <MDL	µg/L	no
Vinyl Chloride	28 January 2019	0.17 <MDL	µg/L	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
Trihalomethanes	68	µg/L	28 October 2019