January 6, 2016

The Mayor and Members of Council
City of Elliot Lake
Municipal Office
45 Hillside Drive North
Elliot Lake, Ontario P5A 1X5

ATTENTION: Mayor and Member of Council

RE: ELLIOT LAKE WATER TREATMENT PLANT SUMMARY REPORT FOR MUNICIPALITIES: Municipal Large Residential

Your Worship Mayor Marchisella and Members of Council:

Please find attached, the 2015 Summary Report for the Elliot Lake Water Treatment Plant. This report has been prepared in accordance to the guidelines set out in Schedule 22 of the Safe Drinking Water Act, 2002 (Ontario Regulation 170/03).

The report covers the period from January 1, 2015 to December 31, 2015.

Please direct any questions or concerns to the undersigned.

Yours truly,

Sean McGhee
Director of Operations

Elliot Lake Water Treatment Plant
2015 Summary Report

The purpose of this report is to summarize water quality and quantity data pertaining to the Elliot Lake water treatment plant.

This report is prepared in accordance with Schedule 22 of Regulation 170/03 of Ontario's Safe Drinking Water Act and covers the reporting period from January 1, 2015 to December 31, 2015.

The report contains the following information:

- A summary of the quantities and flow rates of the water supplied including monthly average and maximum daily flows.

- A comparison of the peak flows and capacities to the rated capacities referenced in the drinking water works permit and municipal drinking water licence.

- A listing of all requirements of the Act, the Regulations, the systems Drinking Water Permit and Licence, and applicable system approvals that the system failed to meet during the period covered by the report. This includes any measures taken to mitigate the failure and the duration of the incident.

- Terms and conditions identified in the Act, relevant regulations, drinking water permit, and municipal drinking water licence.

Under the Regulation, this report must be provided to Members of Municipal Council not later than March 31st of each calendar year.

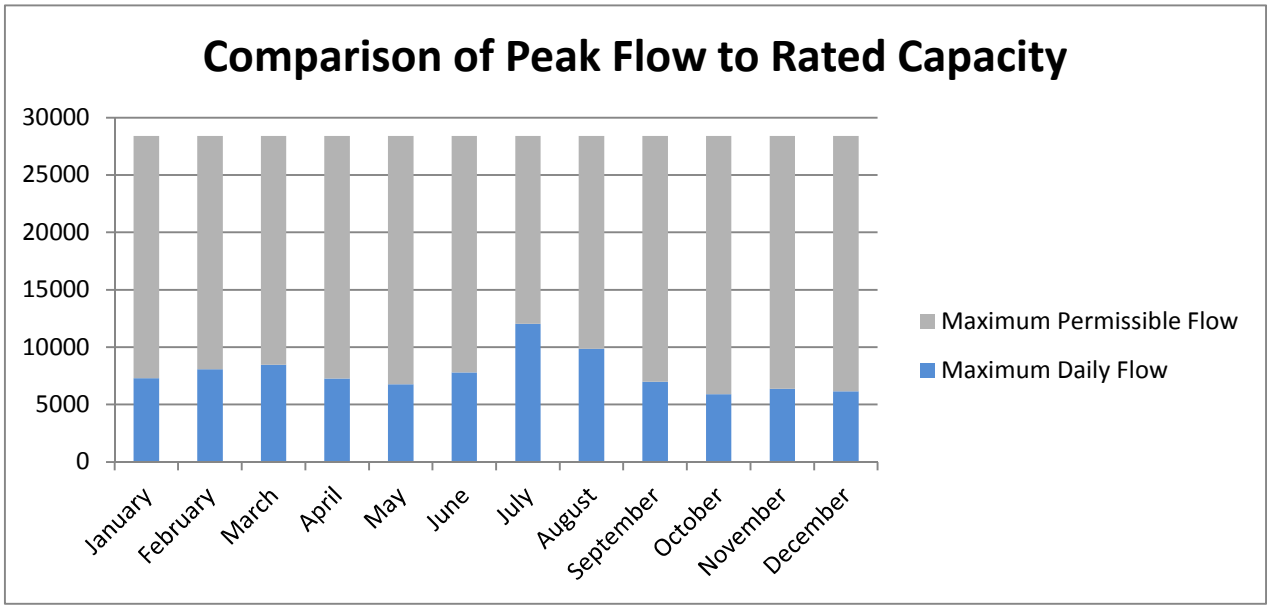
Upon approval of Council, the report is posted on the City of Elliot Lake website and can be found at the following link: *http://www.cityofelliotlake.com/en/cityhall/operationsreports.asp*

Annual Quantities and Flow Rates:

MONTH	Minimum Flow / Day (M^3)	Maximum Flow / Day (M^3)	Average Flow / Day (M^3)	Instantaneous Peak flow (l/s)	Total Flow (M^3)
January	4,284	7,308	5,898	157.2	192,390
February	4,965	8,068	6,305	156.7	185,110
March	4,640	8,476	6,641	167.3	216,633
April	4,587	7,259	5,761	157.8	182,763
May	2,849	6,765	5,167	154	168,942
June	3,587	7,793	5,397	239.5	170,656
July	3,828	12,041	7,415	184.5	241,332
August	3,877	9,871	6,997	151.9	211,987
September	3,884	6,999	5,325	156.1	167,927
October	3,806	5,891	5,018	146.3	164,149
November	4,067	6,375	4,992	165.5	158,151
December	3,103	6,159	5,038	158.4	164,764

Minimum	2,849	5,891	4,992	146.3	158,151
Maximum	4,965	12,041	7,415	239.5	241,332
Average	3,956	7,750	5,830	166.3	185,400
				Total Flow for 2015	**2,224,804**

As noted in the graph below, the maximum rated capacity of **28,400** m^3/day (as identified in the facility's Municipal Drinking Water Licence) was not exceeded for the period of this report.



Regulatory Inspection

The Ministry of the Environment carried out a facility inspection on June 9th, 2015. No orders were issued and no additional action was required. The final inspection rating for the system was 100.0%.

Compliance Report

Section 18 of the Safe Drinking Water Act requires the system operator to report adverse test results or conditions immediately after the result is obtained or situation identified.

A test result is considered adverse when the sample being tested fails to meet the prescribed drinking water standards. Limits for all parameters being tested under the Acts and Regulations are identified under the various Regulations associated with the Safe Drinking Water Act, 2002.

Adverse test results must be identified in the Summary Report.

Situations involving the depressurization of any portion of the distribution system for repair of a watermain can be deemed as an adverse event due to the potential for contamination through back siphonage or pressurized backflow. These incidents are included in the list of adverse events. They are indicated as evidence of best practice on the part of the Public Works Department.

There were 26 instances in 2015 where reports were made to the Health Unit and Spills Action Centre in accordance with Section 18 of the Safe Drinking Water Act.

Corrective Action:

In all cases when repair or maintenance carried out on the distribution system requires depressurization of any part of the system, the Algoma Health Unit is notified. This scenario is considered to be a “failure of mechanical containment”, which can potentially lead to contamination through back siphonage or pressurized backflow.

These situations are without exception, treated as an adverse incident by the Algoma Health Unit, and either a Boil Water Advisory or Drinking Water Advisory is issued in order to protect the consumer from potential risk. Boil Water Advisories are issued when the risk to the system is deemed to be bacteriological in nature, whereas a Drinking Water Advisory is issued in situations where the Health Unit is concerned with physical, chemical, or organic contamination.

Following the repair, flushing is undertaken to restore quality. Once completed, two consecutive sets of bacteriological tests are taken, at 24 hour intervals, after which, if all is clear, the advisory is lifted.

Adverse Water Quality Incidents:

INCIDENT DATE	PARAMETER	RESULTS	UNIT OF MEASURE	CORRECTIVE ACTION	CORRECTIVE ACTION DATE
8-Jan-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	19-Jan-15
15-Jan-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	26-Jan-15
28-Jan-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	2-Feb-15
29-Jan-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	6-Feb-15
02-Feb-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	12-Feb-15
10-Feb-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	17-Feb-15
11-Feb-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	20-Feb-15
17-Feb-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	27-Feb-15
10-Mar-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	15-Mar-15
29-Apr-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	5-May-15
13-May-15	Hydrant Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	19-May-15
20-May-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	25-May-15
25-May-15	Watermain Cleaning	Pressure Loss	PSI	Boil Water Advisory - flush - resample	5-Jun-15
08-Jun-15	Watermain Repair	Pressure Loss	PSI	Boil Water Advisory - flush - resample	15-Jun-15
17-Jul-15	Watermain Cleaning	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	10-Aug-15
23-Jul-15	Valve Repair	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	4-Aug-15
29-Jul-15	Watermain Repair	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	4-Aug-15
12-Aug-15	Low Cl_2 Residual	< 0.05	mg/l	Boil Water Advisory - flush - resample	31-Aug-15
20-Aug-15	System Upgrades	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	10-Sep-15
15-Oct-15	System Upgrades	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	26-Oct-15
26-Oct-15	Hydrant Repair	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	30-Oct-15
30-Oct-15	Watermain Repair	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	5-Nov-15
7-Dec-15	System Upgrades	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	15-Dec-15
9-Dec-15	System Upgrades	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	16-Dec-15
22-Dec-15	Watermain Repair	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	30-Dec-15
23-Dec-15	Watermain Repair	Pressure Loss	PSI	Boil Water / Drinking Water Advisory - flush - resample	4-Jan-16

Identified Terms and Conditions

Performance:

The Elliot Lake Water Treatment Plant meets the requirement of the Ontario "Drinking Water Standards." Disinfection of treated water is achieved as per Ministry Procedure B13-3. Required CT was continuously monitored and met at all times ensuring appropriate levels of disinfection were attained.

Backwash water discharge suspended solids were monitored with an average of **23 mg/l** which is below the required **25 mg/l** annual average.

Monitoring and Recording:

Flow meters, chlorine analyzers and turbidimeters are calibrated per manufacturer's specifications. Third party certification is secured on an annual basis as a quality assurance, quality control measure.

Operations and Maintenance:

Maintenance of the water treatment plant is conducted, monitored, documented, and controlled through a preventive maintenance program. All operators are certified with at least one operator certified at the designated level of the facility. All treatment chemicals meet A.W.W.A. (American Water Works Association) and ANSI / NSF 60 quality criteria for drinking water.

Process Parameters:

The following are the chemicals used and dosage rates:

- Polyaluminum Chloride - 25.87 mg/l
- Hydrofluorosilicic Acid – 0.458 mg/l
- Chlorine – 2.55 mg/l
- Hydrated Lime – 10.41 mg/l

Drinking Water Quality Management System

The Quality Management System (QMS) consists of an Operational Plan that defines and documents the various policies and procedures with respect to water quality management which were established to meet Province of Ontario standards as identified within the Safe Drinking Water Act.

The Management Review and Internal Audit were all completed in 2015 per the requirements outlined in the Operational Plan found in the Drinking Water Quality Management System.

Documentation:

Contingency plans, the Facility Operations Manual, Standard Operating Procedures and the Drinking Water Quality Management Standard documents which provide guidance in the event of emergencies, upset conditions and breakdowns are located in the office at the water treatment facility. Detailed drawings of the facility are centrally located in the Operational Control Room.