



**LANCASTER WATER TREATMENT
Annual Report 2018**

(as per O. Reg. 170/03 – Section 11)

and

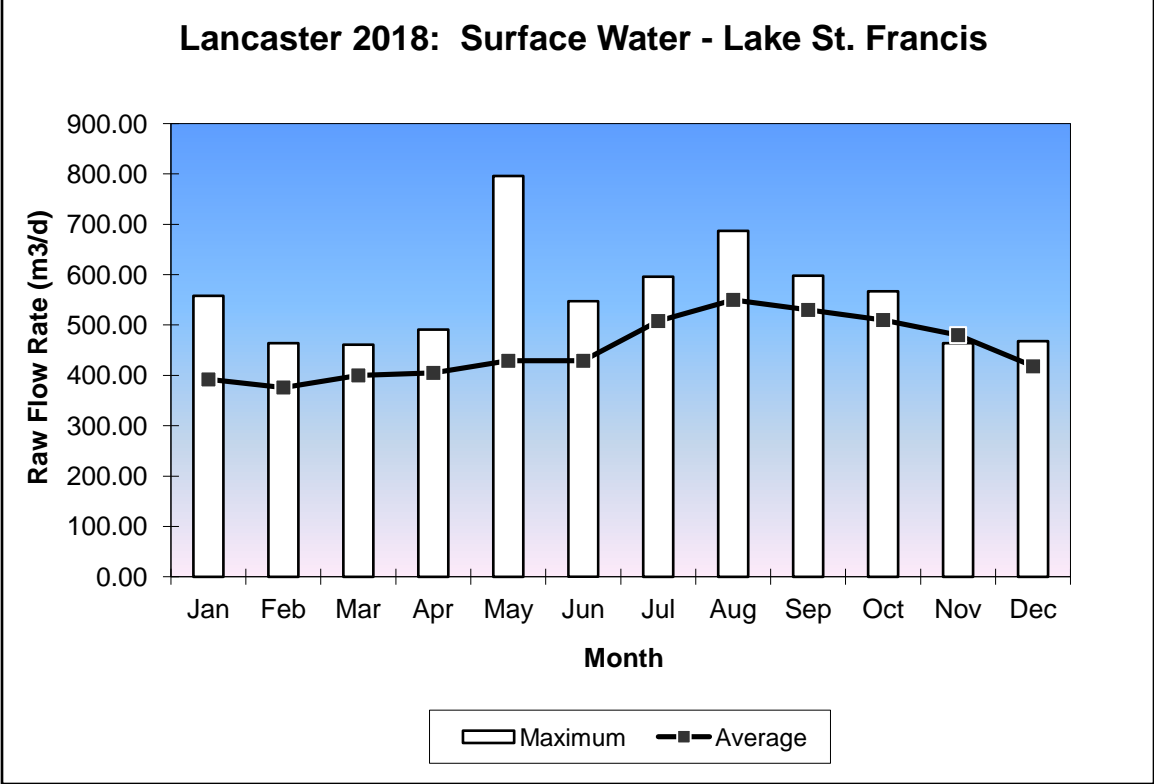
2018 Summary Report for Municipalities

(as per O. Reg. 170/03 – Schedule 22)

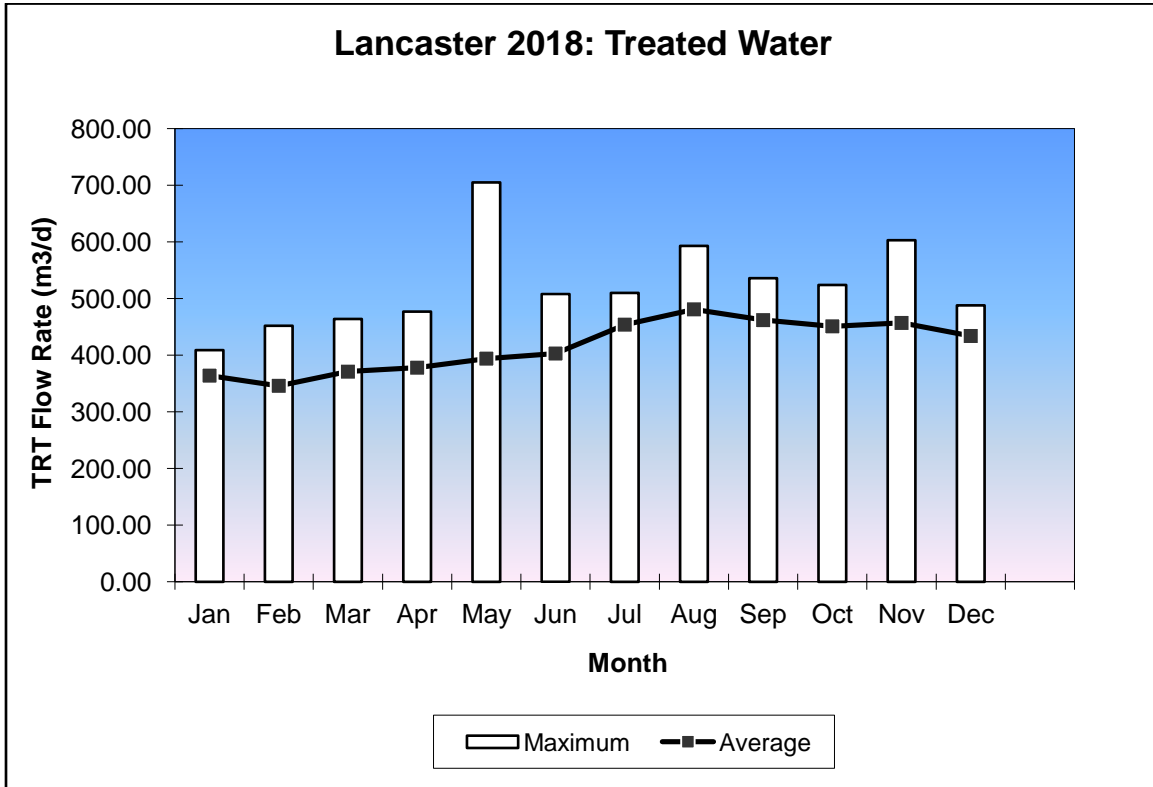
**Prepared by Shawn Killoran
Director of Water/Wastewater Operations**

Date Prepared/Submitted: February 12, 2019

**Comparison of
Daily Average and Maximum Raw Daily Flows for 2018**



**Comparison of
Daily Average and Maximum Treated Daily Flows for 2018**



The Corporation of the Township of South Glengarry Lancaster Water Treatment Plant 2018 Annual Performance Report

OVERVIEW

The Township Of South Glengarry, Lancaster Water Treatment Plant is located at 20523 Old Montreal Road in South Lancaster. The water treatment plant is a surface water treatment facility serving the village of Lancaster and the Hamlet of South Lancaster. The water plant has a rated capacity of 1,440 cubic meters of water per day for a design population of 1,218 people.

The Township Of South Glengarry utilizes the following accredited laboratory to ensure safe and potable water to meet or exceed Ministry standards. Caduceon Laboratory Ottawa.

The Township Of South Glengarry operators are all certified under the Ministry of the Environment regulation 128/04 for utility Operator Licensing Program.

The Township Of South Glengarry water system uses Sodium Hypochlorite for disinfection and Aluminum Sulphate for a coagulant.

EQUIPMENT

Raw water is consumed through a 450 millimeter intake pipe and wooden intake crib off the shore of Lake St. Francis at a depth of approximately 12 meters. The plant consist of three low lift pumps rated at 8.33 liters per second one dual media anthracite sand gravity filter, one gravity granular activated carbon filter, three high lift pumps two rated at 15.9 liters per second and the third at 6.3 liters per second and two backwash pumps together with all associated piping, electrical equipment, controls and alarm systems all housed in a common building.

PROCESS

Raw water is pumped from the low lift chamber, which is pre chlorinated. A liquid coagulant is introduced into an in line flash mixer, and then flows to two set of coagulant/flocculators; clarifiers and filters each rated at 720 cubic meters per day. The filtered water is then post chlorinated before it enters the twin celled reservoir. The treated (potable) water is then pumped to the distribution system and also feeds an elevated storage tank located on North Beech Street.

UPGRADES

No new upgrades

REPORTING

A written report is prepared annually. This report is available for view at the Township Of South Glengarry Municipal office located at 6 Oak Street, Lancaster or the Township of South Glengarry Water Department located at 18352 County Road 2 in Glen Walter. A copy of the report is also available on the Townships web site. A copy of the report is also available free of charge to any resident requesting a copy. For more information, contact the Township Of South Glengarry Water/Wastewater Department at 613-931-3036 or fax 613-931-3340.

Ontario Drinking Water License #185-101

The Township of South Glengarry Water Treatment Department operated the Lancaster Water Treatment Plant for the year of 2018 and met all terms of the Ontario Drinking Water System Regulation 170/03, under the Safe Drinking Water Act. The Township of South Glengarry commitment policy is to: Provide a safe and reliable supply of drinking water to all its customers, meet or exceed the requirements of all legislation and regulations applicable to the drinking water and maintain and continually improve its quality management system.

A total of 163,291m³ of raw water had been treated for the year 2018 with a monthly average of 452m³ per day and a maximum flow of 796m³ /day for the year. Maximum flow is equivalent to 55% of plant capacity.

The Lancaster Water Treatment Plant uses sodium hypochlorite for disinfection. A total of 662kg of sodium hypochlorite has been utilized for the year at an average dosage rate of 4.06mg/litre.

The Lancaster Water Treatment Plant also uses aluminum sulphate as a coagulant in the treatment process. A total of 3.08m³ of aluminum sulphate had been used.

Attached is the data spread sheet, which identifies flows, laboratory results, number of samples collected and chemical use on a monthly basis.

Municipality: Township of South Glengarry
 Project: Lancaster W.T.P
 DWS # 260006867

Annual Report Data
 2018

Water Source: Lake St. Francis
 Design Capacity: 1.440 x 1000 m3/D

Description: Conventional Treatment - Chemically Assisted Filtration (Alum) - Sodium Hypochlorite Disinfection

	Raw Water Flow			Treated Water Flow			Chemical Usage		Treated Water						Distribution Water								
	Total X 1000 m3	Average X 1000 m3	Maximum Daily X 1000 m3	Total X 1000 m3	Average X 1000 m3	Maximum Daily X 1000 m3	Cl2 Total Kg Used	Alum Total m3 Used	Free Cl2 Residual mg/L			Average Turbidity NTU	Average Colour TCU	Average Aluminum mg/L	Nitrate NO3 mg/L	Nitrite NO2 mg/L	Free Cl2 Residual mg/L			THM ug/L	Lead ug/L	Lead ug/L	
									Min.	Max.	Avg.						Min.	Max.	Avg.				
January	12.172	0.392	0.558	11.285	0.364	0.409	39.76	0.228	1.52	1.99	1.74	0.03	0	0.041	0.2	0.1	1.26	1.45	1.34	36.5			
February	10.548	0.376	0.464	9.715	0.346	0.452	30.16	0.194	0.80	3.00	1.48	0.04	0	0.046			0.88	1.32	1.06				
March	12.419	0.400	0.461	11.514	0.371	0.464	41.19	0.226	0.88	1.92	1.38	0.06	0	0.030			0.74	1.52	1.13				
April	12.174	0.405	0.491	11.342	0.378	0.477	43.85	0.227	1.32	1.84	1.48	0.07	0	0.043	0.3	0.1	1.02	1.38	1.21	42.6			
May	13.299	0.429	0.796	12.221	0.394	0.705	48.44	0.249	0.92	1.53	1.30	0.06	0	0.039			0.76	1.17	1.02				
June	12.887	0.429	0.547	12.097	0.403	0.508	62.79	0.223	0.80	3.00	1.27	0.06	0	0.090			0.83	1.26	1.07				
July	15.771	0.508	0.596	14.098	0.454	0.510	78.17	0.297	1.05	1.56	1.32	0.04	0	0.090	0.2	0.1	0.92	1.26	1.10	99.2			
August	17.056	0.550	0.687	14.928	0.481	0.593	84.59	0.323	0.44	2.03	1.53	0.09	0	0.110			0.86	1.67	1.24				
September	15.911	0.530	0.598	13.865	0.462	0.536	77.42	0.300	1.02	1.78	1.45	0.05	0	0.110			0.94	1.54	1.24				
October	15.834	0.510	0.567	13.992	0.451	0.524	69.30	0.308	0.77	1.60	1.42	0.05	0	0.100	0.1	0.1	0.70	1.36	1.19	65			
November	12.252	0.480	0.464	13.739	0.457	0.603	44.66	0.249	1.04	1.62	1.37	0.05	0	0.080			0.98	1.36	1.26				
December	12.968	0.418	0.468	13.466	0.434	0.488	42.00	0.256	0.80	1.63	1.38	0.06	0	0.053			1.04	1.37	1.27				
Total	163.291			152.262			662.33	3.08															
Average	13.607583	0.452	0.558	12.689	0.416	0.522	55.19	0.257	0.95	1.96	1.43	0.06	0	0.069	0.2	0.1	0.91	1.39	1.18	60.8	#DIV/0!	#DIV/0!	
Criteria			1.440						0.2				5	0.1	10	1	0.05			100	10	10	
Maximum			0.796						0.77				0	0.069	0.3	0.1	0.7			60.8			
Compliance			Yes						Yes				Yes	Yes	Yes	Yes	Yes			Yes			

	Total # of Raw Samples	Raw Water Escherichia Coliform (cfu/100mL)			Raw Water Total Coliform (cfu/100mL)			Total # of Treated Samples	Treated Water Escherichia Coliform (cfu/100mL)			Treated Water Total Coliform (cfu/100mL)			Treated Water Heterotrophic Plate Count (cfu/100mL)		Total # of Dist. Samples	Distribution Water Escherichia Coliform (cfu/100mL)		Distribution Water Total Coliform (cfu/100mL)		Distribution Water Heterotrophic Plate Count (cfu/100mL)	
		Minimum	Maximum	Average	Minimum	Maximum	Average		Safe	Unsafe	Safe	Unsafe	Safe	Unsafe	Safe	Unsafe		Safe	Unsafe	Safe	Unsafe		
January	5	0	3	0.80	2	16	6.40	5	5	0	5	5	0	5	0	15	15	0	15	0	15	0	
February	4	0	2	0.50	2	24	7.50	4	4	0	4	4	0	4	0	12	12	0	12	0	12	0	
March	4	0	1	0.25	2	2	2.00	4	4	0	4	4	0	4	0	12	12	0	12	0	12	0	
April	5	0	1	0.40	2	8	3.20	5	5	0	5	5	0	5	0	15	15	0	15	0	15	0	
May	4	0	2	0.50	2	10	4.00	4	4	0	4	4	0	4	0	12	12	0	12	0	12	0	
June	4	0	1	0.25	2	82	22.00	4	4	0	4	4	0	4	0	12	12	0	12	0	12	0	
July	5	0	0	0.00	2	2	2.00	5	5	0	5	5	0	5	0	15	15	0	15	0	15	0	
August	4	0	0	0.00	0	2	1.50	4	4	0	4	4	0	4	0	12	12	0	12	0	12	0	
September	4	0	3	0.75	2	12	4.50	4	4	0	4	4	0	4	0	12	12	0	12	0	12	0	
October	5	0	6	2.40	6	28	13.60	5	5	0	5	5	0	5	0	15	15	0	15	0	15	0	
November	4	0	3	1.50	2	12	8.00	4	4	0	4	4	0	4	0	12	12	0	12	0	12	0	
December	4	0	4	1.25	4	18	11.00	4	4	0	4	4	0	4	0	12	12	0	12	0	12	0	
Total	52							52								156							

LANCASTER WATER TREATMENT PLANT

INORGANIC PARAMETERS

PARAMETER	SAMPLE DATE	RESULT VALUE	MAC	UNIT OF MEASURE	EXCEEDANCE	%
ANTIMONY	Jan-8-18	0.0001	0.006	mg/L	No	2
ARSENIC	Jan-8-18	0.0004	0.025	mg/L	No	2
BARIUM	Jan-8-18	0.018	1	mg/L	No	2
BORON	Jan-8-18	0.023	5	mg/L	No	0
CADMIUM	Jan-8-18	0.00002	0.005	mg/L	No	0
CHROMIUM	Jan-8-18	0.002	0.05	mg/L	No	4
LEAD	Year 2017	0.04	10	ug/L	No	0
MERCURY	Jan-8-18	0.00002	0.001	mg/L	No	2
SELENIUM	Jan-8-18	0.001	0.01	mg/L	No	10
SODIUM	Aug-8-17	17.8	200	mg/L	No	9
URANIUM	Jan-8-18	0.00019	0.02	mg/L	No	1
FLUORIDE	Aug-8-17	0.1	1.5	mg/L	No	7
NITRITE	Year 2018		1	mg/L	No	0
NITRATE	Year 2018		10	mg/L	No	0
Eastern Ontario Health Unit MAC						
Sodium	Aug-8-17	17.8	20	mg/L	No	89

LANCASTER WATER TREATMENT PLANT							
ORGANIC PARAMETERS							
PARAMETER	SAMPLE DATE	RESULT VALUE	MAC	UNIT OF MEASURE	EXCEEDANCE	%	MAC mg/L
ALACHLOR	Jan-8-18	0.3	5	ug/L	No	6	0.005
ATRAZINE + N-DEALKYLATED METOBOLITES	Jan-8-18	0.5	5	ug/L	No	10	0.005
AZINPHOS-METHYL	Jan-8-18	1	20	ug/L	No	5	0.02
BENZO(A)PYRENE	Jan-8-18	0.005	0.01	ug/L	No	50	0.00001
BENZENE	Jan-8-18	0.5	5	ug/L	No	10	0.005
BROMOXYNIL	Jan-8-18	0.3	5	ug/L	No	6	0.005
CARBON TETRACHLORIDE	Jan-8-18	0.2	5	ug/L	No	4	0.005
CARBARYL	Jan-8-18	3	90	ug/L	No	3	0.09
CARBOFURAN	Jan-8-18	1	90	ug/L	No	1	0.09
CHLORPYRIFOS	Jan-8-18	0.5	90	ug/L	No	1	0.09
1,2-DICHLOROBENZENE	Jan-8-18	0.1	200	ug/L	No	0	0.2
1,4-DICHLOROBENZENE	Jan-8-18	0.2	5	ug/L	No	4	0.005
1,2-DICHLOROETHANE	Jan-8-18	0.1	5	ug/L	No	2	0.005
1,1-DICHOETHENE	Jan-8-18	0.1	1.4	ug/L	No	7	0.0014
DICHLOROMETHANE	Jan-8-18	0.3	50	ug/L	No	1	0.05
DIAZINON	Jan-8-18	1	20	ug/L	No	5	0.02
DICAMBA	Jan-8-18	5	120	ug/L	No	4	0.12
2-4 DICHLOROPHENOL	Jan-8-18	0.1	900	ug/L	No	0	0.9
2,4-DICHLOROPHENOXY ACETIC ACID(2,4-D)	Jan-8-18	5	100	ug/L	No	5	0.1
DICLOFOP-METHYL	Jan-8-18	0.5	9	ug/L	No	6	0.009
DIMETHOATE	Jan-8-18	1	20	ug/L	No	5	0.02
DIQUAT	Jan-8-18	5	70	ug/L	No	7	0.07
DIURON	Jan-8-18	5	150	ug/L	No	3	0.15
GLYPHOSATE	Jan-8-18	25	280	ug/L	No	9	0.28
MONOCHLOROBENZENE	Jan-8-18	0.2	80	ug/L	No	0	0.08
MALATHION	Jan-8-18	5	190	ug/L	No	3	0.19
METOLACHLOR	Jan-8-18	3	50	ug/L	No	6	0.05
METRIBUZIN	Jan-8-18	3	80	ug/L	No	4	0.08
PARAQUAT	Jan-8-18	1	10	ug/L	No	10	0.01
PENTACHLOROPHENOL	Jan-8-18	0.1	60	ug/L	No	0	0.06
PHORATE	Jan-8-18	0.3	2	ug/L	No	15	0.002
PICLORAM	Jan-8-18	5	190	ug/L	No	3	0.19
POLYCHLORINATED BIPHENYLS(PCB)	Jan-8-18	0.05	3	ug/L	No	2	0.003
PROMETRYNE	Jan-8-18	0.1	1	ug/L	No	10	0.001
SIMAZINE	Jan-8-18	0.5	10	ug/L	No	5	0.01
TETRACHLOROETHYLENE	Jan-8-18	0.2	30	ug/L	No	1	0.03
TRICHLOROETHYLENE	Jan-8-18	0.1	5	ug/L	No	2	0.005
TERBUFOS	Jan-8-18	0.3	1	ug/L	No	30	0.001
2,3,4,6-TRICHLOROPHENOL	Jan-8-18	0.1	5	ug/L	No	2	0.005
TRIALATE	Jan-8-18	10	230	ug/L	No	4	0.23
2,4,6-TRICHLOROPHENOL	Jan-8-18	0.1	5	ug/L	No	2	0.005
Vinyl Chloride	Jan-8-18	0.2	2	ug/L	No	10	0.002
TRIFLURALIN	Jan-8-18	0.5	45	ug/L	No	1	0.045
THM (NOTE: SHOW LATEST ANNUAL AVERAGE)	Year 2018		100	ug/L	No	0	0.1
MCPA	Year 2018		100	ug/L	No	0	0.1
HAA	Year 2018		80	ug/L	No	0	0.08