



2022
Annual Drinking Water Report
and
Summary Report for Municipalities

Lancaster Water Treatment


Version 2.0

Prepared by: 

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Director of Water and Wastewater

February 14, 2023

Date

Approved by: 

Sarah McDonald, P. Eng.
General Manager, Infrastructure Services

February 14, 2023

Date

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Regulations

Annual Report

O. Reg. 170/03 – Section 11

Summary Report for Municipalities

O. Reg. 170/-3 – Schedule 22

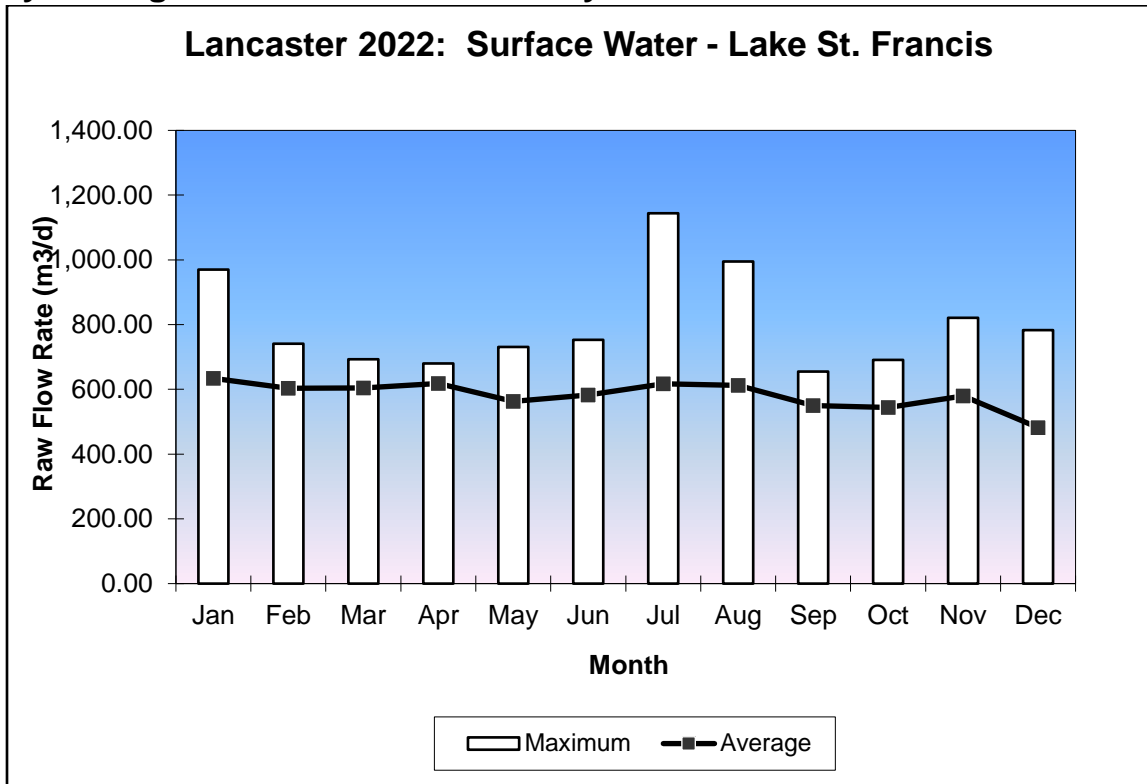
Revision History

Date	Description	Revision	Author
February 6, 2023	Initial Issue for Council Receipt	1.0	D. Seguin
February 14, 2023	Final for Approval	2.0	D. Seguin

Lancaster Water Treatment Plant – Annual Report

1. Flows

Daily Average and Maximum Raw Daily Flows

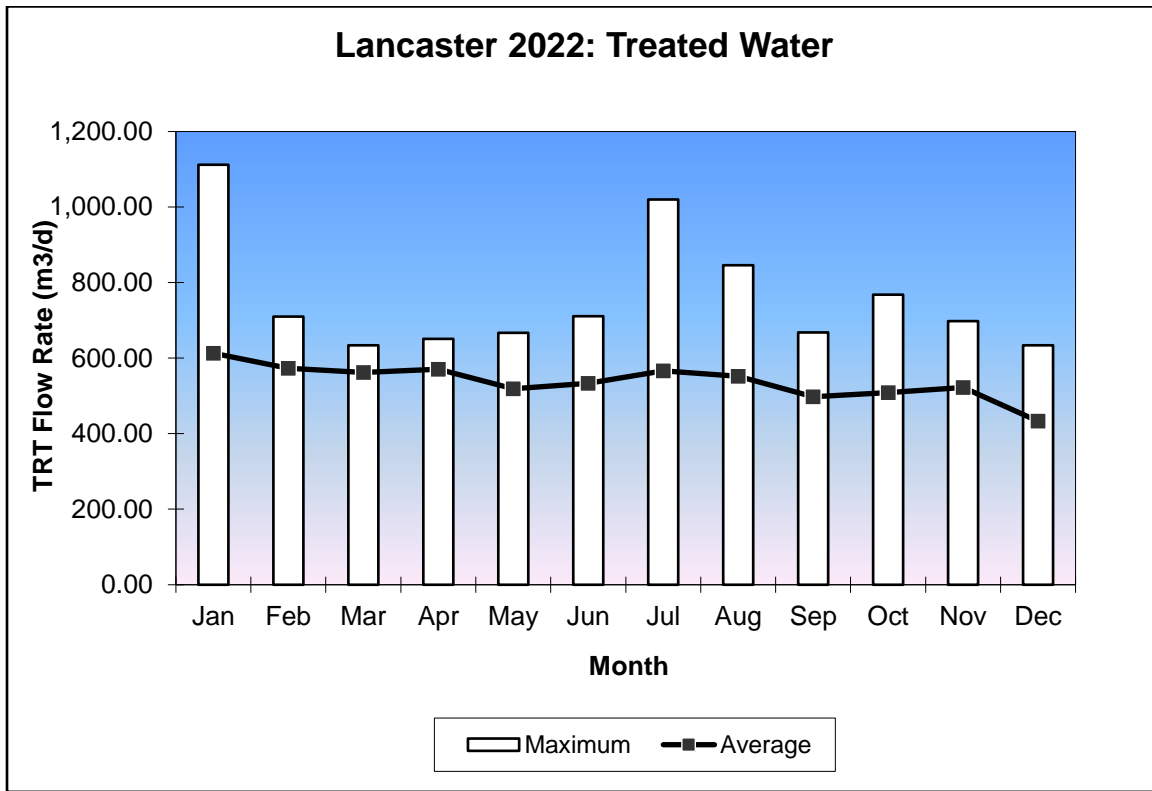


Permit To Take Water (6653-AP9H6L)	
Max Allowable Raw Water Flow:	1,440m ³ /d
Year Max:	1,144m ³ /day

Note(s):

- Above Normal Usage x 2
- January - High Treated Water Flow Caused Due to Watermain Break/Water Tower Emergency
- July – High Water Flow Caused Due to Hydrant Flow

Daily Average and Maximum Treated Daily Flows



Municipal Drinking Water License Rated Capacity (185-101)	
Max Allowable Raw Water Flow:	1,440m ³ /d
Year Max:	1,112m ³ /day

Note(s):

- Above Normal Usage x 2
- January - High Treated Water Flow Caused Due to Watermain Break/Water Tower Emergency
- July – High Water Flow Caused Due to Hydrant Flow

2. Compliance

A written report is prepared annually. This report is available for viewing at the Township of South Glengarry Municipal office, 6 Oak Street Lancaster or at the Glen Walter Water Treatment Plant 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 available free of charge to any resident requesting a copy. For more information on the Municipal water supply contact:

Township of South Glengarry
Water/Wastewater Division
Telephone: 613-931-3036
Fax: 613-931-3340
E-mail: infrastructure@southglengarry.com

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 drinking water and maintain and continually improve its quality management system.

3. System Description

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 consists 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.

Distribution

The distribution system is comprised of varying sized water pipes, valves, and fire hydrants all supplied from the three high lift pumps situated at the Lancaster Water Plant. Fire flow can be achieved for the Lancaster Water system.

4. Operation Summary

There were no upgrades were noted in the reporting year.

There was an increased distribution breaks/leaks are to be noted for the year 2022. As infrastructure continues to age, the increase of leaks is more prominent.

The major maintenance undertaken on the Lancaster system is provided in the table below.

Table 1. Major Maintenance (2022)

2022	Details
Jan.	Distribution Break Oak St (Precautionary Boil Water)
Feb.	Leak Victoria St (Pipe/Hymax)
Feb.	Leak Maple St. (Valve Replaced)
Feb.	Leak South Beech (Valve Replaced)
Feb.	Hydrant Flushing and Winterizing
Feb.	Flow meters replaced on Filter 1+2
Feb.	Differential sensor replaced on Filter 2
Mar.	Scada Utility Power Supply failed and replaced
Mar.	Backwash PLC control relay failed and replaced (16 Relay Card)
May.	Leak South Terrace (Valve Replaced)
Jun.	Generator maintenance/tests
Jun.	Analytical calibrations
Jul.	Hydrant flushing
Sep.	Fire Hydrant Flow Testing
Oct.	Flow meter calibrations
Nov.	Winterize hydrants
Dec.	Distribution Break Military Rd. (Service on Main)
Dec.	Generator maintenance/load test

Lancaster Water Treatment Plant – Summary Report

Ontario Drinking Water License #185-101

The Township of South Glengarry Water Treatment Department operated the Lancaster Water Treatment Plant for the year 2022.

5. Non-Compliance

Adverse Water Quality Incidents

During the reporting year, there was one (1) adverse water quality incident (AWQI).

Incident #1

Incident Date:	October 5th, 2022
Parameter:	Total Coliforms
Result:	2 TC
Corrective Action:	Resample
Corrective Action Date:	October 5th, 2022
Corrective Compliance:	October 7th, 2022

Non-Compliance

During the reporting year, there was one (1) non-compliance in regard to a regulatory requirement.

Non-Compliance #1

Non-Compliance Date:	January 27th, 2022
Parameter:	Low Pressure
Result:	<20 psi
Corrective Action:	Monitor replacement of pipe and follow watermain disinfection protocol. Return pressure back to normal range, flush dead ends and issue preventative boil water until water samples could be tested.
Corrective Action Date:	January 27th, 2022
Corrective Compliance:	January 29th, 2022.

Non-Compliance Ministry Inspection

During the year 2022, there were no non-compliance from a ministry inspection within the Lancaster Drinking Water System.

The ministry inspection occurred on and off site during the month of July. There were no issues of regulatory compliance identified in the report and the final inspection rating was 100%. A copy of the report is available at The Glen Walter Water Treatment Plant Office.

6. Regulatory Sample Results

Statistics for Flow and Chemicals

A total of 210,228m³ of raw water had been treated for the year 2022 with a monthly average of 583m³ per day and a maximum flow of 1,144m³ /day for the year. Maximum flow is equivalent to 79% of plant capacity. It is noted that two (2) high usage days occurred and were not regular flow operations.

The Lancaster Water Treatment Plant uses sodium hypochlorite for disinfection. A total of 900.94kg of sodium hypochlorite has been utilized for the year at an average dosage rate of 4.28mg/litre.

The Lancaster Water Treatment Plant also uses aluminum sulphate as a coagulant in the treatment process. A total of 4.44m³ 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
 2022

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 L Used	Free Cl2 Residual mg/L			Average Turbidity NTU	Average Colour TCU	Average Aluminium 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	19.654	0.634	0.970	19.026	0.613	1.112	80.77	0.434	0.74	2.33	1.76	0.14	0.25	0.050	0.3	0.1	1.16	1.84	1.63	21			
February	16.885	0.603	0.741	16.050	0.573	0.710	66.13	0.360	1.61	2.40	1.88	0.080	0.00	0.080			1.44	1.90	1.63				
March	18.736	0.604	0.693	17.433	0.562	0.634	71.34	0.394	1.07	2.88	1.77	0.08	0.00	0.090			0.88	2.00	1.43				
April	18.547	0.618	0.680	17.152	0.571	0.651	67.03	0.391	1.53	2.32	1.84	0.100	0.00	0.060	0.1	0.3	1.40	1.78	1.61	39			
May	17.469	0.563	0.731	16.103	0.519	0.667	75.45	0.365	1.52	2.40	1.80	0.090	0.00	0.067			1.28	2.00	1.61				
June	17.501	0.583	0.753	15.992	0.533	0.711	67.45	0.355	1.54	1.98	1.76	0.090	0.00	0.090			1.32	1.82	1.57				
July	16.672	0.617	1.144	17.555	0.566	1.020	92.10	0.403	1.73	2.14	1.87	0.1	0.00	0.160	0.1	0.2	1.49	1.90	1.69	55			
August	18.989	0.612	0.995	17.124	0.552	0.846	67.48	0.401	1.33	2.85	1.80	0.09	0.00	0.160			1.08	2.00	1.51				
September	16.522	0.550	0.655	14.953	0.488	0.668	84.12	0.343	1.82	2.12	1.93	0.090	0.00	0.140			1.64	1.86	1.73				
October	16.887	0.544	0.691	15.782	0.509	0.768	87.97	0.354	1.78	2.05	1.90	0.090	0.00	0.080	0.2	0.1	1.68	1.94	1.76	41			
November	17.400	0.580	0.821	15.664	0.522	0.698	75.45	0.363	1.61	2.16	1.85	0.08	0.00	0.050			1.40	1.90	1.65				
December	14.966	0.482	0.783	13.426	0.433	0.634	65.65	0.282	1.41	2.17	1.94	0.100	0.00	0.030			1.26	1.98	1.78				
Total	210.228			196.26			900.94	4.445															
Average	17.519	0.583	0.805	16.355	0.538	0.760	75.08	0.370	1.47	2.32	1.84	0.09	0.02	0.086	0.2	0.175	1.34	1.91	1.63	39.0	#DIV/0!	#DIV/0!	
Criteria			1.440						0.2					5		10	1	0.05		100	10	10	
Maximum			1.144						0.74					0		0.3	0.3	0.88		55			
Compliance			Yes						Yes					Yes		Yes	Yes		Yes	N/A	N/A	N/A	

	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	0	0.00	0	5	2.00	5	5	0	5	0	5	0	20	20	0	20	0	20	0	
February	4	0	1	0.25	0	94	27.00	4	4	0	4	0	4	0	12	12	0	12	0	12	0	
March	4	0	50	18.50	10	164	85.00	4	4	0	4	0	4	0	12	12	0	12	0	12	0	
April	4	0	1	0.25	4	18	11.00	4	4	0	4	0	4	0	12	12	0	12	0	12	0	
May	5	0	4	0.80	0	38	13.60	5	5	0	5	0	5	0	15	15	0	15	0	15	0	
June	4	0	0	0.00	0	4	1.00	4	4	0	4	0	4	0	12	12	0	12	0	12	0	
July	4	0	0	0.00	0	0	0.00	4	4	0	4	0	4	0	12	12	0	12	0	12	0	
August	5	0	0	0.00	0	1	0.20	5	5	0	5	0	5	0	15	15	0	15	0	15	0	
September	4	0	0	0.00	0	0	0.00	4	4	0	4	0	4	0	12	12	0	12	0	12	0	
October	5	0	0	0.00	0	2	0.40	7	7	0	7	0	7	0	21	21	0	21	1	15	0	
November	4	0	0	0.00	0	0	0.00	4	4	0	4	0	4	0	12	12	0	12	0	12	0	
December	4	0	0	0.00	0	0	0.00	4	4	0	4	0	4	0	12	12	0	12	0	12	0	
Total	52							54						167								

Inorganic Parameters**LANCASTER WATER TREATMENT PLANT**

INORGANIC PARAMETERS					
PARAMETER	SAMPLE DATE	RESULT VALUE	MAC	UNIT OF MEASURE	EXCEEDANCE
ANTIMONY	Jan-04-22	0.0001	0.006	mg/L	No
ARSENIC	Jan-04-22	0.0003	0.025	mg/L	No
BARIUM	Jan-04-22	0.0220	1	mg/L	No
BORON	Jan-04-22	0.0190	5	mg/L	No
CADMIUM	Jan-04-22	0.000015	0.005	mg/L	No
CHROMIUM	Jan-04-22	0.0020	0.050	mg/L	No
LEAD	Year 2020	1.18	10	ug/L	No
MERCURY	Jan-04-22	0.00002	0.001	mg/L	No
SELENIUM	Jan-04-22	0.0010	0.010	mg/L	No
SODIUM	Aug 22 2022	17.8	200	mg/L	No
URANIUM	Jan-04-22	0.00018	0.020	mg/L	No
FLUORIDE	Aug 22 2022	0.10	1.5	mg/L	No
NITRITE	Year 2022	0.10	1	mg/L	No
NITRATE	Year 2022	0.25	10	mg/L	No

Eastern Ontario Health Unit MAC

Sodium	Aug 22 2022	17.8	20	mg/L	No
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Organic Parameters

LANCASTER WATER TREATMENT PLANT					
ORGANIC PARAMETERS					
PARAMETER	SAMPLE DATE	RESULT VALUE	MAC	UNIT OF MEASURE	EXCEEDANCE
ALACHLOR	Jan-04-22	0.3	5	ug/L	No
ATRAZINE + N-DEALKYLATED METOBOLITES	Jan-04-22	0.5	5	ug/L	No
AZINPHOS-METHYL	Jan-04-22	1	20	ug/L	No
BENZO(A)PYRENE	Jan-04-22	0.006	0.01	ug/L	No
BENZENE	Jan-04-22	0.5	5	ug/L	No
BROMOXYNIL	Jan-04-22	0.5	5	ug/L	No
CARBON TETRACHLORIDE	Jan-04-22	0.2	5	ug/L	No
CARBARYL	Jan-04-22	3	90	ug/L	No
CARBOFURAN	Jan-04-22	1	90	ug/L	No
CHLORPYRIFOS	Jan-04-22	0.5	90	ug/L	No
1,2-DICHLOROBENZENE	Jan-04-22	0.5	200	ug/L	No
1,4-DICHLOROBENZENE	Jan-04-22	0.5	5	ug/L	No
1,2-DICHLOROETHANE	Jan-04-22	0.5	5	ug/L	No
1,1-DICHOETHENE	Jan-04-22	0.5	1.4	ug/L	No
DICHLOROMETHANE	Jan-04-22	5	50	ug/L	No
DIAZINON	Jan-04-22	1	20	ug/L	No
DICAMBA	Jan-04-22	1	120	ug/L	No
2-4 DICHLOROPHENOL	Jan-04-22	0.2	900	ug/L	No
2,4-DICHLOROPHENOXY ACETIC ACID(2,4-D)	Jan-04-22	1	100	ug/L	No
DICLOFOP-METHYL	Jan-04-22	0.9	9	ug/L	No
DIMETHOATE	Jan-04-22	1	20	ug/L	No
DIQUAT	Jan-04-22	5	70	ug/L	No
DIURON	Jan-04-22	5	150	ug/L	No
GLYPHOSATE	Jan-04-22	25	280	ug/L	No
MONOCHLOROBENZENE	Jan-04-22	0.5	80	ug/L	No
MALATHION	Jan-04-22	5	190	ug/L	No
METOLACHLOR	Jan-04-22	3	50	ug/L	No
METRIBUZIN	Jan-04-22	3	80	ug/L	No
PARAQUAT	Jan-04-22	1	10	ug/L	No
PENTACHLOROPHENOL	Jan-04-22	0.2	60	ug/L	No
PHORATE	Jan-04-22	0.3	2	ug/L	No
PICLORAM	Jan-04-22	5	190	ug/L	No
POLYCHLORINATED BIPHENYLS(PCB)	Jan-04-22	0.05	3	ug/L	No
PROMETRYNE	Jan-04-22	0.1	1	ug/L	No
SIMAZINE	Jan-04-22	0.5	10	ug/L	No
TETRACHLOROETHYLENE	Jan-04-22	0.5	30	ug/L	No
TRICHLOROETHYLENE	Jan-04-22	0.5	5	ug/L	No
TERBUFOS	Jan-04-22	0.5	1	ug/L	No
2,3,4,6-TRICHLOROPHENOL	Jan-04-22	0.2	5	ug/L	No
TRIALATE	Jan-04-22	10	230	ug/L	No
2,4,6-TRICHLOROPHENOL	Jan-04-22	0.2	5	ug/L	No
Vinyl Chloride	Jan-04-22	0.2	2	ug/L	No
TRIFLURALIN	Jan-04-22	0.5	45	ug/L	No
MCPA	Jan-04-22	10	100	ug/L	No
THM (NOTE: SHOW LATEST ANNUAL AVERAGE)	Year 2022	39	100	ug/L	No
HAA	Year 2022	21.25	80	ug/L	No