CITY OF HAMILTON

DRINKING WATER SYSTEMS ANNUAL WATER QUALITY AND SUMMARY REPORT

2020

Ontario Regulation 170/03
Section 11 & Schedule 22

Hamilton

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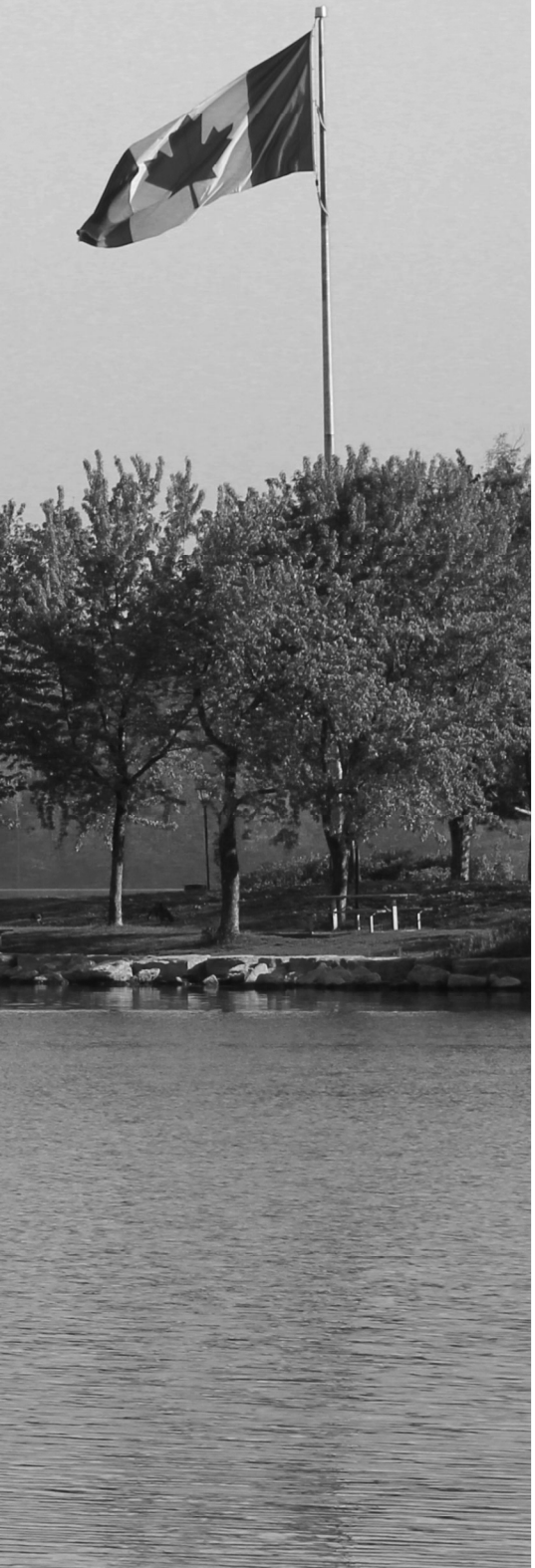


INTRODUCTION

A key priority of the City of Hamilton (COH) is to ensure the safe, high quality, consistent supply of drinking water to our residents. This report for municipalities has been prepared in accordance with the Safe Drinking Water Act, Ontario Regulation 170/03, Section 11 and Schedule 22 for the 2020 reporting period. The City of Hamilton is the Owner of the following five Drinking Water Systems (DWS):

DRINKING WATER SYSTEM	DRINKING WATER SYSTEM NUMBER	MUNICIPAL DRINKING WATER LICENCE NUMBER	DRINKING WATER WORKS PERMIT NUMBER	PERMIT TO TAKE WATER NUMBER
Hamilton DWS Woodward Subsystem	220003118	005-101	005-201	2437-BCLNEJ
Hamilton DWS Fifty Road Subsystem	260069173	005-101	005-201	N/A
Freelton DWS	220004117	005-102	005-202	4650-BB2HXG (FDF01 & FDF03)
Greensville DWS	220004126	005-103	005-203	2476-9F5KM6 (FDG01)
Carlisle DWS	220004108	005-104	005-204	2373-8F7MMJ (FDC01 & FDC02)
				8228-AJZK9H (FDC03R)
				4207-AJZJ4L (FDC05)
Lynden DWS	250001830	005-105	005-205	0634-ASERU8 (FDL01 & FDL03)

There were no Provincial Officer's Orders issued with regards to drinking water. All Adverse Water Quality Incidents were reported to the Ontario Ministry of Environment, Conservation and Parks (MECP) Spills Action Centre (SAC) and Public Health Services (PHS) and are provided in the report. All water taking quantities and flow rates were within approved rated capacities and provincial water taking limits.

The MECP Inspection Calendar Year is from April 1st to March 31st. The MECP 2018 to 2021 inspection ratings are as follows. As of writing this report, the completion of most 2020 - 2021 inspections remain pending. Any findings will be included in the 2021 report.

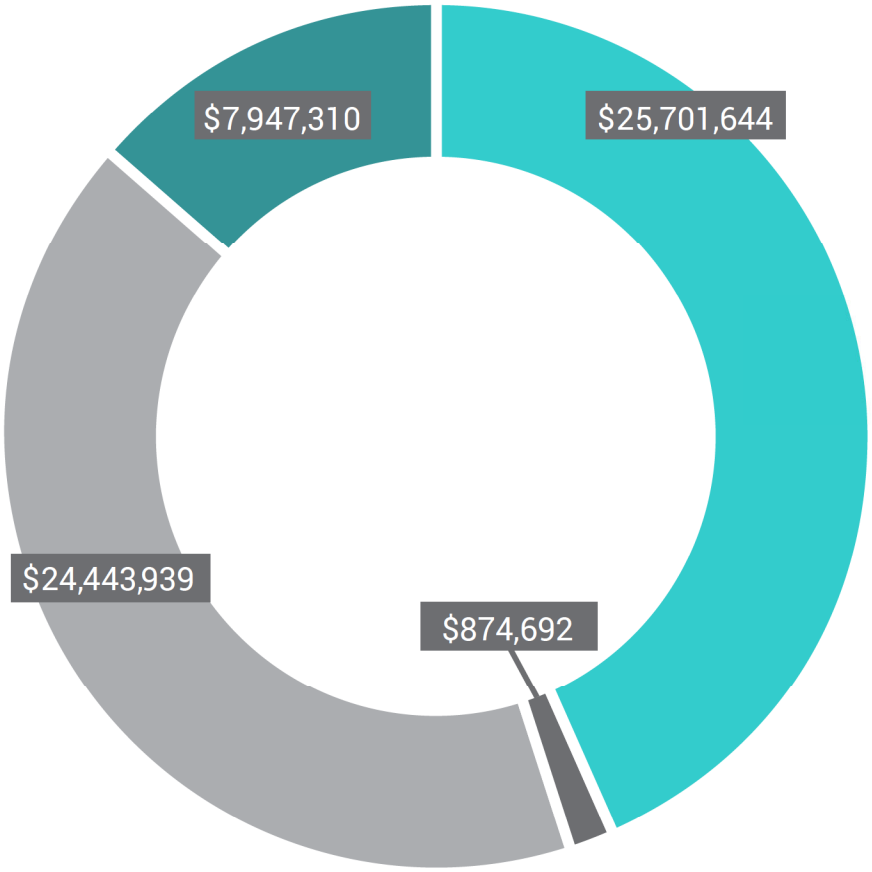
DRINKING WATER SYSTEM	2018 - 2019 INSPECTION RATING	2019 - 2020 INSPECTION RATING	2020 - 2021 INSPECTION RATING
Hamilton DWS - Woodward	94.85%	100%	Pending in 2021
Hamilton DWS - Fifty Road	100%	99.10%	93.6%
Freelton	96.74%	100%	Pending in 2021
Greensville	99.36%	100%	Pending in 2021
Carlisle	94.40%	100%	Pending in 2021
Lynden	100%	100%	Pending in 2021

ANNUAL REPORTS

The Drinking Water Annual Report required under Ontario Regulation 170/03 Section 11 and Schedule 22 is available to the public at no charge at www.hamilton.ca/waterquality. A copy of the report can also be requested by contacting (905) 546-2489 or water@hamilton.ca.

SUMMARY OF MONETARY EXPENSES INCURRED IN 2020

In 2020, significant expenses were incurred for installing, repairing and replacing required equipment. The following expenses were incurred to complete repairs, maintenance and upgrades to the Drinking Water Systems within the City of Hamilton.



- Total DWS - New Development - Expansion of DWS (horizontal and vertical assests)
- Total DWS - Distribution Repair, Rehabilitation and Replacement (horizontal assests)
- Total DWS - Maintenance and Repairs (vertical assests)
- Total DWS - Water Capital Upgrade Projects

WOODWARD AVENUE DRINKING WATER SUBSYSTEM WATER QUALITY ANNUAL REPORT

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GENERAL INFORMATION

The Woodward Drinking Water Subsystem is a large municipal residential system that supplies a significant portion of Hamilton’s population with drinking water including Stoney Creek, Dundas, Ancaster, Waterdown, and Glanbrook. The population served is estimated at 536,917. In addition, the treatment system provides treated water to parts of Haldimand County (Caledonia, York, and Cayuga) and parts of Halton Region.

The Woodward Water Treatment Facility has three raw water intake pipes (1.22m, 1.52m and 2.44m diameter) of which two intake pipes (2.44m and 1.52m diameter) are currently in use. The raw water is drawn from Lake Ontario at distances of 640m, 915m and 945m to begin the treatment process.

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
MPN: Most Probable Number
N/A: Not Applicable
ng/L: nanograms per litre
P/A: Present/Absent
PTTW: Permit to Take Water
ug/L: micrograms per litre

TREATMENT PROCESS:

- The raw water intakes have chlorine added for zebra mussel control.
- The low lift has 3 travelling screens where the screening takes place prior to the water being pumped to the water treatment plant.
- At the pre-treatment stage Polyaluminum chloride is added to the water to coagulate suspended solids. Additional chlorine is also added at this stage to ensure disinfection.
- Clarification of the water is completed by flocculation & sedimentation.
- Chlorine, ammonia, fluoride and ortho-phosphate are added before the treated water is sent to the distribution system. Ammonia is added to convert chlorine to mono-chloramine to help maintain stable chlorine residuals in the distribution system. Fluoride is added to the drinking water to promote dental health and orthophosphate is added to help reduce lead corrosion.
- High lift pumps push the water from the Woodward Water Treatment Facility to the distribution system.

DISTRIBUTION:

The Woodward Water Distribution System is comprised of 20 pumping stations, 11 reservoirs, 4 elevated storage tanks, 1 standpipe and over 2,000 kms of watermains.

SAMPLING & ANALYSIS:

Continuous monitoring equipment such as chlorine analyzers, turbidity meters, fluoride and phosphate analyzers ensure the maintenance of high-quality water. Raw water is sampled and analyzed weekly; treated water is sampled and analyzed 6 days per week; distribution water is sampled and analyzed 5 days per week. In addition, chlorine residual in the distribution system is analyzed daily.

CORROSION CONTROL PROGRAM (CCP):

On November 8, 2018, the addition of orthophosphate in the form of phosphoric acid commenced in the Hamilton Drinking Water System - Woodward Subsystem, including a regulatory post-implementation sampling and monitoring plan to monitor the progress and effectiveness of the program for lead control. The CCP continues to show an improvement in the observed lead levels at the tap.

Since implementation, four completed rounds of the Legislated Community Lead Sampling Program, as required by Schedule 15.1 of Ontario Regulation, 170/03, have taken place in the Woodward DWS. The results continue to illustrate a reduction in the lead concentrations observed at the tap as well as an overall decreasing trend in the percentage of samples observed to be above the Maximum Acceptable Concentration (MAC) of 10 µg/L.

For the Summer 2020 (June 15 – October 15, 2020) Schedule 15.1 sampling round, a COVID regulatory relief for sampling at the tap, was granted for all plumbing samples. These samples are collected inside residents' homes and with the pandemic, it posed a health risk to both staff and homeowners. A COVID regulatory relief for sampling was requested for the upcoming Winter 2021 sampling round (December 15 – April 15, 2021).

Despite having relief from the residential sampling, the three Lead Pipe Loops installed in the Woodward Sub-System remained an additional tool to monitor the effectiveness of the program, which continue to show a decreasing trend in lead levels. The COH also monitors for secondary effects of the CCP including collecting customer feedback and water quality complaints to ensure customer safety and satisfaction. There continues to be minimal secondary effects and no water quality complaints related to the CCP.

The MECP received the CCP Annual Report in March 2020 summarizing the overall effectiveness of the CCP. November 2020 marked the two-year mark since the implementation of the program. In 2021, we will receive the results from a consultant assignment assessing the maturity of the program.

DRINKING WATER SYSTEM NUMBER	DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM OWNER	DRINKING WATER SYSTEM CATEGORY	PERIOD BEING REPORTED
220003118	Woodward Subsystem of Hamilton Drinking Water System	City of Hamilton	Large Municipal Residential	January 1, 2020 to December 31, 2020

PROVISION OF DRINKING WATER TO OTHER MUNICIPALITIES

The following is a list of municipal drinking water systems which receive drinking water from the Woodward Drinking Water Subsystem:

DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM NUMBER
Caledonia/Cayuga/York Water Distribution System	260004566
North Aldershot Water Distribution System	260086762
Snake Road Water Distribution System	260086775
Bridgeview Community Water Distribution System	260068419

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

Our customers are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.

WATER TREATMENT CHEMICALS USED DURING THIS REPORTING PERIOD

- Polyaluminum Chloride
- Liquid Chlorine
- Aqueous Ammonia
- Hydrofluorosilicic Acid
- Phosphoric Acid

BREAKDOWN OF SIGNIFICANT MONETARY EXPENSES

THE FOLLOWING TABLE HIGHLIGHTS THE SIGNIFICANT EXPENSES THAT WERE INCURRED FOR INSTALLING, REPAIRING AND REPLACING REQUIRED EQUIPMENT IN 2020.
Woodward Water Treatment Plant Process Upgrades $10,651,532
Kenilworth & Ben Nevis Resevoir Works - $4,698,270
HDR05 Stonechurch / Garth Reservoir Upgrades - $2,372,905
Ben Nevis & Dewitt HD08A Water Pumping Station Works - $1,790,779
Installation of 105 post hydrants and flushing to ensure water quality - $1,059,343
Maintenance and Repairs (Horizontal Assets) - $410,430
Osler Road HD011 Water Pumping Station Works - $379,494
SCADA Servers and Network - $372, 486
Greenhill Pumping Station HD04B & HD05A Works - $324,968
Kenilworth Pumping Station HD005 Upgrades - $324,791
Water Treatment Plant Lighting Upgrades - $104,402

ADVERSE TEST RESULTS AND REPORTABLE INCIDENTS

The following table outlines 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.

NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION
2020-07-05	South Waterdown Tower HDT024, on-line analyser at the Outlet	Total Chlorine = 0.24 mg/L Combined Chlorine = 0.24 mg/L Free Chlorine = 0.00 mg/L (Regulatory requirement is minimum Combined Chlorine of 0.25 mg/L or Free Chlorine of 0.05 mg/L)	South Waterdown Tower was isolated, drained and re-filled. It was put back in service on July 7th at 23:32 with a Total Chlorine reading of 1.18 mg/L.
2020-07-16	Ancaster Sampling Station A, Jerseyville Rd.	Total Coliforms = Present (Regulatory requirement is Not Detectable)	Resampled adverse location, one upstream and one downstream location. Result failed at the original adverse location which resulted in another AWQI July 17th. The adverse was confirmed.
2020-07-17	Ancaster Sampling Station A, Jerseyville Rd.	Total Coliforms = 1 MPN/100mL (Regulatory requirement is Not Detectable)	Resampled adverse location, one upstream and one downstream location. Result passed at the upstream location but failed at the original adverse location and downstream location which resulted in AWQIs on July 18th.
2020-07-18	Ancaster Sampling Station A, Jerseyville Rd.	Total Coliforms = 2 MPN/100mL (Regulatory requirement is Not Detectable)	Resampled adverse locations, one upstream and one downstream location. Two consecutive sets of samples were taken 24 to 48 hours apart. All results passed.
	Downstream Hydrant AN15H004	Total Coliforms = 152 MPN/100mL (Regulatory requirement is Not Detectable)	

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NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION
2020-08-18	City of Hamilton Operations Yard, 308 Rymal Rd E.	Total Coliforms = Present (Regulatory requirement is Not Detectable)	Resampled original adverse location, one upstream and one downstream location. Result failed at the original adverse location which resulted in another AWQI on August 19th. The adverse was confirmed.
2020-08-19	City of Hamilton Operations Yard, 308 Rymal Rd E.	Total Coliforms = 114 MPN/100mL (Regulatory requirement is Not Detectable)	Resampled original adverse location, one upstream location, one downstream location and a janitor's sink at a local park. Posted signs at sample point in the Roads facility and bathroom at Turner Park baseball diamond as requested by Public Health Services. Two sets of samples were taken 24 to 48 hours apart. All results passed for the first set of samples. For the second set of samples, results failed for the upstream and downstream locations resulting in AWQIs on August 21st.
2020-08-21	Downstream Hydrant HC68H003	Total Coliforms = 47 MPN/100mL (Regulatory requirement is Not Detectable)	Resampled original adverse location, two upstream and two downstream locations 24 to 48 hours apart. Result failed at the original adverse location which resulted in another AWQI on August 23rd.
	Upstream Hydrant HC68H004	Total Coliforms =18 MPN/100mL (Regulatory requirement is Not Detectable)	
2020-08-23	City of Hamilton Operations Yard, 308 Rymal Rd E.	Total Coliforms = 2 MPN/100mL (Regulatory requirement is Not Detectable)	Resampled original adverse location, one upstream and one downstream location. Result failed at the original adverse location which resulted in another AWQI on August 24th.

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NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION
2020-08-24	City of Hamilton Operations Yard, 308 Rymal Rd E.	Total Coliforms = 1 MPN/100mL (Regulatory requirement is Not Detectable)	The fixture/tap was replaced at the original adverse location. Resampled the original adverse location, one upstream and one downstream location. Two sets of samples were taken 24 to 48 hours apart. All results passed for the first set of samples. For the second set of samples, results failed for the original adverse location resulting in another AWQI on August 26th.
2020-08-26	City of Hamilton Operations Yard, 308 Rymal Rd E.	Total Coliforms = 1 MPN/100mL (Regulatory requirement is Not Detectable)	Resampled original adverse location, one upstream and one downstream location. Two sets of samples were taken 24 to 48 hours apart. All results passed.
2020-09-02	Hamilton Sampling Station B, across from 31 Currie St.	Total Chlorine = 0.20 mg/L Combined Chlorine = 0.17 mg/L Free Chlorine = 0.03 mg/L (Regulatory requirement is minimum Combined Chlorine of 0.25 mg/L or Free Chlorine of 0.05 mg/L)	Watermain was flushed to restore chlorine. On Sept 9th at 14:30, chlorine levels were restored as follows: Total Chlorine: 1.18 mg/L, Combined Chlorine: 1.16 mg/L, Free Chlorine: 0.02 mg/L
2020-09-16	Waterdown Tower HDT16, 115 Cole St	Total Coliforms = Present (Regulatory requirement is Not Detectable)	Resampled adverse location, one upstream and downstream location. All results passed. The adverse was not confirmed.

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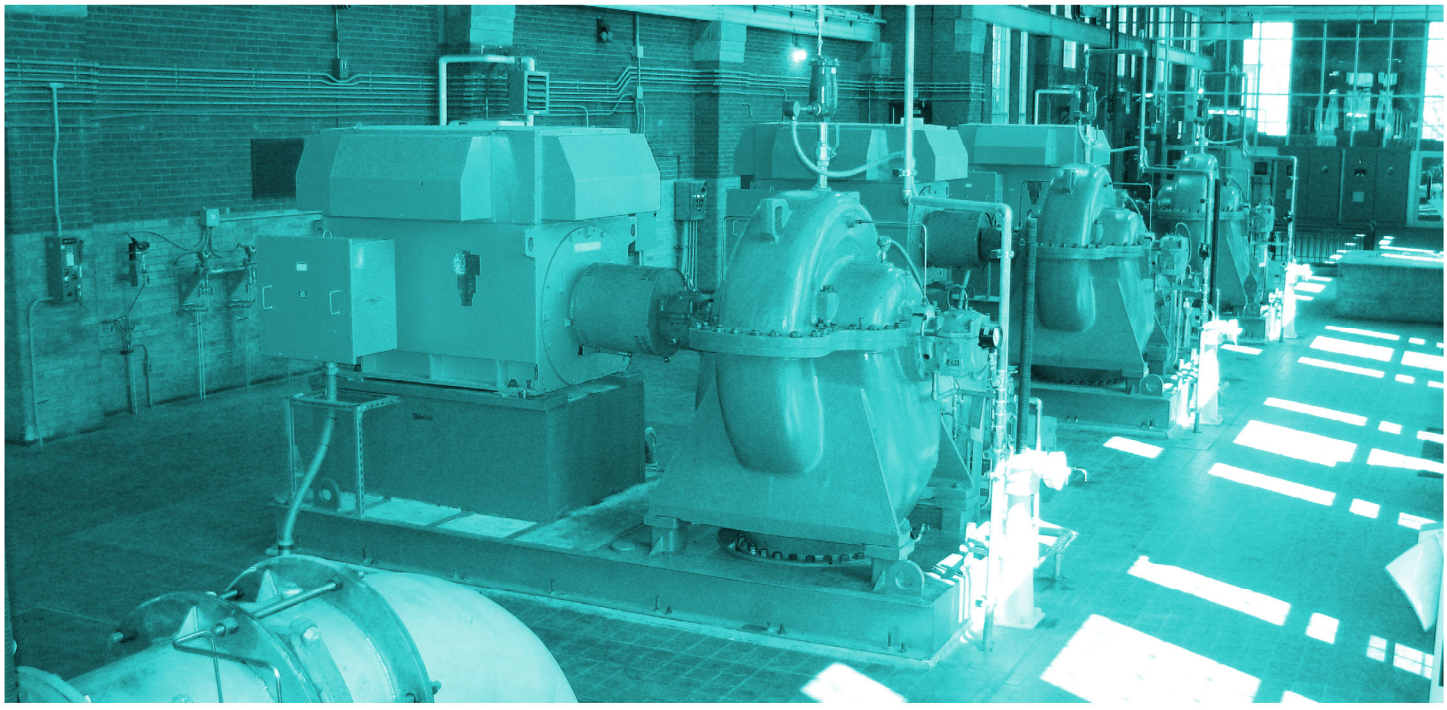
NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION
2020-10-02	Hamilton Sampling Station B, across from 31 Currie St.	Total Chlorine = 0.14 mg/L Combined Chlorine = 0.11 mg/L Free Chlorine = 0.03 mg/L (Regulatory requirement is minimum Combined Chlorine of 0.25 mg/L or Free Chlorine of 0.05 mg/L)	Watermain was flushed to restore chlorine. On Oct 2nd at 17:45, chlorine was restored as follows: Total Chlorine: 1.17 mg/L, Combined Chlorine: 1.14 mg/L, Free Chlorine: 0.03 mg/L
2020-10-15	City of Hamilton Operations Yard, 308 Rymal Rd E.	Total Coliforms = Present (Regulatory requirement is Not Detectable)	Resampled adverse location, one upstream and downstream location. All results passed. The adverse was not confirmed.
2020-11-18	HDR01, Kenilworth Reservoir, 111 Kenilworth Ave.	Carbon Tetrachloride= 30 ug/L (Regulatory requirement is maximum of 2 ug/L)	Resampled adverse location, one upstream location, one downstream location, and the high lift. All results passed. The adverse was not confirmed.



MECP HAMILTON DRINKING WATER SYSTEM, WOODWARD SUBSYSTEM INSPECTION FINDINGS AND SELF-DECLARED NON-COMPLIANCES

A summary of findings that were either issued during the MECP inspection or self-declared during the 2020 calendar year (Inspection date: January 15, 2020):

NOTE: The 2020 - 2021 inspection is on going. The report has not yet been recieved.

#	FINDING TYPE	FINDING	STATUS
1	Recommendation	The owner had not implemented a program for the flushing of watermains as per industry standards.	Actions complete
2	Recommendation	Records did not confirm that disinfectant residuals were routinely checked at the extremities and "dead ends" of the distribution system.	Actions complete
3	Recommendation	Complete a site review and update the Drinking Water Works Permit as required.	Actions in process
4	Recommendation	It is recommended that a form be developed to demonstrate disinfection was completed for maintenance and watermain break repairs.	No action required
5	Recommendation	It is recommended that the log calculator be reviewed by a process engineer with experience in drinking water treatment (report signed and stamped) to use for demonstrating primary disinfection as per the drinking water Licence and Procedure for Disinfection.	Actions in process
6	Recommendation	After GAC replacement, as a preventative measure toward filter optimization and longevity, continue to monitor alum accumulation and further develop manual mud ball removal and filter surface / wall cleaning practices.	Actions in process
7	Recommendation	Several low water pressure complaints. Analyze data to determine correlation between complaints and potential problem areas, and conduct pressure investigations during periods of low and peak use.	Actions in process

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#	FINDING TYPE	FINDING	STATUS
8	Recommendation	Confirm load testing at Stone Church Rd E and Tunbridge Crescent Pumping Station.	Actions complete
9	Recommendation	Complete daily visits to the facility's structures to check system integrity.	Actions in process
10	Recommendation	It is recommended that all owner (i.e. developer) notifications be reviewed as per Condition 2.7 of Schedule B of the DWWP.	Actions in process
11	Self-Declared Non-Compliance	E2 plan was not revised by the required deadline.	Actions in process
12	Self-Declared Non-Compliance	Contractor performed work without direction from the Operator in Charge.	Actions complete

WATER PRODUCTION REPORTS - SUMMARY

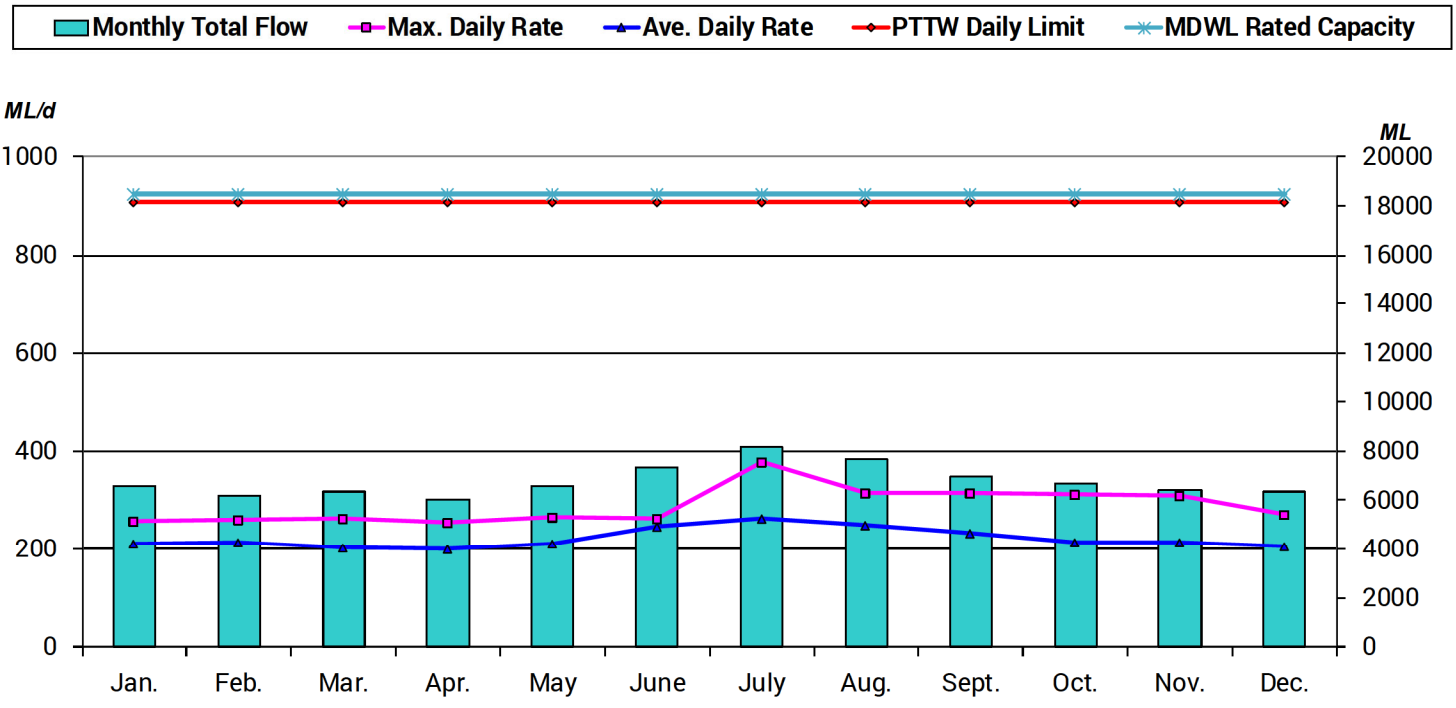
The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

TABLE 1-1: WOODWARD TREATMENT PLANT - 2020 MONTHLY PRODUCTION (SUMMARY)

WOODWARD	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	ML	6,576	6,204	6,328	6,030	6,574	7,359	8,181	7,691	6,951	6,664	6,399	6,369
Average Daily Rate	ML/d	212	214	204	201	212	245	264	248	232	215	213	205
Maximum Daily Rate	ML/d	258	260	264	255	265	263	379	316	316	313	310	271
PTTW Daily Rated Capacity	ML/d	909	909	909	909	909	909	909	909	909	909	909	909
MDWL Daily Rated Capacity	ML/d	926	926	926	926	926	926	926	926	926	926	926	926

MAINTAINED COMPLIANCE

FIGURE 1-1: WOODWARD TREATMENT PLANT - 2020 MONTHLY PRODUCTION (SUMMARY)



WATER QUALITY DATA

SUMMARY OF LEAD TESTING UNDER SCHEDULE 15.1 DURING THIS REPORTING PERIOD.

LOCATION TYPE	POINTS SAMPLED	LEAD SAMPLES TAKEN	PH SAMPLES TAKEN	ALKALINITY SAMPLES TAKEN	PH RESULTS (MIN #) TO (MAX #) PH UNITS	ALKALINITY RESULTS (MIN #) TO (MAX #) MG/L	LEAD RESULTS (MIN #) TO (MAX #) MG/L	LEAD AWQIs	LEAD EXCEEDANCES
PLUMBING-NR	5	10	5	N/A	7.48 to 7.89	N/A	0.0004 to 0.0298	N/A	2
PLUMBING-R	50	100	50	N/A	7.25 to 7.89	N/A	<0.0001 to 0.0189	N/A	4
DISTRIBUTION	20	20	20	20	7.40 to 8.01	84 to 88	<0.0001 to 0.0012	0	N/A

NR - Non Residential R- Residential

MICROBIOLOGICAL TESTING DONE UNDER SCHEDULE 10, 11, 12 AND 17, 18 OF REGULATION 170/03, DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATES	# OF SAMPLES	RESULT RANGE	UNIT OF MEASURE
RAW				
E.COLI	2020-01-07 to 2020-01-28	4	1 to 13	CFU/100mL
E.COLI MPN	2020-02-04 to 2020-12-29	48	0 to 10	MPN/100mL
TOTAL COLIFORM	2020-01-07 to 2020-01-28	4	19 to 138	CFU/100mL
TOTAL COLIFORM MPN	2020-02-04 to 2020-12-29	48	0 to 7270	MPN/100mL
TREATED				
E.COLI	2020-01-01 to 2020-01-31	54	0	CFU/100mL
E.COLI P/A	2020-02-02 to 2020-12-31	548	ALL ABSENT	P/A/100mL
HPC	2020-01-01 to 2020-12-30	350	0 to 12	CFU/1mL
TOTAL COLIFORM	2020-01-01 to 2020-01-31	54	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-02 to 2020-12-31	548	ALL ABSENT	P/A/100mL
DISTRIBUTION				
E.COLI	2020-01-02 to 2020-01-31	154	0	CFU/100mL
E.COLI MPN	2020-07-16 to 2020-10-15	50	0	MPN/100mL
E.COLI P/A	2020-02-03 to 2020-12-31	1703	ALL ABSENT	P/A/100mL
HPC	2020-01-06 to 2020-12-30	1135	0 to 2200	CFU/1mL
TOTAL COLIFORM	2020-01-02 to 2020-01-31	154	0	CFU/100mL
TOTAL COLIFORM MPN	2020-07-16 to 2020-10-15	50	0 to 152	MPN/100mL
TOTAL COLIFORM P/A	2020-02-03 to 2020-12-31	1703	4 DETECTIONS	P/A/100mL

OPERATIONAL TESTING DONE UNDER SCHEDULE 7, 8 OR 9 OF REGULATION 170/03 DURING THE PERIOD COVERED BY THIS ANNUAL REPORT.

NOTE: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) TO (MAX #)	UNIT OF MEASURE
TURBIDITY - TREATED – FILTER 1	8760	0.01 to 0.77	NTU
TURBIDITY - TREATED – FILTER 2	8760	0.02 to 0.49	NTU
TURBIDITY - TREATED – FILTER 3	8760	0.02 to 0.65	NTU
TURBIDITY - TREATED – FILTER 4	8760	0.02 to 0.45	NTU
TURBIDITY - TREATED – FILTER 5	8760	0.02 to 0.70	NTU
TURBIDITY - TREATED – FILTER 6	8760	0.02 to 0.72	NTU
TURBIDITY - TREATED – FILTER 7	8760	0.02 to 0.06	NTU
TURBIDITY - TREATED – FILTER 8	8760	0.01 to 0.57	NTU
TURBIDITY - TREATED – FILTER 9	8760	0.02 to 0.44	NTU
TURBIDITY - TREATED – FILTER 10	8760	0.02 to 0.65	NTU
TURBIDITY - TREATED – FILTER 11	8760	0.02 to 0.66	NTU
TURBIDITY - TREATED – FILTER 12	8760	0.02 to 0.22	NTU
TURBIDITY - TREATED – FILTER 13	8760	0.02 to 0.29	NTU
TURBIDITY - TREATED – FILTER 14	8760	0.02 to 0.11	NTU
TURBIDITY - TREATED – FILTER 15	8760	0.02 to 0.28	NTU
TURBIDITY - TREATED – FILTER 16	8760	0.02 to 0.61	NTU
TURBIDITY - TREATED – FILTER 17	8760	0.02 to 0.39	NTU
TURBIDITY - TREATED – FILTER 18	8760	0.02 to 0.24	NTU
TURBIDITY - TREATED – FILTER 19	8760	0.02 to 0.14	NTU
TURBIDITY - TREATED – FILTER 20	8760	0.02 to 0.59	NTU
TURBIDITY - TREATED – FILTER 21	8760	0.02 to 0.56	NTU
TURBIDITY - TREATED – FILTER 22	8760	0.02 to 0.74	NTU
TURBIDITY - TREATED – FILTER 23	8760	0.02 to 0.13	NTU
TURBIDITY - TREATED – FILTER 24	8760	0.02 to 0.27	NTU
COMBINED CHLORINE - TREATED	8760	1.03 to 2.96	mg/L
FREE CHLORINE - DISTRIBUTION	2015	<0.02 to 0.19	mg/L
COMBINED CHLORINE - DISTRIBUTION	2015	0.11 to 2.81	mg/L
FLUORIDE – TREATED	8760	0.36 to 1.19	mg/L

SUMMARY OF ADDITIONAL TESTING AND SAMPLING CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENT OF A LICENCE, APPROVAL, ORDER OR OTHER LEGAL INSTRUMENT.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
TREATED – MICROCYSTIN	2020-06-02 to 2020-10-27	<0.15	ug/L
RAW - MICROCYSTIN	2020-01-14 to 2020-12-08	<0.15	ug/L
TREATED - CHLORIDE	2020-01-14 to 2020-12-08	29.2 to 40.3	mg/L
TREATED - SULPHATE	2020-01-14 to 2020-12-08	23.3 to 26.1	mg/L
TREATED - O-PHOSPHATE AS PO4	2020-01-01 to 2020-12-31	1.60 to 2.48	mg/L
TREATED – COLOUR (APPARENT)	2020-01-27 to 2020-10-19	<2 to 2	CU
TREATED – LEAD	2020-01-27 to 2020-10-19	<0.0001	mg/L
TREATED - ALKALINITY	2020-05-11 to 2020-11-02	86 to 88	mg/L
TREATED - IRON	2020-01-27 to 2020-10-19	<0.003	mg/L
TREATED – COPPER	2020-01-27 to 2020-10-19	0.0002 to 0.0004	mg/L
TREATED – TOTAL DISSOLVED SOLIDS	2020-01-27 to 2020-10-19	166 to 228	mg/L
PLUMBING – COPPER	2020-01-13 to 2020-01-31	0.0014 to 0.0633	mg/L
DISTRIBUTION - IRON	2020-01-27 to 2020-10-20	<0.003 to 0.093	mg/L
DISTRIBUTION - O-PHOSPHATE AS PO4	2020-01-02 to 2020-12-31	1.72 to 3.53	mg/L
DISTRIBUTION - FIELD TEMPERATURE	2020-01-02 to 2020-12-31	4.8 to 22.3	°C
DISTRIBUTION - FIELD TURBIDITY	2020-01-02 to 2020-12-31	<0.05 to 1.67	NTU

PARAMETER	NUMBER OF GRAB SAMPLES	RESULT VALUE	UNIT OF MEASURE
RAW – TEMPERATURE	8760	0.63 to 23.35	°C
TREATED – pH	8760	6.66 to 7.64	pH
TREATED – ORTHOPHOSPHATE	8760	0.84 to 3.46	mg/L

SUMMARY OF INORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
		TREATED		
ANTIMONY	2020-05-11 to 2020-11-02	0.0001 to 0.0002	mg/L	0
ARSENIC	2020-05-11 to 2020-11-02	0.0006	mg/L	0
BARIUM	2020-05-11 to 2020-11-02	0.0208 to 0.0215	mg/L	0
BORON	2020-05-11 to 2020-11-02	0.023 to 0.026	mg/L	0
CADMIUM	2020-05-11 to 2020-11-02	<0.0001	mg/L	0
CHROMIUM	2020-05-11 to 2020-11-02	<0.0001	mg/L	0
FLUORIDE	2020-05-11 to 2020-11-02	0.56 to 0.63	mg/L	0
MERCURY	2020-05-11 to 2020-11-02	<0.05	ug/L	0
NITRATE AS N	2020-01-20 to 2020-11-02	0.30 to 0.53	mg/L	0
NITRITE AS N	2020-01-20 to 2020-11-02	<0.01	mg/L	0
SELENIUM	2020-05-11 to 2020-11-02	0.0001	mg/L	0
SODIUM	2020-05-11 to 2020-11-02	14.2 to 17.5	mg/L	0
URANIUM	2020-05-11 to 2020-11-02	0.192 to 0.213	ug/L	0

SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
	TREATED			
1,1-DICHLOROETHYLENE	2020-05-11 to 2020-11-02	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-11 to 2020-11-02	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-11 to 2020-11-02	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-11 to 2020-11-02	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-11	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-11	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-11	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-05-11	<0.15	ug/L	0
ALACHLOR	2020-05-11	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-11	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-11	<0.05	ug/L	0
BENZENE	2020-05-11 to 2020-11-02	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-11	<0.004	ug/L	0
BROMOXYNIL	2020-05-11	<0.33	ug/L	0
CARBARYL	2020-05-11	<0.05	ug/L	0
CARBOFURAN	2020-05-11	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-11 to 2020-11-02	<0.2	ug/L	0
CHLOROBENZENE	2020-05-11 to 2020-11-02	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-11	<0.02	ug/L	0
DIAZINON	2020-05-11	<0.02	ug/L	0
DICAMBA	2020-05-11	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-11 to 2020-11-02	<0.5	ug/L	0
DICLOFOP-METHYL	2020-05-11	<0.40	ug/L	0
DIMETHOATE	2020-05-11	<0.06	ug/L	0
DIQUAT	2020-05-11	<1	ug/L	0
DIURON	2020-05-11	<0.03	ug/L	0
ETHYLBENZENE	2020-05-11 to 2020-11-02	<0.33	ug/L	0
GLYPHOSATE	2020-05-11	<1	ug/L	0
MALATHION	2020-05-11	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHE-NOXYACETIC ACID)	2020-05-11	<0.00012	mg/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
TREATED				
METOLACHLOR	2020-05-11	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-11	<0.02	ug/L	0
PARAQUAT	2020-05-11	<1	ug/L	0
PCBS TOTAL	2020-05-11	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-11	<0.15	mg/L	0
PHORATE	2020-05-11	<0.01	ug/L	0
PICLORAM	2020-05-11	<1	ug/L	0
PROMETRYNE	2020-05-11	<0.03	ug/L	0
SIMAZINE	2020-05-11	<0.01	ug/L	0
TERBUFOS	2020-05-11	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-11 to 2020-11-02	<0.35	ug/L	0
TOLUENE	2020-05-11 to 2020-11-02	<0.36	ug/L	0
TRIALLATE	2020-05-11	<0.01	ug/L	0
TRICHLOROETHYLENE	2020-05-11 to 2020-11-02	<0.44	ug/L	0
TRIFLURALIN	2020-05-11	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-11 to 2020-11-02	<0.2	ug/L	0
XYLENE	2020-05-11 to 2020-11-02	<0.5	ug/L	0
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	14.8	ug/L	0
HALOACETIC ACIDS*	Running annual average for the last four quarters.	5.5	ug/L	0

*The Maximum Acceptable Concentration for Trihalomethanes and Haloacetic Acids in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
		TREATED		
1,1-DICHLOROETHYLENE	2020-08-31 to 2020-12-29	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-08-31 to 2020-12-29	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-08-31 to 2020-12-29	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-08-31 to 2020-12-29	<0.36	ug/L	0
BENZENE	2020-08-31 to 2020-12-29	<0.32	ug/L	0
CARBON TETRACHLORIDE	2020-08-31 to 2020-12-29	<0.2	ug/L	0
CHLOROBENZENE	2020-08-31 to 2020-12-29	<0.3	ug/L	0
DICHLOROMETHANE	2020-08-31 to 2020-12-29	<0.5	ug/L	0
TETRACHLOROETHYLENE	2020-08-31 to 2020-12-29	<0.35	ug/L	0
TRICHLOROETHYLENE	2020-08-31 to 2020-12-29	<0.44	ug/L	0
VINYL CHLORIDE	2020-08-31 to 2020-12-29	<0.2	ug/L	0
1,4-DIOXANE	2020-08-31 to 2020-12-29	<2	ug/L	0
1-CHLORONAPHTHALENE	2020-08-31 to 2020-12-29	<500	ng/L	0
1-METHYLNAPHTHALENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-08-31 to 2020-12-29	<0.20	ug/L	0
2,3,5,6-TETRACHLOROPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
2,4,5-TRICHLOROPHENOL	2020-08-31 to 2020-12-29	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-08-31 to 2020-12-29	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-08-31 to 2020-12-29	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-08-31 to 2020-12-29	<0.15	ug/L	0
2,4-DIMETHYLPHENOL	2020-08-31 to 2020-12-29	<5	ug/L	0
2,4-DINITROPHENOL	2020-08-31 to 2020-12-29	<10	ug/L	0
2,4-DINITROTOLUENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2,6-DINITROTOLUENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2-CHLORONAPHTHALENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2-CHLOROPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
2-METHYL-4,6-DINITROPHENOL	2020-08-31 to 2020-12-29	<10	ug/L	0
2-METHYLNAPHTHALENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2-NITROANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
2-NITROPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0

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SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
		TREATED		
3,3'-DICHLOROBENZIDINE	2020-08-31 to 2020-12-29	<500	ng/L	0
3-NITROANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
4-CHLORO-3-METHYLPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
4-CHLOROANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
4-CHLOROPHENYL PHENYL ETHER	2020-08-31 to 2020-12-29	<500	ng/L	0
4-NITROANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
4-NITROPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
5-NITROACENAPHTHENE	2020-08-31 to 2020-12-29	<500	ng/L	0
7H-DIBENZO(C,G)CARBAZOLE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
ACENAPHTHENE	2020-08-31 to 2020-12-29	<100	ng/L	0
ACENAPHTHYLENE	2020-08-31 to 2020-12-29	<100	ng/L	0
ALACHLOR	2020-08-31 to 2020-12-29	<0.02	ug/L	0
ANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
ANTHRACENE	2020-08-31 to 2020-12-29	<100	ng/L	0
ATRAZINE	2020-08-31 to 2020-12-29	<0.01 to 0.01	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-08-31 to 2020-12-29	<0.01 to 0.01	ug/L	0
AZINPHOS-METHYL	2020-08-31 to 2020-12-29	<0.05	ug/L	0
AZOBENZENE	2020-08-31 to 2020-12-29	<500	ng/L	0
BENZIDINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
BENZO[A]ANTHRACENE	2020-08-31 to 2020-12-29	<100	ng/L	0
BENZO[A]PYRENE	2020-08-31 to 2020-12-29	<0.004	ug/L	0
BENZO[B/J]FLUORANTHENE	2020-08-31 to 2020-12-29	<100	ng/L	0
BENZO[E]PYRENE	2020-08-31 to 2020-12-29	<100	ng/L	0

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SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
		TREATED		
BENZO[G,H,I]PERYLENE	2020-08-31 to 2020-12-29	<200	ng/L	0
BENZO[K]FLUORANTHENE	2020-08-31 to 2020-12-29	<100	ng/L	0
BENZYL ALCOHOL	2020-08-31 to 2020-12-29	<500	ng/L	0
BENZYL BUTYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
BIPHENYL	2020-08-31 to 2020-12-29	<500	ng/L	0
BIS(2-CHLOROETHOXY) METHANE	2020-08-31 to 2020-12-29	<500	ng/L	0
BIS(2-CHLOROETHYL)ETHER	2020-08-31 to 2020-12-29	<500	ng/L	0
BIS(2-CHLOROISOPROPYL) ETHER	2020-08-31 to 2020-12-29	<500	ng/L	0
BIS(2-ETHYLHEXYL) PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
BIS(2-ETHYLHEXYL)ADIPATE	2020-08-31 to 2020-12-29	<1	ug/L	0
BISPHENOL A	2020-08-31 to 2020-12-29	<1	ug/L	0
BROMOXYNIL	2020-08-31 to 2020-12-29	<0.33	ug/L	0
CAMPHENE	2020-08-31 to 2020-12-29	<1000	ng/L	0
CARBARYL	2020-08-31 to 2020-12-29	<0.05	ug/L	0
CARBAZOLE	2020-08-31 to 2020-12-29	<5	ug/L	0
CARBOFURAN	2020-08-31 to 2020-12-29	<0.01	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-08-31 to 2020-12-29	<0.02	ug/L	0
CHRYSENE	2020-08-31 to 2020-12-29	<100	ng/L	0
DESETHYL-ATRAZINE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
DIAZINON	2020-08-31 to 2020-12-29	<0.02	ug/L	0
DIBENZO(A,E)PYRENE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO(A,H)ACRIDINE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO(A,H)PYRENE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO(A,I)PYRENE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO(A,J)ACRIDINE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO[A,H]ANTHRACENE	2020-08-31 to 2020-12-29	<200	ng/L	0
DIBENZOFURAN	2020-08-31 to 2020-12-29	<0.5	ug/L	0
DICAMBA	2020-08-31 to 2020-12-29	<0.20	ug/L	0
DICLOFOP-METHYL	2020-08-31 to 2020-12-29	<0.40	ug/L	0
DIETHYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0

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SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
TREATED				
DIMETHOATE	2020-08-31 to 2020-12-29	<0.06	ug/L	0
DIMETHYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
DI-N-BUTYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
DI-N-OCTYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
DIPHENYL ETHER	2020-08-31 to 2020-12-29	<1000	ng/L	0
DIPHENYLAMINE/N-NITROSODIPHENYLAMINE	2020-08-31 to 2020-12-29	<2000	ng/L	0
DIQUAT	2020-08-31 to 2020-12-29	<1	ug/L	0
DIURON	2020-08-31 to 2020-12-29	<0.03	ug/L	0
FLUORANTHENE	2020-08-31 to 2020-12-29	<100	ng/L	0
FLUORENE	2020-08-31 to 2020-12-29	<100	ng/L	0
GLYPHOSATE	2020-08-31 to 2020-12-29	<1	ug/L	0
HEXACHLOROBENZENE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
HEXACHLOROBUTADIENE	2020-08-31 to 2020-12-29	<100	ng/L	0
HEXACHLOROCYCLOPENTADIENE	2020-08-31 to 2020-12-29	<1	ug/L	0
HEXACHLOROETHANE	2020-08-31 to 2020-12-29	<100	ng/L	0
INDENO[1,2,3-CD]PYRENE	2020-08-31 to 2020-12-29	<200	ng/L	0
INDOLE	2020-08-31 to 2020-12-29	<1000	ng/L	0
ISOPHORONE	2020-08-31 to 2020-12-29	<500	ng/L	0
M+P-CRESOL (3+4-METHYLPHENOL)	2020-08-31 to 2020-12-29	<1000	ng/L	0
MALATHION	2020-08-31 to 2020-12-29	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLORO-PHENOXYACETIC ACID)	2020-08-31 to 2020-12-29	<0.00012	mg/L	0
M-DINITROBENZENE	2020-08-31 to 2020-12-29	<5	ug/L	0
METOLACHLOR	2020-08-31 to 2020-12-29	<0.01	ug/L	0

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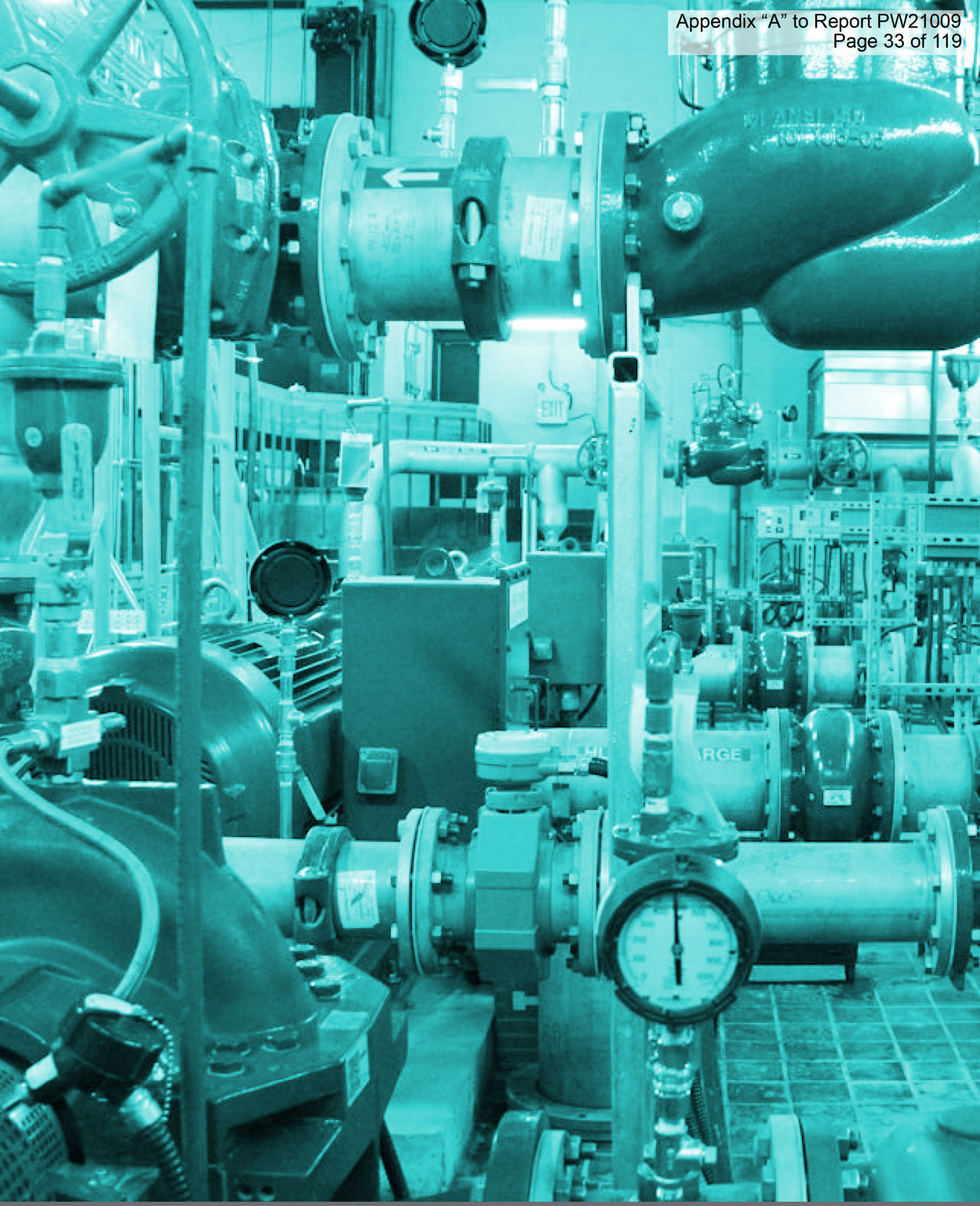
SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
		TREATED		
METRIBUZIN (SENCOR)	2020-08-31 to 2020-12-29	<0.02	ug/L	0
NAPHTHALENE	2020-08-31 to 2020-12-29	<0.5	ug/L	0
NDMA	2020-08-31 to 2020-12-29	<0.0008 to 0.0022	ug/L	0
NITROBENZENE	2020-08-31 to 2020-12-29	<1000	ng/L	0
N-NITROSODI-N-PROPYLAMINE	2020-08-31 to 2020-12-29	<500	ng/L	0
O-CRESOL (2-METHYLPHENOL)	2020-08-31 to 2020-12-29	<1000	ng/L	0
OCTACHLOROSTYRENE	2020-08-31 to 2020-12-29	<500	ng/L	0
O-DINITROBENZENE	2020-08-31 to 2020-12-29	<5	ug/L	0
PARAQUAT	2020-08-31 to 2020-12-29	<1	ug/L	0
PCBS TOTAL	2020-08-31 to 2020-12-29	<0.04	ug/L	0
P-DINITROBENZENE	2020-08-31 to 2020-12-29	<5	ug/L	0
PENTACHLOROPHENOL	2020-08-31 to 2020-12-29	<0.15	ug/L	0
PERYLENE	2020-08-31 to 2020-12-29	<500	ng/L	0
PHENANTHRENE	2020-08-31 to 2020-12-29	<100	ng/L	0
PHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
PHORATE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
PICLORAM	2020-08-31 to 2020-12-29	<1	ug/L	0
PROMETRYNE	2020-08-31 to 2020-12-29	<0.03	ug/L	0
PYRENE	2020-08-31 to 2020-12-29	<100	ng/L	0
PYRIDINE	2020-08-31 to 2020-12-29	<2000	ng/L	0
SIMAZINE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
TERBUFOS	2020-08-31 to 2020-12-29	<0.01	ug/L	0
TRIALLATE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
TRIFLURALIN	2020-08-31 to 2020-12-29	<0.02	ug/L	0



SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DISTRIBUTION				
1,1-DICHLOROETHYLENE	2020-08-31 to 2020-12-29	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-08-31 to 2020-12-29	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-08-31 to 2020-12-29	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-08-31 to 2020-12-29	<0.36	ug/L	0
BENZENE	2020-08-31 to 2020-12-29	<0.32	ug/L	0
CARBON TETRACHLORIDE	2020-08-31 to 2020-12-29	<0.2 to 30	ug/L	1
CHLOROBENZENE	2020-08-31 to 2020-12-29	<0.3	ug/L	0
DICHLOROMETHANE	2020-08-31 to 2020-12-29	<0.5	ug/L	0
TETRACHLOROETHYLENE	2020-08-31 to 2020-12-29	<0.35	ug/L	0
TRICHLOROETHYLENE	2020-08-31 to 2020-12-29	<0.44	ug/L	0
VINYL CHLORIDE	2020-08-31 to 2020-12-29	<0.2	ug/L	0
1,4-DIOXANE	2020-08-31 to 2020-12-29	<2	ug/L	0
1-CHLORONAPHTHALENE	2020-08-31 to 2020-12-29	<500	ng/L	0
1-METHYLNAPHTHALENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-08-31 to 2020-12-29	<0.20	ug/L	0
2,3,5,6-TETRACHLOROPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
2,4,5-TRICHLOROPHENOL	2020-08-31 to 2020-12-29	<0.2	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-08-31 to 2020-12-29	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-08-31 to 2020-12-29	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-08-31 to 2020-12-29	<0.15	ug/L	0
2,4-DIMETHYLPHENOL	2020-08-31 to 2020-12-29	<5	ug/L	0
2,4-DINITROPHENOL	2020-08-31 to 2020-12-29	<10	ug/L	0
2,4-DINITROTOLUENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2,6-DINITROTOLUENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2-CHLORONAPHTHALENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2-CHLOROPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
2-METHYL-4,6-DINITROPHENOL	2020-08-31 to 2020-12-29	<10	ug/L	0
2-METHYLNAPHTHALENE	2020-08-31 to 2020-12-29	<500	ng/L	0
2-NITROANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
2-NITROPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0

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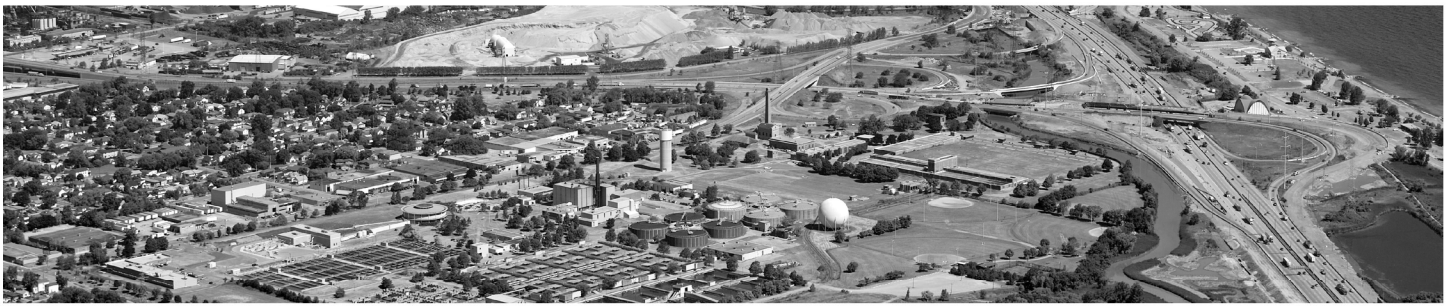

SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DISTRIBUTION				
3,3'-DICHLOROBENZIDINE	2020-08-31 to 2020-12-29	<500	ng/L	0
3-NITROANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
4-CHLORO-3-METHYLPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
4-CHLOROANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
4-CHLOROPHENYL PHENYL ETHER	2020-08-31 to 2020-12-29	<500	ng/L	0
4-NITROANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
4-NITROPHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
5-NITROACENAPHTHENE	2020-08-31 to 2020-12-29	<500	ng/L	0
7H-DIBENZO(C,G)CARBAZOLE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
ACENAPHTHENE	2020-08-31 to 2020-12-29	<100	ng/L	0
ACENAPHTHYLENE	2020-08-31 to 2020-12-29	<100	ng/L	0
ALACHLOR	2020-08-31 to 2020-12-29	<0.02	ug/L	0
ANILINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
ANTHRACENE	2020-08-31 to 2020-12-29	<100	ng/L	0
ATRAZINE	2020-08-31 to 2020-12-29	<0.01 to 0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-08-31 to 2020-12-29	<0.01 to 0.02	ug/L	0
AZINPHOS-METHYL	2020-08-31 to 2020-12-29	<0.05	ug/L	0
AZOBENZENE	2020-08-31 to 2020-12-29	<500	ng/L	0
BENZIDINE	2020-08-31 to 2020-12-29	<1000	ng/L	0
BENZO[A]ANTHRACENE	2020-08-31 to 2020-12-29	<100	ng/L	0
BENZO[A]PYRENE	2020-08-31 to 2020-12-29	<0.004	ug/L	0
BENZO[B/J]FLUORANTHENE	2020-08-31 to 2020-12-29	<100	ng/L	0
BENZO[E]PYRENE	2020-08-31 to 2020-12-29	<100	ng/L	0

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SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
		DISTRIBUTION		
BENZO[G,H,I]PERYLENE	2020-08-31 to 2020-12-29	<200	ng/L	0
BENZO[K]FLUORANTHENE	2020-08-31 to 2020-12-29	<100	ng/L	0
BENZYL ALCOHOL	2020-08-31 to 2020-12-29	<500 to 1200	ng/L	0
BENZYL BUTYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
BIPHENYL	2020-08-31 to 2020-12-29	<500	ng/L	0
BIS(2-CHLOROETHOXY) METHANE	2020-08-31 to 2020-12-29	<500	ng/L	0
BIS(2-CHLOROETHYL)ETHER	2020-08-31 to 2020-12-29	<500	ng/L	0
BIS(2-CHLOROISOPROPYL) ETHER	2020-08-31 to 2020-12-29	<500	ng/L	0
BIS(2-ETHYLHEXYL) PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
BIS(2-ETHYLHEXYL)ADIPATE	2020-08-31 to 2020-12-29	<1	ug/L	0
BISPHENOL A	2020-08-31 to 2020-12-29	<1	ug/L	0
BROMOXYNIL	2020-08-31 to 2020-12-29	<0.33	ug/L	0
CAMPHENE	2020-08-31 to 2020-12-29	<1000	ng/L	0
CARBARYL	2020-08-31 to 2020-12-29	<0.05	ug/L	0
CARBAZOLE	2020-08-31 to 2020-12-29	<5	ug/L	0
CARBOFURAN	2020-08-31 to 2020-12-29	<0.01	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-08-31 to 2020-12-29	<0.02	ug/L	0
CHRYSENE	2020-08-31 to 2020-12-29	<100	ng/L	0
DESETHYL-ATRAZINE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
DIAZINON	2020-08-31 to 2020-12-29	<0.02	ug/L	0
DIBENZO(A,E)PYRENE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO(A,H)ACRIDINE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO(A,H)PYRENE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO(A,I)PYRENE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO(A,J)ACRIDINE	2020-08-31 to 2020-12-29	<0.1	ug/L	0
DIBENZO[A,H]ANTHRACENE	2020-08-31 to 2020-12-29	<200	ng/L	0
DIBENZOFURAN	2020-08-31 to 2020-12-29	<0.5	ug/L	0
DICAMBA	2020-08-31 to 2020-12-29	<0.20	ug/L	0
DICLOFOP-METHYL	2020-08-31 to 2020-12-29	<0.40	ug/L	0
DIETHYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0

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SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DISTRIBUTION				
DIMETHOATE	2020-08-31 to 2020-12-29	<0.06	ug/L	0
DIMETHYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
DI-N-BUTYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
DI-N-OCTYL PHTHALATE	2020-08-31 to 2020-12-29	<2000	ng/L	0
DIPHENYL ETHER	2020-08-31 to 2020-12-29	<1000	ng/L	0
DIPHENYLAMINE/N-NITROSODIPHENYLAMINE	2020-08-31 to 2020-12-29	<2000	ng/L	0
DIQUAT	2020-08-31 to 2020-12-29	<1	ug/L	0
DIURON	2020-08-31 to 2020-12-29	<0.03	ug/L	0
FLUORANTHENE	2020-08-31 to 2020-12-29	<100	ng/L	0
FLUORENE	2020-08-31 to 2020-12-29	<100	ng/L	0
GLYPHOSATE	2020-08-31 to 2020-12-29	<1	ug/L	0
HEXACHLOROBENZENE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
HEXACHLOROBUTADIENE	2020-08-31 to 2020-12-29	<1000	ng/L	0
HEXACHLOROCYCLOPENTADIENE	2020-08-31 to 2020-12-29	<1	ug/L	0
HEXACHLOROETHANE	2020-08-31 to 2020-12-29	<100	ng/L	0
INDENO[1,2,3-CD]PYRENE	2020-08-31 to 2020-12-29	<200	ng/L	0
INDOLE	2020-08-31 to 2020-12-29	<1000	ng/L	0
ISOPHORONE	2020-08-31 to 2020-12-29	<500	ng/L	0
M+P-CRESOL (3+4-METHYLPHENOL)	2020-08-31 to 2020-12-29	<1000	ng/L	0
MALATHION	2020-08-31 to 2020-12-29	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLORO-PHENOXYACETIC ACID)	2020-08-31 to 2020-12-29	<0.00012	mg/L	0
M-DINITROBENZENE	2020-08-31 to 2020-12-29	<5	ug/L	0
METOLACHLOR	2020-08-31 to 2020-12-29	<0.01	ug/L	0

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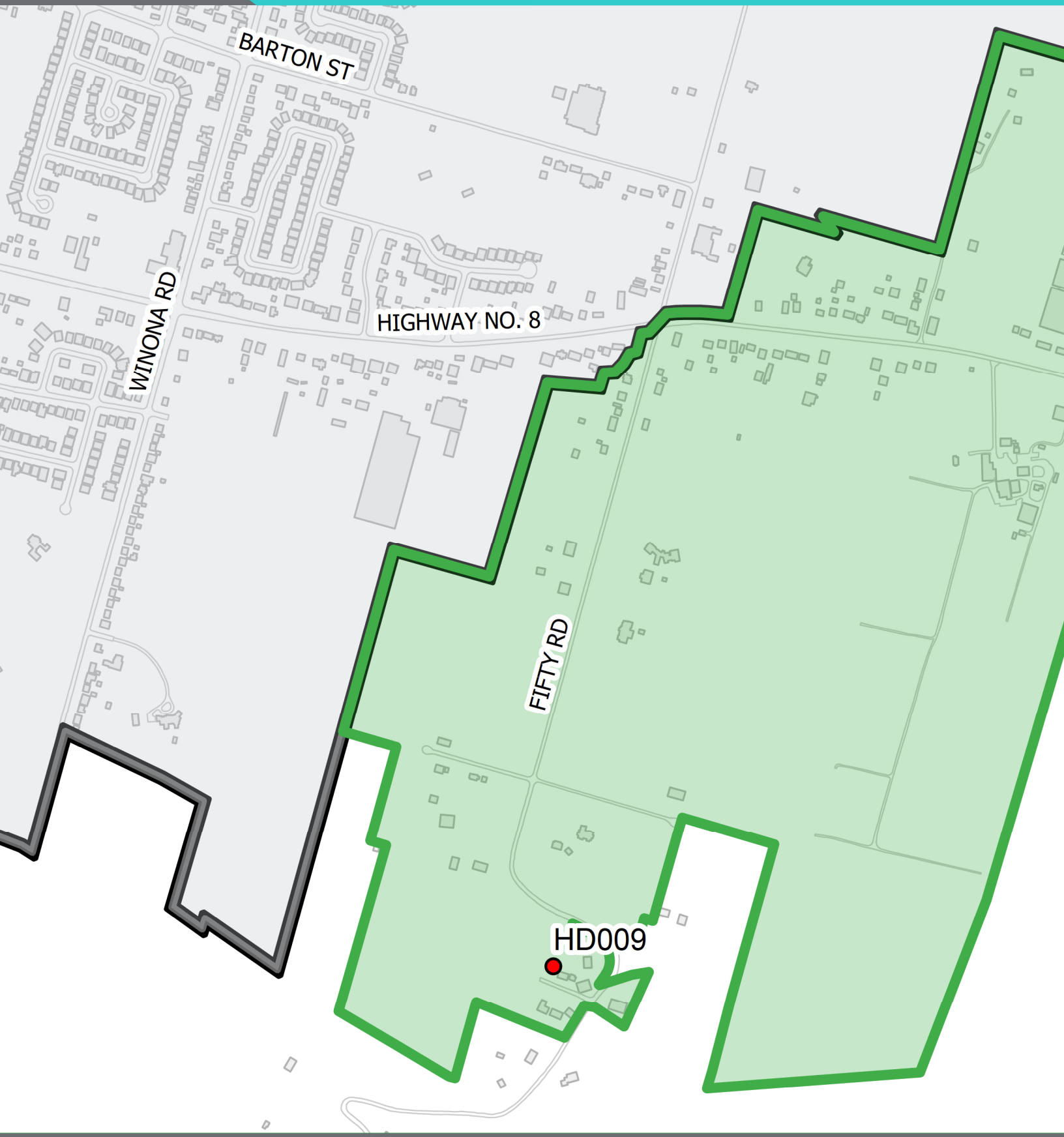
SUMMARY OF ADDITIONAL TESTING AND SAMPLING RELATED TO KENILWORTH RESERVOIR

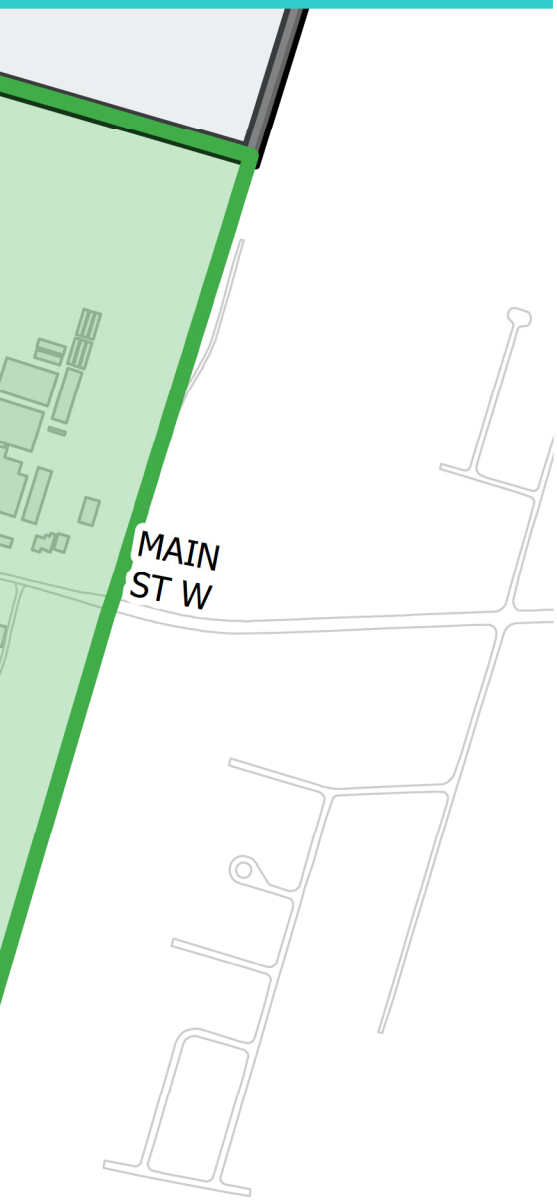
PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DISTRIBUTION				
METRIBUZIN (SENCOR)	2020-08-31 to 2020-12-29	<0.02	ug/L	0
NAPHTHALENE	2020-08-31 to 2020-12-29	<0.5	ug/L	0
NDMA	2020-08-31 to 2020-12-29	<0.0008 to 0.0019	ug/L	0
NITROBENZENE	2020-08-31 to 2020-12-29	<1000	ng/L	0
N-NITROSODI-N-PROPYLAMINE	2020-08-31 to 2020-12-29	<500	ng/L	0
O-CRESOL (2-METHYLPHENOL)	2020-08-31 to 2020-12-29	<1000	ng/L	0
OCTACHLOROSTYRENE	2020-08-31 to 2020-12-29	<500	ng/L	0
O-DINITROBENZENE	2020-08-31 to 2020-12-29	<5	ug/L	0
PARAQUAT	2020-08-31 to 2020-12-29	<2	ug/L	0
PCBS TOTAL	2020-08-31 to 2020-12-29	<0.04	ug/L	0
P-DINITROBENZENE	2020-08-31 to 2020-12-29	<5	ug/L	0
PENTACHLOROPHENOL	2020-08-31 to 2020-12-29	<0.15	ug/L	0
PERYLENE	2020-08-31 to 2020-12-29	<500	ng/L	0
PHENANTHRENE	2020-08-31 to 2020-12-29	<100	ng/L	0
PHENOL	2020-08-31 to 2020-12-29	<1	ug/L	0
PHORATE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
PICLORAM	2020-08-31 to 2020-12-29	<1	ug/L	0
PROMETRYNE	2020-08-31 to 2020-12-29	<0.03	ug/L	0
PYRENE	2020-08-31 to 2020-12-29	<100	ng/L	0
PYRIDINE	2020-08-31 to 2020-12-29	<2000	ng/L	0
SIMAZINE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
TERBUFOS	2020-08-31 to 2020-12-29	<0.01	ug/L	0
TRIALLATE	2020-08-31 to 2020-12-29	<0.01	ug/L	0
TRIFLURALIN	2020-08-31 to 2020-12-29	<0.02	ug/L	0

Parameters Exceeding Prescribed Half-Standard

There were no Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03)

FIFTY ROAD DRINKING WATER SUBSYSTEM WATER QUALITY ANNUAL REPORT





GENERAL INFORMATION

The treated water supply for this area comes from the Town of Grimsby Water Distribution System and serves a population of approximately 200 people. Water is provided from Grimsby west along Highway 8, then south on Fifty Road to Concession Road and to an underground, 1,100m3 storage reservoir operated by the City of Hamilton. The reservoir supplies water to residences on Reservoir Park Road.

A pump, running continuously, maintains the distribution system water pressure. Water pumped in excess of water system demand is circulated back to the reservoir. Fluoridation is not carried out on the water supplied by the Town of Grimsby. The reservoir water chlorine residual is maintained by a rechlorination system at the reservoir. Distribution water is sampled and analyzed one day per week. Chlorine residual in the distribution system is analyzed twice per week.

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre
MPN - Most Probable Number
P/A – Present/Absent

For more information on the Town of Grimsby's Quality Management System, DWQMS Policy, Licenses/Permits, Operational Plan and Annual Drinking Water Quality Reports, please visit:

https://www.grimsby.ca/en/living-in/drinking-water-quality.aspx

DRINKING WATER SYSTEM NUMBER	DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM OWNER	DRINKING WATER SYSTEM CATEGORY	PERIOD BEING REPORTED
260069173	Fifty Road Subsystem of Hamilton Drinking Water System	City of Hamilton	Small Municipal Residential	January 1, 2020 to December 31, 2020


CITY OF HAMILTON
Facility Number: H0009
UTILITY
PROPERTY
NOT FOR
PUBLIC USE

PROVISION OF DRINKING WATER TO OTHER MUNICIPALITIES

The following is a list of municipal drinking water systems which receive drinking water from the Fifty Road Drinking Water Subsystem:

DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM NUMBER
None other than Fifty Road Subsystem	260069173

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

Our customers are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.

WATER TREATMENT CHEMICALS USED DURING THIS REPORTING PERIOD

- Sodium Hypochlorite

BREAKDOWN OF SIGNIFICANT MONETARY EXPENSES

There were no significant expenses incurred for installing, repairing and replacing required equipment in 2020. There were no significant projects initiated or expenses to highlight for the Fifty Road Subsystem in 2020.

ADVERSE TEST RESULTS AND REPORTABLE INCIDENTS

The following table outlines 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.

NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION

We are pleased to announce that there were no Adverse Water Quality Incidents for the period of January 1, 2020 to December 31, 2020.

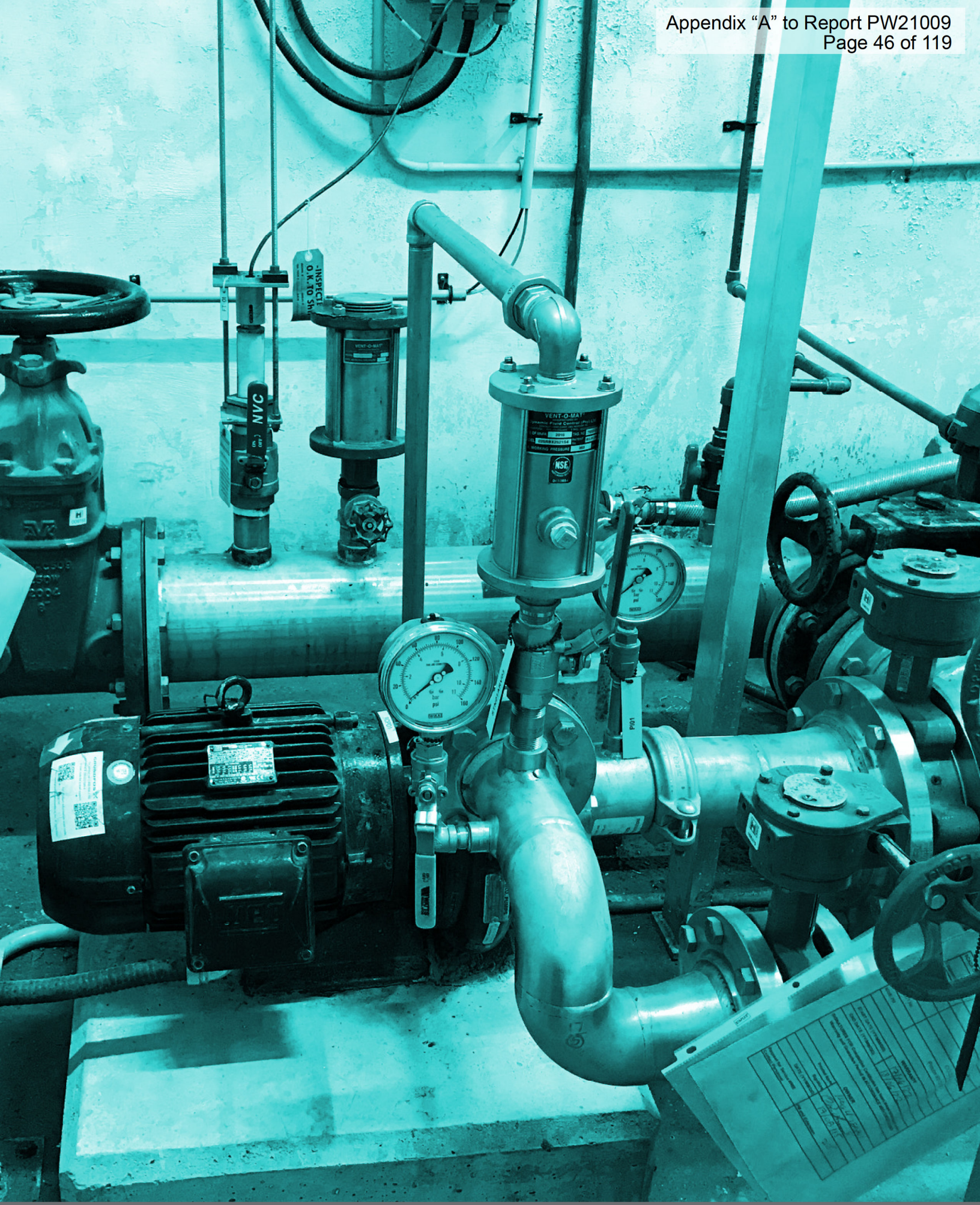
MECP HAMILTON DRINKING WATER SYSTEM, FIFTY ROAD SUBSYSTEM INSPECTION FINDINGS AND SELF-DECLARED NON-COMPLIANCES

A summary of findings that were either issued during the MECP inspection or self-declared during the 2020 calendar year.

#	FINDING TYPE	FINDING	STATUS
1	Non-Compliance	Records did not demonstrate disinfection in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit. Records must demonstrate disinfection was completed for maintenance as per Section "1.4 Planned Maintenance Of Watermain Appurtenances and Fittings" of the Watermain Disinfection Procedure. Maintenance Work Orders reviewed for the inspection included water sampling maintenance, service barrel repair, sampling station installation and post hydrant installation, not inclusive.	Actions Pending

WATER PRODUCTION REPORTS - SUMMARY

The Memorandum of Understanding between Grimsby and Hamilton does not include a rated capacity. Hamilton Water is working with Grimsby to revise the Memoradum of Understanding.


NVC
VENT-O-MAT
NSF

WATER QUALITY DATA

MICROBIOLOGICAL TESTING DONE UNDER SCHEDULE 10, 11, 12 AND 17, 18 OF REGULATION 170/03, DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	# OF SAMPLES	RESULT RANGE	UNIT OF MEASURE
DISTRIBUTION				
E.COLI	2020-01-06 to 2020-01-27	8	0	CFU/100mL
E.COLI P/A	2020-02-03 to 2020-12-28	96	ALL ABSENT	P/A/100mL
HPC	2020-01-06 to 2020-12-28	104	0 to 35	CFU/1mL
TOTAL COLIFORM	2020-01-06 to 2020-01-27	8	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-03 to 2020-12-28	96	ALL ABSENT	P/A/100mL

OPERATIONAL TESTING DONE UNDER SCHEDULE 7, 8 OR 9 OF REGULATION 170/03 DURING THE PERIOD COVERED BY THIS ANNUAL REPORT.

NOTE: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) TO (MAX #)	UNIT OF MEASURE
FREE CHLORINE - DISTRIBUTION	157	0.50 to 1.51	mg/L

SUMMARY OF ADDITIONAL TESTING AND SAMPLING CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENT OF A LICENCE, APPROVAL, ORDER OR OTHER LEGAL INSTRUMENT.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

SUMMARY OF INORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEA-SURE	NO. OF AWQIs
N/A	-	-	-	-

SUMMARY OF LEAD TESTING UNDER SCHEDULE 15.1 DURING THIS REPORTING PERIOD.

LOCATION TYPE	POINTS SAMPLED	LEAD SAMPLES TAKEN	PH SAMPLES TAKEN	ALKALINITY SAMPLES TAKEN	PH RESULTS (MIN #) TO (MAX #) PH UNITS	ALKALINITY RESULTS (MIN #) TO (MAX #) MG/L	LEAD RESULTS (MIN #) TO (MAX #) MG/L	LEAD AWQIs	LEAD EXCEEDANCES
PLUMBING-NR	1	2	1	N/A	7.66	N/A	<0.0001 to 0.0001	N/A	0
PLUMBING-R	5	10	5	N/A	7.66 to 8.54	N/A	0.0001 to 0.0003	N/A	0
DISTRIBUTION	2	2	2	2	7.53 to 7.64	86 to 88	<0.0001	0	N/A

NR - Non Residential R- Residential

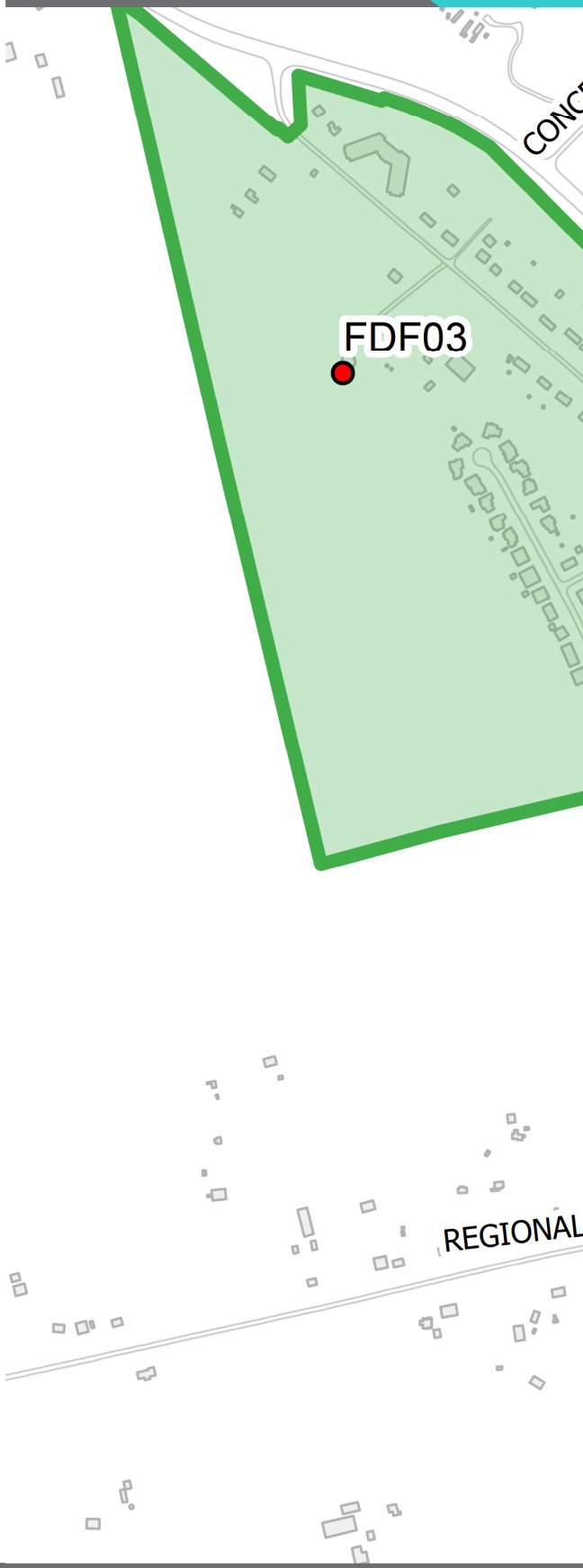
SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	19.6	ug/L	0
HALOACETIC ACIDS*	Running annual average for the last four quarters.	22.2	ug/L	0

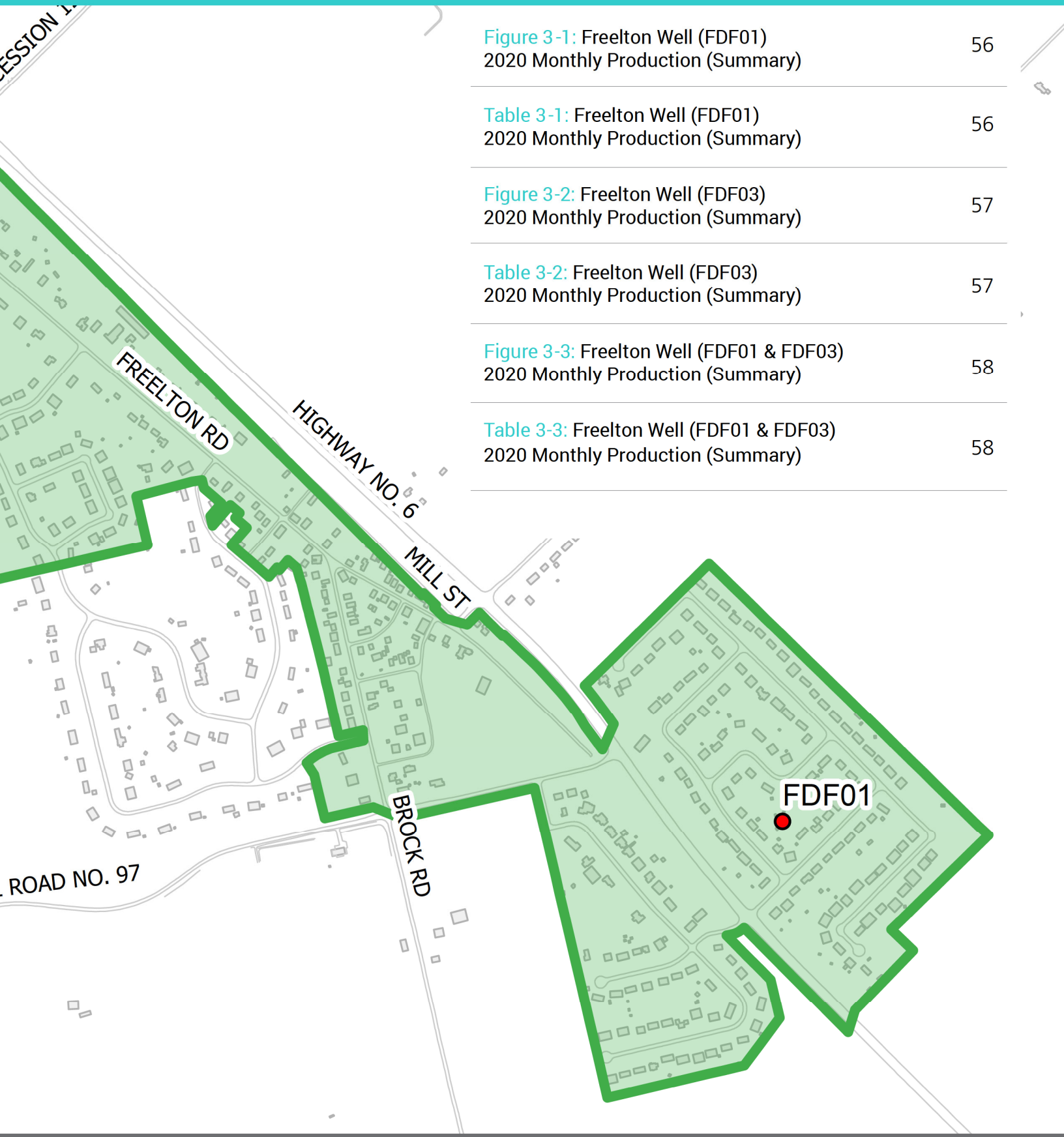
* The Maximum Acceptable Concentration for Trihalomethanes in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

PARAMETERS EXCEEDING PRESCRIBED HALF-STANDARD

There were no Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03)



FREELTON DRINKING WATER SYSTEM WATER QUALITY ANNUAL REPORT



GENERAL INFORMATION

The Freelton water supply system consists of two wells, one elevated water storage tank, treatment, sampling and analysis which services a population of approximately 804 people. The water source for the community of Freelton is ground water.

Water Wells:

- Freelton Well FDF01 is a 250mm diameter, approximately 21-metre-deep drilled ground water well.
- Freelton Well FDF03 is a 300mm diameter, approximately 50-metre-deep drilled ground water well.

Treatment:

- Sodium hypochlorite (chlorine) is used for disinfection within a chlorine contact chamber to ensure disinfection of the water prior to entering the distribution system.
- Fluoridation is not carried out at any of the Freelton community wells.

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre
MPN - Most Probable Number
P/A – Present/Absent

Water Storage:

An elevated water storage tank with an operating capacity of 2,840m^3 is available for peak hour water demand equalization as well as fire and emergency storage.

Sampling & Analysis:

All wells are equipped with on-line chlorine residual analyzers and turbidity analyzers that continually monitor the treated water quality. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.

DRINKING WATER SYSTEM NUMBER	DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM OWNER	DRINKING WATER SYSTEM CATEGORY	PERIOD BEING REPORTED
220004117	Freelton Drinking Water System FDF01, FDF03	City of Hamilton	Large Municipal Residential	January 1, 2020 to December 31, 2020


Freelton
Hamilton

PROVISION OF DRINKING WATER TO OTHER MUNICIPALITIES

The following is a list of municipal drinking water systems which receive drinking water from the Freelton System:

DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM NUMBER
None other than Freelton System	220004117

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

Our customers are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.

WATER TREATMENT CHEMICALS USED DURING THIS REPORTING PERIOD

- Sodium Hypochlorite

BREAKDOWN OF SIGNIFICANT MONETARY EXPENSES

There were no significant expenses incurred for installing, repairing and replacing required equipment in 2020. There were no significant projects initiated or expenses to highlight for the Freelton Drinking Water System in 2020.

ADVERSE TEST RESULTS AND REPORTABLE INCIDENTS

The following table outlines 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.

NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION
2020-05-19	Freelton Drinking Water System	FDF01 Sodium = 55.7 mg/L FDF03 Sodium = 38.0 mg/L (Regulatory requirement is maximum of 20 mg/L. Notification required only once every 57 months)	Resampled adverse locations. Sodium adverse was confirmed. Residents were mailed a letter, written by Public Health Services about sodium. Public Health was given a list of addresses to which the letters were mailed and a letter indicating that these addresses were believed to be connected to the Freelton Drinking Water System.

MECP FREELTON DRINKING WATER SYSTEM (DWS) INSPECTION FINDINGS AND SELF-DECLARED NON-COMPLIANCES

A summary of findings that were either issued during the MECP inspection or self-declared during the 2020 calendar year. The inspection has been started and the Final Inspection Report is pending. Additional findings will be included in the 2021 Drinking Water Systems Annual Summary and Water Quality Report.

#	FINDING TYPE	FINDING	STATUS
1	Self-Declared Non-Compliance	There were two occasions at two monitoring wells in Freelton where there was missing data due to equipment malfunctions.	Actions Pending

WATER PRODUCTION REPORTS - SUMMARY

The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

TABLE 3-1: FREELTON WELL (FDF01) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDF01	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total Monthly Flow	m^3	3,184	2,759	2,319	3,731	4,449	6,051	7,514	6,927	6,341	4,177	3,216	3,601
Average Daily Rate	m^3/d	103	95	75	124	144	202	242	223	211	135	107	116
Maximum Daily Rate	m^3/d	488	477	422	551	551	594	666	621	666	514	471	511
PTTW Daily Rated Capacity	m^3/d	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584	1,584
MDWL Daily Rated Capacity	m^3/d	878	878	878	878	878	878	878	878	878	878	878	878

MAINTAINED COMPLIANCE

FIGURE 3-1: FREELTON WELL (FDF01) - 2020 MONTHLY PRODUCTION (SUMMARY)

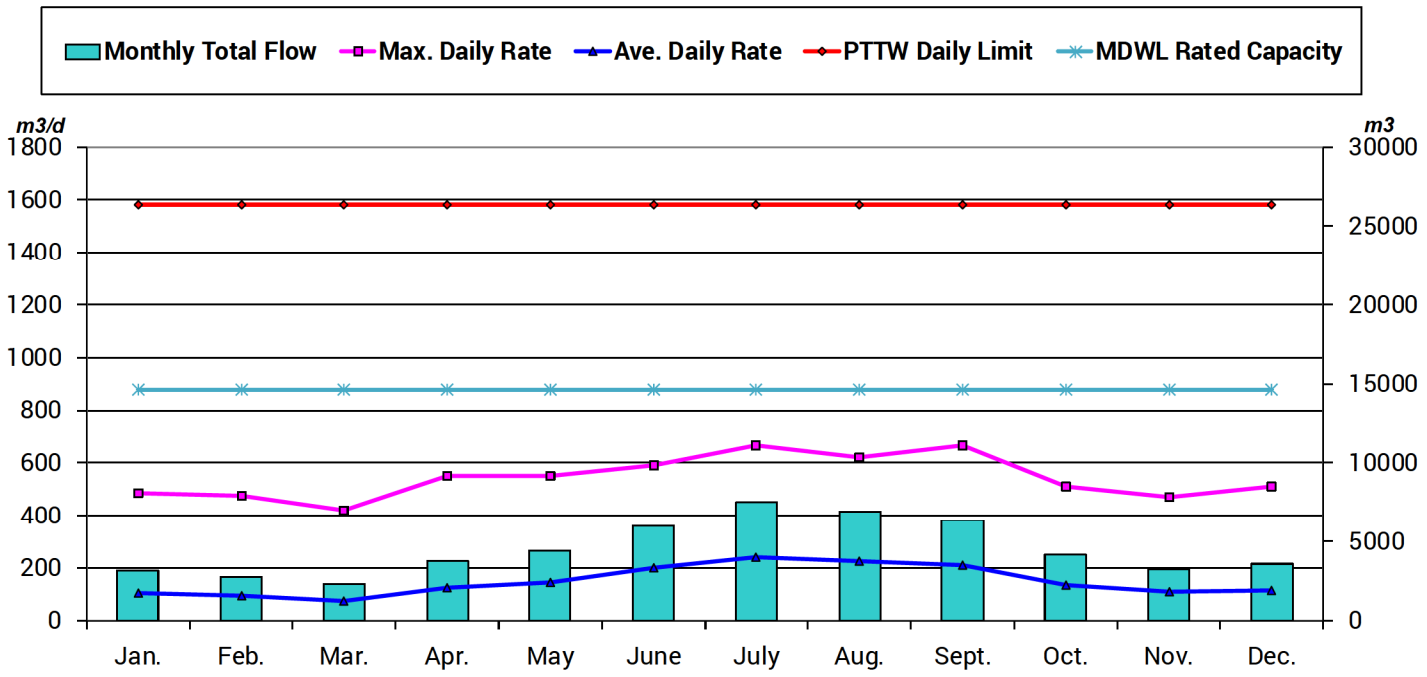


TABLE 3-2: FREELTON WELL (FDF03) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDF03	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total Monthly Flow	m^3	3,468	3,444	4,491	4,075	4,915	6,556	7,510	7,055	5,288	5,453	2,916	4,477
Average Daily Rate	m^3/d	112	119	145	136	159	219	242	228	176	176	97	144
Maximum Daily Rate	m^3/d	537	521	761	710	596	654	631	707	656	732	530	575
PTTW & MDWL Daily Rated Capacity	m^3/d	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607

MAINTAINED COMPLIANCE

FIGURE 3-2: FREELTON WELL (FDF03) - 2020 MONTHLY PRODUCTION (SUMMARY)

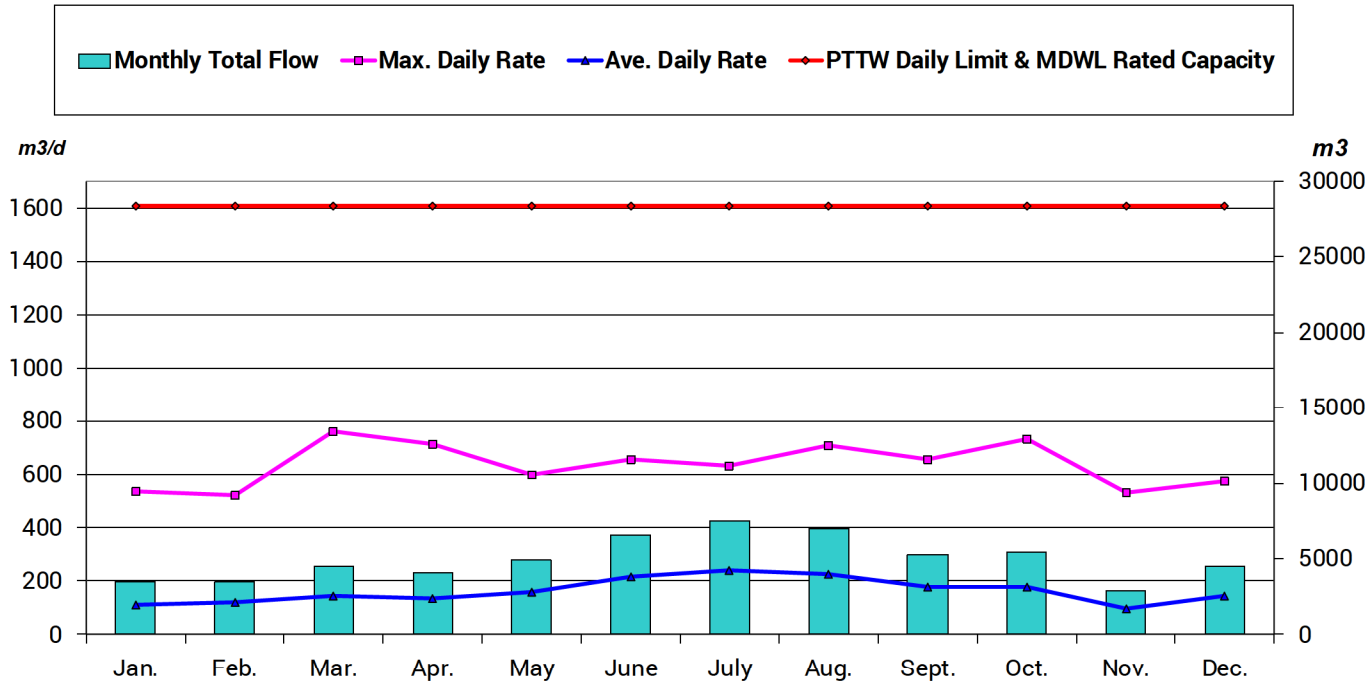
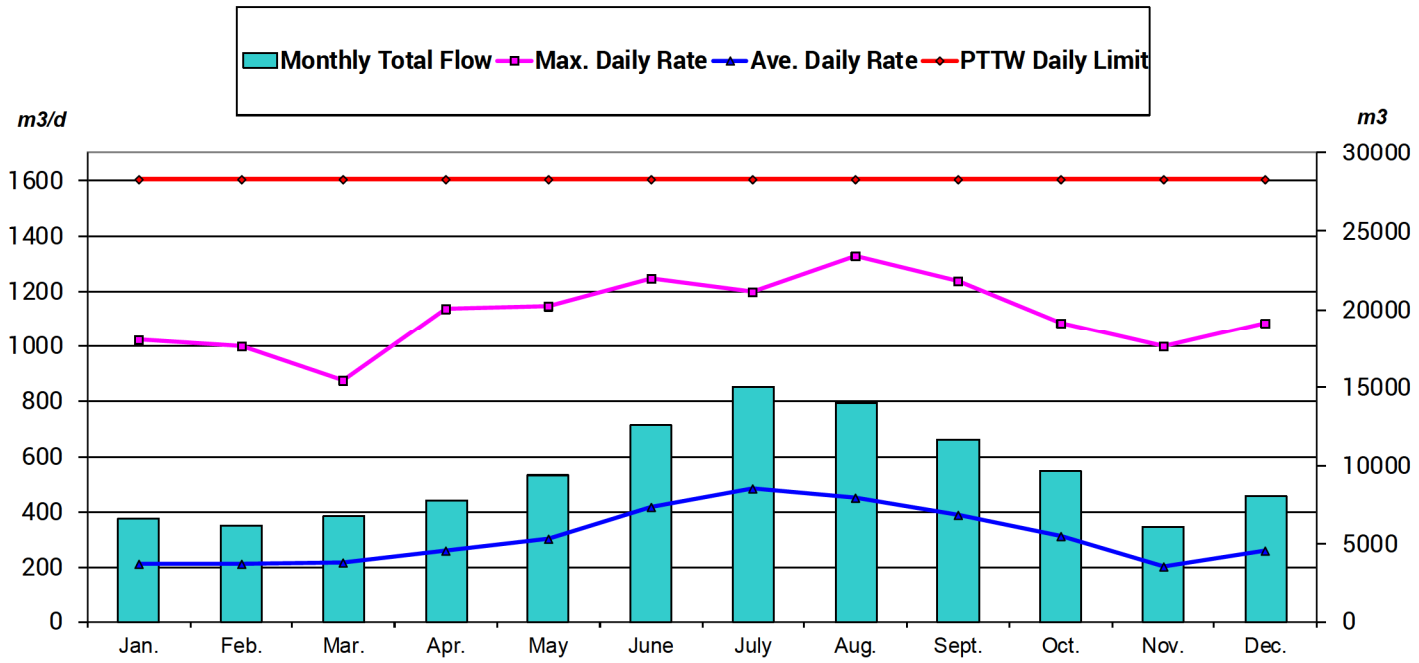


TABLE 3-3: FREELTON WELL (FDF01 & FDF03) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDF01 & 03	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Total Montly Flow	m^3	6,652	6,203	6,810	7,806	9,365	12,607	15,024	13,982	11,629	9,630	6,132	8,078
Average Daily Rate	m^3/d	215	214	220	260	302	420	485	451	388	311	204	261
Maximum Daily Rate	m^3/d	1,025	998	876	1,138	1,147	1,247	1,198	1,328	1,240	1,087	1,000	1,086
PTTW Daily Rated Capacity	m^3/d	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607	1,607

MAINTAINED COMPLIANCE

FIGURE 3-3: FREELTON WELL (FDF01 & FDF03) - 2020 MONTHLY PRODUCTION (SUMMARY)



WATER QUALITY DATA

MICROBIOLOGICAL TESTING DONE UNDER SCHEDULE 10, 11, 12 AND 17, 18 OF REGULATION 170/03, DURING THIS REPORTING PERIOD.

PARAMETER - SAMPLE TYPE	SAMPLE DATE	# OF SAMPLES	RESULT RANGE	UNIT OF MEASURE
FREELTON WELL FDF01 - RAW				
E.COLI	2020-01-06 to 2020-01-27	4	0	CFU/100mL
E.COLI MPN	2020-02-03 to 2020-12-28	48	0	MPN/100mL
TOTAL COLIFORM	2020-01-06 to 2020-01-27	4	0	CFU/100mL
TOTAL COLIFORM MPN	2020-02-03 to 2020-12-28	48	0	MPN/100mL
FREELTON WELL FDF03 - RAW				
E.COLI	2020-01-07 to 2020-01-28	4	0	CFU/100mL
E.COLI MPN	2020-02-04 to 2020-12-29	48	0	MPN/100mL
TOTAL COLIFORM	2020-01-07 to 2020-01-28	4	0	CFU/100mL
TOTAL COLIFORM MPN	2020-02-04 to 2020-12-29	48	0	MPN/100mL
FREELTON WELL FDF01 - TREATED				
E.COLI	2020-01-06 to 2020-01-27	4	0	CFU/100mL
E.COLI P/A	2020-02-03 to 2020-12-28	48	ALL ABSENT	P/A/100mL
HPC	2020-01-06 to 2020-12-28	52	0 to 13	CFU/1mL
TOTAL COLIFORM	2020-01-06 to 2020-01-27	4	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-03 to 2020-12-28	48	ALL ABSENT	P/A/100mL
FREELTON WELL FDF03 - TREATED				
E.COLI	2020-01-07 to 2020-01-28	4	0	CFU/100mL
E.COLI P/A	2020-02-04 to 2020-12-29	48	ALL ABSENT	P/A/100mL
HPC	2020-01-07 to 2020-12-29	52	0 to 6	CFU/1mL
TOTAL COLIFORM	2020-01-07 to 2020-01-28	4	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-04 to 2020-12-29	48	ALL ABSENT	P/A/100mL
DISTRIBUTION				
E.COLI	2020-01-06 to 2020-01-28	16	0	CFU/100mL
E.COLI P/A	2020-02-03 to 2020-12-29	176	ALL ABSENT	P/A/100mL
HPC	2020-01-06 to 2020-12-29	192	0 to 3	CFU/1mL
TOTAL COLIFORM	2020-01-06 to 2020-01-28	16	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-03 to 2020-12-29	176	ALL ABSENT	P/A/100mL

OPERATIONAL TESTING DONE UNDER SCHEDULE 7, 8 OR 9 OF REGULATION 170/03 DURING THE PERIOD COVERED BY THIS ANNUAL REPORT.

NOTE: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #)-(MAX #)	UNIT OF MEASURE
TURBIDITY - RAW - FDF01	52	0.04 to 0.22	NTU
TURBIDITY - RAW - FDF03	52	0.04 to 0.30	NTU
FREE CHLORINE - TREATED - FDF01	8760	1.40 to 2.56	mg/L
FREE CHLORINE - TREATED - FDF03	8760	1.38 to 2.32	mg/L
FREE CHLORINE - DISTRIBUTION	366	1.23 to 2.29	mg/L

SUMMARY OF ADDITIONAL TESTING AND SAMPLING CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENT OF A LICENCE, APPROVAL, ORDER OR OTHER LEGAL INSTRUMENT.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

SUMMARY OF INORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF01 - TREATED				
ANTIMONY	2020-05-12 to 2020-11-03	0.0001	mg/L	0
ARSENIC	2020-05-12 to 2020-11-03	0.0001	mg/L	0
BARIUM	2020-05-12 to 2020-11-03	0.0626 to 0.0662	mg/L	0
BORON	2020-05-12 to 2020-11-03	0.019 to 0.023	mg/L	0
CADMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
CHROMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
FLUORIDE	2020-05-12 to 2020-11-03	0.08 to 0.09	mg/L	0
MERCURY	2020-05-12 to 2020-11-03	<0.05	ug/L	0
NITRATE AS N	2020-01-21 to 2020-11-03	1.65 to 2.41	mg/L	0
NITRITE AS N	2020-01-21 to 2020-11-03	<0.01	mg/L	0
SELENIUM	2020-05-12 to 2020-11-03	0.0003	mg/L	0
SODIUM	2020-05-12 to 2020-11-03	49.9 to 55.7	mg/L	1
URANIUM	2020-05-12 to 2020-11-03	0.280 to 0.287	ug/L	0

SUMMARY OF INORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF03 - TREATED				
ANTIMONY	2020-05-12 to 2020-11-03	<0.0001 to 0.0001	mg/L	0
ARSENIC	2020-05-12 to 2020-11-03	0.0003	mg/L	0
BARIUM	2020-05-12 to 2020-11-03	0.0663 to 0.0676	mg/L	0
BORON	2020-05-12 to 2020-11-03	0.015 to 0.019	mg/L	0
CADMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
CHROMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
FLUORIDE	2020-05-12 to 2020-11-03	0.16 to 0.17	mg/L	0
MERCURY	2020-05-12 to 2020-11-03	<0.05	ug/L	0
NITRATE AS N	2020-01-21 to 2020-11-03	<0.01 to 0.28	mg/L	0
NITRITE AS N	2020-01-21 to 2020-11-03	<0.01	mg/L	0
SELENIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
SODIUM	2020-05-12 to 2020-11-03	33.2 to 38.0	mg/L	1
URANIUM	2020-05-12 to 2020-11-03	0.278 to 0.279	ug/L	0

SUMMARY OF LEAD TESTING UNDER SCHEDULE 15.1 DURING THIS REPORTING PERIOD.

LOCATION TYPE	POINTS SAMPLED	LEAD SAMPLES TAKEN	PH SAMPLES TAKEN	ALKALINITY SAMPLES TAKEN	PH RESULTS (MIN #) TO (MAX #) PH UNITS	ALKALINITY RESULTS (MIN #) TO (MAX #) MG/L	LEAD RESULTS (MIN #) TO (MAX #) MG/L	LEAD AWQIs	LEAD EXCEEDANCES
PLUMBING-NR	1	2	1	N/A	7.95	N/A	0.0002 to 0.0003	N/A	0
PLUMBING-R	10	20	10	N/A	7.39 to 8.06	N/A	<0.0001 to 0.0032	N/A	0
DISTRIBUTION	4	4	4	4	7.35 to 7.87	293 to 312	0.0001 to 0.0007	0	N/A

NR - Non Residential R- Residential

SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF01 - TREATED				
1,1-DICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-12	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-12	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-12	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-05-12	<0.15	ug/L	0
ALACHLOR	2020-05-12	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-12	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-12	<0.05	ug/L	0
BENZENE	2020-05-12 to 2020-11-03	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-12	<0.004	ug/L	0
BROMOXYNIL	2020-05-12	<0.33	ug/L	0
CARBARYL	2020-05-12	<0.05	ug/L	0
CARBOFURAN	2020-05-12	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
CHLOROBENZENE	2020-05-12 to 2020-11-03	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-12	<0.02	ug/L	0
DIAZINON	2020-05-12	<0.02	ug/L	0
DICAMBA	2020-05-12	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
DICLOFOP-METHYL	2020-05-12	<0.40	ug/L	0
DIMETHOATE	2020-05-12	<0.06	ug/L	0
DIQUAT	2020-05-12	<1	ug/L	0
DIURON	2020-05-12	<0.03	ug/L	0
ETHYLBENZENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
GLYPHOSATE	2020-05-12	<1	ug/L	0
MALATHION	2020-05-12	<0.02	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF01 - TREATED				
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2020-05-12	<0.00012	mg/L	0
METOLACHLOR	2020-05-12	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-12	<0.02	ug/L	0
PARAQUAT	2020-05-12	<1	ug/L	0
PCBS TOTAL	2020-05-12	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-12	<0.15	ug/L	0
PHORATE	2020-05-12	<0.01	ug/L	0
PICLORAM	2020-05-12	<1	ug/L	0
PROMETRYNE	2020-05-12	<0.03	ug/L	0
SIMAZINE	2020-05-12	<0.01	ug/L	0
TERBUFOS	2020-05-12	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
TOLUENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
TRIALLATE	2020-05-12	<0.01	ug/L	0
TRICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.44	ug/L	0
TRIFLURALIN	2020-05-12	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
XYLENE	2020-05-12 to 2020-11-03	<0.5	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF03 - TREATED				
1,1-DICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-12	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-12	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-12	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-05-12	<0.15	ug/L	0
ALACHLOR	2020-05-12	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-12	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-12	<0.05	ug/L	0
BENZENE	2020-05-12 to 2020-11-03	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-12	<0.004	ug/L	0
BROMOXYNIL	2020-05-12	<0.33	ug/L	0
CARBARYL	2020-05-12	<0.05	ug/L	0
CARBOFURAN	2020-05-12	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
CHLOROBENZENE	2020-05-12 to 2020-11-03	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-12	<0.02	ug/L	0
DIAZINON	2020-05-12	<0.02	ug/L	0
DICAMBA	2020-05-12	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
DICLOFOP-METHYL	2020-05-12	<0.40	ug/L	0
DIMETHOATE	2020-05-12	<0.06	ug/L	0
DIQUAT	2020-05-12	<1	ug/L	0
DIURON	2020-05-12	<0.03	ug/L	0
ETHYLBENZENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
GLYPHOSATE	2020-05-12	<1	ug/L	0
MALATHION	2020-05-12	<0.02	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

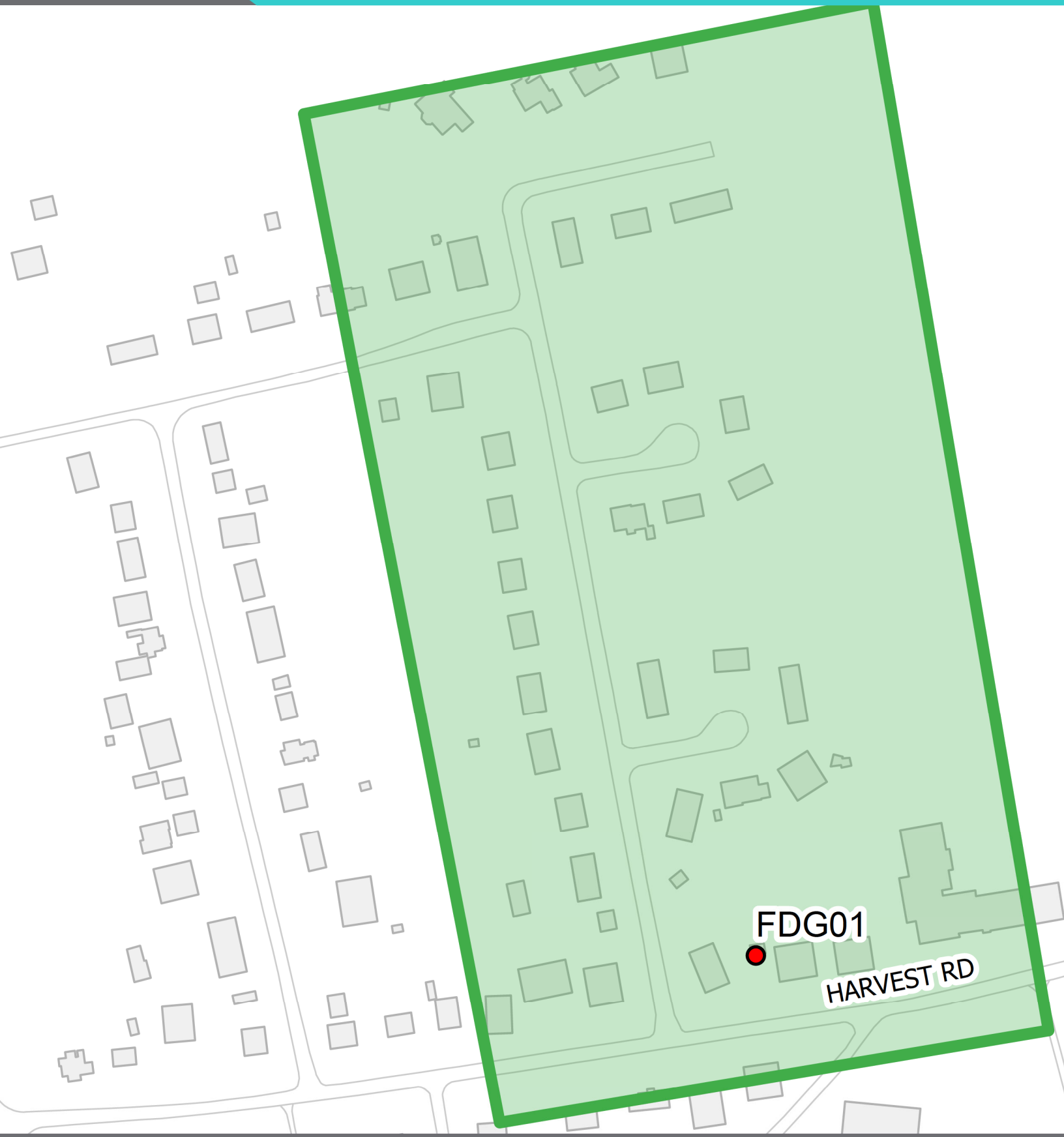
PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
FREELTON WELL FDF03 - TREATED				
MCPA (2-METHYL-4-CHLO-ROPHENOXYACETIC ACID)	2020-05-12	<0.00012	mg/L	0
METOLACHLOR	2020-05-12	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-12	<0.02	ug/L	0
PARAQUAT	2020-05-12	<1	ug/L	0
PCBS TOTAL	2020-05-12	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-12	<0.15	ug/L	0
PHORATE	2020-05-12	<0.01	ug/L	0
PICLORAM	2020-05-12	<1	ug/L	0
PROMETRYNE	2020-05-12	<0.03	ug/L	0
SIMAZINE	2020-05-12	<0.01	ug/L	0
TERBUFOS	2020-05-12	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
TOLUENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
TRIALLATE	2020-05-12	<0.01	ug/L	0
TRICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.44	ug/L	0
TRIFLURALIN	2020-05-12	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
XYLENE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters	11.0	ug/L	0
HALOACETIC ACIDS*	Running annual average for the last four quarters	<5.3	ug/L	0

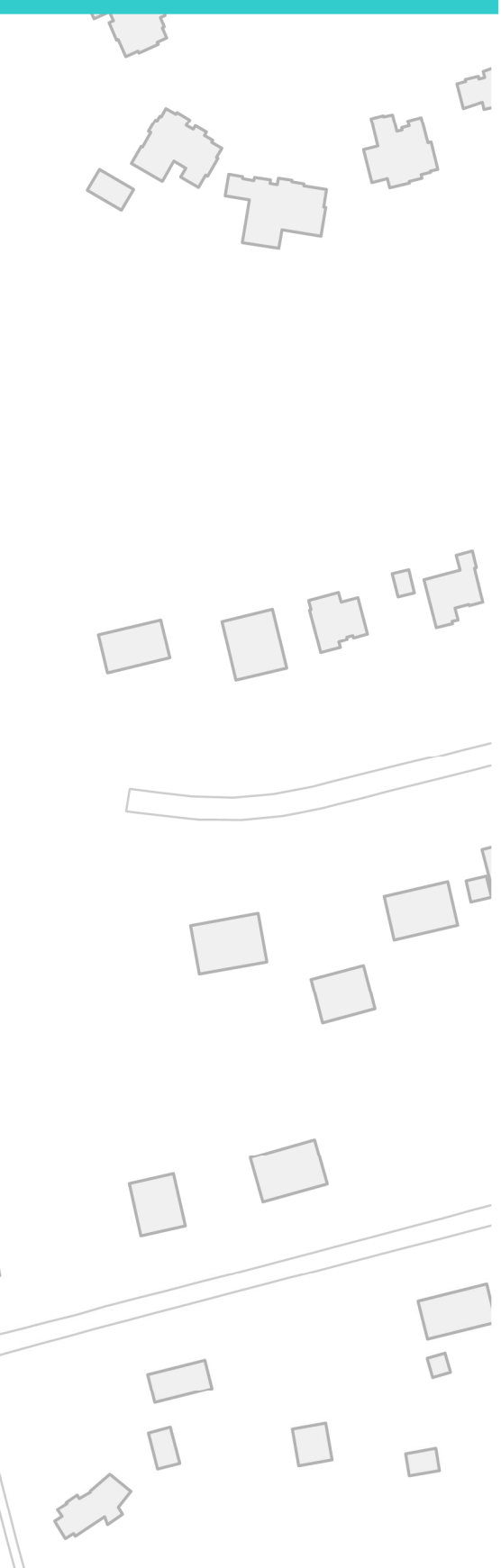
* The Maximum Acceptable Concentration for Trihalomethanes and Haloacetic Acids in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

PARAMETERS EXCEEDING PRESCRIBED HALF-STANDARD

There were no Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03)

GREENSVILLE DRINKING WATER SYSTEM
WATER QUALITY ANNUAL REPORT





GENERAL INFORMATION

The Greensville water supply system consists of one well, one well station, treatment, sampling and analysis which services a population of approximately 108 people.

Water Well:
Greensville Well FDG01 is a 150mm diameter, approximately 12-metre-deep drilled ground water well under the influence of surface water (GUDI).

Treatment:
Water passes through 2 stage cartridge filters, is disinfected using ultraviolet light and sodium hypochlorite (chlorine) prior to entering the distribution system. A chlorine contact chamber is used to ensure disinfection of the water. Fluoridation is not carried out at the Greensville community well.

Well Station:
Within the Well Station, water treatment takes place, well water level, discharge pressure and flow are monitored. Hydropneumatic pressure tanks are used to control system pressures.

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre
MPN - Most Probable Number
P/A – Present/Absent

Sampling & Analysis:
The well is equipped with on-line chlorine residual and turbidity analyzers that continually monitor the treated water quality at the well station. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.

DRINKING WATER SYSTEM NUMBER	DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM OWNER	DRINKING WATER SYSTEM CATEGORY	PERIOD BEING REPORTED
220004126	Greensville Drinking Water System FDG01	City of Hamilton	Small Municipal Residential	January 1, 2020 to December 31, 2020


DIGITAL FLOW MONITOR
TOTAL CHLORINE
FREE CHLORINE
SNYDER industries, inc.
WARNING

PROVISION OF DRINKING WATER TO OTHER MUNICIPALITIES

The following is a list of municipal drinking water systems which receive drinking water from the Greensville System:

DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM NUMBER
None other than Greensville System	220004126

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

Our customers are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.

WATER TREATMENT CHEMICALS USED DURING THIS REPORTING PERIOD

- Sodium Hypochlorite

BREAKDOWN OF SIGNIFICANT MONETARY EXPENSES

THE FOLLOWING TABLE HIGHLIGHTS THE SIGNIFICANT EXPENSES THAT WERE INCURRED FOR REPLACING REQUIRED EQUIPMENT IN 2020

New Greensville Communal Well Project $13,236

ADVERSE TEST RESULTS AND REPORTABLE INCIDENTS

The following table outlines 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.

NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION
2020-05-19	Greensville Drinking Water System	FDG01 Sodium = 123 mg/L (Regulatory requirement is maximum of 20 mg/L. Notification required only once every 57 months)	Resampled adverse location. Sodium adverse was confirmed. Residents were mailed a letter, written by Public Health Services about sodium. Public Health was given a list of addresses to which the letters were mailed and a letter indicating that these addresses were believed to be connected to the Greensville Drinking Water System.
2020-11-12	Greensville Sampling Station D, Forest Ave.	Total Coliforms = Present (Regulatory requirement is Not Detectable)	Resampled adverse location, one upstream post hydrant and one downstream post hydrant. Result failed at the original adverse location which resulted in another AWQI on Nov 13th. The adverse was confirmed.
2020-11-13	Greensville Sampling Station D, Forest Ave.	Total Coliforms = 649 MPN/100mL (Regulatory requirement is Not Detectable)	Resampled original adverse location, one upstream post hydrant and one downstream post hydrant. Two consecutive sets of samples were taken 24 to 48 hours apart. All results passed.

MECP GREENSVILLE DRINKING WATER SYSTEM (DWS) INSPECTION FINDINGS AND SELF-DECLARED NON-COMPLIANCES

A summary of findings that were either issued during the MECP inspection or self-declared during the 2020 calendar year. The inspection has not been started and the Final Inspection Report is pending.

#	FINDING TYPE	FINDING	STATUS

Any findings will be included in the 2021 Drinking Water Systems Annual Summary and Water Quality Report.

WATER PRODUCTION REPORTS - SUMMARY

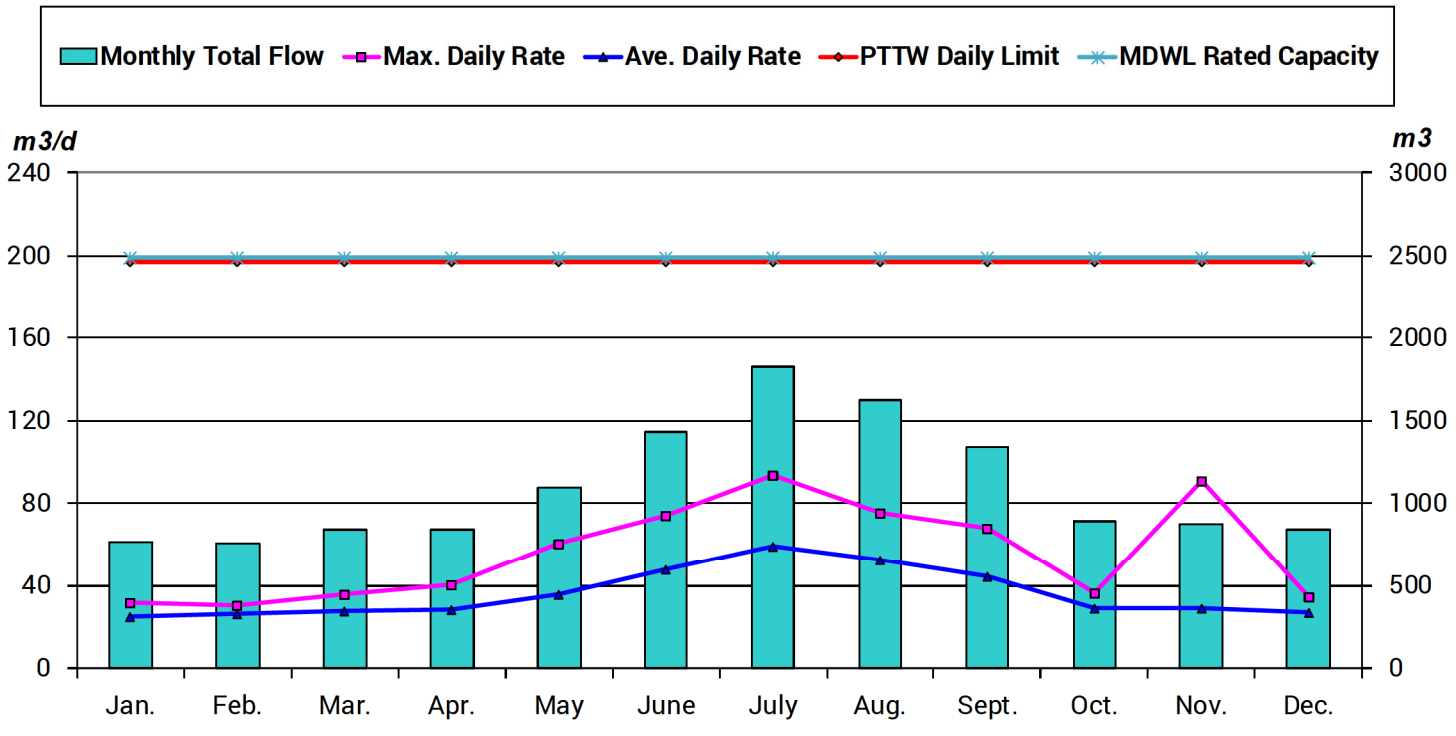
The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

TABLE 4-1: GREENSVILLE WELL (FDG01) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDG01	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	761	756	845	843	1,096	1,430	1,825	1,625	1,336	891	877	841
Average Daily Rate	m^3/d	25	26	27	28	35	48	59	52	45	29	29	27
Maximum Daily Rate	m^3/d	32	30	35	41	60	74	93	75	68	36	90	34
PTTW Daily Rated Capacity	m^3/d	197	197	197	197	197	197	197	197	197	197	197	197
MDWL Daily Rated Capacity	m^3/d	199	199	199	199	199	199	199	199	199	199	199	199

MAINTAINED COMPLIANCE

FIGURE 4-1: GREENSVILLE WELL (FDG01) - 2020 MONTHLY PRODUCTION (SUMMARY)



WATER QUALITY DATA

MICROBIOLOGICAL TESTING DONE UNDER SCHEDULE 10, 11, 12 AND 17, 18 OF REGULATION 170/03, DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATES	# OF SAMPLES	RESULT RANGE	UNIT OF MEASURE
GREENSVILLE WELL FDG01 - RAW				
E.COLI	2020-01-01 to 2020-01-29	5	0 to 1	CFU/100mL
E.COLI MPN	2020-02-05 to 2020-12-30	48	0	MPN/100mL
TOTAL COLIFORM	2020-01-01 to 2020-01-29	5	0 to 1	CFU/100mL
TOTAL COLIFORM MPN	2020-02-05 to 2020-12-30	48	0 to 1	MPN/100mL
GREENSVILLE WELL FDG01 - TREATED				
E.COLI	2020-01-01 to 2020-01-29	5	0	CFU/100mL
E.COLI P/A	2020-02-05 to 2020-12-30	48	ALL ABSENT	P/A/100mL
HPC	2020-01-01 to 2020-12-30	53	0 to 2	CFU/1mL
TOTAL COLIFORM	2020-01-01 to 2020-01-29	5	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-05 to 2020-12-30	48	ALL ABSENT	P/A/100mL
DISTRIBUTION				
E.COLI	2020-01-01 to 2020-01-29	10	0	CFU/100mL
E.COLI MPN	2020-11-12 to 2020-11-14	9	0	MPN/100mL
E.COLI P/A	2020-02-05 to 2020-12-30	96	ALL ABSENT	P/A/100mL
HPC	2020-01-01 to 2020-12-30	106	0 to 370	CFU/1mL
TOTAL COLIFORM	2020-01-01 to 2020-01-29	10	0	CFU/100mL
TOTAL COLIFORM MPN	2020-11-12 to 2020-11-14	9	0 to 649	MPN/100mL
TOTAL COLIFORM P/A	2020-02-05 to 2020-12-30	96	1 DETECTION	P/A/100mL

OPERATIONAL TESTING DONE UNDER SCHEDULE 7, 8 OR 9 OF REGULATION 170/03 DURING THE PERIOD COVERED BY THIS ANNUAL REPORT.

NOTE: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) TO (MAX #)	UNIT OF MEASURE
TURBIDITY - TREATED - FDG01	8,760	0.02 to 0.22	NTU
FREE CHLORINE - TREATED	8,760	1.61 to 2.51	mg/L
FREE CHLORINE - DISTRIBUTION	365	1.26 to 2.86	mg/L

SUMMARY OF ADDITIONAL TESTING AND SAMPLING CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENT OF A LICENCE, APPROVAL, ORDER OR OTHER LEGAL INSTRUMENT.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

SUMMARY OF INORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
GREENSVILLE WELL FDG01 - TREATED				
ANTIMONY	2020-05-13 to 2020-11-04	<0.0001	mg/L	0
ARSENIC	2020-05-13 to 2020-11-04	<0.0001 to 0.0001	mg/L	0
BARIUM	2020-05-13 to 2020-11-04	0.127 to 0.146	mg/L	0
BORON	2020-05-13 to 2020-11-04	0.031 to 0.039	mg/L	0
CADMIUM	2020-05-13 to 2020-11-04	<0.0001	mg/L	0
CHROMIUM	2020-05-13 to 2020-11-04	0.0002	mg/L	0
FLUORIDE	2020-05-13 to 2020-11-04	0.11 to 0.12	mg/L	0
MERCURY	2020-05-13 to 2020-11-04	<0.05	ug/L	0
NITRATE AS N	2020-01-08 to 2020-12-02	5.20 to 6.27	mg/L	0
NITRITE AS N	2020-01-08 to 2020-12-02	<0.01	mg/L	0
SELENIUM	2020-05-13 to 2020-11-04	0.0003	mg/L	0
SODIUM	2020-05-13 to 2020-11-04	123 to 131	mg/L	1
URANIUM	2020-05-13 to 2020-11-04	0.626 to 0.699	ug/L	0

SUMMARY OF LEAD TESTING UNDER SCHEDULE 15.1 DURING THIS REPORTING PERIOD.

LOCATION TYPE	POINTS SAMPLED	LEAD SAMPLES TAKEN	PH SAMPLES TAKEN	ALKALINITY SAMPLES TAKEN	PH RESULTS (MIN #) TO (MAX #) PH UNITS	ALKALINITY RESULTS (MIN #) TO (MAX #) MG/L	LEAD RESULTS (MIN #) TO (MAX #) MG/L	LEAD AWQIs	LEAD EXCEEDANCES
PLUMBING-NR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PLUMBING-R	5	10	5	N/A	7.28 to 7.36	N/A	0.0005 to 0.0025	N/A	0
DISTRIBUTION	2	2	2	2	7.38 to 7.39	340 to 357	<0.0001	0	N/A

NR - Non Residential R - Residential

SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
GREENSVILLE WELL FDG01 - TREATED				
1,1-DICHLOROETHYLENE	2020-05-13 to 2020-11-04	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-13 to 2020-11-04	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-13 to 2020-11-04	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-13 to 2020-11-04	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-13	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-13	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-13	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-05-13	<0.15	ug/L	0
ALACHLOR	2020-05-13	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-13	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-13	<0.05	ug/L	0
BENZENE	2020-05-13 to 2020-11-04	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-13	<0.004	ug/L	0
BROMOXYNIL	2020-05-13	<0.33	ug/L	0
CARBARYL	2020-05-13	<0.05	ug/L	0
CARBOFURAN	2020-05-13	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-13 to 2020-11-04	<0.2	ug/L	0
CHLOROBENZENE	2020-05-13 to 2020-11-04	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-13	<0.02	ug/L	0
DIAZINON	2020-05-13	<0.02	ug/L	0
DICAMBA	2020-05-13	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-13 to 2020-11-04	<0.5	ug/L	0
DICLOFOP-METHYL	2020-05-13	<0.40	ug/L	0
DIMETHOATE	2020-05-13	<0.06	ug/L	0
DIQUAT	2020-05-13	<1	ug/L	0
DIURON	2020-05-13	<0.03	ug/L	0
ETHYLBENZENE	2020-05-13 to 2020-11-04	<0.33	ug/L	0
GLYPHOSATE	2020-05-13	<1	ug/L	0
MALATHION	2020-05-13	<0.02	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
GREENSVILLE WELL FDG01 - TREATED				
MCPA (2-METHYL-4-CHLOROPHENOXYACETIC ACID)	2020-05-13	<0.00012	mg/L	0
METOLACHLOR	2020-05-13	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-13	<0.02	ug/L	0
PARAQUAT	2020-05-13	<1	ug/L	0
PCBS TOTAL	2020-05-13	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-13	<0.15	ug/L	0
PHORATE	2020-05-13	<0.01	ug/L	0
PICLORAM	2020-05-13	<1	ug/L	0
PROMETRYNE	2020-05-13	<0.03	ug/L	0
SIMAZINE	2020-05-13	<0.01	ug/L	0
TERBUFOS	2020-05-13	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-13 to 2020-11-04	<0.35	ug/L	0
TOLUENE	2020-05-13 to 2020-11-04	<0.36	ug/L	0
TRIALLATE	2020-05-13	<0.01	ug/L	0
TRICHLOROETHYLENE	2020-05-13 to 2020-11-04	<0.44	ug/L	0
TRIFLURALIN	2020-05-13	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-13 to 2020-11-04	<0.2	ug/L	0
XYLENE	2020-05-13 to 2020-11-04	<0.5	ug/L	0
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	14.5	ug/L	0
HALOACETIC ACIDS*	Running annual average for the last four quarters.	5.4	ug/L	0

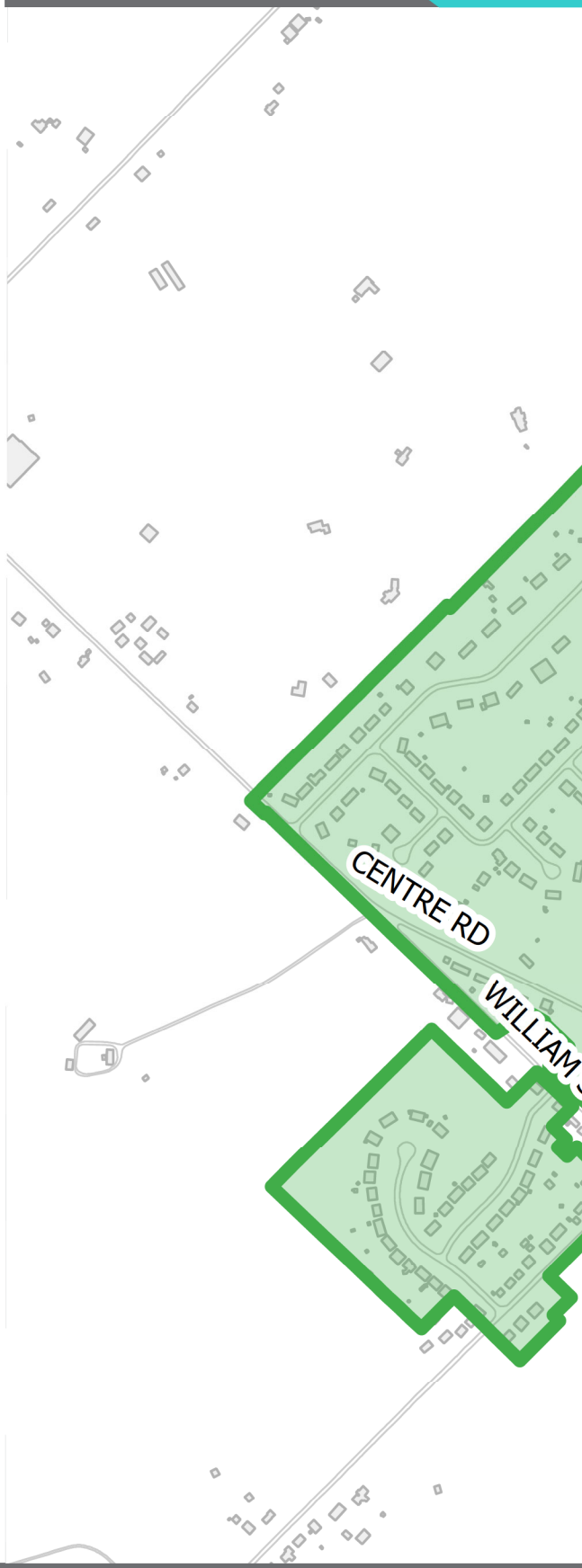
* The Maximum Acceptable Concentration for Trihalomethanes and Haloacetic Acids in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

PARAMETERS EXCEEDING PRESCRIBED HALF-STANDARD

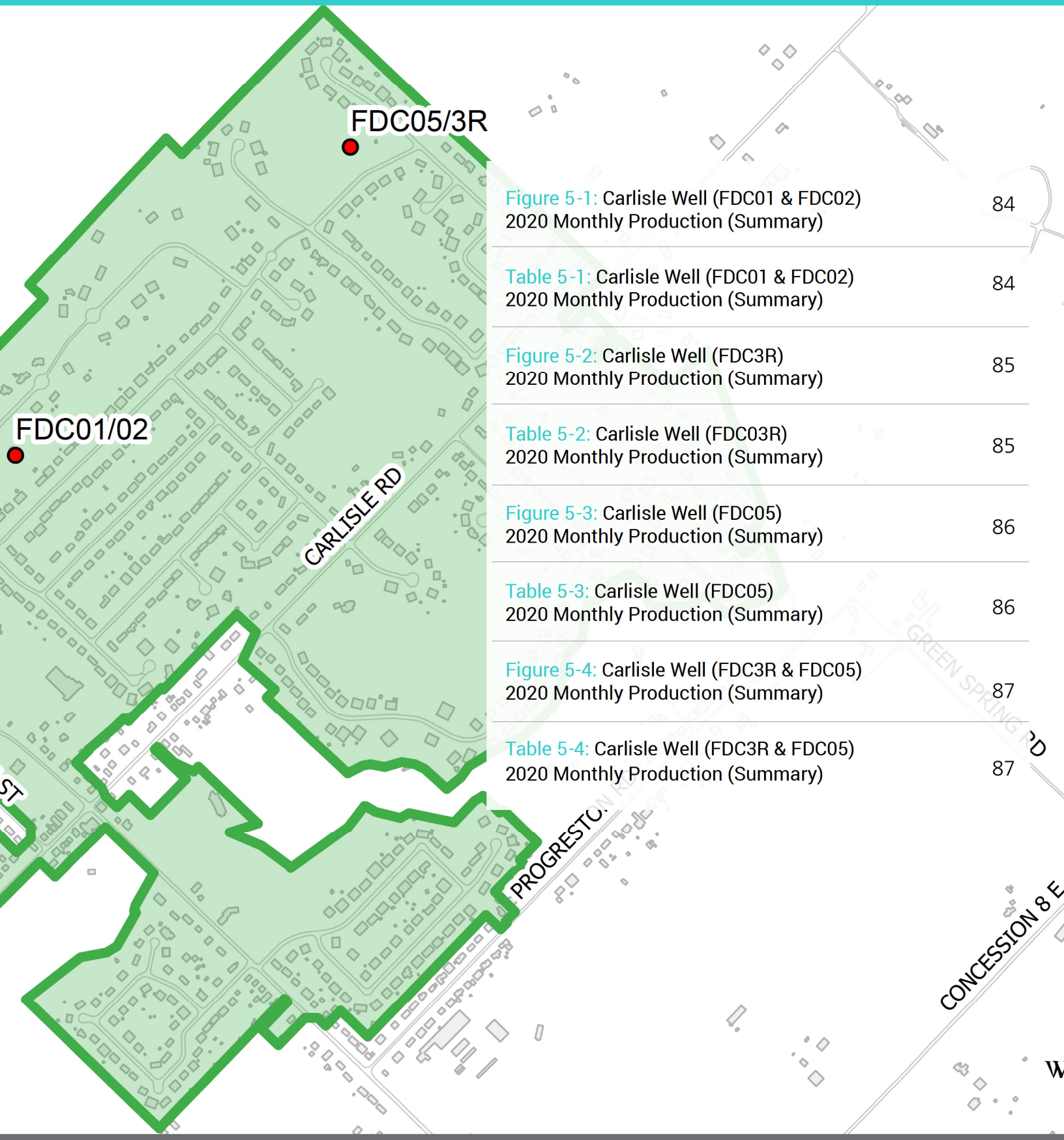
Summary of Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
NITRATE	2020-01-08	5.41	mg/L
NITRATE	2020-01-22	5.42	mg/L
NITRATE	2020-02-05	5.50	mg/L
NITRATE	2020-03-04	5.78	mg/L
NITRATE	2020-04-08	5.58	mg/L
NITRATE	2020-05-06	5.51	mg/L
NITRATE	2020-05-13	5.53	mg/L
NITRATE	2020-06-03	5.20	mg/L
NITRATE	2020-07-08	5.21	mg/L
NITRATE	2020-07-22	5.22	mg/L
NITRATE	2020-08-05	5.38	mg/L
NITRATE	2020-09-02	5.48	mg/L
NITRATE	2020-10-07	6.03	mg/L
NITRATE	2020-11-04	6.27	mg/L
NITRATE	2020-11-04	6.26	mg/L
NITRATE	2020-12-02	6.23	mg/L

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)



CARLISLE DRINKING WATER SYSTEM WATER QUALITY ANNUAL REPORT



GENERAL INFORMATION

The Carlisle water supply system consists of four wells, one elevated water storage tank, treatment, sampling and analysis, which services a population of approximately 1,833 people. The water source for the community of Carlisle is ground water.

Water Wells:

- Carlisle Well FDC01 has a diameter of 157mm and a depth of approximately 42 metres.
- Carlisle Well FDC02 has a diameter of 300mm at a depth of 2.6 metres and a diameter of 250mm to a depth of 36 metres.
- Carlisle Well FDC3R has a diameter of 200mm and a depth of approximately 33.5 metres. It is a drilled ground water well under the influence of surface water (GUDI).
- Carlisle Well FDC05 has a diameter of 214mm and a depth of approximately 28 metres. It is a drilled ground water well under the influence of surface water (GUDI).

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre
MPN - Most Probable Number
P/A – Present/Absent

Treatment:

- Within a treatment well house, both wells, FDC01 and FDC02 are joined to a common header for flow metering and disinfection. Sodium hypochlorite (chlorine) within a chlorine contact chamber is used to ensure disinfection of the water.
- Within the well house, both FDC3R and FDC05 discharges have separate flow metering, filtration and ultraviolet light disinfection streams. The flows are combined for treatment by sodium hypochlorite (chlorine) within a chlorine contact chamber to ensure disinfection of the water prior to entering the distribution system.
- Fluoridation is not carried out at any of the Carlisle community wells.

Water Storage:

An elevated water storage tank is located at the same site as wells FDC01 and FDC02. The storage tank has an operating capacity of 1,400m^3. It was designed for peak hour water demand equalization as well as fire and emergency storage.

Sampling & Analysis:

All wells are equipped with on-line chlorine residual and turbidity analyzers that continually monitor the treated water quality. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.

DRINKING WATER SYSTEM NUMBER	DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM OWNER	DRINKING WATER SYSTEM CATEGORY	PERIOD BEING REPORTED
220004108	Carlisle Drinking Water System FDC01, FDC02, FDC3R, FDC05	City of Hamilton	Large Municipal Residential	January 1, 2020 to December 31, 2020

PROVISION OF DRINKING WATER TO OTHER MUNICIPALITIES

The following is a list of municipal drinking water systems which receive drinking water from the Carlisle System:

DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM NUMBER
None other than Carlisle System	220004108

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

Our customers are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.

WATER TREATMENT CHEMICALS USED DURING THIS REPORTING PERIOD

- Sodium Hypochlorite

BREAKDOWN OF SIGNIFICANT MONETARY EXPENSES

The following table highlights the significant expenses that were incurred for installing, repairing and replacing required equipment in 2020.

Well Relining - $103,730

Maintenance and Repairs (vertical assets) - $137,646

ADVERSE TEST RESULTS AND REPORTABLE INCIDENTS

The following table outlines 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.

NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION
2020-05-19	Carlisle Drinking Water System	FDC01 Sodium = 20.7 mg/L FDC02 Sodium = 30.7 mg/L FDC3R Sodium = 55.6 mg/L FDC05 Sodium = 54.9 mg/L (Regulatory requirement is maximum of 20 mg/L. Notification required only once every 57 months)	Resampled adverse locations. Sodium adverse was confirmed at all wells except FDC01. Residents were mailed a letter, written by Public Health Services about sodium. Public Health was given a list of addresses to which the letters were mailed and a letter indicating that these addresses were believed to be connected to the Carlisle Drinking Water System.

MECP CARLISLE DRINKING WATER SYSTEM (DWS) INSPECTION FINDINGS AND SELF-DECLARED NON-COMPLIANCES

A summary of findings that were either issued during the MECP inspection or self-declared during the 2020 calendar year. The inspection has been started and the Final Inspection Report is pending.

#	FINDING TYPE	FINDING	STATUS

Any findings will be included in the 2021 Drinking Water Systems Annual Summary and Water Quality Report.

WATER PRODUCTION REPORTS - SUMMARY

The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

TABLE 5-1: CARLISLE WELLS (FDC01 & FDC02) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDC01 & 02	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	3,727	3,267	2,849	3,237	4,398	9,401	7,806	6,006	5,834	1,853	1,654	1,181
Average Daily Rate	m^3/d	120	113	92	108	142	313	252	194	194	60	55	38
Maximum Daily Rate	m^3/d	694	403	382	444	389	698	694	511	430	299	324	182
PTTW & MDWL Daily Rated Capacity	m^3/d	851	851	851	851	851	851	851	851	851	851	851	851

MAINTAINED COMPLIANCE

FIGURE 5-1: CARLISLE WELLS (FDC01 & FDC02) - 2020 MONTHLY PRODUCTION (SUMMARY)

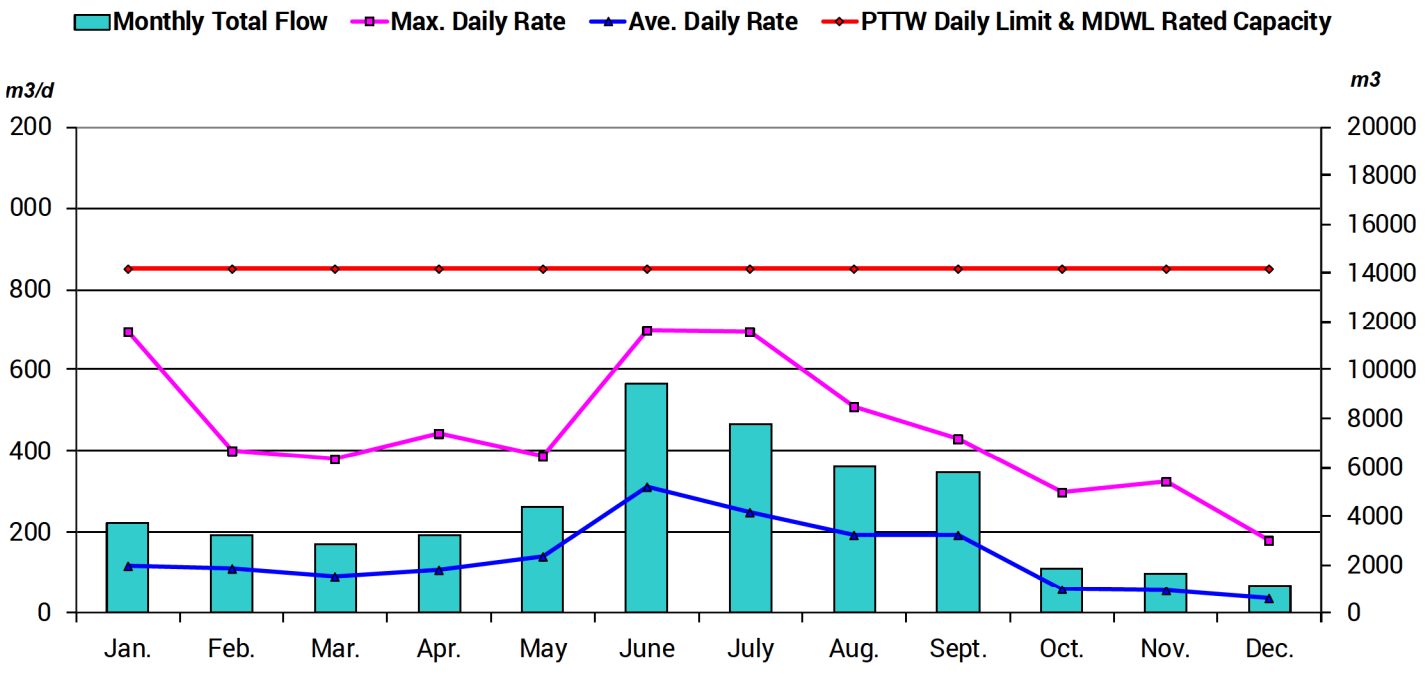


TABLE 5-2: CARLISLE WELL (FDC3R) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDC3R	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	9,498	196	0	3,014	13,168	27,239	22,855	18,727	8,525	6,864	6,346	7,075
Average Daily Rate	m^3/d	306	7	0	100	425	908	737	604	284	221	212	228
Maximum Daily Rate	m^3/d	564	110	0	564	1,201	1,642	1,483	1,166	914	565	444	642
PTTW Daily Rated Capacity	m^3/d	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160	2,160

Note: Carlisle DWS FDC3R and FDC05 have a combined rated capacity of 3456m^3/day

MAINTAINED COMPLIANCE

FIGURE 5-2: CARLISLE WELL (FDC3R) - 2020 MONTHLY PRODUCTION (SUMMARY)

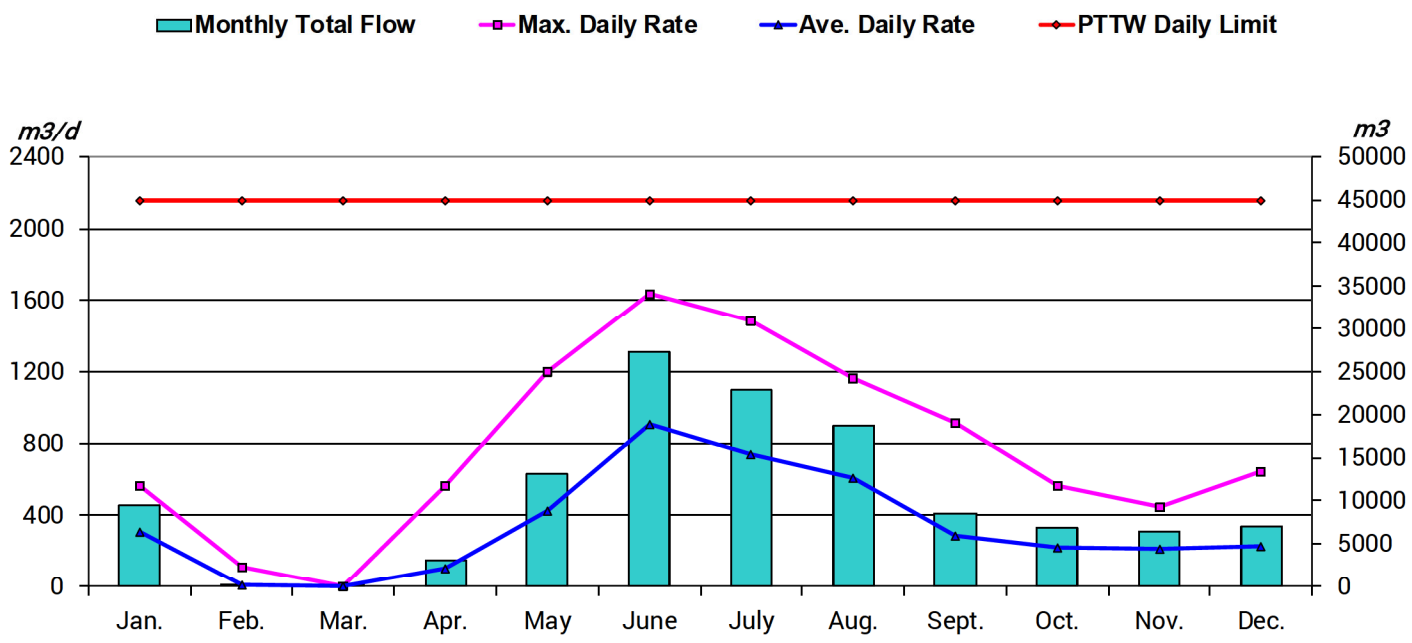


TABLE 5-3: CARLISLE WELL (FDC05) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDC05	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	604	8,505	11,098	9,485	6,223	7,068	18,442	16,863	17,111	6,143	5,490	6,024
Average Daily Rate	m^3/d	19	293	358	316	201	236	595	544	570	198	183	194
Maximum Daily Rate	m^3/d	383	483	662	829	641	859	1,062	1,046	1,047	749	544	771
PTTW Daily Rated Capacity	m^3/d	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296	1,296

Note: Carlisle DWS FDC3R and FDC05 have a combined rated capacity of 3456m^3/day

MAINTAINED COMPLIANCE

FIGURE 5-3: CARLISLE WELL (FDC05) - 2020 MONTHLY PRODUCTION (SUMMARY)

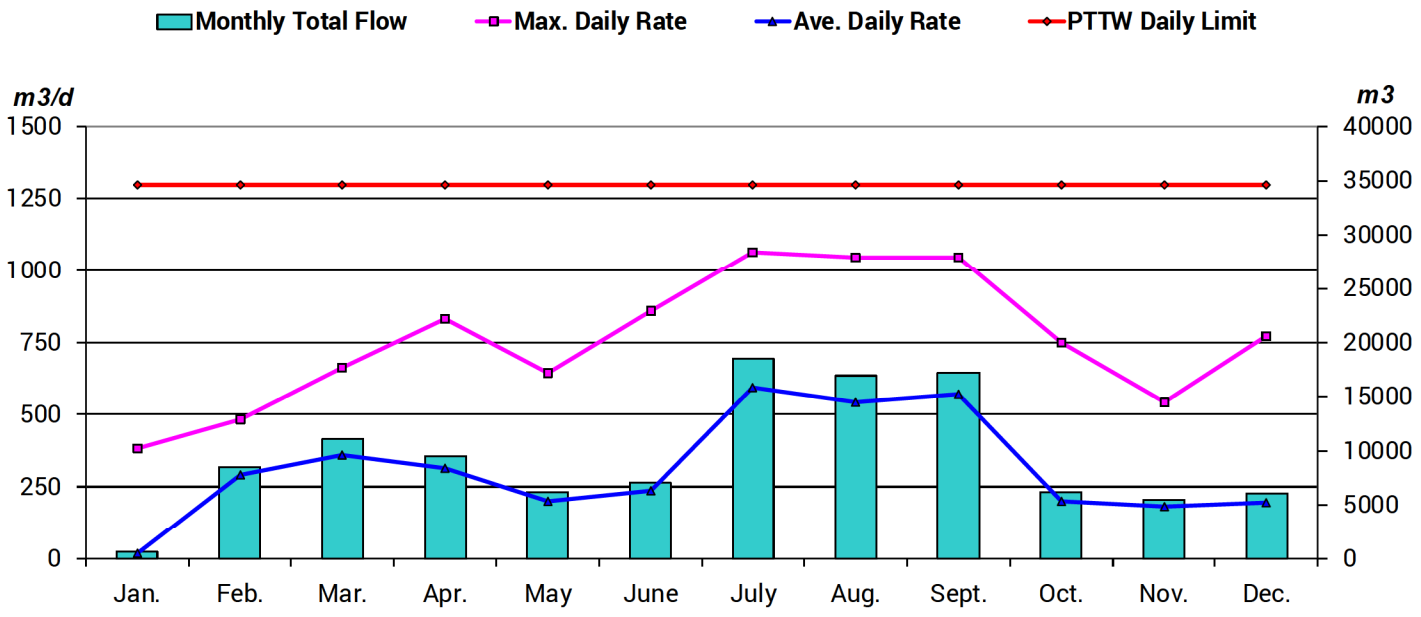
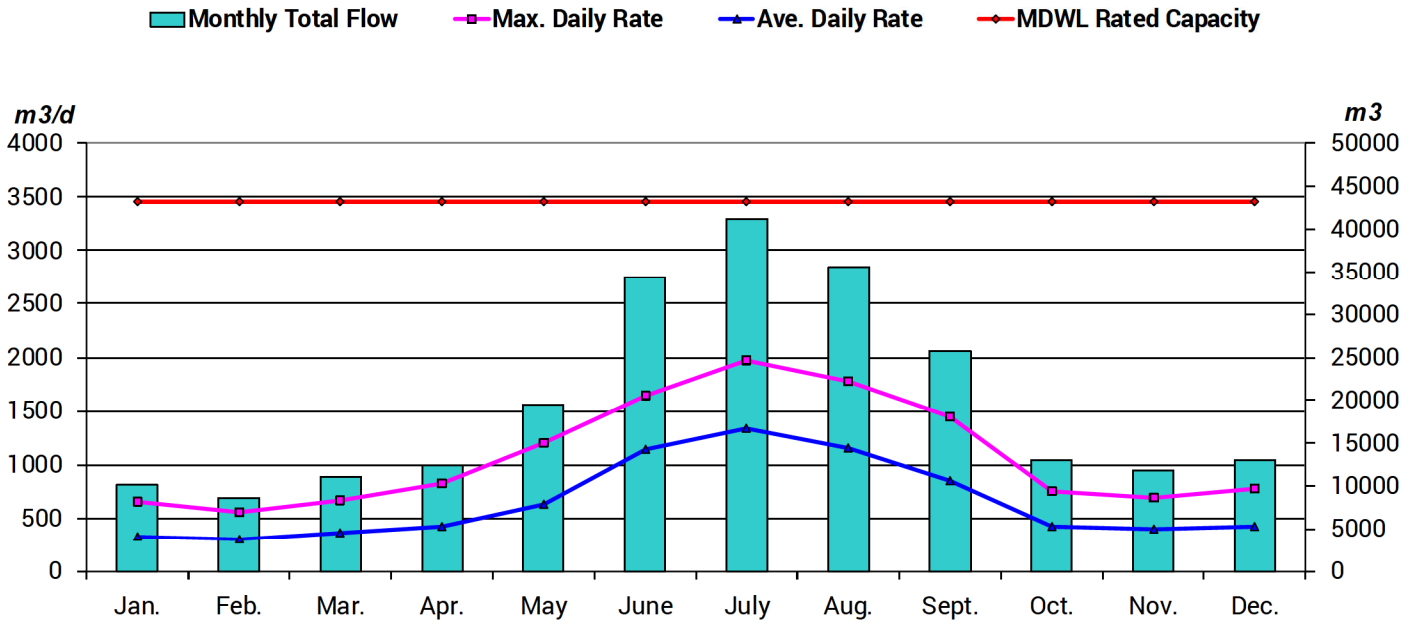


TABLE 5-4: CARLISLE WELL (FDC3R & FDC05) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDC3R & FDC05	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	10,102	8,701	11,099	12,499	19,390	34,307	41,297	35,591	25,636	13,007	11,836	13,099
Average Daily Rate	m^3/d	326	300	358	417	625	1,144	1,332	1,148	855	420	395	423
Maximum Daily Rate	m^3/d	653	550	662	829	1,201	1,642	1,969	1,774	1,442	749	689	771
MDWL Daily Rated Capacity	m^3/d	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456	3,456

MAINTAINED COMPLIANCE

FIGURE 5-4: CARLISLE WELL (FDC3R & FDC05) - 2020 MONTHLY PRODUCTION (SUMMARY)



WATER QUALITY DATA

MICROBIOLOGICAL TESTING DONE UNDER SCHEDULE 10, 11, 12 AND 17, 18 OF REGULATION 170/03, DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATES	# OF SAMPLES	RESULT RANGE	UNIT OF MEASURE
CARLISLE WELL FDC01 - RAW				
E.COLI	2020-01-07 to 2020-01-28	4	0	CFU/100mL
E.COLI MPN	2020-02-04 to 2020-12-29	48	0	MPN/100mL
TOTAL COLIFORM	2020-01-07 to 2020-01-28	4	0	CFU/100mL
TOTAL COLIFORM MPN	2020-02-04 to 2020-12-29	48	0	MPN/100mL
CARLISLE WELL FDC02 - RAW				
E.COLI	2020-01-07 to 2020-01-28	4	0	CFU/100mL
E.COLI MPN	2020-02-04 to 2020-12-29	48	0	MPN/100mL
TOTAL COLIFORM	2020-01-07 to 2020-01-28	4	0	CFU/100mL
TOTAL COLIFORM MPN	2020-02-04 to 2020-12-29	48	0	MPN/100mL
CARLISLE WELL FDC3R - RAW				
E.COLI	2020-01-06 to 2020-01-29	4	0	CFU/100mL
E.COLI MPN	2020-02-03 to 2020-12-28	39	0	MPN/100mL
TOTAL COLIFORM	2020-01-06 to 2020-01-29	4	0	CFU/100mL
TOTAL COLIFORM MPN	2020-02-03 to 2020-12-28	39	0	MPN/100mL
CARLISLE WELL FDC05 - RAW				
E.COLI	2020-01-29	1	0	CFU/100mL
E.COLI MPN	2020-02-03 to 2020-12-28	45	0	MPN/100mL
TOTAL COLIFORM	2020-01-29	1	0	CFU/100mL
TOTAL COLIFORM MPN	2020-02-03 to 2020-12-28	45	0	MPN/100mL
CARLISLE WELL FDC01 - TREATED				
E.COLI	2020-01-07 to 2020-01-28	4	0	CFU/100mL
E.COLI P/A	2020-02-04 to 2020-12-29	48	ALL ABSENT	P/A/100mL
HPC	2020-01-07 to 2020-12-29	52	0 to 2	CFU/1mL
TOTAL COLIFORM	2020-01-07 to 2020-01-28	4	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-04 to 2020-12-29	48	ALL ABSENT	P/A/100mL

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MICROBIOLOGICAL TESTING DONE UNDER SCHEDULE 10, 11, 12 AND 17, 18 OF REGULATION 170/03, DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATES	# OF SAMPLES	RESULT RANGE	UNIT OF MEASURE
CARLISLE WELL FDC02 - TREATED				
E.COLI	2020-01-07 to 2020-01-28	4	0	CFU/100mL
E.COLI P/A	2020-02-04 to 2020-12-29	48	ALL ABSENT	P/A/100mL
HPC	2020-01-07 to 2020-12-29	52	0 to 2	CFU/1mL
TOTAL COLIFORM	2020-01-07 to 2020-01-28	4	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-04 to 2020-12-29	48	ALL ABSENT	P/A/100mL
CARLISLE WELL FDC3R - TREATED				
E.COLI	2020-01-06 to 2020-01-29	4	0	CFU/100mL
E.COLI P/A	2020-02-03 to 2020-12-28	39	ALL ABSENT	P/A/100mL
HPC	2020-01-06 to 2020-12-28	43	0 to 2	CFU/1mL
TOTAL COLIFORM	2020-01-06 to 2020-01-29	4	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-03 to 2020-12-28	39	ALL ABSENT	P/A/100mL
CARLISLE WELL FDC05 - TREATED				
E.COLI	2020-01-29	1	0	CFU/100mL
E.COLI P/A	2020-02-03 to 2020-12-28	45	ALL ABSENT	P/A/100mL
HPC	2020-01-29 to 2020-12-28	46	0 to 1	CFU/1mL
TOTAL COLIFORM	2020-01-29	1	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-03 to 2020-12-28	45	ALL ABSENT	P/A/100mL
DISTRIBUTION				
E.COLI	2020-01-06 to 2020-01-28	16	0	CFU/100mL
E.COLI P/A	2020-02-03 to 2020-12-29	192	ALL ABSENT	P/A/100mL
HPC	2020-01-06 to 2020-12-29	208	0 to 10	CFU/1mL
TOTAL COLIFORM	2020-01-06 to 2020-01-28	16	0	CFU/100mL
TOTAL COLIFORM P/A	2020-02-03 to 2020-12-29	192	ALL ABSENT	P/A/100mL

OPERATIONAL TESTING DONE UNDER SCHEDULE 7, 8 OR 9 OF REGULATION 170/03 DURING THE PERIOD COVERED BY THIS ANNUAL REPORT.

NOTE: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) TO (MAX #)	UNIT OF MEASURE
TURBIDITY - RAW - FDC01	52	0.02 to 0.88	NTU
TURBIDITY - RAW - FDC02	51	0.01 to 0.31	NTU
TURBIDITY - RAW - FDC3R	8760	0.01 to 0.40	NTU
TURBIDITY - RAW - FDC05	8760	0.03 to 0.49	NTU
FREE CHLORINE - TREATED - FDC01 AND FDC02	8760	1.09 to 2.94	mg/L
FREE CHLORINE - TREATED - FDC3R AND FDC05	8760	0.99 to 2.72	mg/L
FREE CHLORINE - DISTRIBUTION	366	1.17 to 2.26	mg/L

SUMMARY OF ADDITIONAL TESTING AND SAMPLING CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENT OF A LICENCE, APPROVAL, ORDER OR OTHER LEGAL INSTRUMENT.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
N/A	-	-	-

SUMMARY OF INORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC01 - TREATED				
ANTIMONY	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
ARSENIC	2020-05-12 to 2020-11-03	0.0001 to 0.0002	mg/L	0
BARIUM	2020-05-12 to 2020-11-03	0.0849 to 0.0898	mg/L	0
BORON	2020-05-12 to 2020-11-03	0.017 to 0.030	mg/L	0
CADMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
CHROMIUM	2020-05-12 to 2020-11-03	<0.0001 to 0.0001	mg/L	0
FLUORIDE	2020-05-12 to 2020-11-03	0.07 to 0.08	mg/L	0
MERCURY	2020-05-12 to 2020-11-03	<0.05	ug/L	0
NITRATE AS N	2020-01-21 to 2020-11-03	0.69 to 2.64	mg/L	0
NITRITE AS N	2020-01-21 to 2020-11-03	<0.01	mg/L	0
SELENIUM	2020-05-12 to 2020-11-03	0.0001 to 0.0002	mg/L	0
SODIUM	2020-05-12 to 2020-11-03	15.0 to 20.7	mg/L	1
URANIUM	2020-05-12 to 2020-11-03	0.400 to 0.510	ug/L	0
CARLISLE WELL FDC02 - TREATED				
ANTIMONY	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
ARSENIC	2020-05-12 to 2020-11-03	0.0002	mg/L	0
BARIUM	2020-05-12 to 2020-11-03	0.0877 to 0.0894	mg/L	0
BORON	2020-05-12 to 2020-11-03	0.021 to 0.026	mg/L	0
CADMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
CHROMIUM	2020-05-12 to 2020-11-03	<0.0001 to 0.0001	mg/L	0
FLUORIDE	2020-05-12 to 2020-11-03	0.07	mg/L	0
MERCURY	2020-05-12 to 2020-11-03	<0.05	ug/L	0
NITRATE AS N	2020-01-21 to 2020-11-03	1.67 to 3.56	mg/L	0
NITRITE AS N	2020-01-21 to 2020-11-03	<0.01	mg/L	0
SELENIUM	2020-05-12 to 2020-11-03	0.0002	mg/L	0
SODIUM	2020-05-12 to 2020-11-03	28.5 to 31.1	mg/L	1
URANIUM	2020-05-12 to 2020-11-03	0.401 to 0.562	ug/L	0

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SUMMARY OF INORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC3R - TREATED				
ANTIMONY	2020-05-12 to 2020-11-03	0.0001 to 0.0002	mg/L	0
ARSENIC	2020-05-12 to 2020-11-03	0.0005 to 0.0006	mg/L	0
BARIUM	2020-05-12 to 2020-11-03	0.0775 to 0.0784	mg/L	0
BORON	2020-05-12 to 2020-11-03	0.024 to 0.027	mg/L	0
CADMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
CHROMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
FLUORIDE	2020-05-12 to 2020-11-03	0.07 to 0.08	mg/L	0
MERCURY	2020-05-12 to 2020-11-03	<0.05	ug/L	0
NITRATE AS N	2020-01-21 to 2020-11-03	0.18 to 0.67	mg/L	0
NITRITE AS N	2020-01-21 to 2020-11-03	<0.01	mg/L	0
SELENIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
SODIUM	2020-05-12 to 2020-11-03	51.6 to 56.0	mg/L	1
URANIUM	2020-05-12 to 2020-11-03	0.648 to 0.729	ug/L	0
CARLISLE WELL FDC05 - TREATED				
ANTIMONY	2020-05-12 to 2020-11-03	<0.0001 to 0.0001	mg/L	0
ARSENIC	2020-05-12 to 2020-11-03	0.0006 to 0.0008	mg/L	0
BARIUM	2020-05-12 to 2020-11-03	0.0752 to 0.0774	mg/L	0
BORON	2020-05-12 to 2020-11-03	0.023 to 0.027	mg/L	0
CADMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
CHROMIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
FLUORIDE	2020-05-12 to 2020-11-03	0.07 to 0.08	mg/L	0
MERCURY	2020-05-12 to 2020-11-03	<0.05	ug/L	0
NITRATE AS N	2020-01-29 to 2020-11-03	<0.01 to 1.09	mg/L	0
NITRITE AS N	2020-01-29 to 2020-11-03	<0.01	mg/L	0
SELENIUM	2020-05-12 to 2020-11-03	<0.0001	mg/L	0
SODIUM	2020-05-12 to 2020-11-03	50.6 to 54.9	mg/L	1
URANIUM	2020-05-12 to 2020-11-03	0.477 to 0.699	ug/L	0

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SUMMARY OF LEAD TESTING UNDER SCHEDULE 15.1 DURING THIS REPORTING PERIOD.

LOCATION TYPE	POINTS SAMPLED	LEAD SAMPLES TAKEN	PH SAMPLES TAKEN	ALKALINITY SAMPLES TAKEN	PH RESULTS (MIN #) TO (MAX #) PH UNITS	ALKALINITY RESULTS (MIN #) TO (MAX #) MG/L	LEAD RESULTS (MIN #) TO (MAX #) MG/L	LEAD AWQIs	LEAD EXCEEDANCES
PLUMBING-NR	1	2	1	N/A	7.26	N/A	0.0002	N/A	0
PLUMBING-R	10	20	10	N/A	7.25 to 7.45	N/A	<0.0001 to 0.0096	N/A	0
DISTRIBUTION	4	4	4	4	7.24 to 7.26	318 to 324	0.0001 to 0.0004	0	N/A

NR - Non Residential R- Residential

SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC01 - TREATED				
1,1-DICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-12	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-12	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-12	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-05-12	<0.15	ug/L	0
ALACHLOR	2020-05-12	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-12	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-12	<0.05	ug/L	0
BENZENE	2020-05-12 to 2020-11-03	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-12	<0.004	ug/L	0
BROMOXYNIL	2020-05-12	<0.33	ug/L	0
CARBARYL	2020-05-12	<0.05	ug/L	0
CARBOFURAN	2020-05-12	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
CHLOROBENZENE	2020-05-12 to 2020-11-03	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-12	<0.02	ug/L	0
DIAZINON	2020-05-12	<0.02	ug/L	0
DICAMBA	2020-05-12	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
DICLOFOP-METHYL	2020-05-12	<0.40	ug/L	0
DIMETHOATE	2020-05-12	<0.06	ug/L	0
DIQUAT	2020-05-12	<1	ug/L	0
DIURON	2020-05-12	<0.03	ug/L	0
ETHYLBENZENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
GLYPHOSATE	2020-05-12	<1	ug/L	0
MALATHION	2020-05-12	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHE-NOXYACETIC ACID)	2020-05-12	<0.00012	mg/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC01 - TREATED				
METOLACHLOR	2020-05-12	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-12	<0.02	ug/L	0
PARAQUAT	2020-05-12	<1	ug/L	0
PCBS TOTAL	2020-05-12	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-12	<0.15	ug/L	0
PHORATE	2020-05-12	<0.01	ug/L	0
PICLORAM	2020-05-12	<1	ug/L	0
PROMETRYNE	2020-05-12	<0.03	ug/L	0
SIMAZINE	2020-05-12	<0.01	ug/L	0
TERBUFOS	2020-05-12	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
TOLUENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
TRIALLATE	2020-05-12	<0.01	ug/L	0
TRICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.44	ug/L	0
TRIFLURALIN	2020-05-12	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
XYLENE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
CARLISLE WELL FDC02 - TREATED				
1,1-DICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-12	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-12	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-12	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-05-12	<0.15	ug/L	0
ALACHLOR	2020-05-12	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-12	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-12	<0.05	ug/L	0
BENZENE	2020-05-12 to 2020-11-03	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-12	<0.004	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC02 - TREATED				
BROMOXYNIL	2020-05-12	<0.33	ug/L	0
CARBARYL	2020-05-12	<0.05	ug/L	0
CARBOFURAN	2020-05-12	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
CHLOROBENZENE	2020-05-12 to 2020-11-03	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-12	<0.02	ug/L	0
DIAZINON	2020-05-12	<0.02	ug/L	0
DICAMBA	2020-05-12	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
DICLOFOP-METHYL	2020-05-12	<0.40	ug/L	0
DIMETHOATE	2020-05-12	<0.06	ug/L	0
DIQUAT	2020-05-12	<1	ug/L	0
DIURON	2020-05-12	<0.03	ug/L	0
ETHYLBENZENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
GLYPHOSATE	2020-05-12	<1	ug/L	0
MALATHION	2020-05-12	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLORO-PHENOXYACETIC ACID)	2020-05-12	<0.00012	mg/L	0
METOLACHLOR	2020-05-12	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-12	<0.02	ug/L	0
PARAQUAT	2020-05-12	<1	ug/L	0
PCBS TOTAL	2020-05-12	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-12	<0.15	ug/L	0
PHORATE	2020-05-12	<0.01	ug/L	0
PICLORAM	2020-05-12	<1	ug/L	0
PROMETRYNE	2020-05-12	<0.03	ug/L	0
SIMAZINE	2020-05-12	<0.01	ug/L	0
TERBUFOS	2020-05-12	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
TOLUENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
TRIALLATE	2020-05-12	<0.01	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC02 - TREATED				
TRICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.44	ug/L	0
TRIFLURALIN	2020-05-12	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
XYLENE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
CARLISLE WELL FDC3R - TREATED				
1,1-DICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-12	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-12	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-12	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-05-12	<0.15	ug/L	0
ALACHLOR	2020-05-12	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-12	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-12	<0.05	ug/L	0
BENZENE	2020-05-12 to 2020-11-03	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-12	<0.004	ug/L	0
BROMOXYNIL	2020-05-12	<0.33	ug/L	0
CARBARYL	2020-05-12	<0.05	ug/L	0
CARBOFURAN	2020-05-12	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
CHLOROBENZENE	2020-05-12 to 2020-11-03	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-12	<0.02	ug/L	0
DIAZINON	2020-05-12	<0.02	ug/L	0
DICAMBA	2020-05-12	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
DICLOFOP-METHYL	2020-05-12	<0.40	ug/L	0
DIMETHOATE	2020-05-12	<0.06	ug/L	0
DIQUAT	2020-05-12	<1	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC3R - TREATED				
DIURON	2020-05-12	<0.03	ug/L	0
ETHYLBENZENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
GLYPHOSATE	2020-05-12	<1	ug/L	0
MALATHION	2020-05-12	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHE-NOXYACETIC ACID)	2020-05-12	<0.00012	mg/L	0
METOLACHLOR	2020-05-12	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-12	<0.02	ug/L	0
PARAQUAT	2020-05-12	<1	ug/L	0
PCBS TOTAL	2020-05-12	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-12	<0.15	ug/L	0
PHORATE	2020-05-12	<0.01	ug/L	0
PICLORAM	2020-05-12	<1	ug/L	0
PROMETRYNE	2020-05-12	<0.03	ug/L	0
SIMAZINE	2020-05-12	<0.01	ug/L	0
TERBUFOS	2020-05-12	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
TOLUENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
TRIALLATE	2020-05-12	<0.01	ug/L	0
TRICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.44	ug/L	0
TRIFLURALIN	2020-05-12	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
XYLENE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
CARLISLE WELL FDC05 - TREATED				
1,1-DICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-12	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-12	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-12	<0.19	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC05 - TREATED				
2,4-DICHLOROPHENOL	2020-05-12	<0.15	ug/L	0
ALACHLOR	2020-05-12	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-12	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-12	<0.05	ug/L	0
BENZENE	2020-05-12 to 2020-11-03	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-12	<0.004	ug/L	0
BROMOXYNIL	2020-05-12	<0.33	ug/L	0
CARBARYL	2020-05-12	<0.05	ug/L	0
CARBOFURAN	2020-05-12	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
CHLOROBENZENE	2020-05-12 to 2020-11-03	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-12	<0.02	ug/L	0
DIAZINON	2020-05-12	<0.02	ug/L	0
DICAMBA	2020-05-12	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
DICLOFOP-METHYL	2020-05-12	<0.40	ug/L	0
DIMETHOATE	2020-05-12	<0.06	ug/L	0
DIQUAT	2020-05-12	<1	ug/L	0
DIURON	2020-05-12	<0.03	ug/L	0
ETHYLBENZENE	2020-05-12 to 2020-11-03	<0.33	ug/L	0
GLYPHOSATE	2020-05-12	<1	ug/L	0
MALATHION	2020-05-12	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLORO-PHENOXYACETIC ACID)	2020-05-12	<0.00012	mg/L	0
METOLACHLOR	2020-05-12	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-12	<0.02	ug/L	0
PARAQUAT	2020-05-12	<1	ug/L	0
PCBS TOTAL	2020-05-12	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-12	<0.15	ug/L	0
PHORATE	2020-05-12	<0.01	ug/L	0
PICLORAM	2020-05-12	<1	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

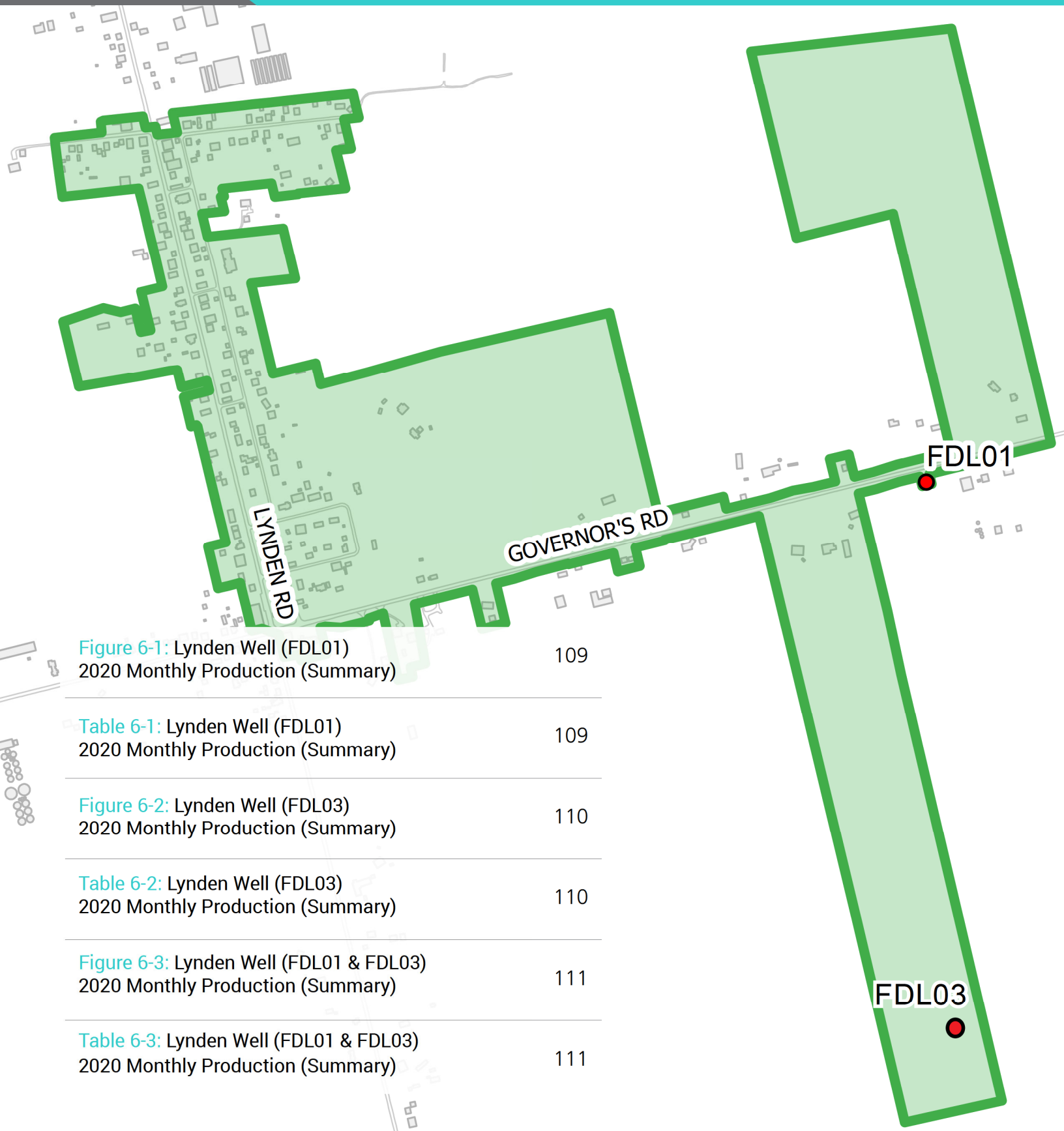
PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
CARLISLE WELL FDC05 - TREATED				
PROMETRYNE	2020-05-12	<0.03	ug/L	0
SIMAZINE	2020-05-12	<0.01	ug/L	0
TERBUFOS	2020-05-12	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.35	ug/L	0
TOLUENE	2020-05-12 to 2020-11-03	<0.36	ug/L	0
TRIALLATE	2020-05-12	<0.01	ug/L	0
TRICHLOROETHYLENE	2020-05-12 to 2020-11-03	<0.44	ug/L	0
TRIFLURALIN	2020-05-12	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-12 to 2020-11-03	<0.2	ug/L	0
XYLENE	2020-05-12 to 2020-11-03	<0.5	ug/L	0
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	10.5	ug/L	0
HALOACETIC ACIDS*	Running annual average for the last four quarters.	<5.3	ug/L	0

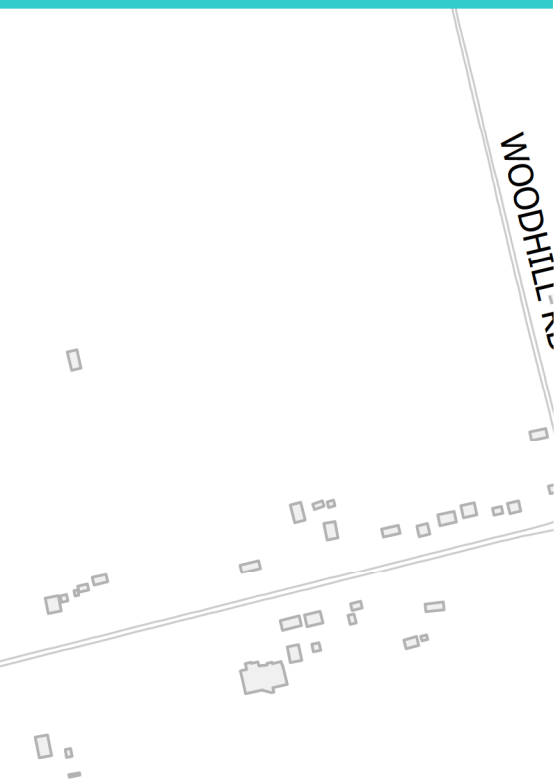
* The Maximum Acceptable Concentration for Trihalomethanes and Haloacetic Acids in the distribution system is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

PARAMETERS EXCEEDING PRESCRIBED HALF-STANDARD

There were no Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03)

LYNDEN DRINKING WATER SYSTEM WATER QUALITY ANNUAL REPORT





GENERAL INFORMATION

The Lynden water supply system consists of two wells, one reservoir, treatment, sampling and analysis, which services a population of approximately 393 people. The water source for the community of Lynden is ground water.

The construction of a new Lynden well (FDL03), water treatment plant and storage facility was complete and started providing water to the Lynden DWS on July 9, 2020. This project represents over a $7 million investment and provides clean drinking water, redundancy of equipment and ensures security of supply for the Lynden community.

Water Wells:

- Lynden Well FDL01 has a diameter of 200mm at a depth of approximately 54.6 metres.
- Lynden Well FDL03 has a diameter of 200mm at a depth of 52 metres.

Treatment:

Within a treatment well house, both wells, FDL01 and FDL03 are joined to a common header for flow metering and disinfection. The treatment plant includes air stripper, transfer pumping, a cartridge filter, CO2 injection system followed by a static mixer for pH adjustment prior to the aeration tank. Sodium hypochlorite (chlorine) within the reservoir is used to ensure disinfection of the water. Fluoridation is not carried out at any of the Lynden community wells.

DEFINITIONS

AWQI: Adverse Water Quality Incident
CFU: Colony Forming Unit
HPC: Heterotrophic Plate Count
MDWL: Municipal Drinking Water Licence
mg/L: milligrams per litre
mL: millilitre
N/A: Not Applicable
PTTW: Permit to Take Water
ug/L: micrograms per litre
MPN - Most Probable Number
P/A – Present/Absent

Sampling & Analysis:

All wells are equipped with on-line chlorine residual and turbidity analyzers that continually monitor the treated water quality. Raw, treated and distribution water is sampled and analyzed weekly. In addition, chlorine residual in the distribution system is analyzed daily.

DRINKING WATER SYSTEM NUMBER	DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM OWNER	DRINKING WATER SYSTEM CATEGORY	PERIOD BEING REPORTED
250001830	Lynden Drinking Water System FDL01	City of Hamilton	Large Municipal Residential	January 1, 2020 to December 31, 2020

PROVISION OF DRINKING WATER TO OTHER MUNICIPALITIES

The following is a list of municipal drinking water systems which receive drinking water from the Lynden System:

DRINKING WATER SYSTEM NAME	DRINKING WATER SYSTEM NUMBER
None other than Lynden System	250001830

A copy of this annual report is provided to all Drinking Water System owners that are connected to the system and to whom we provide drinking water.

Our customers are notified through the local newspaper that the annual report is available online free of charge at www.hamilton.ca/waterquality.

WATER TREATMENT CHEMICALS USED DURING THIS REPORTING PERIOD

- Sodium Hypochlorite

BREAKDOWN OF SIGNIFICANT MONETARY EXPENSES

The following table highlights the significant expenses that were incurred for the installation of required equipment in 2020. There were no significant expenses related to the replacement or repair of equipment in 2020.

Lynden Additional Water Supply $2,811,701

ADVERSE TEST RESULTS AND REPORTABLE INCIDENTS

The following table outlines 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.

NOTIFICATION DATE (Y-M-D)	LOCATION OF ADVERSE	ADVERSE WATER QUALITY INCIDENT	RESOLUTION
2020-02-07	Lynden Drinking Water System	Duty to report - Loss of communication	An operator was dispatched to the site to monitor the situation and remained until communication was up and running. A wireless router was set up on site and communication was restored at 02:46 on Feb 7th. The operator verified that there was no effect on the quality of water.
2020-05-19	Lynden Drinking Water System	FDL01 Sodium = 58.7 mg/L (Regulatory requirement is maximum of 20 mg/L. Notification required only once every 57 months)	Resampled adverse location. Sodium adverse was confirmed. Residents were mailed a letter, written by Public Health Services about sodium. Public Health was given a list of addresses to which the letters were mailed and a letter indicating that these addresses were believed to be connected to the Lynden Drinking Water system.
2020-07-02	Lynden Sampling Station D, Liberty St.	Total Coliforms = Present (Regulatory requirement is Not Detectable)	Resampled adverse location, entry point at FDL01 and one downstream location. Result failed at the original adverse location which resulted in another AWQI on July 3rd. The adverse was confirmed.
2020-07-03	Lynden Sampling Station D, Liberty St.	Total Coliforms = 5 MPN/100mL (Regulatory requirement is Not Detectable)	Resampled original adverse location, entry point at FDL01 and one downstream location. Two consecutive sets of samples were taken 24 to 48 hours apart. All results passed.
2020-07-24	Lynden Drinking Water System	FDL03 Sodium = 51.4 mg/L (Regulatory requirement is maximum of 20 mg/L. Notification required only once every 57 months)	Resampled adverse location. Sodium adverse was confirmed. A Water Community Update letter was mailed to the residents of Lynden, advising them that the new water treatment plant will not change the sodium concentrations in the drinking water system.

MECP LYNDEN DRINKING WATER SYSTEM (DWS) INSPECTION FINDINGS AND SELF-DECLARED NON-COMPLIANCES

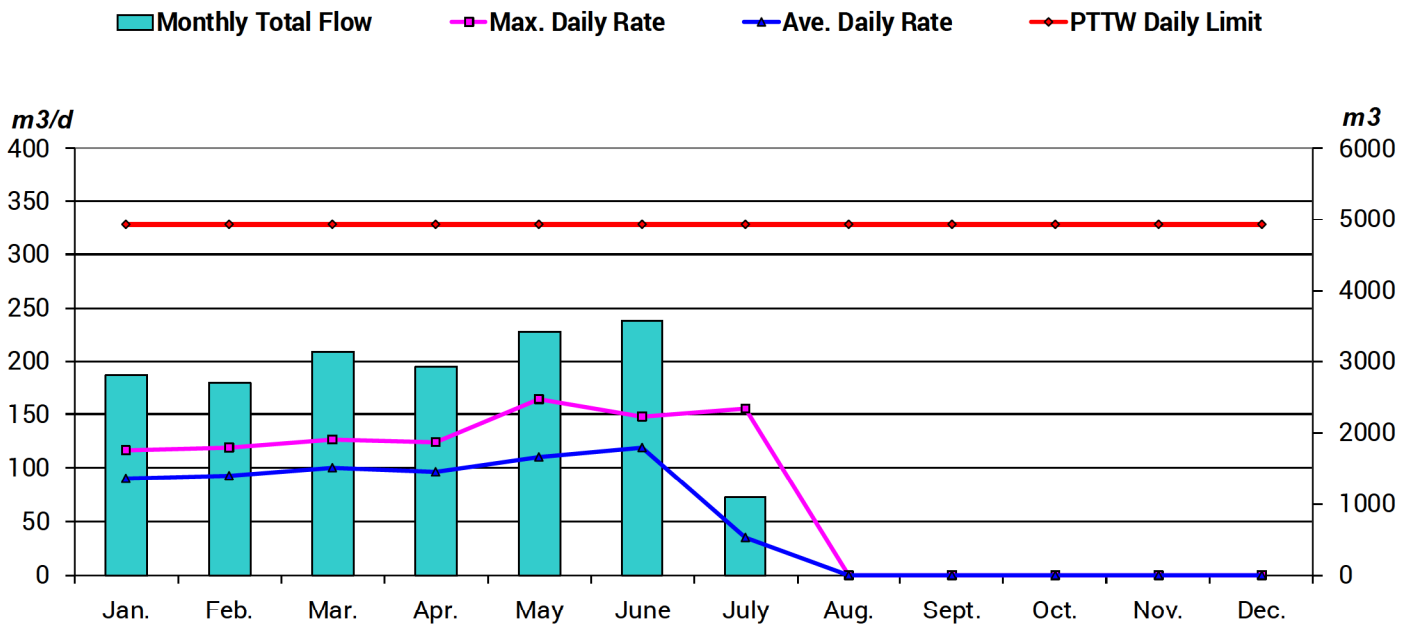
A summary of findings that were either issued during the MECP inspection or self-declared during the 2020 calendar year. The inspection is on-going and the final Inspection Report is pending. Additional findings will be included in the 2021 Drinking Water Systems Annual Summary and Water Quality Report.

#	Finding Type	Finding	Status
1	Self-Declared Non-Compliance	DWS Profile Information Form not submitted to MECP within 10 days of change.	Actions complete

WATER PRODUCTION REPORTS - SUMMARY

The following provides a summary of daily flow rates and instantaneous peak flow rates in comparison to the capacity of the water works as identified in the Permit to Take Water. This information is tabulated in the accompanying tables.

FIGURE 6-1: LYNDEN WELL (FDL01) - 2020 MONTHLY PRODUCTION (SUMMARY)



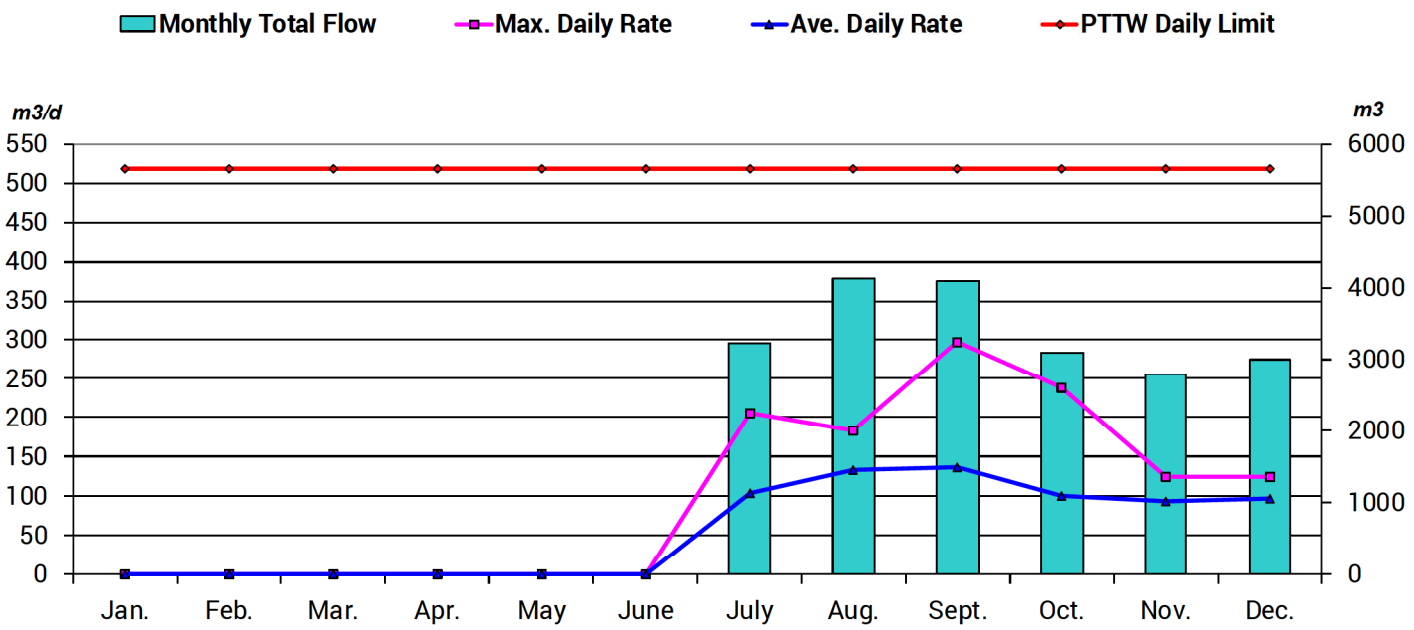
NOTE: Lynden Well FDL01 was decommissioned in July 2020

MAINTAINED COMPLIANCE

TABLE 6-1: LYNDEN WELL (FDL01) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDL01	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	2,804	2,693	3,121	2,915	3,426	3,580	1,093	0	0	0	0	0
Average Daily Rate	m^3/d	90	93	101	97	111	119	35	0	0	0	0	0
Maximum Daily Rate	m^3/d	116	119	126	124	164	148	155	0	0	0	0	0
PTTW Daily Rated Capacity	m^3/d	327	327	327	327	327	327	327	327	327	327	327	327

FIGURE 6-2: LYNDEN WELL (FDL03) - 2020 MONTHLY PRODUCTION (SUMMARY)



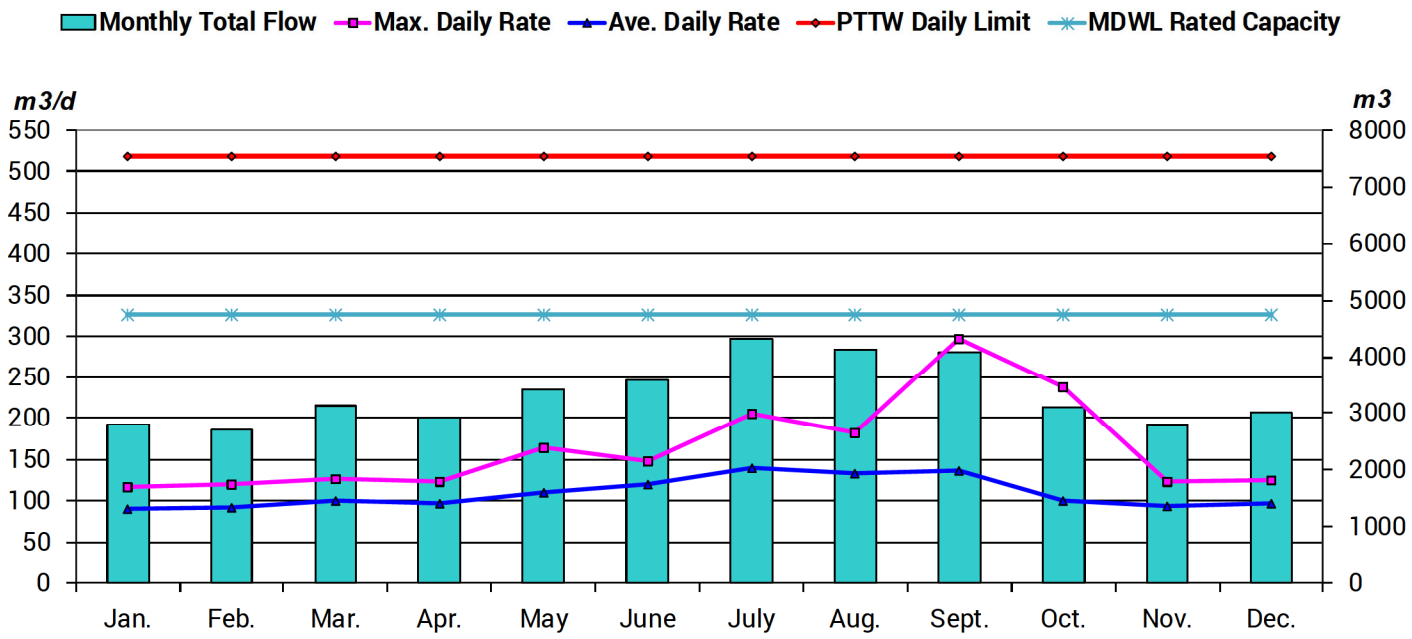
NOTE: Lynden Well FDL03 was commissioned in July 2020

MAINTAINED COMPLIANCE

TABLE 6-2: LYNDEN WELL (FDL03) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDL03	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	0	0	0	0	0	0	3,219	4,132	4,085	3,097	2,794	3,000
Average Daily Rate	m^3/d	0	0	0	0	0	0	104	133	136	100	93	97
Maximum Daily Rate	m^3/d	0	0	0	0	0	0	205	183	297	239	124	125
PTTW Daily Rated Capacity	m^3/d	518	518	518	518	518	518	518	518	518	518	518	518

FIGURE 6-3: LYNDEN WELL (FDL01 & FDL03) - 2020 MONTHLY PRODUCTION (SUMMARY)



MAINTAINED COMPLIANCE

TABLE 6-3: LYNDEN WELL (FDL01 & FDL03) - 2020 MONTHLY PRODUCTION (SUMMARY)

FDL01 & FDL03	UNITS	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Monthly Total Flow	m^3	2,804	2,693	3,121	2,915	3,426	3,580	4,311	4,132	4,085	3,097	2,794	3,000
Average Daily Rate	m^3/d	90	93	101	97	111	119	139	133	136	100	93	97
Maximum Daily Rate	m^3/d	116	119	126	124	164	148	205	183	297	239	124	125
PTTW Daily Rated Capacity	m^3/d	518	518	518	518	518	518	518	518	518	518	518	518
MDWL Daily Rated Capacity	m^3/d	327	327	327	327	327	327	327	327	327	327	327	327

WATER QUALITY DATA

MICROBIOLOGICAL TESTING DONE UNDER SCHEDULE 10, 11, 12 AND 17, 18 OF REGULATION 170/03, DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATES	# OF SAMPLES	RESULT RANGE	UNIT OF MEASURE
LYNDEN WELL FDL01 - RAW				
E.COLI	2020-01-01 to 2020-01-29	5	0	CFU/100mL
E.COLI MPN	2020-02-05 to 2020-07-22	25	0	MPN/100mL
TOTAL COLIFORM	2020-01-01 to 2020-01-29	5	0	CFU/100mL
TOTAL COLIFORM MPN	2020-02-05 to 2020-07-22	25	0	MPN/100mL
LYNDEN WELL FDL03 - RAW				
E.COLI MPN	2020-07-10 to 2020-12-30	26	0	MPN/100mL
TOTAL COLIFORM MPN	2020-07-10 to 2020-12-30	26	0	MPN/100mL
LYNDEN WELL FDL01 - TREATED				
E.COLI	2020-01-01 to 2020-01-29	5	0	CFU/100mL
E.COLI MPN	2020-07-02 to 2020-07-04	3	0	MPN/100mL
E.COLI P/A	2020-02-05 to 2020-07-22	25	ALL ABSENT	P/A/100mL
HPC	2020-01-01 to 2020-07-22	30	0 to 780	CFU/1mL
TOTAL COLIFORM	2020-01-01 to 2020-01-29	5	0	CFU/100mL
TOTAL COLIFORM MPN	2020-07-02 to 2020-07-04	3	0	MPN/100mL
TOTAL COLIFORM P/A	2020-02-05 to 2020-07-22	25	ALL ABSENT	P/A/100mL
LYNDEN WELL FDL03 - TREATED				
E.COLI P/A	2020-07-10 to 2020-12-30	26	ALL ABSENT	P/A/100mL
HPC	2020-07-10 to 2020-12-30	26	0 to 45	CFU/1mL
TOTAL COLIFORM P/A	2020-07-10 to 2020-12-30	26	ALL ABSENT	P/A/100mL
DISTRIBUTION				
E.COLI	2020-01-01 to 2020-01-29	14	0	CFU/100mL
E.COLI MPN	2020-07-02 to 2020-07-04	6	0	MPN/100mL
E.COLI P/A	2020-02-05 to 2020-12-30	143	ALL ABSENT	P/A/100mL
HPC	2020-01-01 to 2020-12-30	157	0 to 11	CFU/1mL
TOTAL COLIFORM	2020-01-01 to 2020-01-29	14	0	CFU/100mL
TOTAL COLIFORM MPN	2020-07-02 to 2020-07-04	6	0 to 5	MPN/100mL
TOTAL COLIFORM P/A	2020-02-05 to 2020-12-30	143	1 DETECTION	P/A/100mL

OPERATIONAL TESTING DONE UNDER SCHEDULE 7, 8 OR 9 OF REGULATION 170/03 DURING THE PERIOD COVERED BY THIS ANNUAL REPORT.

NOTE: If results are obtained from continuous monitors, then 8,760 is reported as the number of samples.

PARAMETER - SAMPLE TYPE	NUMBER OF GRAB SAMPLES	RANGE OF RESULTS (MIN #) TO (MAX #)	UNIT OF MEASURE
TURBIDITY - RAW - FDL01	30	0.08 to 0.25	NTU
TURBIDITY - RAW - FDL03	25	0.09 to 0.50	NTU
FREE CHLORINE - TREATED	8760	1.09 to 3.81	mg/L
FREE CHLORINE - DISTRIBUTION	366	0.66 to 3.12	mg/L

SUMMARY OF ADDITIONAL TESTING AND SAMPLING CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENT OF A LICENCE, APPROVAL, ORDER OR OTHER LEGAL INSTRUMENT.

PARAMETER	NUMBER OF GRAB SAMPLES	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
LEAD - TREATED - FDL01	13	2020-01-08 to 2020-07-02	<0.0001 to 0.0006	mg/L
LEAD - TREATED - FDL03	12	2020-07-15 to 2020-12-30	<0.0001	mg/L
LEAD - DISTRIBUTION	74	2020-01-08 to 2020-12-30	<0.0001 to 0.0010	mg/L

SUMMARY OF INORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
LYNDEN WELL FDL01 - TREATED				
ANTIMONY	2020-05-13	<0.0001	mg/L	0
ARSENIC	2020-05-13	0.0001	mg/L	0
BARIUM	2020-01-22 to 2020-07-22	0.602 to 0.657	mg/L	0
BORON	2020-05-13	0.468	mg/L	0
CADMIUM	2020-05-13	<0.0001	mg/L	0
CHROMIUM	2020-05-13	0.0002	mg/L	0
FLUORIDE	2020-05-13	0.65	mg/L	0
MERCURY	2020-05-13	<0.05	ug/L	0
NITRATE AS N	2020-01-22 to 2020-07-22	0.02	mg/L	0
NITRITE AS N	2020-01-22 to 2020-07-22	<0.01	mg/L	0
SELENIUM	2020-05-13	<0.0001	mg/L	0
SODIUM	2020-05-13 to 2020-05-20	58.3 to 58.7	mg/L	1
URANIUM	2020-05-13	0.004	ug/L	0
LYNDEN WELL FDL03 - TREATED				
ANTIMONY	2020-07-22 to 2020-11-04	<0.0001	mg/L	0
ARSENIC	2020-07-22 to 2020-11-04	0.0008 to 0.0022	mg/L	0
BARIUM	2020-07-22 to 2020-11-04	0.115 to 0.156	mg/L	0
BORON	2020-07-22 to 2020-11-04	0.441 to 0.461	mg/L	0
CADMIUM	2020-07-22 to 2020-11-04	<0.0001	mg/L	0
CHROMIUM	2020-07-22 to 2020-11-04	0.0002	mg/L	0
FLUORIDE	2020-07-22 to 2020-11-04	0.66	mg/L	0
MERCURY	2020-07-22 to 2020-11-04	<0.05	ug/L	0
NITRATE AS N	2020-07-22 to 2020-11-04	<0.02	mg/L	0
NITRITE AS N	2020-07-22 to 2020-11-04	<0.01	mg/L	0
SELENIUM	2020-07-22 to 2020-11-04	<0.0001	mg/L	0
SODIUM	2020-07-22 to 2020-11-04	51.4 to 56.4	mg/L	1
URANIUM	2020-07-22 to 2020-11-04	0.035 to 0.067	ug/L	0

SUMMARY OF LEAD TESTING UNDER SCHEDULE 15.1 DURING THIS REPORTING PERIOD.

LOCATION TYPE	POINTS SAMPLED	LEAD SAMPLES TAKEN	PH SAMPLES TAKEN	ALKALINITY SAMPLES TAKEN	RANGE OF PH RESULTS (MIN #) TO (MAX #) PH UNITS	ALKALINITY RESULTS (MIN #) TO (MAX #) MG/L	LEAD RESULTS (MIN #) TO (MAX #) MG/L	LEAD AWQIs	LEAD EXCEEDANCES
PLUMBING-NR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PLUMBING-R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISTRIBUTION	2	2	2	2	8.39 to 8.63	93 to 108	0.0001 to 0.0012	0	N/A

NR - Non Residential R- Residential

SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
LYNDEN WELL FDL01 - TREATED				
1,1-DICHLOROETHYLENE	2020-05-13	<0.33	ug/L	0
1,2-DICHLOROBENZENE	2020-05-13	<0.41	ug/L	0
1,2-DICHLOROETHANE	2020-05-13	<0.35	ug/L	0
1,4-DICHLOROBENZENE	2020-05-13	<0.36	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-05-13	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-05-13	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-05-13	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-05-13	<0.15	ug/L	0
ALACHLOR	2020-05-13	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-05-13	<0.01	ug/L	0
AZINPHOS-METHYL	2020-05-13	<0.05	ug/L	0
BENZENE	2020-05-13	<0.32	ug/L	0
BENZO[A]PYRENE	2020-05-13	<0.004	ug/L	0
BROMOXYNIL	2020-05-13	<0.33	ug/L	0
CARBARYL	2020-05-13	<0.05	ug/L	0
CARBOFURAN	2020-05-13	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-05-13	<0.17	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
LYNDEN WELL FDL01 - TREATED				
CHLOROBENZENE	2020-05-13	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-05-13	<0.02	ug/L	0
DIAZINON	2020-05-13	<0.02	ug/L	0
DICAMBA	2020-05-13	<0.20	ug/L	0
DICHLOROMETHANE	2020-05-13	<0.35	ug/L	0
DICLOFOP-METHYL	2020-05-13	<0.40	ug/L	0
DIMETHOATE	2020-05-13	<0.06	ug/L	0
DIQUAT	2020-05-13	<1	ug/L	0
DIURON	2020-05-13	<0.03	ug/L	0
ETHYLBENZENE	2020-05-13	<0.33	ug/L	0
GLYPHOSATE	2020-05-13	<1	ug/L	0
MALATHION	2020-05-13	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLORO-PHENOXYACETIC ACID)	2020-05-13	<0.00012	mg/L	0
METOLACHLOR	2020-05-13	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-05-13	<0.02	ug/L	0
PARAQUAT	2020-05-13	<1	ug/L	0
PCBS TOTAL	2020-05-13	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-05-13	<0.15	ug/L	0
PHORATE	2020-05-13	<0.01	ug/L	0
PICLORAM	2020-05-13	<1	ug/L	0
PROMETRYNE	2020-05-13	<0.03	ug/L	0
SIMAZINE	2020-05-13	<0.01	ug/L	0
TERBUFOS	2020-05-13	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-05-13	<0.35	ug/L	0
TOLUENE	2020-05-13	<0.36	ug/L	0
TRIALLATE	2020-05-13	<0.01	ug/L	0
TRICHLOROETHYLENE	2020-05-13	<0.44	ug/L	0
TRIFLURALIN	2020-05-13	<0.02	ug/L	0
VINYL CHLORIDE	2020-05-13	<0.17	ug/L	0
XYLENE	2020-05-13	<0.43	ug/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
LYNDEN WELL FDL03 - TREATED				
1,1-DICHLOROETHYLENE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
1,2-DICHLOROBENZENE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
1,2-DICHLOROETHANE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
1,4-DICHLOROBENZENE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
2,3,4,6-TETRACHLOROPHENOL	2020-07-22	<0.20	ug/L	0
2,4,6-TRICHLOROPHENOL	2020-07-22	<0.25	ug/L	0
2,4-DICHLOROPHENOXYACETIC ACID	2020-07-22	<0.19	ug/L	0
2,4-DICHLOROPHENOL	2020-07-22	<0.15	ug/L	0
ALACHLOR	2020-07-22	<0.02	ug/L	0
ATRAZINE + DESETHYL-ATRAZINE	2020-07-22	<0.01	ug/L	0
AZINPHOS-METHYL	2020-07-22	<0.05	ug/L	0
BENZENE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
BENZO[A]PYRENE	2020-07-22	<0.004	ug/L	0
BROMOXYNIL	2020-07-22	<0.33	ug/L	0
CARBARYL	2020-07-22	<0.05	ug/L	0
CARBOFURAN	2020-07-22	<0.01	ug/L	0
CARBON TETRACHLORIDE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
CHLOROBENZENE	2020-07-22 to 2020-11-04	<0.3	ug/L	0
CHLORPYRIFOS (DURSBAN)	2020-07-22	<0.02	ug/L	0
DIAZINON	2020-07-22	<0.02	ug/L	0
DICAMBA	2020-07-22	<0.20	ug/L	0
DICHLOROMETHANE	2020-07-22 to 2020-11-04	<0.5	ug/L	0
DICLOFOP-METHYL	2020-07-22	<0.40	ug/L	0
DIMETHOATE	2020-07-22	<0.06	ug/L	0
DIQUAT	2020-07-22	<1	ug/L	0
DIURON	2020-07-22	<0.03	ug/L	0
ETHYLBENZENE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
GLYPHOSATE	2020-07-22	<1	ug/L	0
MALATHION	2020-07-22	<0.02	ug/L	0
MCPA (2-METHYL-4-CHLOROPHE-NOXYACETIC ACID)	2020-07-22	<0.00012	mg/L	0

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SUMMARY OF ORGANIC PARAMETERS REQUIRED BY REGULATION 170/03 AND TESTED DURING THIS REPORTING PERIOD.

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	NO. OF AWQIs
LYNDEN WELL FDL03 - TREATED				
METOLACHLOR	2020-07-22	<0.01	ug/L	0
METRIBUZIN (SENCOR)	2020-07-22	<0.02	ug/L	0
PARAQUAT	2020-07-22	<1	ug/L	0
PCBS TOTAL	2020-07-22	<0.04	ug/L	0
PENTACHLOROPHENOL	2020-07-22	<0.15	ug/L	0
PHORATE	2020-07-22	<0.01	ug/L	0
PICLORAM	2020-07-22	<1	ug/L	0
PROMETRYNE	2020-07-22	<0.03	ug/L	0
SIMAZINE	2020-07-22	<0.01	ug/L	0
TERBUFOS	2020-07-22	<0.01	ug/L	0
TETRACHLOROETHYLENE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
TOLUENE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
TRIALLATE	2020-07-22	<0.01	mg/L	0
TRICHLOROETHYLENE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
TRIFLURALIN	2020-07-22	<0.02	ug/L	0
VINYL CHLORIDE	2020-07-22 to 2020-11-04	<0.2	ug/L	0
XYLENE	2020-07-22 to 2020-11-04	<0.5 to 0.5	ug/L	0
DISTRIBUTION				
TOTAL TRIHALOMETHANES*	Running annual average for the last four quarters.	50.8	ug/L	0
HALOACETIC ACIDS*	Running annual average for the last four quarters.	6.0	ug/L	0

* The Maximum Acceptable Concentration for Trihalomethanes and Haloacetic Acids in the distribution is based on a running average of the results from all sampling events in the past four quarters. This running average can be found in the result value column.

PARAMETERS EXCEEDING PRESCRIBED HALF-STANDARD

Summary of Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards (O.Reg. 169/03).

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE
LYNDEN WELL FDL01 - TREATED			
BARIUM	2020-01-22	0.634	mg/L
BARIUM	2020-05-13	0.657	mg/L
BARIUM	2020-07-22	0.602	mg/L

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)