Park Lane Subdivision Drinking Water System

Waterworks # 220007132
System Category – Small Municipal Residential

Annual Water Report

Prepared For: The Township of Ramara

Reporting Period of January 1st – December 31st, 2022

Issued: February 24, 2023

Revision: 0

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

This report has been prepared to satisfy the annual reporting requirements in O. Reg. 170/03 Section 11 and Schedule 22

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Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the Township Of Ramara Administration Office and on the Township's website at www.ramara.ca. Notification that reports are available free of charge will be made on the Township of Ramara website. The Township of Ramara Administration Office is located at 2297 Highway 12, Brechin, ON L0K 1B0.

Compliance Report Card

Drinking Water System Number: 220007132
Drinking Water System Name: Park Lane Subdivision DWS
Drinking Water System Owner: Township of Ramara
Drinking Water System Category: Small Municipal Residential
Period Being Reported: January 1, 2022 - December 31, 2022

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	June 28, 2022	Announced –Focused -Drinking Water Inspection – Final Inspection Rating of 100%
AWQI's	0		
Number of Non-Compliances	1	December 12 & 13, 2022	Mini Stand Pipe over flowed, as a consequence Well #1, #2 exceeded daily allowable water taking
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Park Lane DWS is supplied with raw groundwater from two non-GUDI wells: Well # 1, # 2.

Treatment

The treatment system consists of the following:

- Pre-chlorination system and potassium permanganate system for iron and manganese oxidation
- Two (2) greensand filters with backwash equipment and backwash waste storage/decant tank system
- Sodium hypochlorite secondary disinfection system

- One (1) standpipe reservoir for potable water storage
- A high lift pumping system
- Stand-by propane generator on-site

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag
Potassium Permanganate	Iron and Manganese Oxidation	Carus Chemical Company

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
There were no adverse water quality incidents reported during the reporting period.						

Non-Compliance

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
Part X of EPA	Mini Stand Pipe overflowed	December 12, 2022 at 21:08 until December 13, 2022 at 14:20	Power to the electronic automatic valve was restored along with the high level alarm being adjusted.	Complete

Non-Compliance Identified in a Ministry Inspection:

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliances identified in a Ministry Inspection during this period.				

Flows

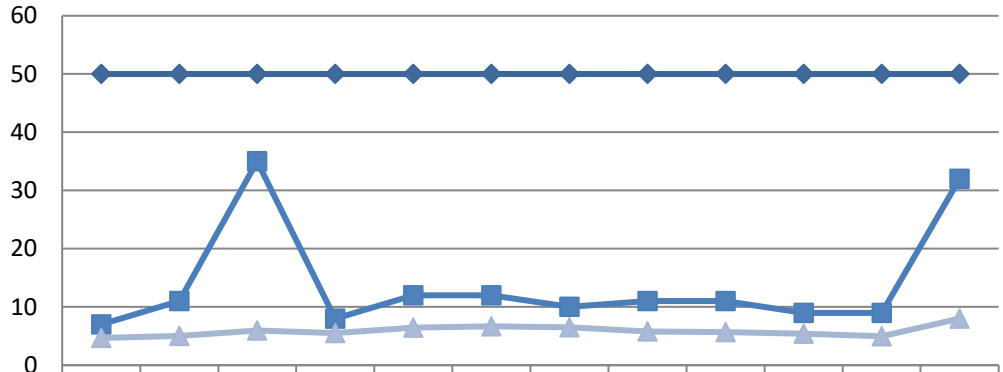
Raw Water Flows

The Raw Water flows are not regulated under a Permit to Take Water as they remain below 50m^3/day. The Raw Water flows are regulated under the Municipal Licence. While each separate Raw Water source remained below the 50m^3/day on December 12

& 13, 2022 the daily water taking was exceeded for the Raw Water totals of 56 m^3 taken on December 12, 2022 and 71 m^3 taken on December 13, 2022. The Raw Water taking exceedances were a consequence of the spill that was reported.

Total Monthly Flows (m^3/d)

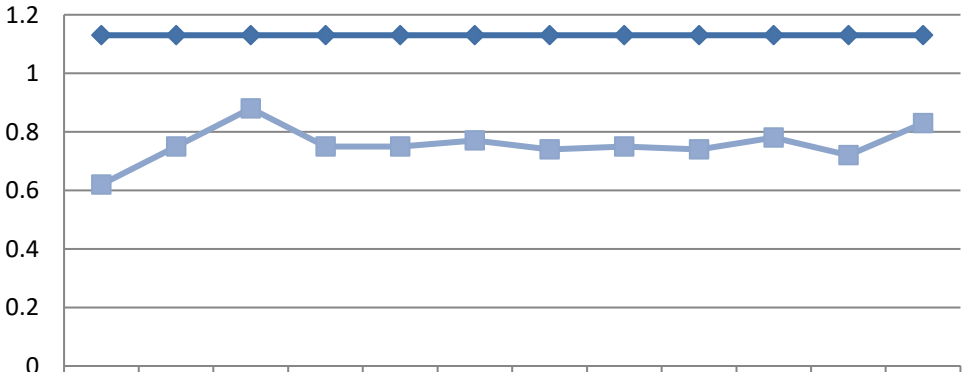
Max Allowable-MDWL- Well #1



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m^3/d)	50	50	50	50	50	50	50	50	50	50	50	50
Max Flow (m^3/d)	7	11	35	8	12	12	10	11	11	9	9	32
Avg (m^3/d)	5	5	6	6	6	7	7	6	6	5	5	8

Monthly Rated Flows (L/s)

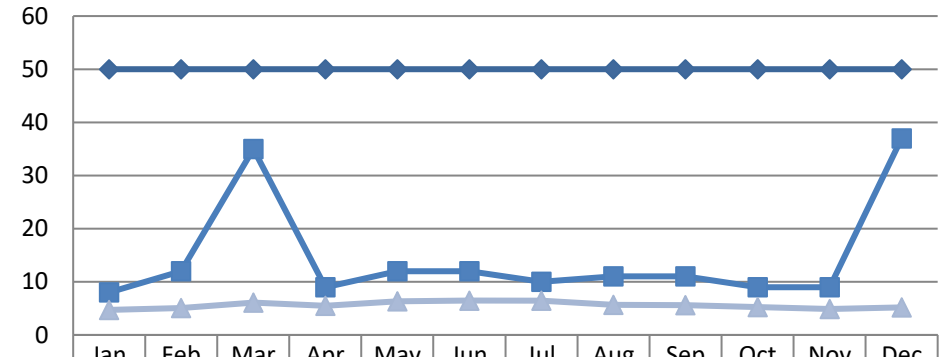
Max Allowable Rate-MDWL- Well #1



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/s)	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Max Rate (L/s)	0.62	0.75	0.88	0.75	0.75	0.77	0.74	0.75	0.74	0.78	0.72	0.83

Total Monthly Flows (m³/d)

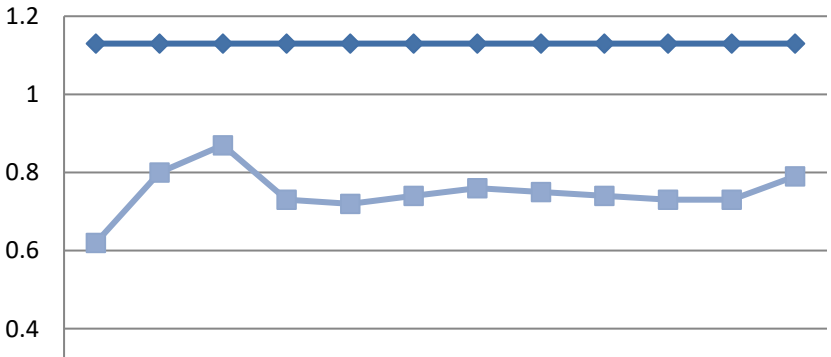
Max Allowable-MDWL- Well #2



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	50	50	50	50	50	50	50	50	50	50	50	50
Max Flow (m³/d)	8	12	35	9	12	12	10	11	11	9	9	37
Avg (m³/d)	5	5	6	5	6	6	6	6	6	5	5	5

Monthly Rated Flows (L/s)

Max Allowable Rate-MDWL- Well #2



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/s)	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Max Rate (L/s)	0.62	0.80	0.87	0.73	0.72	0.74	0.76	0.75	0.74	0.73	0.73	0.79

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence. The average water consumption for the Park Lane Drinking Water System during 2022 was: 8.2 m^3/day.

Park Lane Drinking Water System Historical Demands

Year	Number of Connections	Average Daily Demand (m^3)	Maximum Daily Demand (m^3/day)	Rated Capacity	Per Capita Consumption*(L/p/day)	
					Average	Maximum
2012	17	10	34	50	228	760
2013	17	8	27	50	173	614
2014	17	11	26	50	239	588
2015	17	8	16	50	190	362
2016	17	8	33	50	193	747
2017	18	7.5	20	50	160	425
2018	19	8.3	16	50	168	324
2019	19	12.2	45	50	246	911
2020	19	11.5	42	50	233	850
2021	19	9.1	19	50	184	385
2022	19	8.2	23	50	167	466
3 Year Average/Max		9.6	42	50	195	850

*Based on 2.6 people per dwelling
Note: Historical data may have included leaks/breaks & system flushing. Previous numbers would need to be reviewed to confirm accuracy.
Note: This calculation was completed based on current connections in the system, growth within the drinking water system has not been considered.

System Reserve Capacity

In accordance with the MECP Procedure D-5-1, the reserve capacity is calculated by the following formula:

Reserve Capacity= Design Flow- Committed Flow

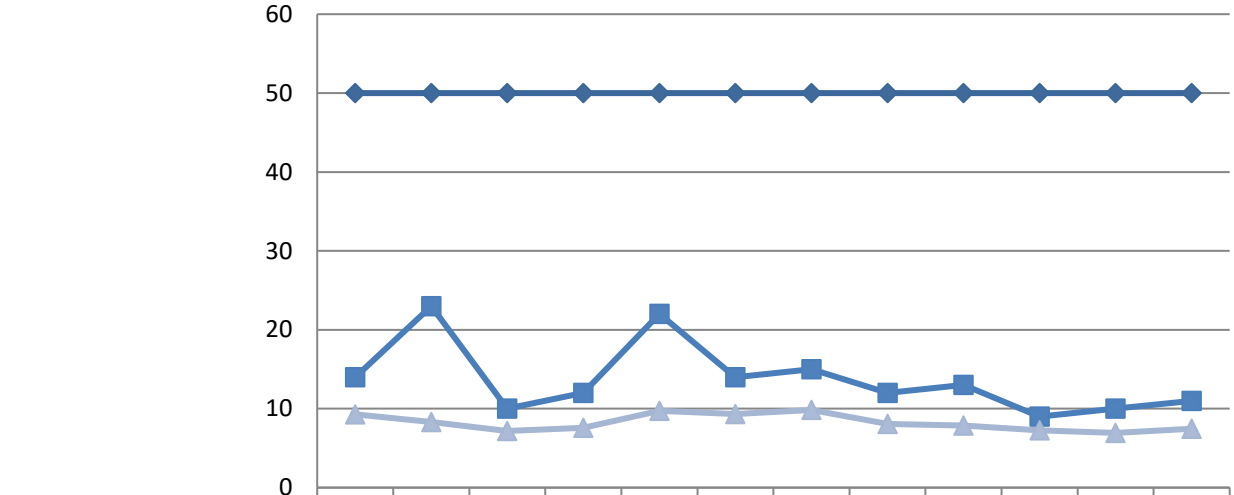
Design flow is the maximum permissible flow approved by the MDWL and/or PTTW. Park Lane Water Works maximum daily rated capacity is 50 m^3/day.

The committed flow is the total expected water demand from the existing and proposed connections based on the previous three years of data. The committed number of service connections is: 19. The three-year (2020-2022) maximum per capita water consumption is: 850 L/p/day. At this water consumption rate, the committed flow is: 42 m^3/day.

As a result, the calculated reserve capacity is: 8 m^3/day.

Monthly Rated Flows

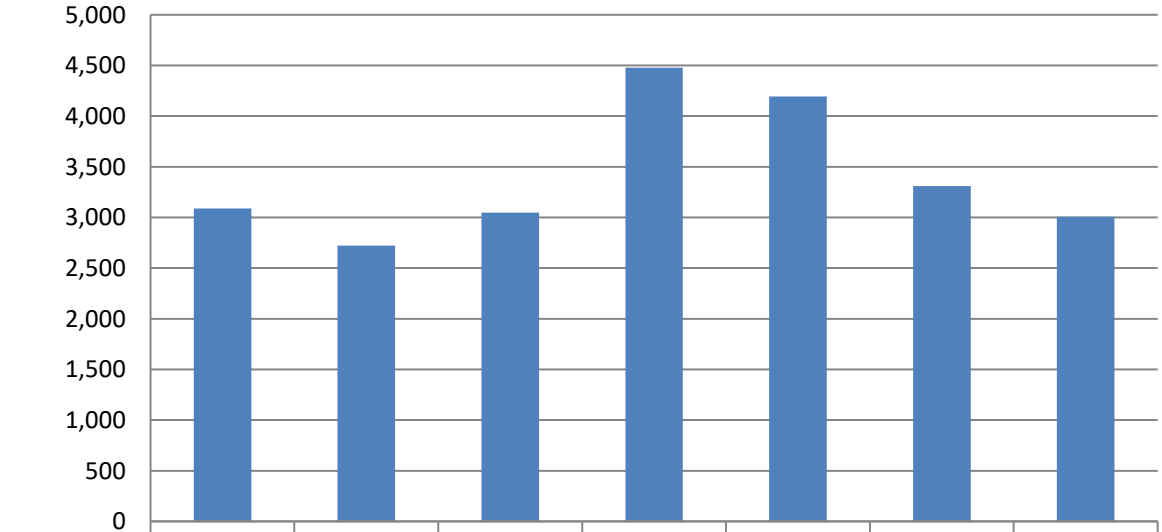
Rated Capacity – MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m^3/d)	50	50	50	50	50	50	50	50	50	50	50	50
Max Daily Flow (m^3/d)	14	23	10	12	22	14	15	12	13	9	10	11
Avg (m^3/d)	9	8	7	8	10	9	10	8	8	7	7	7

Annual Total Flow Comparison

Total Annual m^3



	2016	2017	2018	2019	2020	2021	2022
WTP (m^3)	3,090	2,723	3,047	4,477	4,194	3,309	3,007

Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E. Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw Well 1	12	0	0	0	0		
Raw Well 2	14	0	0	0	0		
Distribution	26	0	0	0	0	0	2

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Well 1 (NTU)	12	0.63	7.49
Turbidity Well 2 (NTU)	12	0.18	10.9
Turbidity – Treated Water (NTU)	8760	0.00	2.03
Treated Water Chlorine	8760	0.00	3.59
Distribution Water Chlorine	107	0.54	2.20
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measure if it is **not** milligrams per litre.
Note: For continuous monitors 8760 is used as the number of samples**.** Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O. Reg. 170/03.

Inorganic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. Sodium and Fluoride are required to be tested every 5 years. Nitrate and Nitrite are tested quarterly and the metals are tested annually as required under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = Method Detection Limit

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2019/08/21	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	2019/08/21	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2019/08/21	129.0	1000.0	No	No
Boron: B (ug/L) - TW	2019/08/21	152.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2019/08/21	<MDL 0.003	5.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Chromium: Cr (ug/L) - TW	2019/08/21	0.18	50.0	No	No
Mercury: Hg (ug/L) - TW	2019/08/21	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2019/08/21	<MDL 0.04	50.0	No	No
Uranium: U (ug/L) - TW	2019/08/21	0.766	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2022/08/03	0.26	1.5	No	No
Nitrite (mg/L) - TW	2022/02/08	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/05/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/08/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/11/09	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2022/02/08	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW	2022/05/03	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW	2022/08/03	0.01	10.0	No	No
Nitrate (mg/L) - TW	2022/11/09	<MDL 0.006	10.0	No	No
Sodium: Na (mg/L) - TW	2020/08/12	60.9	20*	Yes	Yes
Sodium: Na (mg/L) - TW	2020/08/24	57.6	20*	Yes	Yes

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O. Reg. 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (ug/L)	Number of Exceedances
Alkalinity (mg/L)	2	187	212	N/A	N/A
pH	2	6.9	6.90	N/A	N/A
Lead (ug/l)	2	0.24	0.74	10	0

Note: Samples shown above are reflective of the 2022 lead sampling period.

Organic Parameters

These parameters are tested every 5 years as a requirement under O.Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2019/08/21	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2019/08/21	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2019/08/21	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2019/08/21	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2019/08/21	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2019/08/21	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2019/08/21	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2019/08/21	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2019/08/21	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2019/08/21	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2019/08/21	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2019/08/21	<MDL 0.20	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2019/08/21	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2019/08/21	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2019/08/21	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2019/08/21	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2019/08/21	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2019/08/21	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2019/08/21	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2019/08/21	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2019/08/21	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2019/08/21	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2019/08/21	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2019/08/21	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2019/08/21	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA) (ug/L)	2019/08/21	<MDL 0.12	100	No	No
Metolachlor (ug/L) - TW	2019/08/21	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2019/08/21	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2019/08/21	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2019/08/21	<MDL 1.0	10.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
PCB (ug/L) - TW	2019/08/21	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2019/08/21	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2019/08/21	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2019/08/21	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2019/08/21	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2019/08/21	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2019/08/21	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2019/08/21	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2019/08/21	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2019/08/21	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2019/08/21	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2019/08/21	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2019/08/21	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2019/08/21	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2022	80.5	100	No	Yes
HAA Total (ug/L) Annual Average - DW	2022	74.9	80	No	Yes

MAC = Maximum Allowable Concentration as per O. Reg. 169/03
MDL = Method Detection Limit

Additional Legislated Samples

Municipal Drinking Water License	Parameter	Date Sampled	Result	Unit of Measure
Settling Tank Discharge Point	Filter Backwash (FBW): Suspended Solids (Composite)	*November 2021	2	mg/L
		February 2022	6	mg/L
		May 2022	3	mg/L
		August 2022	3	mg/L
2021/2022 Annual Average	Filter Backwash (FBW): Suspended Solids (Composite)	2021/2022 Annual Average	3.5	mg/L

Note: The Suspended Solids annual average limit is 25 mg/L.
*The MDWL issue #4 dated February 04, 2022 was amended to remove the requirement to collect filter backwash samples and test for suspended solids, calculating the running annual average. The above table shows the last 4 samples

required to be collected under the MDWL issue #4. MDWL issue #5 was issued September 22, 2022.

Inorganic or Organic Parameter Exceedances

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
Trihalomethane: Total (ug/L) Annual Average - DW	80.5	(ug/L)	2022 Annual Average
HAA Total (ug/L) Annual Average - DW	74.9	(ug/L)	2022 Annual Average

Major Maintenance Summary incurred to install, repair or replace required equipment

Item #	Description
1	Green sand filter and backwash pumps replaced
2	Generator wiring fault emergency repair
3	Chlorine analyzer replaced
4	MDWL amendment on backwash parameters
5	Well #2 rehab completed
6	Replace Treated Mag meter