Southview Estates Drinking Water System

Waterworks # 220012260
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2023

Issued: February 24, 2024

Revision: 0

Operating Authorities:

Kawartha Lakes

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 residences. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office and on the City's website at**:** www.kawarthalakes.ca. Notification that reports are available free of charge will be made on the City of Kawartha Lakes website. The City of Kawartha Lakes Public Works Administration Office is located at 322 Kent Street West in Lindsay, Ontario.

Compliance Report Card

Drinking Water System Number: 220012260
Drinking Water System Name: Southview Estates DWS
Drinking Water System Owner: City of Kawartha Lakes
Drinking Water System Category: Large Municipal Residential
Period Being Reported: January 1, 2023 - December 31, 2023

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	December 13, 2023	Unannounced Detailed Drinking Water Inspection. Final inspection rating was 100%.
AWQI's	0		
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Southview Estates Drinking Water System is supplied with surface water from Sturgeon Lake.

Treatment

The treatment system consists of the following:

- Dual train conventional filtration package plant
- Inline static mixer
- Coagulant feed system with addition of SternPAC
- Coagulant aid feed system with addition of polymer

- Two mono-media upflow clarifier units
- Two dual media rapid gravity filters
- Sodium hypochlorite feed system for primary disinfection
- Dual celled chlorine contact tanks (274 m³) located beneath the plant
- Two highlift pump chambers housing five pumps; three highlift and two backwash
- Sodium hypochlorite feed system for post chlorination
- Online analyzers to monitor both free treated chlorine and filter effluent turbidity
- Wastewater treatment system that consists of two backwash pumps and two settling tanks that receive backwash water and clarifier sludge
- SCADA computer control system
- Zebra mussel control system
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi
SternPAC	Coagulant	Kemira
Magnafloc	Coagulant Aid	BASF

Summary of Non-Compliance

Adverse Water Quality Incidents

There were no adverse water quality incidents reported during the reporting period.

Non-Compliance

There were no non-compliance incidents during this period.

Non-Compliance Identified in a Ministry Inspection:

There were no non-compliances identified in a Ministry Inspection for 2023/2024 inspection report.

Flows

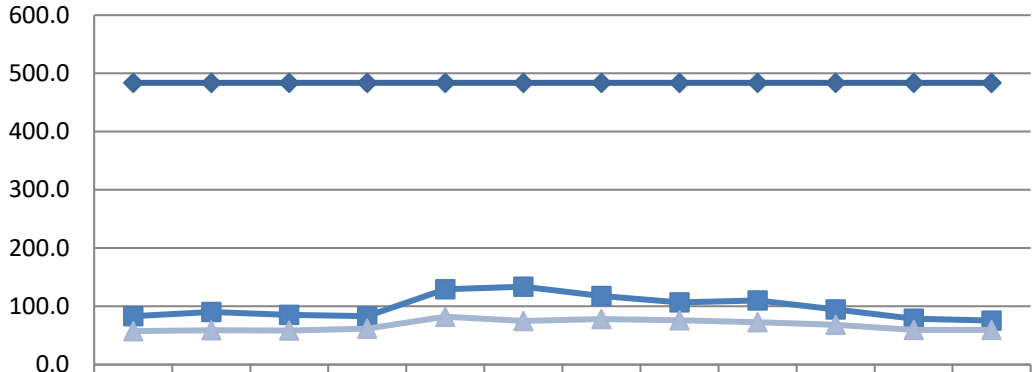
The Southview Estates Drinking Water System is operating under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water.2023 Raw Flow Data was submitted to the Ministry electronically under permit #8118-AW2NZT. The confirmation and a copy of the data that was submitted are attached in Appendix A.

Total Monthly Flows (m³/d)

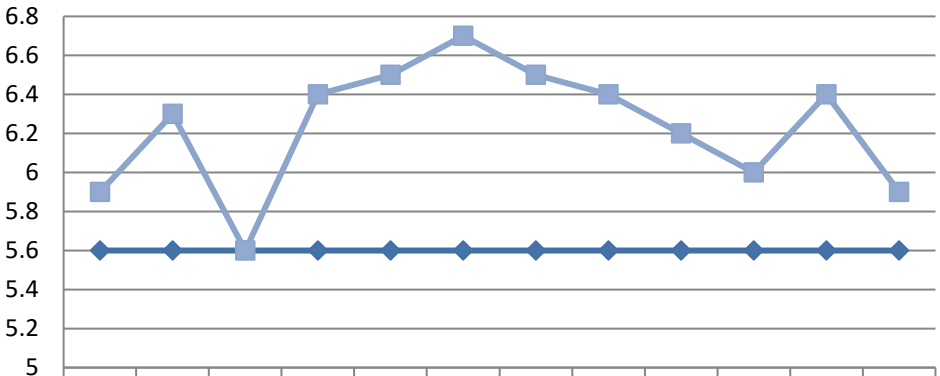
Max Allowable PTTW- Raw



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	483.8	483.8	483.8	483.8	483.8	483.8	483.8	483.8	483.8	483.8	483.8	483.8
Max Flow (m³/d)	83.4	90.2	85.5	83.0	129.3	133.9	117.9	107.1	110.1	94.6	78.6	75.7
Avg (m³/d)	57.5	59.0	58.3	61.5	82.3	74.9	78.4	76.0	72.8	68.4	59.7	59.6

Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Raw



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Max Rate (L/s)	5.9	6.3	5.6	6.4	6.5	6.7	6.5	6.4	6.2	6.0	6.4	5.9

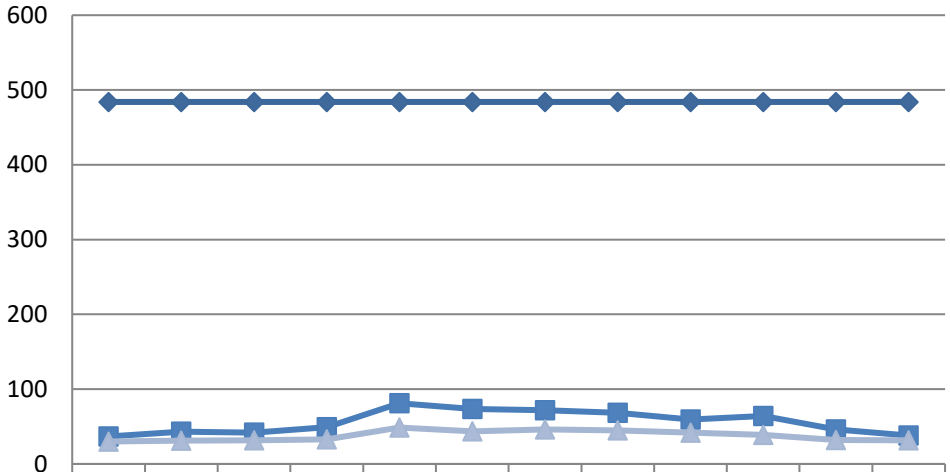
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s), exceedances were short in duration and reviewed for compliance. The scheduled Flow Meter calibration was in August 2023.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Drinking Water Licence (MDWL) 141-101.

Monthly Rated Flows

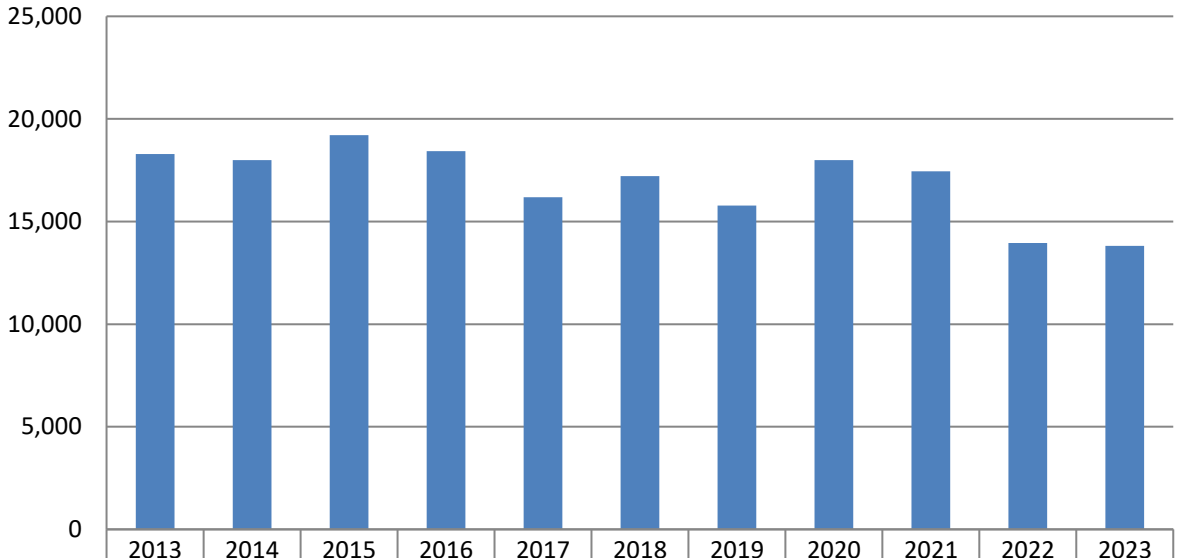
Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m^3/d)	484	484	484	484	484	484	484	484	484	484	484	484
Max Daily Flow (m^3/d)	36.7	42.9	42.0	49.1	81.1	73.3	72.0	68.5	59.2	63.9	46.2	38.2
Avg (m^3/d)	30.0	31.3	31.5	33.0	48.7	43.7	46.0	44.7	42.0	38.9	32.0	31.7

Annual Total Flow Comparison

Total Annual m^3



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
WTP (m^3)	18,295	17,990	19,204	18,430	16,177	17,212	15,772	17,992	17,448	13,955	13,810

Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E. Coli Results	Range of E. Coli Results	Range of Total Coliform Results	Range of Total Coliform Results	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max	Min	Max
Raw	52	0	NDOGT	0	NDOGT		
Treated	56	0	0	0	0	0	2
Distribution	156	0	0	0	0	0	3

Note: NDOGT - No Data, Overgrown with Target bacteria. Maximum counted Raw E.coli 3 Colony Forming Unit (CFU), maximum counted Raw Total Coliform 36 CFU

Operational Testing

Parameter	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Raw (NTU)	51	0.59	2.38
Turbidity Filter 1 (NTU)	8760	0	2.00
Turbidity Filter 2 (NTU)	8760	0.03	2.00
Chlorine	8760	0.83	3.41
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

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Antimony: Sb (ug/L)	2023/01/03	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L)	2023/01/03	<MDL	10.0	No	No

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
		0.2			
Barium: Ba (ug/L)	2023/01/03	22.1	1000.0	No	No
Boron: B (ug/L)	2023/01/03	12.0	5000.0	No	No
Cadmium: Cd (ug/L)	2023/01/03	0.011	5.0	No	No
Chromium: Cr (ug/L)	2023/01/03	0.43	50.0	No	No
Mercury: Hg (ug/L)	2023/01/03	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2023/01/03	0.22	50.0	No	No
Uranium: U (ug/L)	2023/01/03	0.009	20.0	No	No
Additional Inorganics					
Fluoride (mg/L)	2023/01/03	<MDL 0.06	1.5	No	No
Nitrite (mg/L)	2023/01/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2023/04/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2023/07/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2023/10/03	<MDL 0.003	1.0	No	No
Nitrate (mg/L)	2023/01/03	0.358	10.0	No	No
Nitrate (mg/L)	2023/04/03	0.378	10.0	No	No
Nitrate (mg/L)	2023/07/06	0.156	10.0	No	No
Nitrate (mg/L)	2023/10/03	0.055	10.0	No	No
Sodium: Na (mg/L)	2023/01/03	13.8	20*	No	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 Sampling Points	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (ug/L)	Number of Exceedances
Alkalinity (mg/L)	2	2	63	84	N/A	N/A
pH	2	2	7.42	7.67	N/A	N/A
Lead (ug/l)	2	2	0.10	0.15	10	0

Organic Parameters

These parameters are tested annually 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.

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Alachlor (ug/L)	2023/01/03	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2023/01/03	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2023/01/03	<MDL 0.05	20.0	No	No
Benzene (ug/L)	2023/01/03	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2023/01/03	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	2023/01/03	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2023/01/03	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2023/01/03	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2023/01/03	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L)	2023/01/03	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2023/01/03	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2023/01/03	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L)	2023/01/03	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2023/01/03	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2023/01/03	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L)	2023/01/03	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2023/01/03	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2023/01/03	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2023/01/03	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2023/01/03	<MDL 0.4	9.0	No	No
Dimethoate (ug/L)	2023/01/03	<MDL 0.06	20.0	No	No
Diquat (ug/L)	2023/01/03	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2023/01/03	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2023/01/03	<MDL 1.0	280.0	No	No
Malathion (ug/L)	2023/01/03	<MDL 0.02	190.0	No	No
Metolachlor (ug/L)	2023/01/03	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2023/01/03	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2023/01/03	<MDL 0.3	80.0	No	No
Paraquat (ug/L)	2023/01/03	<MDL 1.0	10.0	No	No
PCB (ug/L)	2023/01/03	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2023/01/03	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2023/01/03	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2023/01/03	<MDL 1.0	190.0	No	No

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Prometryne (ug/L)	2023/01/03	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2023/01/03	<MDL 0.01	10.0	No	No
Terbufos (ug/L)	2023/01/03	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2023/01/03	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2023/01/03	<MDL 0.2	100.0	No	No
Triallate (ug/L)	2023/01/03	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2023/01/03	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L)	2023/01/03	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	2023/01/03	<MDL 0.12	100.0	No	No
Trifluralin (ug/L)	2023/01/03	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2023/01/03	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average	2023	96.6	100.0	No	Yes
HAA Total (ug/L) Annual Average	2023	59.6	80.0	No	Yes

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

Additional Legislated Samples

Municipal Drinking Water License	Location	No. of Samples Collected	Range of Results Minimum	Range of Results Maximum
Alkalinity (mg/L as CaCO3)	Point of Entrance to Distribution System	4	62.0	87.0
Aluminum (µg/L)	Point of Entrance to Distribution System	4	19.0	70.0
Dissolved Organic Carbon (mg/L)	Point of Entrance to Distribution System	54	2.0	6.0
Total Suspended Solids (mg/L)	Settling Tank Discharge Point	12	3.0	23.0

Municipal Drinking Water Licence	Collected Weekly June – Oct	Total Microcystin Raw Results Range (ug/L)	Total Microcystin Treated Water Results Range (ug/L)	Treated Water Total Microcystin Limit 1.5 ug/L Exceeded Y/N
Harmful Algal Blooms Monitoring required June to October at a minimum. Treated	June	<0.1 – <0.1	<0.1 - <0.1	N

Municipal Drinking Water Licence	Collected Weekly June – Oct	Total Microcystin Raw Results Range (ug/L)	Total Microcystin Treated Water Results Range (ug/L)	Treated Water Total Microcystin Limit 1.5 ug/L Exceeded Y/N
and Raw Water Samples collected weekly.				
	July	<0.1 - <0.1	<0.1 - <0.1	N
	August	<0.1 - <0.1	<0.1 - <0.1	N
	September	<0.1 - <0.1	<0.1 - <0.1	N
	October	<0.1 – <0.1	<0.1 - <0.1	N

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

WO #	Description
3288674	Backwash Pump BWK-325, Refurbishment
3525325	Carpenter Ants Removal, by Contractor
3571416	High Lift Pump 3, Motor Replacement
3625520	High Lift 3 Pump, Seal Packing Replacement
3665166	Filter 1 Valve Failure, Repair
3666569	SCADA Firmware Upgrade

Appendix A

WTRS Data and Submission Confirmation