



2022
Annual Drinking Water Report
and
Summary Report for Municipalities
Redwood Estates Water Treatment
Version 2.0

Prepared by:  _____ February 14, 2023
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Approved by:  _____ February 14, 2023
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Regulations

Annual Report

O. Reg. 170/03 – Section 11

Summary Report for Municipalities

O. Reg. 170/-3 – Schedule 22

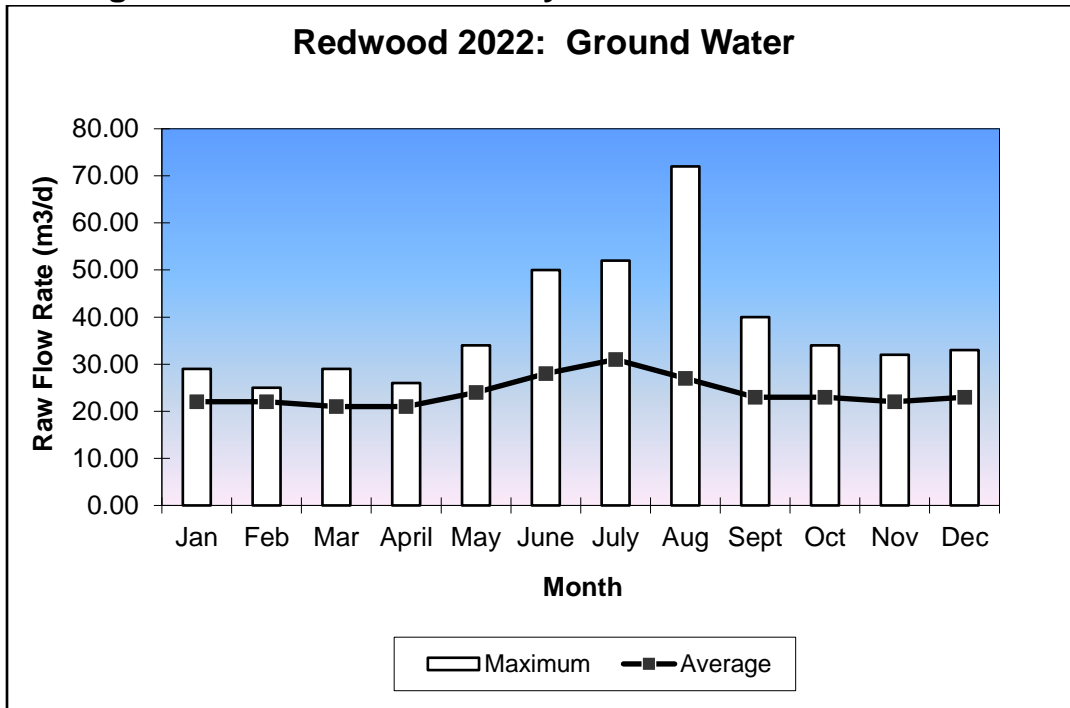
Revision History

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

Redwood Water Treatment Plant – Annual Report

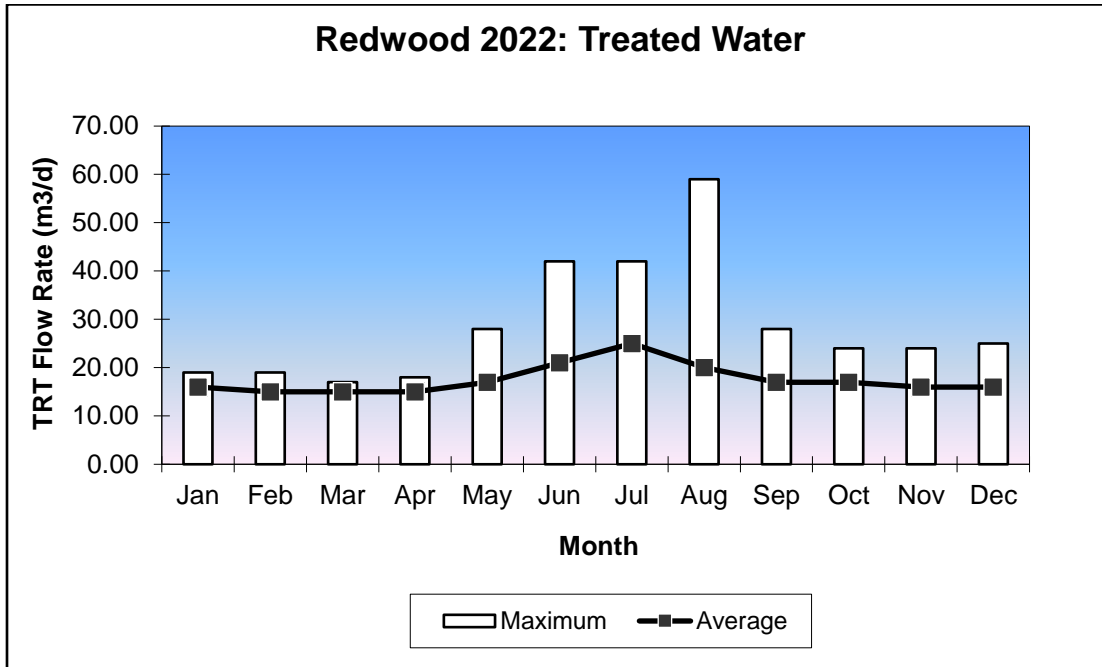
1. Flows

Daily Average and Maximum Raw Daily Flows



Permit To Take Water (8854-9GQQNL)	
Max Allowable Raw Water Flow:	151.2m ³ /d
Year Max:	72m ³ /day

Daily Average and Maximum Treated Daily Flows



Municipal Drinking Water License Rated Capacity (185-103)	
Max Allowable Raw Water Flow:	151.2m ³ /d
Year Max:	59m ³ /day

2. Compliance

A written report is prepared annually. This report is available for viewing at the Township of South Glengarry Municipal office, 6 Oak Street Lancaster or at the Glen Walter Water Treatment Plant located at 18352 County Road 2 in Glen Walter. A copy of the report is also available on the Townships website. A copy of the report is available free of charge to any resident requesting a copy. For more information on the Municipal water supply contact:

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

The Township of South Glengarry commitment policy is to provide a safe and reliable supply of drinking water to all its customers, meet or exceed the requirements of all legislation and regulations applicable to drinking water and maintain and continually improve its quality management system.

3. System Description

Overview

The Township of South Glengarry, Redwood Estates Water Treatment Facility is located approximately 5 kilometers east of the Village of Lancaster. The water treatment plant is a ground water system serving the Redwood Estates subdivision. The water treatment plant has a rated capacity of 151 cubic meters per day for a design population of 140 people.

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

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

The Township of South Glengarry, Redwood water system uses Sodium Hypochlorite for disinfection.

Equipment

Raw water is drawn from a single well located within the pump house with a submersible pump capable of delivering 118 liters per minute. The water treatment plant consists of two Manganese greensand pressure filters, two hydro pneumatic tanks, two high lift pumps, one booster and one backwash pump. All pumps have a rated capacity of 303 liters per minute together with all associated piping, electrical equipment, controls and alarm systems all housed in a common building.

Process

Raw water is drawn from the single well where Sodium Hypochlorite is introduced, and flash mixed for disinfection. Following the disinfection period water then flows through the Greensand

filters removing all other impurities. Water then flows to a 25 cubic meter underground storage reservoir to be pumped to the distribution system.

Distribution

The distribution system is comprised of one sized water pipe, valves, and two sample hydrants all supplied from the two high lift pumps that fill two hydro pneumatic tanks situated at the Redwood Water Plant. Fire flow cannot be supplied.

4. Operation Summary

There were no upgrades were noted in the reporting year.

During the year 2022, the final effluent for backwash did not meet the Maximum discharge limit of 0.02mg/L. A notification to the ministry was submitted on January 25th, 2022. Records of the notification are kept at the Glen Walter Water Treatment office.

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

Table 1. Major Maintenance (2022)

2022	Details
Feb.	Redwood backwash pit cleaned
Jun.	Generator maintenance/tests
Jun.	Analytical calibrations
Jul.	Hydrant flushing
Oct.	Flow meter calibrations
Dec.	Generator maintenance/load test

Redwood Estates Water Treatment Plant – Summary Report

Ontario Drinking Water License #185-103

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

5. Non-Compliance

Adverse Water Quality Incidents

During the reporting year, there were no adverse water quality incidents (AWQI).

Incident #1 (none)

Incident Date:	-
Parameter:	-
Result:	-
Corrective Action:	-
Corrective Action Date:	-
Corrective Compliance:	-

Non-Compliance

During the reporting year, there was one (1) non-compliance in regard to the Municipal Drinking Water License.

Non-Compliance #1

Non-Compliance Date:	January 25th, 2022
Parameter:	Under Schedule C: System-specific Conditions – Residuals Management. The max allowable annual concentration for chlorine is 0.02ppm.
Result:	0.14ppm
Corrective Action:	Addition of de-chlorination pucks to the backwash tank. Increase was needed to achieve 0.02ppm.
Corrective Action Date:	January 25th, 2022
Corrective Compliance:	January 25th, 2022

Non-Compliance Ministry Inspection

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

6. Regulatory Sample Results

Statistics for Flow and Chemicals

A total of 8,917 cubic meters of water had been treated for the year 2022 with a monthly average of 24m³ per day and a maximum flow of 72m³ /day for the year. Maximum flow is equivalent to 48% of the plant capacity.

The Redwood Estates Water Treatment Plant uses Sodium Hypochlorite for disinfection. A total of 68.27 kg of chlorine had been utilized for the year at an average of 7.6mg/liter.

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

Municipality: Township of South Glengarry
 Project: Redwood Estates W.T.P
 DWS # 250002311

Annual Report Data
 2022

Water Source: Ground Water (GUDI)
 Design Capacity: 0.151 x 1000 m3/D

Description: Greensand Pressure Filtration - Sodium Hypochlorite Disinfection

	Raw Water Flow			Treated Water Flow			Chemical Cl2 Total Kg Used	Treated Water										Distribution Water					Backwash Water Flow		
	Total X 1000 m3	Average X 1000 m3	Maximum Daily X 1000 m3	Total X 1000 m3	Average X 1000 m3	Maximum Daily X 1000 m3		Free Cl2 Min.	Residual Max.	mg/L Avg.	Average Turbidity NTU	Average Colour TCU	Sodium mg/L	Nitrate NO3 mg/L	Nitrite NO2 mg/L	Iron mg/L NO2 mg/L	Free Cl2 Min.	Residual Max.	mg/L Avg.	THM ug/L	Lead ug/L	CBOD5 mg/L	TSS mg/L	Cl2	
January	0.710	0.022	0.029	0.515	0.016	0.019	5.03	1.10	2.17	1.60	0.12	0.0			0.1	0.1	0.007	1.13	1.85	1.49	14		3	7	0.85
February	0.616	0.022	0.025	0.447	0.015	0.019	4.81	0.85	2.69	1.67	0.12	0.3					0.93	2.43	1.55			3	74	0.17	
March	0.672	0.021	0.029	0.474	0.015	0.017	4.19	0.95	2.59	1.51	0.18	0.0					0.95	2.20	1.46		0.23	3	3	0.24	
April	0.640	0.021	0.026	0.457	0.015	0.018	4.46	1.05	2.69	1.46	0.19	0.0		0.7	0.1	0.015	1.14	1.82	1.41	14		3	5	0.02	
May	0.752	0.024	0.034	0.535	0.017	0.028	5.08	1.00	1.92	1.37	0.20	0.0					1.09	1.67	1.30			3	10	0.20	
June	0.840	0.028	0.050	0.643	0.021	0.042	6.15	0.80	2.65	1.58	0.14	0.0					0.88	1.76	1.46			3	13	0.02	
July	0.982	0.031	0.052	0.787	0.025	0.042	7.19	1.00	2.33	1.65	0.15	0.0		0.1	0.1	0.009	1.05	2.04	1.51	12	0.41	3	3	0.02	
August	0.846	0.027	0.072	0.649	0.020	0.059	6.69	1.15	2.49	1.74	0.14	0.0					1.26	1.92	1.59			3	5	0.11	
September	0.710	0.023	0.040	0.514	0.017	0.028	6.16	0.44	2.49	1.89	0.11	0.0					0.91	2.13	1.78			3	3	0.02	
October	0.738	0.023	0.034	0.531	0.017	0.024	6.07	1.36	2.49	1.81	0.16	0.0		0.1	0.2	0.005	1.46	2.01	1.71	17		3	30	0.02	
November	0.674	0.022	0.032	0.490	0.016	0.024	5.77	1.10	2.33	1.81	0.13	0.0					1.27	2.03	1.66			3	9	0.02	
December	0.737	0.023	0.033	0.516	0.016	0.025	6.67	0.85	2.69	1.79	0.17	0.0					1.00	2.12	1.63			3	5	0.02	
Total	8.917			6.558			68.27																		
Average	0.743	0.024	0.038	0.547	0.018	0.029	5.689	0.97	2.46	1.66	0.15	0.02		0.3	0.1	0.009	1.09	2.00	1.55	14.250	0.32	3	13.9	0.14	
Criteria			0.151					0.2				5	20	10	1		0.05			100	10	25	25	0.02	
Maximum			0.072					0.44									0.88			14.2	0.32	3	13.9	0.14	
Compliance		Yes						Yes				Yes	N/A	Yes	Yes		Yes			Yes	Yes	Yes	Yes	NO	

	Total # of Raw Samples	Raw Water Escherichia Coliform (cfu/100mL)			Raw Water Total Coliform (cfu/100mL)			Total # of Treated Samples	Treated Water Escherichia Coliform (cfu/100mL)		Treated Water Total Coliform (cfu/100mL)		Treated Water Heterotrophic Plate Count (cfu/100mL)		Total # of Dist. Samples	Distribution Water Escherichia Coliform (cfu/100mL)		Distribution Water Total Coliform (cfu/100mL)		Distribution Water Heterotrophic Plate Count (cfu/100mL)	
		Minimum	Maximum	Average	Minimum	Maximum	Average		Safe	Unsafe	Safe	Unsafe	Safe	Unsafe		Safe	Unsafe	Safe	Unsafe	Safe	Unsafe
January	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	5	0	5	0
February	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	0	4	0
March	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	0	4	0
April	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	0	4	0
May	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	5	0	5	0
June	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	0	4	0
July	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	0	4	0
August	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	5	0	5	0
September	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	0	4	0
October	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	5	0	5	0
November	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	0	4	0
December	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4	0	4	0
Total	12							0							52						

Inorganic Parameters**REDWOOD WATER TREATMENT PLANT****INORGANIC PARAMETERS**

PARAMETER	SAMPLE DATE	RESULT VALUE	MAC	UNIT OF MEASURE	EXCEEDANCE
<i>Antimony</i>	Jan-04-21	0.0001	0.006	mg/L	No
<i>Arsenic</i>	Jan-04-21	0.0001	0.025	mg/L	No
<i>Barium</i>	Jan-04-21	0.2740	1	mg/L	No
<i>Boron</i>	Jan-04-21	0.1820	5	mg/L	No
<i>Cadmium</i>	Jan-04-21	0.000015	0.005	mg/L	No
<i>Chromium</i>	Jan-04-21	0.0020	0.05	mg/L	No
<i>Lead</i>	Year 2021	0.4100	10	ug/L	No
<i>Mercury</i>	Jan-04-21	0.00002	0.001	mg/L	No
<i>Selenium</i>	Jan-04-21	0.0010	0.01	mg/L	No
<i>Sodium</i>	Jan-04-21	254	200	mg/L	Yes
<i>Uranium</i>	Jan-04-21	0.00006	0.02	mg/L	No
<i>Fluoride</i>	Apr-06-21	0.10	1.5	mg/L	No
<i>Nitrite</i>	Year 2022	0.12	1	mg/L	No
<i>Nitrate</i>	Year 2022	0.25	10	mg/L	No

Eastern Ontario Health Unit MAC

Sodium	Jan-04-21	254	20	mg/L	Yes
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Organic Parameters

REDWOOD WATER TREATMENT PLANT					
ORGANIC PARAMETERS					
PARAMETER	SAMPLE DATE	RESULT VALUE	MAC	UNIT OF MEASURE	EXCEEDANCE
ALACHLOR	Jan-04-21	0.3	5	ug/L	No
ATRAZINE + N-DEALKYLATED METOBOLITES	Jan-04-21	0.5	5	ug/L	No
AZINPHOS-METHYL	Jan-04-21	1	20	ug/L	No
BENZO(A)PYRENE	Jan-04-21	0.006	0.01	ug/L	No
BENZENE	Jan-04-21	0.5	5	ug/L	No
BROMOXYNIL	Jan-04-21	0.5	5	ug/L	No
CARBON TETRACHLORIDE	Jan-04-21	0.2	5	ug/L	No
CARBARYL	Jan-04-21	3	90	ug/L	No
CARBOFURAN	Jan-04-21	1	90	ug/L	No
CHLORPYRIFOS	Jan-04-21	0.5	90	ug/L	No
1,2-DICHLOROBENZENE	Jan-04-21	0.5	200	ug/L	No
1,4-DICHLOROBENZENE	Jan-04-21	0.5	5	ug/L	No
1,2-DICHLOROETHANE	Jan-04-21	0.5	5	ug/L	No
1,1-DICHOETHENE	Jan-04-21	0.5	1.4	ug/L	No
DICHLOROMETHANE	Jan-04-21	5	50	ug/L	No
DIAZINON	Jan-04-21	1	20	ug/L	No
DICAMBA	Jan-04-21	10	120	ug/L	No
2-4 DICHLOROPHENOL	Jan-04-21	0.2	900	ug/L	No
2,4-DICHLOROPHENOXY ACETIC ACID(2,4-D)	Jan-04-21	10	100	ug/L	No
DICLOFOP-METHYL	Jan-04-21	0.9	9	ug/L	No
DIMETHOATE	Jan-04-21	1	20	ug/L	No
DIQUAT	Jan-04-21	5	70	ug/L	No
DIURON	Jan-04-21	5	150	ug/L	No
GLYPHOSATE	Jan-04-21	25	280	ug/L	No
MONOCHLOROBENZENE	Jan-04-21	0.5	80	ug/L	No
MALATHION	Jan-04-21	5	190	ug/L	No
METOLACHLOR	Jan-04-21	3	50	ug/L	No
METRIBUZIN	Jan-04-21	3	80	ug/L	No
PARAQUAT	Jan-04-21	1	10	ug/L	No
PENTACHLOROPHENOL	Jan-04-21	0.2	60	ug/L	No
PHORATE	Jan-04-21	0.3	2	ug/L	No
PICLORAM	Jan-04-21	15	190	ug/L	No
POLYCHLORINATED BIPHENYLS(PCB)	Jan-04-21	0.05	3	ug/L	No
PROMETRYNE	Jan-04-21	0.1	1	ug/L	No
SIMAZINE	Jan-04-21	0.5	10	ug/L	No
TETRACHLOROETHYLENE	Jan-04-21	0.5	30	ug/L	No
TRICHLOROETHYLENE	Jan-04-21	0.5	5	ug/L	No
TERBUFOS	Jan-04-21	0.5	1	ug/L	No
2,3,4,6-TETRACHOLOPHENOL	Jan-04-21	0.2	5	ug/L	No
TRIALATE	Jan-04-21	10	230	ug/L	No
2,4,6-TRICHLOROPHENOL	Jan-04-21	0.2	5	ug/L	No
TRIFLURALIN	Jan-04-21	0.5	45	ug/L	No
Vinyl Chloride	Jan-04-21	0.2	2	ug/L	No
MCPA	Jan-04-21	10	100	ug/L	No
THM (NOTE: SHOW LATEST ANNUAL AVERAGE)	Year 2022	14.25	100	ug/L	No
HAA	Year 2022	5.3	80	ug/L	No