



February 24, 2025
Municipality of West Grey
402813 Grey Road 4
RR#2
Durham, ON
N0G 1R0

Attention: Geoff Aitken, Manager of Public Works

**RE: Durham Drinking Water System
2024 Annual and Summary Reports**

Geoff,

Please find attached the 2024 Annual and Summary Reports for the Durham Drinking Water System, in accordance with Section 11(1) of O. Reg. 170/03. This report covers the period from January 1 to December 31, 2024 and meets the requirement of being prepared by February 28 of this year.

Please ensure that a copy of this report is given, without charge, to every person who requests a copy. In addition, please make certain that effective steps are taken to advise residents that copies of the report are available, and of how a copy can be obtained.

Finally, as per Schedule 22 of O. Reg. 170/03, please ensure that at least a copy of the Summary Report is given to the members of municipal council no later than March 31, 2025.

If you have any questions regarding the report, we would be pleased to address them and you should contact the undersigned accordingly.

Sincerely,

Scott Gowan
Project Manager

Part 1 - ANNUAL REPORT (as required by O. Reg 170/03, Section 11)

Drinking-Water System Number:	220001771
Drinking-Water System Name:	Durham Drinking Water System
Drinking-Water System Owner:	Municipality of West Grey
Drinking-Water System Category:	Large Municipality Residential
Period being reported:	January 1 - December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential	Complete for all other Categories
Does your Drinking-Water System serve more than 10,000 people? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Designated Facilities served: n/a
Is your annual report available to the public at no charge on a website on the Internet? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Did you provide a copy of your annual report to all Designated Facilities you serve? <input type="checkbox"/> Yes <input type="checkbox"/> No
Location where Summary Report required under O.Reg. 170/03 Schedule 22 will be available for inspection. Municipality of West Grey 402813 Grey Road #4 Durham, ON N0G 1R0	Number of Designated Facilities served: n/a Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? <input type="checkbox"/> Yes <input type="checkbox"/> No

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:	
Drinking Water System Name	Drinking Water System Number
n/a	

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?
n/a

Indicate how you notified system users that your annual report is available, and is free of charge.		
<input checked="" type="checkbox"/> Public access/notice via the Web	<input checked="" type="checkbox"/> Public access/notice via Government Office	<input type="checkbox"/> Public access/notice via a newspaper
<input type="checkbox"/> Public access/notice via the Public Request	<input type="checkbox"/> Public access/notice via a Public Library	<input type="checkbox"/> Public access/notice via other method

Describe your Drinking Water System

Well No. 1B Pumphouse

A GUDI well, 300mm diameter and 77 m deep equipped with a VFD submersible well pump rated at 15.9 L/s at a TDH of 71-133 m. The pumphouse enclosure building is 4.9 m x 3.1 m x 3.3 m high and houses the water treatment equipment including, but not limited to, flow meters, UV disinfection system, cartridge filters, sodium hypochlorite disinfection system, online chlorine and turbidity analyzers, low level alarms, autodialer and backup diesel generator.

Well No. 2 Pumphouse

A GUDI well, 300mm diameter and 74.7 m deep equipped with a VFD submersible well pump rated at 17 L/s at a TDH of 75-139 m. The pumphouse contains the water treatment equipment including, but not limited to, flow meters, UV disinfection system, cartridge filters, sodium hypochlorite disinfection system, online chlorine and turbidity analyzers, low level alarms, autodialer and backup power source available.

Well #2A is located just outside the well#2 pumphouse. It is 250mm diameter well about 68m deep. The variable speed submersible pump has a capacity of 1134L/min. The capacity of the wellhouse is 18.9L/s.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite - 12%

Please provide a brief description and a breakdown of monetary expenses incurred

A new Turbidity analyzer was installed at Well 1B
Replaced the Control Board for the Diesel Generator
Watermain repairs took place on Queen Street and Garafraxa Street.
An additional Well has been drilled, which will potentially be added as an additional source for the community.

Provide details on 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

Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
NA				

Microbiological testing done under the Schedule 10, 11, 12 of Regulation 170/03, during this reporting period

	Number of Samples	Range of E.Coli Results (min #) - (max #)	Range of Total Coliform Results (min #) - (max #)	Number of HPC Samples	Range of HPC Results (min #) - (max #)
Raw (Well 1B)	53	0 - 0	0 - 0	n/a	n/a
Raw (Well 2)	53	0 - 0	0 - 1	n/a	n/a
Raw (Well 2A)	53	0 - 0	0 - 0	n/a	n/a
Treated POE 1	53	0 - 0	0 - 0	53	<10 - 50
Treated POE 2	53	0 - 0	0 - 0	53	<10 - 50
Distribution	159	0 - 0	0 - 0	53	10 - 10

Operational testing under Schedule 7, 8, or 9 of Regulation 170/03 during the period covered

	Number of Grab Samples	Range of Results (min #) - (max #)	Units
Turbidity - Well 1B Treated	8760*	0.01 - 1.71 *	NTU
Turbidity - Well 2 Treated	8760*	0.02 - 2.00 **	NTU
Chlorine - Well 1B Treated	8760*	0.50 - 2.00 *** A max of 2.00 occurs due to a chlorine spike when the well starts. The max the SCADA will record is 2.00 mg/L.	mg/L
Chlorine - Well 2 Treated	8760*	0.50 - 2.00 *** A max of 2.00 occurs due to a chlorine spike when the well starts. The max the SCADA will record is 2.00 mg/L.	mg/L
Chlorine - Distribution	468	0.76 - 1.42	mg/L

* For continuous monitors use 8760 as the number of samples

**high turbidity incidents were either too short to be reportable (<15min) or occurred when system was off

*****Minimum Chlorine residual required to meet CT is 0.44 mg/l for Well 1, and 0.39 mg/l for Well 2 (@10 l/s). Wells both lock out at 0.50 mg/l**

There were no instances of untreated water being delivered into the distribution system. Well pumps automatically shut off when chlorine levels drop below a preset value (0.5 mg/l), or if Turbidity exceeds 1.0NTU for 10 minutes. SCADA system reads all values, even when well pumps are off or equipment service is being conducted.

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument				
Date of legal instrument issued	Parameter	Date Sampled	Range of Results	Units of Measure
December 1, 2009	UV Transmittance (#1B)	Jan-Dec 2024	97.0-99.0	% Transmittance
December 1, 2009	UV Transmittance (#2)	Jan-Dec 2024	98.0-100.0	% Transmittance

Summary of Inorganic parameters tested during this reporting period or the most recent sample results						
Parameter	Sample Date	Result Value POE 1	Result Value POE 2	Distribution	Unit of Measure	Exceedance
Alkalinity	Mar. 25, 2024 Sep. 9, 2024	-	-	281 271 288 265	mg/L	No
Antimony	Aug. 12, 2024	<0.6	<0.6	-	µg/L	No
Arsenic	Aug. 12, 2024	<0.2	<0.2	-	µg/L	No
Barium	Aug. 12, 2024	14.9	14.5	-	µg/L	No
Boron	Aug. 12, 2024	10	20	-	µg/L	No
Cadmium	Aug. 12, 2024	0.007	0.006	-	µg/L	No
Chromium	Aug. 12, 2024	0.19	0.15	-	µg/L	No
Lead-see summary below						
Mercury	Aug. 12, 2024	<0.01	<0.01	-	µg/L	No
Selenium	Aug. 12, 2024	0.81	0.99	-	µg/L	No
Sodium	Aug. 4, 2020	6.2	11.0	-	mg/L	No
Uranium	Aug. 12, 2024	2.16	3.54	-	µg/L	No
Fluoride	Aug. 30, 2021	0.20	0.67	-	mg/L	No
Nitrite	Feb. 12, 2024 May 13, 2024 Aug. 5, 2024 Nov. 4, 2024	<0.003 <0.003 <0.003 <0.003	<0.003 <0.003 <0.003 <0.003	-	mg/L	No
Nitrate	Feb. 12, 2024 May 13, 2024 Aug. 5, 2024 Nov. 4, 2024	1.45 1.44 1.48 1.61	0.890 0.575 0.870 0.773	-	mg/L	No

Summary of Lead Results during this reporting period (Winter: Dec. 15/21 - Apr. 15/22; Summer: June 15/22- Oct. 15/22)				
Sampling Period	Range of Results (µg/L) from Residential Samples (# of Samples Taken)	Distribution Locations	Distribution System ug/L	Any Adverse Water Quality Incidents?
Winter April 11, 2022	n/a	WWTP County Shed	0.12 0.19	NO
Summer October 3, 2022	n/a	WWTP County Shed	0.17 0.88	NO

Summary of Organic parameters sampled during this reporting period or the most recent sample results					
Parameter	Sample Date	Result Value POE 1	Result Value POE 2	Unit of Measure	Exceedance
Alachlor	Aug. 12, 2024	<0.02	<0.02	µg/L	No
Atrazine + N-dealkylated metabolites	Aug. 12, 2024	<0.01	<0.01	µg/L	No
Azinphos-methyl	Aug. 12, 2024	<0.05	<0.05	µg/L	No
Benzene	Aug. 12, 2024	<0.32	<0.32	µg/L	No
Benzo(a)pyrene	Aug. 12, 2024	<0.004	<0.004	µg/L	No
Bromoxynil	Aug. 12, 2024	<0.33	<0.33	µg/L	No
Carbaryl	Aug. 12, 2024	<0.05	<0.05	µg/L	No
Carbofuran	Aug. 12, 2024	<0.01	<0.01	µg/L	No
Carbon Tetrachloride	Aug. 12, 2024	<0.17	<0.17	µg/L	No
Chlorpyrifos	Aug. 12, 2024	<0.02	<0.02	µg/L	No
Diazinon	Aug. 12, 2024	<0.02	<0.02	µg/L	No
Dicamba	Aug. 12, 2024	<0.20	<0.20	µg/L	No
1,2-Dichlorobenzene	Aug. 12, 2024	<0.41	<0.41	µg/L	No
1,4-Dichlorobenzene	Aug. 12, 2024	<0.36	<0.36	µg/L	No
1,2-Dichloroethane	Aug. 12, 2024	<0.35	<0.35	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Aug. 12, 2024	<0.33	<0.33	µg/L	No

Dichloromethane	Aug. 12, 2024	<0.35	<0.35	µg/L	No
2-4 Dichlorophenol	Aug. 12, 2024	<0.15	<0.15	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug. 12, 2024	<0.19	<0.19	µg/L	No
Diclofop-methyl	Aug. 12, 2024	<0.40	<0.40	µg/L	No
Dimethoate	Aug. 12, 2024	<0.06	<0.06	µg/L	No
Diquat	Aug. 12, 2024	<1.0	<1.0	µg/L	No
Diuron	Aug. 12, 2024	<0.03	<0.03	µg/L	No
Glyphosate	Aug. 12, 2024	<1.0	<1.0	µg/L	No
HAA	Feb. 12, 2024 May 13, 2024 Aug. 5, 2024 Nov. 4, 2024	<5.30 (distribution) <5.30 (distribution) <5.30 (distribution) <5.30 (distribution)		µg/L	No
Malathion	Aug. 12, 2024	<0.02	<0.02	µg/L	No
MCPA	Aug. 12, 2024	<0.00012	<0.00012	µg/L	No
Metolachlor	Aug. 12, 2024	<0.01	<0.01	µg/L	No
Metribuzin	Aug. 12, 2024	<0.02	<0.02	µg/L	No
Monochlorobenzene	Aug. 12, 2024	<0.30	<0.30	µg/L	No
Paraquat	Aug. 12, 2024	<1.0	<1.0	µg/L	No
Pentachlorophenol	Aug. 12, 2024	<0.15	<0.15	µg/L	No
Phorate	Aug. 12, 2024	<0.01	<0.01	µg/L	No
Picloram	Aug. 12, 2024	<1.0	<1.0	µg/L	No
Polychlorinated Biphenyls(PCB)	Aug. 12, 2024	<0.04	<0.04	µg/L	No
Prometryne	Aug. 12, 2024	<0.03	<0.03	µg/L	No
Simazine	Aug. 12, 2024	<0.01	<0.01	µg/L	No
THM (NOTE: show latest annual average)	2024 Average	3.33 (distribution)		µg/L	No
Terbufos	Aug. 12, 2024	<0.01	<0.01	µg/L	No
Tetrachloroethylene	Aug. 12, 2024	<0.35	<0.35	µg/L	No
2,3,4,6-Tetrachlorophenol	Aug. 12, 2024	<0.20	<0.20	µg/L	No
Triallate	Aug. 12, 2024	<0.01	<0.01	µg/L	No

Trichloroethylene	Aug. 12, 2024	<0.44	<0.44	µg/L	No
2,4,6-Trichlorophenol	Aug. 12, 2024	<0.25	<0.25	µg/L	No
Trifluralin	Aug. 12, 2024	<0.02	<0.02	µg/L	No
Vinyl Chloride	Aug. 12, 2024	<0.17	<0.17	µg/L	No

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

Parameter	Sample Date	Result Value	Unit of Measure	ODWS Criteria
n/a				

Part 2 - SUMMARY REPORT (as required by O. Reg 170/03, Section 22)

Non-Compliance with Legislations, Regulations, Approvals & Orders

During this period, the Facility was operated in full compliance with the Act, the regulations and the Facility’s approval, save and except for the following:

During the MECP Inspection for the period of November 21, 2023 - October 9, 2024, there were no Non-Compliance issues or Recommendations identified.

Permit to Take Water (PTTW) Flow Comparison

Well #1 Raw Water Flow				Well #2 Raw Water Flow			
Month	Raw Water Flow			Month	Raw Water Flow		
	Average	Maximum	Monthly		Average	Maximum	Monthly
	Daily	Daily	Total		Daily	Daily	Total
	m3	m3	m3		m3	m3	m3
Jan '24	448	517	13,892	Jan '24	225	286	6,987
Feb '24	468	536	13,573	Feb '24	216	294	6,266
Mar '24	408	457	12,647	Mar '24	200	242	6,188
Apr '24	417	488	12,495	Apr '24	210	278	6,304
May '24	446	515	13,817	May '24	220	293	6,834
Jun '24	452	554	13,566	Jun '24	219	341	6,565
Jul '24	461	556	14,282	Jul '24	244	472	7,565
Aug '24	489	586	15,148	Aug '24	242	416	7,503
Sep '24	471	552	14,131	Sep '24	256	466	7,669
Oct '24	428	570	13,266	Oct '24	204	287	6,324
Nov '24	399	518	11,972	Nov '24	217	489	6,502
Dec '24	418	593	12,944	Dec '24	302	864	9,354
Annual Summary				Annual Summary			
Average	442			Average	230		
Maximum		593		Maximum		864	
Total			161,732	Total			84,059
PTTW Capacity	1375	1375		PTTW Capacity	1634	1634	
% Capacity	32.1	43.1		% Capacity	14.1	52.9	

Well #2A Raw Water Flow				Combined Raw Water Flow			
Month	Raw Water Flow			Month	Raw Water Flow		
	Average	Maximum	Monthly		Average	Maximum	Monthly
	Daily	Daily	Total		Daily	Daily	Total
	m3	m3	m3		m3	m3	m3
Jan '24	215	332	6,669	Jan '24	889	985	27,548
Feb '24	246	424	7,138	Feb '24	930	1,073	26,977
Mar '24	213	313	6,597	Mar '24	820	911	25,431
Apr '24	203	241	6,098	Apr '24	830	938	24,897
May '24	223	393	6,920	May '24	889	1,026	27,570
Jun '24	231	341	6,925	Jun '24	902	1,103	27,056
Jul '24	234	410	7,250	Jul '24	939	1,234	29,097
Aug '24	250	454	7,742	Aug '24	980	1,173	30,393
Sep '24	219	405	6,582	Sep '24	946	1,103	28,381
Oct '24	217	300	6,716	Oct '24	849	959	26,306
Nov '24	213	452	6,399	Nov '24	829	1,033	24,872
Dec '24	240	499	7,429	Dec '24	959	1,182	29,727
Annual Summary				Annual Summary			
Average	225			Average	897		
Maximum		499		Maximum		1,234	
Total			82,462	Total			328,253
PTTW Capacity	1634	1634		PTTW Capacity	3009	3009	
% Capacity	13.8	30.5		% Capacity	29.8	41.0	

Municipal Drinking Water Licence (MDWL) Flow Comparison

Well #1 Treated Water Flow				Well #2 Treated Water Flow				Combined Treated Water Flow			
Month	Treated Water Flow			Month	Treated Water Flow			Month	Treated Water Flow		
	Average	Maximum	Monthly		Average	Maximum	Monthly		Average	Maximum	Monthly
	Daily	Daily	Total		Daily	Daily	Total		Daily	Daily	Total
	m3	m3	m3		m3	m3	m3		m3	m3	m3
Jan '24	455	526	14,116	Jan '24	442	492	13,707	Jan '24	898	995	27,823
Feb '24	475	543	13,774	Feb '24	464	538	13,452	Feb '24	939	1,081	27,226
Mar '24	415	464	12,872	Mar '24	411	456	12,737	Mar '24	826	919	25,609
Apr '24	422	496	12,651	Apr '24	413	469	12,392	Apr '24	835	946	25,043
May '24	452	522	14,001	May '24	445	513	13,789	May '24	896	1,035	27,790
Jun '24	459	565	13,766	Jun '24	451	549	13,522	Jun '24	910	1,114	27,288
Jul '24	468	566	14,522	Jul '24	469	592	14,551	Jul '24	938	1,120	29,073
Aug '24	496	595	15,373	Aug '24	494	587	15,328	Aug '24	990	1,182	30,701
Sep '24	481	561	14,429	Sep '24	473	555	14,176	Sep '24	953	1,116	28,604
Oct '24	435	582	13,470	Oct '24	422	482	13,081	Oct '24	856	973	26,550
Nov '24	405	526	12,140	Nov '24	432	648	12,953	Nov '24	836	1,042	25,093
Dec '24	424	602	13,134	Dec '24	543	871	16,848	Dec '24	967	1,192	29,982
Annual Summary				Annual Summary				Annual Summary			
Average	449			Average	455			Average	904		
Maximum		602		Maximum		871		Maximum		1,192	
Total			164,247	Total			166,536	Total			330,784
Rated Capacity	1375	1375		Rated Capacity	1636	1636		Rated Capacity	3011	3011	
% Capacity	32.6	43.8		% Capacity	27.8	53.2		% Capacity	30.0	39.6	