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2025 ANNUAL REPORT

Drinking-Water System Number:	**W210000167**
Drinking-Water System Name:	Town of Hanover Drinking Water System
Drinking-Water System Owner:	The Corporation of the Town of Hanover
Drinking-Water System Category:	Large Municipal (Level 2 Treatment and Distribution)
Period being reported:	January 1st, 2025 to December 31st, 2025

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? Yes [ ] No [X] **Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]** **Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.** **Corporation of the Town of Hanover** **341 10th Street, Hanover Ontario** **N4N 1P5** **Municipal Office- Reception Desk**	**Number of Designated Facilities served:** N/A **Did you provide a copy of your annual report to all Designated Facilities you serve?** **Yes [ ] No [ ]** **Number of Interested Authorities you report to:** N/A **Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?** **Yes [ ] No [ ]**

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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

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?
Yes [ ] No [ ]

Indicate how you notified system users that your annual report is available, and is free of charge.

[X] Public access/notice via the web
[ ] Public access/notice via Government Office
[ ] Public access/notice via a newspaper
[X] Public access/notice via Public Request
[ ] Public access/notice via a Public Library
[ ] Public access/notice via other method _____

Describe your Drinking-Water System

The Hanover Water Treatment Plant is a combination of ground water and surface water serving a population of 8,300 residents. Treatment process includes raw water pumped to a central treatment facility; Source water Ruhl Lake, Well #1 and Well #2 receives chemically aided filtration pretreatment. This combined water is disinfected with U.V. and chlorine gas. Seasonally, enhanced U.V. and hydrogen peroxide is used for taste and odour control. The treated water is combined in the storage clearwell and then pumped to the distribution system and stored in two elevated water towers.

List all water treatment chemicals used over this reporting period

PAX XL 52 – Coagulant to assist filtration.
Chlorine gas – To inactivate disease causing organisms.
Hydrogen Peroxide – Strong oxidant to control taste and odour issues.

Were any significant expenses incurred to?

[ ] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

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

- **Hydro Cost Water Plant/Well 1 $210.159.19**
- **Hydro Cost Ruhl Lake $25,525.68**
- **Hydro Cost Well 2 $25,280.31**
- **Chlorine Gas $135,591.74**
- **PAX-XL $18,690.20**
- **Hydrogen Peroxide $19,157.09**
- **UV System Service and Parts and Repairs $65,058.47**
- **Summa SCADA Service and Upgrade $554,465.53**
- **Annual Generator Service $3,491.99**
- **Annual Online and Benchtop Analyzer Service/Calibration $5,018.33**
- **Annual Chlorinator Service $14,080.64**
- **Annual Flow Meter Calibration $7,030.86**

- **Filter Media/Parts $7,377.77**
- **D.W.Q.M.S Audits and Consultant Fees $6,104.26**
- **Analytical Costs (SGS) $19,146.06**
- **Water Main Repair $33,258.39**
- **Hydrant Repair $476.22**
- **Pump Repairs/Replacement $54,866.26**
- **Valve Repair/Replacement $25,418.22**
- **New Chlorine Analyzer $9,693.78**

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	Unit of Measure	Corrective Action	Corrective Action Date
February 19, 2025	**As per DWWP Schedule A, Filter #1 is designed to treat max 44.15L/sec, filter ran at 54L/sec for 20min**	**Filter design flow was exceeded**	**L/sec**	**Confirmed based on trends and report that all treatment perimeters were normal/compliant such as filter turbidity, UV dose and effluent chlorine residuals. Flushed and backwash filter as well as dumped clear well**	**February 19, 2025**
April 27, 2025	**As per DWWP Schedule A, Filter #1 is designed to treat max 44.15L/sec, filter ran at 54L/sec for 22min**	**Filter design flow was exceeded**	**L/sec**	**Confirmed based on trends and report that all treatment perimeters were normal/compliant such as filter turbidity, UV dose and effluent chlorine residuals. Flushed and backwash filter as well as dumped clear well**	**April 27, 2025**
March 3, 2025	**As per DWWP Schedule A, Filter #2 is designed to treat max 44.15L/sec, filter ran at 54L/sec for 28min**	**Filter design flow was exceeded**	**L/sec**	**Confirmed based on trends and report that all treatment perimeters were normal/compliant such as filter turbidity, UV dose and effluent chlorine residuals. Flushed and backwash**	**March 3, 2025**

				filter as well as dumped clear well	
November 4, 2025	**0.00mg/l free chlorine residual at 70 14th Ave at 12:45 in distribution system not meeting required minimum free chlorine residual of 0.05mg/l**	**The distribution system did not achieve the minimum free residual concentration of 0.05 mg/L**	**Mg/l**	**Operator flushed hydrant out front of building for approximately 1 hour and got a 0.75mg/l free chlorine residual, operator got 0.94mg/l free chlorine residual inside building. Flushing valve inside building has been opened a bit more to maintain chlorine residual. Operators checked chlorine again on November 5, 2025 at 08:40 at 70 14th Ave and got 0.84 Free chlorine residual and 1.05 Total chlorine residual, operator also tested chlorine at 69 14th Ave and got 0.69 Free chlorine and 0.83 total chlorine.**	**November 4, 2025**

Microbiological testing done under the Schedule 10, 11 or 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	156	(2)-(440)	(26) -(6100)	N/A	N/A
Treated	52	0	0	52	(10)-(60)
Distribution	219	0	0	52	(10)-(10)

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(Avg)-(max #)	Unit of Measure
Influent Turbidity	**8760**	**(0.03) -(0.74) -(10.0)**	**NTU**
Effluent Turbidity	**8760**	**(0.04) -(0.11) -(4.00)**	**NTU**
Filter #1 Turbidity	**8760**	**(0.04) -(0.09) -(1.66)**	**NTU**
Filter #2 Turbidity	**8760**	**(0.03) -(0.09) -(1.66)**	**NTU**
Filter #3 Turbidity	**8760**	**(0.01) -(0.06) -(3.00)**	**NTU**
Influent Chlorine	**8760**	**(0.00) -(2.39) -(5.01)**	**Mg/L**
Clearwell Chlorine	**8760**	**(0.47) -(1.72) -(3.23)**	**Mg/L**
Effluent Chlorine	**8760**	**(0.62) -(1.72) -(3.71)**	**Mg/L**
Distribution Samples	**365**	**(0.42) -(1.12) -(2.10)**	**Mg/L**
Waste Water	**9**	**(3.0) -(49.0) -(13.6)**	**Mg/L**
Trojan UV Swift 24 ECT System 4.0 Log Crypto Reduction at peak flow 180 l/s	**Disinfection UV Transmittance 93% Contaminant (T&O) Design 93%0/0/cm**	**Disinfection Dose 40 mJ/cm2**	
Fluoride (If the DWS provides fluoridation)	**N/A**		

***NOTE**: For continuous monitors use 8760 as the number of samples.*

Clearwell Cl2 min of 0.47 alarmed and shut-down pumps. No water under 0.62 CL2 went to town with clearwell dumped to waste.

All NTU spikes for filters over 0.3NTU documented in log book and less than 300 seconds

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 April 15 2016	Parameter Blue Green Algae	Date Sampled June to October	Result (min)-(max)	Unit of Measure Ug/L
Ruhl Lake	**Blue Green Algae**	**June to October 22 Samples**	**(0.1) -(0.1)**	Ug/L
Treated Water	**Blue Green Algae**	**June to October 22 samples**	**(0.1)-(0.1)**	Ug/L

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	MAC	Half MAC	AO/ OG	Result Value	Unit of Measure	Exceedance
Antimony	05-May-25	6	3	-	0.6	Ug/L	
Arsenic	05-May-25	10	5	-	0.4	Ug/L	
Barium	05-May-25	1000	500	-	33.4	Ug/L	
Boron	05-May-25	5000	2500	-	33	Ug/L	
Cadmium	05-May-25	5	2.5	-	0.003	Ug/L	
Chromium	05-May-25	50	25	-	0.08	Ug/L	
Mercury	05-May-25	1	0.5	-	0.01	Ug/L	
Selenium	05-May-25	50	25	-	0.09	Ug/L	
Uranium	05-May-25	20	10		0.295	Ug/L	
***Lead**		10	-	-		Ug/L	
Sodium	13-Feb-23	20	10		12.6	Mg/L	
Fluoride	13-Feb-23	1.5	0.75		0.16	Mg/L	
Nitrite	05-May-25	1	-	-	0.003	Mg/L	
Nitrate	05-May-25	10	-	-	2.11	Mg/L	

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period
(applicable to the following drinking water systems; large municipal residential systems**,** small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Plumbing	88	(0.06)-(5.17)	Ug/L	0
Distribution	6	(0.05)-(0.27)	Ug/L	0

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	MAC	Half MAC	AO/ OG	Result Value	Unit of Measure	Exceedance
Alachlor	05-May-25	5	2.5	-	0.02	Ug/L	
Atrazine + N-dealkylated metabolites	05-May-25	5	2.5	-	0.01	Ug/L	
Azinphos-methyl	05-May-25	20	10		0.05	Ug/L	
Benzene	05-May-25	1	.5		0.32	Ug/L	
Benzo(a)pyrene	05-May-25	0.01	0.005		0.004	Ug/L	
Bromoxynil	05-May-25	5	2.5		0.33	Ug/L	
Carbaryl	05-May-25	90	45		0.05	Ug/L	
Carbofuran	05-May-25	90	45		0.01	Ug/L	
Carbon Tetrachloride	05-May-25	2	1		0.17	Ug/L	
Chlorpyrifos	05-May-25	90	45		0.02	Ug/L	
Diazinon	05-May-25	20	10		0.02	Ug/L	
Dicamba	05-May-25	120	60		0.20	Ug/L	
1,2-Dichlorobenzene	05-May-25	200	100		0.41	Ug/L	
1,4-Dichlorobenzene	05-May-25	5	2.5		0.36	Ug/L	
1,2-Dichloroethane	05-May-25	5	2.5		0.35	Ug/L	
1,1-Dichloroethylene (vinylidene chloride)	05-May-25	14	7		0.33	Ug/L	
Dichloromethane	05-May-25	50	25		0.35	Ug/L	
2-4 Dichlorophenol	05-May-25	900	450		0.15	Ug/L	
2,4-Dichlorophenoxy acetic acid (2,4-D)	05-May-25	100	50		0.19	Ug/L	
Diclofop-methyl	05-May-25	9	4.5		0.40	Ug/L	
Dimethoate	05-May-25	20	10		0.06	Ug/L	
Diquat	05-May-25	70	35		1.00	Ug/L	
Diuron	05-May-25	150	75		0.03	Ug/L	
Glyphosate	05-May-25	280	140		1.00	Ug/L	
Malathion	05-May-25	190	95		0.02	Ug/L	
MCPA (2-Methyl-4-chlorophenoxyacetic acid)	05-May-25	0.1	0.05		0.00012	Ug/L	
Metolachlor	05-May-25	50	25		0.01	Ug/L	
Metribuzin	05-May-25	80	40		0.02	Ug/L	
Monochlorobenzene	05-May-25	80	40		0.3	Ug/L	
Paraquat	05-May-25	10	5		1.0	Ug/L	
Pentachlorophenol	05-May-25	60	30		0.15	Ug/L	
Phorate	05-May-25	2	1		0.01	Ug/L	
Picloram	05-May-25	190	95		1.0	Ug/L	
Polychlorinated Biphenyls (PCB)	05-May-25	3	1.5		0.04	Ug/L	
Prometryne	05-May-25	1	.5		0.03	Ug/L	

Simazine	05-May-25	10	5		0.01	Ug/L	
Terbufos	05-May-25	1	0.5		0.01	Ug/L	
Tetrachloroethylene	05-May-25	10	5		0.35	Ug/L	
2,3,4,6-Tetrachlorophenol	05-May-25	100	50		0.20	Ug/L	
Triallate	05-May-25	230	115		0.01	Ug/L	
Trichloroethylene	05-May-25	5	2.5		0.44	Ug/L	
2,4,6-Trichlorophenol	05-May-25	5	2.5		0.25	Ug/L	
Trifluralin	05-May-25	45	22.5		0.02	Ug/L	
Vinyl Chloride	05-May-25	1	0.5		0.17	Ug/L	
HAA5 (Note: Running annual average)	2025	80	40		32.3	Ug/L	
THM (NOTE: Running annual average)	2025	100	50		56	Ug/L	

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
Sodium	**12.6**	**Mg/L**	**02/13/2023**
THM	**56**	**Ug/L**	**2025**