

Dryden Drinking Water System Annual Water Quality Report

2025



Submitted – February 2026

Table of Contents

Introduction..... 3

Dryden Drinking Water System..... 3

Dryden Water Distribution System 4

2025 Capital Improvements..... 4

Water Quality Testing..... 4

 Operational Testing..... 4

 Summary of Operational Testing Results 5

 Microbial Testing Results..... 6

 Chemical Testing Results 7

 In-Organic Parameters – Treated Water..... 7

 Organic Parameters – Treated Water..... 7

Adverse Results Notifications 8

Lead Sampling Results 9

Water Treatment Plant Production..... 9

 Treated Water Flow Data 9

 Raw Water Flow Data10

 Historic Treated Water Flow.....10

Operational Compliance10

More Information or Questions11

Introduction

The City of Dryden (City) provides safe drinking water to its customers that meets and exceeds Ontario regulatory standards. As per requirements under the Safe Drinking Water Act 2002, and Ontario Regulation 170 /03, the City is required to produce an annual Water Quality Report which includes:

- An overview description of the water treatment plant process
- Major expenditures relating to expenses incurred for the installation, repair or upgrade of water system components
- Laboratory Results pertaining to water quality and the associated Provincial Standards
- A review of incidents and regulatory non-compliance events, including corrective actions taken
- Quantities of water produced with a comparison to the systems rated capacities and provincially approved flow rates

Dryden Drinking Water System

Municipal Drinking Water licence: 223-101

Permit to Take Water: 1854-CXRS4K

Drinking Water System Number: 220001432

The City's Water Treatment Plant (WTP) is located at 250 Wilde Street in Dryden, Ontario and produces drinking water for 2,254 residential and 287 commercial connections. Raw water is pulled from Lake Wabigoon as per the provincially approved Permit to Take Water.

The WTP is a Level 2 treatment facility and is considered to be a conventional treatment process. The process includes coagulation of the raw water, sedimentation through a solids contact clarifier, followed by dual media filtration (anthracite/sand), and followed up with chlorine disinfection before distribution to customers. The treatment chemicals used in the process are as follows:

- Chlorine Gas for disinfection
- Aluminum Sulphate for coagulation
- Non-Ionic Polymer to aid coagulation
- Calcium Hydroxide (Lime) for pH adjustment

Control of the WTP is facilitated through a Supervisory Control and Data Acquisition (SCADA) system that is monitored 24-hours per day by, seven days per week by Public Works Staff. The produced treated water is continuously pumped and pressurized into the Drinking Water System which distributes safe drinking water to residents, consumers, and water haulage customers.

Dryden Water Distribution System

The City’s Water Distribution System consists of a combination of cast iron, and Poly Vinyl Chloride piping in various sizes for a total length of approximately 70km. Water pressurization and storage is provided onsite at the WTP for the City.

2025 Capital Improvements

In this calendar year, approximately \$290,000 was spent on the drinking water system consisting via capital upgrades. The projects included:

Project Name	Expense Type	Location	Value
Valve Installation and Repair	Replacement	Water Distribution	\$140,000
Van Horn Extension of Services	Design	Water Distribution	\$50,000
Water Treatment Overload Relay	Upgrade	Water Treatment	\$75,000
Watermain Upgrade – St. Charles	Design	Water Distribution	\$30,000

In addition to capital upgrades the City also repairs and maintains existing infrastructure. Over this calendar year, repairs were conducted to ten (10) watermains, five (5) service line leaks, six (6) valve replacements and four (4) valve installations for new services.

Water Quality Testing

In accordance with the Safe Drinking Water Act 2002 and other prescribed regulations, the City performs water quality tests every day. Tests include microbiological, organic and inorganic properties on the treated water. Operational sampling and distribution sampling assess treatment capabilities and ensuring safe drinking water from plant to tap.

Operational Testing

The City’s WTP uses many analyzers to ensure the plant is running within prescribed regulations. Continuous monitoring analyzers measure and record results for chlorine residual, and turbidity several times per minute, twenty-four hours per day, seven days per

week. Analyzer readings are validated by an on-site operator and are reviewed by the Ministry of the Environment Conservation and Parks (MECP) through inspection activities.

Chlorine residuals are also measured by operators across the distribution system to ensure that water quality is maintained throughout the system.

At any time, either in the WTP or distribution system, if water is determined to be “Adverse” (not meeting Provincial Regulations), it is immediately reported as an Adverse Water Quality Incident (AWQI) and corrective actions are initiated.

In-house testing for some parameters is used to assess analyzer accuracy, and to aid in process control decisions. A summary of in-house testing results are tabled below.

Summary of Operational Testing Results

Water Treatment Plant Monitoring Results

Parameter	Units	# of Samples	Minimum Result	Maximum Result
Raw Water Turbidity	NTU	365	6.01	23.7
Raw Water pH	pH	358	7	7.7
Raw Water Colour	PtCo	364	5	51
Treated Chlorine Residual	mg/L	365	1.26	1.74
Treated Turbidity	NTU	365	0.033	0.77

Terminology

Residual: Concentration of active component in the water

NTU: Nephelometric Turbidity unit – Measures the presence of suspended material in water no greater than 1 unit (>1.0)

pH: A unit that expresses acidity or alkalinity

PtCo: Platinum Cobalt Colour Scale – Assesses organic levels in water

City of Dryden Operational Standards for Treated Water

Chlorine Residual Requiring Action: <1.4mg/L, >1.65mg/L

NTU: Nephelometric Turbidity unit – Measures the presence of suspended material in water no greater than 1 unit (>1.0)

2025 DRYDEN DRINKING WATER SYSTEM ANNUAL WATER QUALITY REPORT

Water Distribution Monitoring Results

Parameter	Units	# of Samples	Minimum Result	Maximum Result	Adverse*
Routine Distribution Chlorine Residual	mg/L	311	0.13	1.37	No
Non-Routine Distribution Chlorine Residuals*	mg/L	1	0.86	0.86	No

*Noted in Adverse Results Notifications if applicable

Terminology

Routine sampling is prescribed by regulation

Non-Routine sampling needed to support watermain repairs, construction activities and water quality complaints

City of Dryden Operational Standards for Distribution Chlorine Residual:

Chlorine Residual Reportable: <0.2mg/L, >.8mg/L

Microbial Testing Results

Below is a summary of microbial sampling results from routine monitoring of the raw water, treated water, and distribution sampling locations to monitor water quality.

	Number of Samples	E. Coli Results (min -max)	Total Coliform Results (min-max)	Number of Heterotrophic Plate Count Samples	Heterotrophic Plate Count Results (min-max)
Raw Water	52	0 - 4	0 - 41	0	
Treated Water	52	0	0	52	0 - <10*
Distribution	311	0	0	103	0 - <10*
Non-Routine	0				

Terms

Raw Water – Source Water (Lake Wabigoon) Entering the treatment process

Treated Water – Safe drinking Water for distribution to residents

Distribution – 6 (Six) sample locations across the water distribution system to ensure safe drinking water quality

* - <10 is non-detectable

Microbiological standards for treated and distributed water:

E.coli - Non Detectable

Total Coliforms - Non Detectable

Heterotrophic Plate Counts (HPC) - Samples are conducted on some treated and distribution system samples. The HPC test is used as a tool to monitor overall quality, but the results are not indicators of water safety. There is no Drinking Water Quality Standard for HPC

Non-Routine – As a result of AWQI's

Chemical Testing Results

In-Inorganic Parameters – Treated Water

Parameter	Sample Date	Units	WTP Result	Standard Limit	Exceedance of Standard
Antimony	January 7, 2025	µg/L	<0.5	6	No
Arsenic	January 7, 2025	µg/L	<1	10	No
Barium	January 7, 2025	µg/L	7	1000	No
Boron	January 7, 2025	µg/L	<2	5000	No
Cadmium	January 7, 2025	µg/L	<0.1	5	No
Chromium	January 7, 2025	µg/L	<1	50	No
Mercury	January 7, 2025	µg/L	<0.1	1	No
Selenium	January 7, 2025	µg/L	<0.2	50	No
Sodium	January 7, 2025	mg/L	3.27	20	No
Uranium	January 7, 2025	µg/L	<0.5	20	No

Terminology

µg/L – concentration in micrograms per liter

<# - Indicates below detection limit of that specific analysis, non-detectable result

Organic Parameters – Treated Water

Parameter	Sample Date	Units	WTP Result	Standard Limit	Exceedance of Standard
Alachlor	January 7, 2025	µg/L	<0.241	5	No
Atrazine + N-dealkylated metabolites	January 7, 2025	µg/L	<0.5	5	No
Azinphos-methyl (Guthion)	January 7, 2025	µg/L	<0.181	20	No
Benzene	January 7, 2025	µg/L	<0.1	1	No
Benzo(a)pyrene	January 7, 2025	µg/L	<0.01	0.01	No
Bromoxynil	January 7, 2025	µg/L	<0.105	5	No
Carbaryl	January 7, 2025	µg/L	<2	90	No
Carbofuran	January 7, 2025	µg/L	<4	90	No
Carbon Tetrachloride	January 7, 2025	µg/L	<0.2	2	No
Chlorobenzene	January 7, 2025	µg/L	<0.5	80	No
Chlorpyrifos (Dursban)	January 7, 2025	µg/L	<0.181	90	No
Diazinon	January 7, 2025	µg/L	<0.181	20	No
Dicamba	January 7, 2025	µg/L	<0.0915	120	No
Dimethoate	January 7, 2025	µg/L	<0.181	20	No
1,2-Dichlorobenzene	January 7, 2025	µg/L	<0.2	200	No
1,4-Dichlorobenzene	January 7, 2025	µg/L	<0.3	5	No
1,2-Dichlorethane	January 7, 2025	µg/L	<0.2	5	No
1,1-Dichloroethylene (vinylidene chloride)	January 7, 2025	µg/L	<0.3	14	No
Dichloromethane	January 7, 2025	µg/L	<1	50	No
2,4-Dichlorophenol	January 7, 2025		<0.2	900	No
2-4-Dichlorophenoxy acetic acid (2,4-D)	January 7, 2025	µg/L	<0.392	100	No
Diclofop-methyl	January 7, 2025	µg/L	<0.131	9	No

2025 DRYDEN DRINKING WATER SYSTEM ANNUAL WATER QUALITY REPORT

Parameter	Sample Date	Units	WTP Result	Standard Limit	Exceedance of Standard
Dimethoate	January 7, 2025	µg/L	<0.181	20	No
Diquat	January 7, 2025	µg/L	<0.2	70	No
Diuron	January 7, 2025	µg/L	<7	150	No
Glyphosate	January 7, 2025	µg/L	<20	200	No
Distribution HAA (Running Annual Average)	Jan 7, Jul 2, Mar 31, Oct 6, 2025	µg/L	56	80	No
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	January 7, 2025	µg/L	<6.54	100	No
Malathion	January 7, 2025	µg/L	<0.181	190	No
Metolachlor	January 7, 2025	µg/L	<0.121	50	No
Metribuzin (Sencor)	January 7, 2025	µg/L	<0.121	80	No
Nitrate (Maximum of all 4 samples)	Jan 7, Jul 2, Mar 31, Oct 6, 2025	µg/L	<0.05	10	No
Nitrite (Maximum of all 4 samples)	Jan 7, Jul 2, Mar 31, Oct 6, 2025	µg/L	<0.05	1	No
Paraquat	January 7, 2025	µg/L	<0.2	10	No
Pentachlorophenol	January 7, 2025	µg/L	<0.3	60	No
Phorate	January 7, 2025	µg/L	<0.121	2	No
Picloram	January 7, 2025	µg/L	<0.0915	190	No
Polychlorinated Biphenyls (PCB)	January 7, 2025	µg/L	<0.06	3	No
Prometryne	January 7, 2025	µg/L	<0.0603	1	No
Simazine	January 7, 2025	µg/L	<0.181	10	No
Distribution Tri-halomethane (THM – Quarterly Running Annual Average)	Jan 7, Jul 2, Mar 31, Oct 6, 2025	µg/L	60	100	No
Terbufos	January 7, 2025	µg/L	<0.121	1	No
Tetrachloroethylene (perchloroethylene)	January 7, 2025	µg/L	<0.3	10	No
2,3,4,6-Tetrachlorophenol	January 7, 2025	µg/L	<0.3	100	No
Triallate	January 7, 2025	µg/L	<0.121	230	No
Trichloroethylene	January 7, 2025	µg/L	<0.2	5	No
2,4,6-Trichlorophenol	January 7, 2025	µg/L	<0.2	5	No
Trifluralin	January 7, 2025	µg/L	<0.121	45	No
Vinyl Chloride	January 7, 2025	µg/L	<0.1	1	No

Terminology

µg/L – concentration in micrograms per liter

<# - Indicates below detection limit of that specific analysis, non-detectable result

Adverse Results Notifications

There were no Adverse Water Quality Incidents for the 2025 operating year.

Lead Sampling Results

The City, as per Schedule 15.1 of Ontario Regulation 170/03, meets the requirements for reduced lead sampling of the drinking water system. Previous rounds of residential plumbing sampling indicated that lead levels do not meet the threshold required for continued annual testing. As per the regulation, lead sampling is conducted from three distribution system locations every year. Lead sampling results are tabled below, and all remain under the regulatory limit.

Sample Location	Date	Lead Results (µg/L)	Regulatory Limit (µg/L)	Exceedance
Edgewater Drive Hydrant D078-0	April 2 2025	<0.1	10	No
Heather Drive Hydrant B046-15	April 2 2025	<0.1	10	No
Kennedy Road Hydrant DA005-351	April 2 2025	0.5	10	No
Edgewater Drive Hydrant D078-0	October 7 2025	<0.1	10	No
Heather Drive Hydrant B046-15	October 7 2025	<0.1	10	No
Kennedy Road Hydrant DA005-351	October 7 2025	0.3	10	No

Water Treatment Plant Production

Treated Water Flow Data

For the 2025 operating year, the City’s WTP produced a total of 1,051,462 m³ (cubic meters) of water for distribution to Dryden’s consumers. This highest daily flow took place in August, for a total of 3,984 m³/d. This is 29% of the plants rated capacity of 13,637 m³/d.

Month	Total Monthly Flow (m3)	Average Daily Flow (m3/d)	Maximum Daily Flow (m3/d)
January	85379	2754	2924
February	74328	2655	2957
March	82880	2674	2866
April	80358	2679	3162
May	93430	3014	3590
June	90868	3029	3431
July	88722	2862	3049
August	95782	3090	3984
September	96043	3201	3488
October	91624	2956	3417
November	82492	2750	2943
December	89556	2889	3085

Raw Water Flow Data

In 2025, Dryden’s WTP pumped a total of 1,261,045m³ (cubic meters) of water from Lake Wabigoon to be treated. This highest daily flow took place in September, for a total of 5031 m³/d. This is 37% of the plants rated Permit to Take Water at 13,637 m³/d.

Month	Total Monthly Flow (m ³)	Average Daily Flow (m ³ /d)	Maximum Daily Flow (m ³ /d)
January	104891	3384	3970
February	91507	3268	3780
March	101710	3281	3703
April	97753	3258	3741
May	109953	3547	4780
June	107864	3595	4216
July	105336	3398	3745
August	114102	3681	4846
September	115248	3842	5031
October	109377	3528	4675
November	98096	3270	3609
December	105208	3394	377

Historic Treated Water Flow

Total treated water flow has remained relative stable over the past 10 years outside of the reductions associated with the Pandemic. The 2025 production rate is quite similar to what was recorded in 2015. There is the potential for increased water demand over the next few years, and production statistics will continue to be closely monitored.

Year	Total Treated Water Flow (m ³)	Average Monthly Flow (m ³ /d)	Percent Change in Total Production to 2015
2015	1048068	2898	
2016	1057281	2888	0.9%
2017	1027715	2815	1.9%
2018	1077142	2950	2.8%
2019	1029167	2821	-1.8%
2020	1041267	2851	-0.6%
2021	973927	2671	-7.1%
2022	998055	2733	-4.8%
2023	983994	2695	-6.1%
2024	1015984	2775	-3.1%
2025	1051462	2879	0.32%

Operational Compliance

The City’s WTP was inspected by the MECP on April 7, 2025. One non-compliance was issued with respect to administrative record keeping requirements in relation to drinking

water system modifications. Specifically, two water main replacement projects did not have the required forms properly signed. This has been remedied by educating staff on the proper administrative procedurals. The final inspection rating for the year was 99.21%.

The City's water quality continues to meet and exceed regulatory requirements.

More Information or Questions

This report is available to the public free of charge to anyone who requests a copy. An electronic copy is available on the City of Dryden's website, and anyone wanting to be provided a paper copy can make arrangement to pick one up from the Public Works Office. Any concerns or inquiries of this report can be directed to:

Bill Mundy C.E.T.
Utilities and Environmental Services Manager
807-223-1407
bmundy@dryden.ca
www.dryden.ca