Annual Report

Red Lake Drinking Water System

2024

Prepared by **Northern Waterworks Inc.**
on behalf of the **Municipality of Red Lake**

NORTHERN WATERWORKS INC.

REDLAKE
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Contents

1 Introduction

1.1 Annual Reporting Requirements

This consolidated Annual Report (the Report) has been prepared in accordance with both section 11 (Annual Reports) and Schedule 22 (Summary Reports for Municipalities) of Ontario Regulation 170/03 (Drinking Water Systems Regulation). This Report is intended to inform both the public and Municipal Council about the operation of the system over the previous calendar year (January 1 to December 31, 2024).

Section 11 of O. Reg. 170/03 requires the development and distribution to the public of an annual report summarizing water quality monitoring results, adverse water quality incidents, system expenses and chemicals used in the water treatment process.

Schedule 22 of O. Reg. 170/03 requires the development and distribution to Council of an annual report summarizing incidents of regulatory non-compliance and associated corrective actions, in addition to providing flow monitoring results for the purpose of enabling the Owner to assess the capability of the system to meet existing and planned demand.

1.2 Report Availability

In accordance with section 11 of O. Reg. 170/03, this Report must be given, without charge, to every person who requests a copy. Effective steps must also be taken to advise users of water from the system that copies of the report are available, without charge, and of how a copy may be obtained. This Annual Report shall be made available for inspection by the public at the Red Lake Municipal Office and on the Municipality's website.

In accordance with Schedule 22 of O. Reg. 170/03, this Annual Report must be given to the members of Municipal Council. Section 19 (Standard of care, municipal drinking-water system) of Ontario's *Safe Drinking Water Act* (SDWA) also places certain responsibilities upon those municipal officials who oversee an accredited operating authority or exercise decision-making authority over a system. The examination of this Report is one of the methods by which municipal officials may fulfil the obligations required by section 19 of the SDWA.

System users and members of Council should contact a representative of NWI for assistance in interpreting this Report. Questions and comments may be directed to the local NWI Operations Manager or by email to compliance@nwi.ca.

2 System Overview & Expenses

2.1 System Description

The Red Lake Drinking Water System must meet extensive treatment and testing requirements to ensure that human health is protected. The operation and maintenance of the system is governed by Ontario's *Safe Drinking Water Act* and the regulations therein, in addition to requirements within system-specific environmental approvals. Important system information is summarized in Table 1.

Table 1: System information

Drinking-Water System Name:	Red Lake Drinking Water System
DWS Number:	210000265
DWS Category:	Large Municipal Residential
DWS Owner:	The Corporation of the Municipality of Red Lake
DWS Operating Authority:	Northern Waterworks Inc.
DWS Components:	• Red Lake Water Treatment Plant • Red Lake water distribution system and standpipe
Treatment Processes:	• Chemical coagulation, flocculation and clarification • Dual media (rapid sand) filtration • Free chlorine disinfection • pH adjustment

Water production begins as raw water flows by gravity from the intake structure located in Skookum Bay (Red Lake) to underground reservoirs located at the Red Lake Water Treatment Plant. Pumps then transfer water from the reservoirs directly to the treatment units. Aluminum sulphate (coagulant) and sodium carbonate solution (pH/alkalinity adjustment) are injected and rapidly mixed into the raw water immediately upstream from the two package treatment units, which each include a four-chambered flocculation basin, clarifier and filter.

To promote floc formation water is gently mixed as it passes through the flocculation basins. Polymer (flocculant) is also added to the water at this stage of treatment to form larger and more stable floc aggregates. Water then enters the clarifier where its velocity is reduced to allow for the separation and settling of floc. Supernatant overflows into effluent launderers and is directed to the filter unit. Settled floc is periodically removed from the bottom of the clarifier.

Impurities that were not captured and settled as floc in the clarifier are removed by passing water through a dual media filter composed of anthracite and silica sand on a layer of support gravel. Chlorine gas (disinfectant) and sodium carbonate solution are added to the filtrate as it is directed from the filters to the treated water storage reservoir. The filters are periodically cleaned by using an air scour to agitate the entire media bed and reversing the flow of water through the filter.

Primary disinfection is achieved as disinfectant mixes with the water in the reservoir. Treated water is then delivered from the reservoir to the community standpipe and water distribution system using pumps located at the treatment facility. The standpipe is used to regulate system pressure and to provide a reserve volume of water for emergency situations. Secondary disinfection requirements in the water distribution system are achieved by maintaining a free chlorine residual at all locations.

2.2 Water Treatment Chemicals

In accordance with section 11 of O. Reg. 170/03, this Report must include a list of all water treatment chemicals used by the system during the period covered by the report (summarized in Table 2). All chemicals used in the treatment process are NSF/ANSI 60 certified for use in potable water, as required by system approvals.

Table 2: Water treatment chemicals used in 2024

Treatment Chemical	Application
aluminum sulphate	coagulant
sodium carbonate	pH/alkalinity adjustment
polymer (Polyfloc CP1160P)	flocculant
chlorine gas	disinfectant

2.3 System Expenses

In accordance with section 11 of O. Reg. 170/03, this Report must describe any major expenses incurred during the reporting period to install, repair, or replace required equipment. Major expenses incurred in 2024 are summarized in Table 3.

Table 3: Major expenses incurred in 2024

Category	Description	Expense
New Equipment	Decant Pump	$11,602
Replace/Upgrade	Four Chemical metering pumps	$10,600
Maintenance	Flow meter calibration verifications	$2,000
Maintenance/Repairs	Water Tower recirculation pump timers	$9,848

3 Water Quality

3.1 Overview

Water quality monitoring is conducted to determine and confirm that drinking water delivered to the consumer is safe and aesthetically pleasing. Monitoring is also required to assess compliance with legislation and to control the treatment process. In accordance with section 11 of O. Reg. 170/03, this Report must summarize the results of water quality tests required by regulations, approvals and orders. The following sections summarize the results of all required water quality tests and compare the results to applicable water quality standards.

3.2 Microbiological Parameters

Microbiological sampling and testing requirements are provided in Schedule 10 (Microbiological sampling and testing) of O. Reg. 170/03. In 2024, a total of 306 routine source, treated and distribution water samples were collected for microbiological analysis by an accredited laboratory. Samples were collected on a weekly basis and included tests for E. coli (EC), total coliforms (TC) and heterotrophic plate counts (HPC). Results from microbiological analyses are summarized in Table 4. All results were below the associated Ontario Drinking Water Quality Standards.

Table 4: Results summary for microbiological parameters

Sample Type	# of Samples	EC Results Range[1] (MPN/ 100mL)	TC Results Range[1] (MPN/ 100mL)	# of HPC Samples	HPC Results Range (CFU/mL)
Raw Water	52	0 to 7	0 to >2420	---	---
Treated Water	58	absent	absent	52	0 to 3
Distribution	196	absent	absent	52	0 to >300

1. The Ontario Drinking Water Quality Standard for E. Coli and Total Coliforms in a treated or distribution sample is 'not detectable'. The presence of either parameter in a treated or distribution sample constitutes an exceedance.

3.3 Operational Parameters

In accordance with Schedule 7 (Operational checks) of O. Reg. 170/03, regulated operational parameters that must be monitored include raw water turbidity, filtrate turbidity and the free chlorine residuals associated with primary and secondary disinfection. In accordance with the system's *Municipal Drinking Water Licence*, additional parameters that must be monitored include treated water pH and alkalinity. Table 5 summarizes water quality results for regulated and selected unregulated operational parameters. In accordance with Schedule 6 (Operational checks, sampling and testing – general) of O. Reg. 170/03, certain operational parameters are continuously monitored.

Table 5: Results summary for operational parameters

Parameter (Sample Type)	Number of Samples	Units	Min. Result	Max. Result	Annual Avg.	Adverse Result[1]
Turbidity (Raw Water)	83	NTU	0.29	1.70	0.67	n/a
Turbidity (Filter 1)	Continuous	NTU	0.049	0.567	0.139	>1.0
Turbidity (Filter 2)	Continuous	NTU	0.047	0.372	0.140	>1.0
Turbidity (Treated)	365	NTU	0.028	0.393	0.083	n/a
pH (Treated)	365	---	7.40	8.37	7.75	n/a
Alkalinity (Treated)	248	mg/L	32.7	63.0	52.4	n/a
Aluminum Residual (Treated)	241	mg/L	0.012	0.085	0.039	n/a
FCR[2] (Treated)[3]	Continuous	mg/L	1.17	2.76	1.91	n/a
FCR[2] (Distribution)[4]	450+	mg/L	0.55	1.84	1.18	<0.05

1. Adverse results for filtrate turbidity are prescribed within Schedule 16 of O. Reg. 170/03. There are additional factors not included in the table that are necessary to determine whether a result is adverse, such as the duration of the result.
2. FCR = free chlorine residual.
3. There is no adverse result corresponding to the treated water free chlorine residual. However, an observation of adverse water quality occurs if the residual is low enough such that water has not been disinfected in accordance with the system's *Municipal Drinking Water Licence*.
4. Free chlorine residuals are tested at various locations in the distribution system, and the values in the table pertain to the minimum and maximum results collected across all locations in the calendar year.

3.4 Conventional Filtration Performance

In accordance with the system's *Municipal Drinking Water Licence*, conventional filtration facilities must meet certain performance criteria in order to claim removal credits for Cryptosporidium oocysts and Giardia cysts. In addition to continuously monitoring filtrate turbidity and other requirements, filtrate turbidity must be less than or equal to 0.3 NTU in at least 95% of the measurements each month. Table 6 summarizes filtrate turbidity compliance against the <0.3 NTU/95% performance criterion. Minimum and maximum values in the table correspond to the proportion of time that filtered water turbidity was less than or equal to 0.3 NTU in a calendar month in 2024.

Table 6: Filtration performance summary

Filter	Minimum Result	Maximum Result	Adverse Result
Filter 1	99.9%	100%	<95%
Filter 2	99.9%	100%	<95%

3.5 Nitrate & Nitrite

Treated water is tested for nitrate and nitrite concentrations on a quarterly basis in accordance with Schedule 13 (Chemical sampling and testing) of O. Reg. 170/03. Nitrate and nitrite results are provided in Table 7. All results were below the Ontario Drinking Water Quality Standards.

Table 7: Nitrate and nitrite results

Sample Date	Nitrate		Nitrite	
	Result (mg/L)	ODWQS (mg/L)	Result (mg/L)	ODWQS (mg/L)
12-Feb-2024	0.096	10	<0.010	1
13-May-2024	<0.020		<0.010	
15-Aug-2024	<0.020		<0.010	
18-Nov-2024	0.062		<0.010	

3.6 Trihalomethanes & Haloacetic Acids

Trihalomethanes (THMs) and haloacetic acids (HAAs) are sampled on a quarterly basis from a distribution system location that is likely to have an elevated potential for their formation, in accordance with Schedule 13 (Chemical sampling and testing) of O. Reg. 170/03. Total THM and HAA results are provided in Table 8 and Table 9, respectively. Compliance with the provincial standards for trihalomethane and haloacetic acid concentrations is determined by calculating a running annual average (RAA). The 2024 running annual averages for THMs and HAAs were below the respective Ontario Drinking Water Quality Standards.

Table 8: Total THM results

Sample Date	Result (µg/L)	Quarterly Average (µg/L)
12-Feb-24	68.8	68.8
Q1 Regulatory Average (RAA)		**80.3**
13-May-24	62.3	62.3
Q2 Regulatory Average (RAA)		**78.5**
15-Aug-24	100	100
Q3 Regulatory Average (RAA)		**81.1**
11-Nov-24	86.4	86.4
Q4 Regulatory Average (RAA)		**79.4**
ODWQS (RAA)		**100**

Table 9: Total HAA results

Sample Date	Result (µg/L)	Quarterly Average (µg/L)
12-Feb-24	53.8	53.8
Q1 Regulatory Average (RAA)		**65.4**
13-May-24	55.5	55.5
Q2 Regulatory Average (RAA)		**63.8**
15-Aug-24	82.3	82.3
Q3 Regulatory Average (RAA)		**63.3**
11-Nov-24	61.4	61.4
Q4 Regulatory Average (RAA)		**63.3**
ODWQS (RAA)		**80**

3.7 Lead Sampling

In 2011 and in accordance with Schedule 15.1 (Lead) of O. Reg. 170/03, a *Corrosion Control Plan* was required to be developed for the Red Lake Drinking Water System following unfavourable results associated with the community lead sampling program. Corrosion control measures were implemented at this time and involved maintaining treated water pH at a value of 7.8 +/- 0.2 units using a sodium carbonate chemical feed system. Corrosion control has been effective and has resulted in a 90% reduction in average lead levels and an 82% reduction in the 90th percentile lead concentration. The ODWQS exceedance rate has also been significantly reduced from 20.6% to 1.4% (i.e., 20.6% of plumbing samples collected prior to corrosion control exceeded the standard for lead in drinking-water), and there have been no lead exceedances in plumbing samples since 2011.

The system now adheres to the lead monitoring program outlined in its *Municipal Drinking Water Licence*, which requires the collection of distribution and plumbing samples on an annual basis. Table 10 summarizes the results of community lead sampling conducted in 2024. Distribution and plumbing samples were collected on September 10-12, 2024, and results were below the Ontario Drinking Water Quality Standard for lead in drinking water with the exception of one non-residential plumbing sample.

Table 10: Lead sampling results summary

Sample Type	No. of Sample Points	No. of Samples	Min. Result (µg/L)	Max. Result (µg/L)	ODWQS (µg/L)	No. of Sample Point Exceedances
Distribution	2	2	<1.0	<1.0	10	0
Plumbing[1]	12	24	<1.0	58.8[2]		1

1. In accordance with the sampling protocol outlined in Schedule 15.1 of O. Reg. 170/03, two samples are collected and analyzed for lead at each sample point for plumbing samples.
2. One (1) sample tested above the lower analytical detection limit for lead in drinking water.

3.8 Environmental Discharge Sampling

The *Municipal Drinking Water Licence* for the Red Lake Drinking Water System requires additional sampling associated with discharges to the natural environment. Specifically, samples must be collected from settling tank effluent on a monthly basis and tested for the parameter total suspended solids (TSS). This effluent is discharged to Red Lake and originates from the onsite treatment of the wastewater produced during plant operation (e.g., filter backwashing and clarifier solids removal). The *Licence* also requires that the effluent discharged to the natural environment has an annual average TSS concentration below 25 mg/L. Table 11 summarizes 2024 environmental discharge sampling results.

Table 11: Environmental discharge sampling results summary

Number of Samples	Minimum TSS Result (mg/L)	Maximum TSS Result (mg/L)	TSS Annual Average (mg/L)
12	6.8	29.5	15.1

3.9 Inorganic & Organic Parameters

Most inorganic parameters are sampled on an annual basis in treated water in accordance with Schedules 13 (Chemical sampling and testing) and 23 (Inorganic parameters) of O. Reg. 170/03. The inorganic parameters sodium and fluoride are sampled every five (5) years in treated water in accordance with Schedules 13 and 23 of O. Reg. 170/03. The most recent inorganic parameter sampling results are provided in Table 12. All results were below the associated Ontario Drinking Water Quality Standards.

Table 12: Inorganic parameter sampling results

Parameter	Most Recent Sample Date	Units	Result	ODWQS
Antimony	15-Aug-2024	µg/L	<0.60	6
Arsenic	15-Aug-2024	µg/L	<1.0	10
Barium	15-Aug-2024	µg/L	<10	1000
Boron	15-Aug-2024	µg/L	<50	5000
Cadmium	15-Aug-2024	µg/L	<0.10	5
Chromium	15-Aug-2024	µg/L	<1.0	50
Fluoride	13-Feb-2023	mg/L	<0.020	1.5
Mercury	15-Aug-2024	µg/L	<0.100	1
Selenium	15-Aug-2024	µg/L	<1.0	50
Sodium	13-Feb-2023	mg/L	26.2[1]	20
Uranium	15-Aug-2024	µg/L	<2.0	20

1. The parameter sodium is not considered a toxic element and is not associated with a Standard as prescribed in O. Reg. 169/03, although an exceedance of 20 mg/L requires reporting and corrective actions. The result in the table is associated with Adverse Water Quality Incident no. 161352, and a resample collected on February 27, 2023, yielded a sodium result of 25.8 mg/L.

Organic parameters are sampled on an annual basis in treated water in accordance with Schedules 13 (Chemical sampling and testing) and 24 (Organic parameters) of O. Reg. 170/03. These parameters include various organic acids, pesticides, herbicides, PCBs, volatile organics and other chemicals. Sampling for all organic parameters was conducted on August 15, 2024, and results are provided in Table 13. All results were below the associated Ontario Drinking Water Quality Standards.

Table 13: Organic parameter sampling results

Parameter	Result (µg/L)	ODWQS (µg/L)	Parameter	Result (µg/L)	ODWQS (µg/L)
Alachlor	<0.050	5	Diuron	<0.050	150
Atrazine & Metabolites	<0.14	5	Glyphosate	<0.20	280
Azinphos-methyl	<0.100	20	Malathion	<0.0250	190
Benzene	<0.50	1	MCPA	<0.00005	100
Benzo(a)pyrene	<0.005	0.01	Metolachlor	<0.0250	50
Bromoxynil	<0.250	5	Metribuzin	<0.100	80
Carbaryl	<0.050	90	Monochlorobenzene	<0.50	80
Carbofuran	<0.0250	90	Paraquat	<1.0	10
Carbon Tetrachloride	<0.20	2	Pentachlorophenol	<0.50	60
Chlorpyrifos	<0.10	90	Phorate	<0.250	2
Diazinon	<0.0250	20	Picloram	<0.50	190
Dicamba	<0.10	120	Total PCBs	<0.030	3
1,2-Dichlorobenzene	<0.50	200	Prometryne	<0.0250	1
1,4-Dichlorobenzene	<0.50	5	Simazine	<0.100	10
1,2-Dichloroethane	<0.50	5	Terbufos	<0.100	1
1,1-Dichloroethylene	<0.50	14	Tetrachloroethylene	<0.50	10
Dichloromethane	<1.0	50	2,3,4,6-Tetrachlorophenol	<0.50	100
2,4-Dichlorophenol	<0.20	900	Triallate	<0.100	230
2,4-D	<0.050	100	Trichloroethylene	<0.50	5
Diclofop-methyl	<0.100	9	2,4,6-Trichlorophenol	<0.20	5
Dimethoate	<0.050	20	Trifluralin	<0.10	45
Diquat	<1.0	70	Vinyl Chloride	<0.50	1

3.10 Harmful Algal Bloom Monitoring

Starting in 2022 a requirement was added to the Municipal Drinking Water License to monitor for Harmful Algae Blooms. If a bloom is identified or suspected, then microcystin testing must be undertaken. According to the HAB plan sampling must continue for three (3) weeks of no microcystin identified. There were zero (0) reported or suspected blooms during the standard monitoring period in 2024.

There were also no suspected or occurring HABs outside the standard period of June 1 to October 31. Historic sample results have consistently identified no microcystin in raw or treated water when algal blooms are observed. Table 14 provides a summary of suspected or occurring HABs in Hudson since monitoring began.

Table 14: Recent historical algal bloom summary

Year	Suspected	Harmful Algal Blooms
2022	0	0
2023	0	0
2024	0	0

4 Water Production

4.1 Overview

In accordance with Schedule 22 (Summary Reports for Municipalities) of O. Reg. 170/03, this Annual Report must include certain information for the purpose of enabling the Owner to assess the capability of the system to meet existing and planned uses. Specifically, this Report must include a summary of the quantities and flow rates of the water supplied during the reporting period, including monthly average and maximum daily flows. The Report must also include a comparison of flow monitoring results to the rated capacity and flow rates approved in the system's *Municipal Drinking Water Licence*.

4.2 Flow Monitoring Results

Throughout the reporting period the Red Lake Drinking Water System operated within its rated capacity and supplied a total of 282, 490 m^3 of treated water. On an average day in 2024, 774 m^3 of treated water was supplied to the community, which represents 13% of the rated capacity of the Red Lake Water Treatment Plant (6,048 m^3/day). The maximum daily flow in 2024 was 1669 m^3/day, which represents 28% of the rated capacity of the treatment facility. Flow monitoring results are summarized in Figure 1 and Table 15. The capacity assessments provided in the table compare the average and maximum daily treated water flows to the rated capacity of the treatment facility.

Figure 1: 2024 average and maximum daily treated water flows

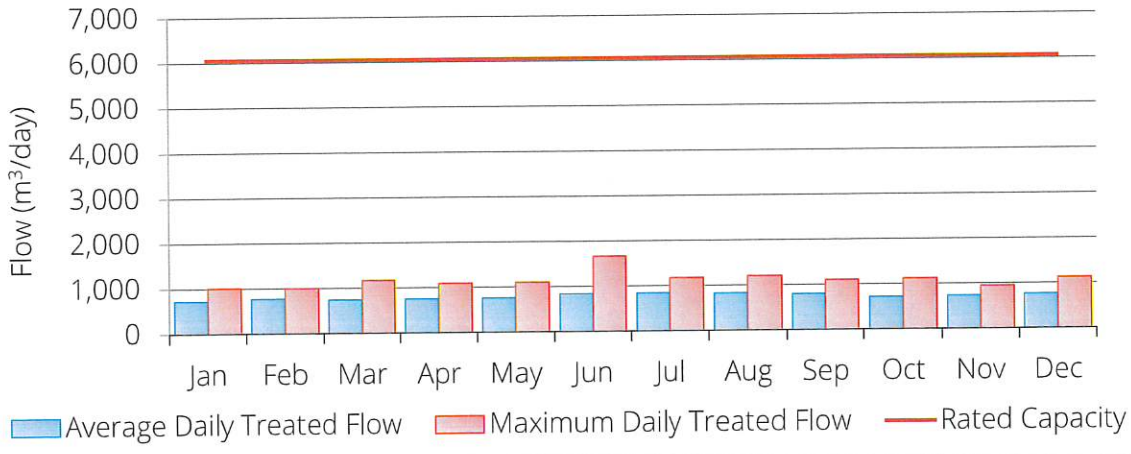
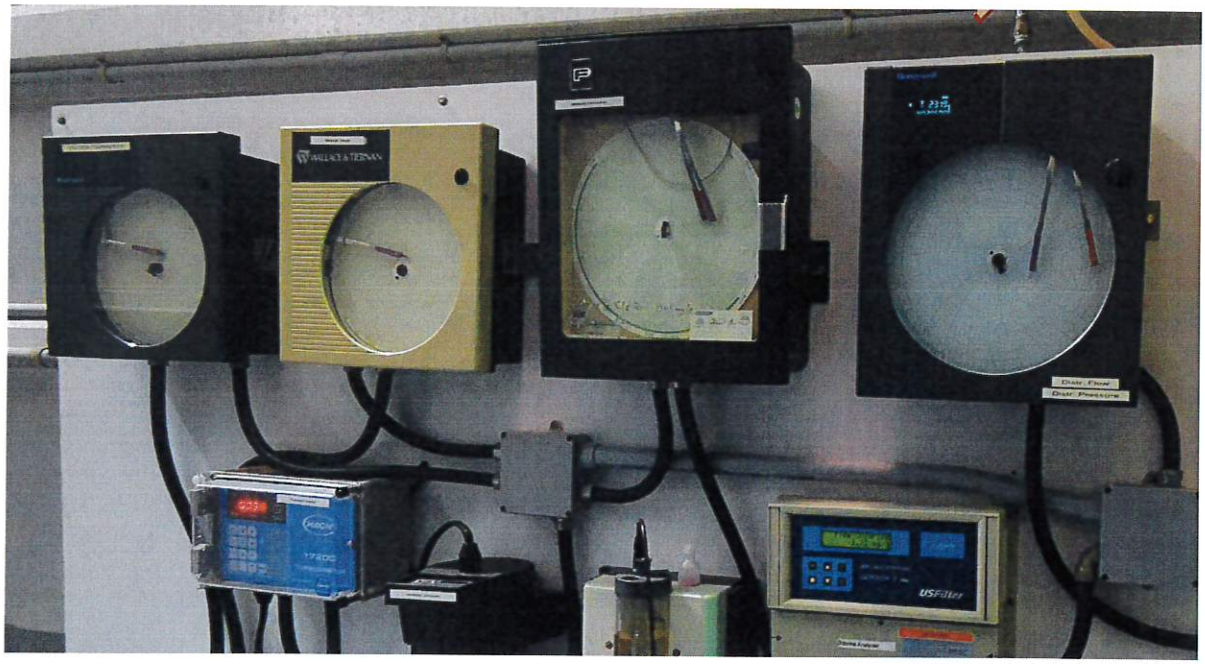


Table 15: 2024 water production summary

Month	Total Volumes (m^3)		Daily Flows (m^3/day)		Capacity Assessments	
	Raw Water	Treated Water	Average - Treated	Maximum - Treated	Average - Treated	Maximum - Treated
Jan	25,513	22,437	724	1,008	12%	17%
Feb	25,708	22,430	773	1,000	13%	17%
Mar	26,580	23,194	748	1,176	12%	19%
Apr	26,061	22,535	751	1,094	12%	18%
May	26,832	23,566	760	1,102	13%	18%
Jun	27,546	24,889	830	1,669	14%	28%
Jul	29,415	25,907	836	1,171	14%	19%
Aug	29,383	25,583	825	1,200	14%	20%
Sep	27,339	23,750	792	1,101	13%	18%
Oct	25,179	22,277	719	1,125	12%	19%
Nov	25,303	22,202	740	952	12%	16%
Dec	27,303	23,720	765	1,131	13%	19%
Total	322,162	282,490	---	MAX:	—	---
Average	26,847	23,541	774	1,669	13%	28%



4.3 Recent Historical Flows

Table 16 summarizes recent historical flow monitoring results for the Red Lake Drinking Water System. There were decreases in the volumes of source water withdrawn and treated water supplied in 2024 when compared to 2023, and flows have generally remained stable over the previous decade. Total annual volumes of treated water supplied in the near future may be expected to be between 300,000 m^3 and 450,000 m^3, which represents approximately 14% to 20% of the rated capacity of the Red Lake Water Treatment Plant.

Table 16: Recent historical water production summary

Year	Total Volumes (m^3)		Daily Flows (m^3/day)		Annual % Change	
	Raw Water	Treated Water	Average – Treated	Maximum – Treated	Raw Water	Treated Water
2014	389,092	331,219	907	1,645	+10.9%	+8.9%
2015	413,969	357,230	979	1,886	+6.4%	+7.9%
2016	396,239	345,746	945	2,231	-4.3%	-3.2%
2017	381,516	334,669	917	1,700	-3.7%	-3.2%
2018	439,388	379,157	1,039	2,290	+15.2%	+13.3%
2019	410,962	358,997	984	1,917	-6.5%	-5.3%
2020	451,078	402,134	1,099	2,036	+9.8%	+12.0%
2021	439,893	394,204	1,080	1,943	-2.5%	-2.0%
2022	455,672	401,942	1101	2074	+3.6%	+2.0%
2023	357,184	320,826	880	1,551	-21.6%	-20.2%
2024	322,162	282,490	880	1,485	-9.8%	-11.9%

5 Compliance

5.1 Overview

Northern Waterworks Inc. and the Municipality of Red Lake employ an operational strategy that is committed to achieving the following goals:

- Providing a safe and reliable supply of drinking water to the community of Red Lake.
- Meeting or exceeding all applicable legislative and regulatory requirements; and,
- Maintaining and continually improving the operation and maintenance of the system.

The following sections will summarize incidents of adverse water quality and regulatory noncompliance that occurred during the reporting period. NWI is committed to employing timely and effective corrective actions to prevent the recurrence of identified incidents of adverse water quality and noncompliance.

5.2 Adverse Water Quality Incidents

In accordance with section 11 (Annual Reports) of O. Reg. 170/03, this Report must summarize any reports made to the Ministry under subsection 18(1) (Duty to report adverse test results) of *the Act* or section 16-4 (Duty to report other observations) of Schedule 16 of O. Reg. 170/03. Additionally, this Report must describe any corrective actions taken under Schedule 17 of O. Reg. 170/03 during the period covered by the report. One (1) adverse water quality incident was reported in 2024 and is summarized below.

- **AWQI No. 166352 (September 16, 2024)**

NWI received notice from the licensed laboratory that Total Coliform was detected in a routine treated water sample collected from the Red Lake distribution system on September 16, 2024. This result exceeded the regulatory reporting limit of 20 mg/L. The issue was immediately reported to the Ministry's Spills Action Centre and to the Northwestern Health Unit on September 18, 2024.

Corrective action was performed in accordance with Schedule 17 of O. Reg. 170/03 and included collecting a water sample from the same location as the sample that gave rise to the corrective action as well as one upstream and one downstream location. These samples were collected on September 18. All resamples tested absent for E. coli and Total coliforms. The chlorine dose was verified to ensure a free chlorine residual of at least 0.20 mg/L was

maintained in the affected part of the distribution system. No additional corrective actions were indicated for this event. The *Notice of Issue Resolution* was provided on September 20, 2024.

5.3 Regulatory Compliance

In accordance with Schedule 22 (Summary Reports for Municipalities) of O. Reg. 170/03, this Report must list any requirements of the *Act*, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report (i.e., an incident of regulatory noncompliance). Additionally, this Report must specify the duration of the failure and the measures that were taken to correct the failure.

The most recent inspection by Ontario's Ministry of the Environment, Conservation and Parks was conducted between October 8 and December 16, 2024, and a final report was received on January 7, 2025. The final inspection rating was 99.39%, and one (1) incident of regulatory noncompliance was identified. Information concerning the duration of failures and the measures taken to address those failures is provided below.

- **Noncompliance item no. 1**

On occasion, erroneous entries were made in the logbook. An error was made on three occasions by one operator while unknowingly logged into a second operator's account. These errors were uncovered and the error corrected when they occurred. The electronic logbook has an audit trail which documents this. There have been no further occurrences since February 2024.

A second error occurred on several occasions when the ORO on call did not include a shift entry to indicate time on site performing ORO duties. However, despite this, all logbook entries related to equipment adjustments were made correctly. There have been no further occurrences since May 2024. These technical logbook issues are related to user logon/logoff errors and ensuring time physically on site is properly recorded in the shift log. These events did not result in a concern with the safety of the drinking water.

As operating authority, NWI will ensure Operators log entries under their own accounts, and the correct OIC's initials are documented when performing work under their name, and Operators reporting for duty (on-call/on-site), continue to be accounted for and properly

documented. No further actions are required at this time and compliance with respect to these issues will be reassessed during the next annual inspection.

There were also three (3) recommendations recorded in the Inspection Report:

1. The MECP recommends that spill containment be provided for all mixed chemicals to prevent chemicals from entering the floor drains which discharge to the decant tank system and potentially being discharged to the natural environment (Skookum Bay). This issue relates to the design of the building as its construction did not show consideration with respect to providing a spill containment solution in the chemical storage area. NWI is reviewing appropriate solutions for this recommendation and will work with and seek budgetary approval from the municipality to permanently address the issue.

2. The MECP recommends that the municipality and operating authority develop and maintain a schedule for the routine cleanout, inspection, and maintenance of the water tower. In general, NWI coordinates the inspection, maintenance and cleaning of water towers every 10 years. The program schedule was interrupted and did not occur due to the impact of the COVID pandemic. With respect to the specialty skills required for safe water tower inspections NWI will be working over the course of 2025 to secure and schedule external contractors to perform this work.

3. The MECP recommends that the municipality develop a program for inspecting and exercising valves in the water distribution system. The municipality exercises valves in trouble areas to assure that the valves are working properly. When water main breaks occur, the municipality exercises valves prior to digging, to ensure they are functional. The aged infrastructure (1950-1960) makes it difficult to exercise every valve. This is considered an industry best practice and NWI could assist the municipality in developing and implementing a formal valve exercising program.