

Annual Report

Sioux Lookout Urban Drinking Water System



2022

Prepared by **Northern Waterworks Inc.**
on behalf of the **Municipality of Sioux Lookout**



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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, 2022).

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 Municipal Office in Sioux Lookout, at the Lost Lake Seniors Drop-In Centre in Hudson 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 Sioux Lookout Urban 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.

Drinking-Water System Name:	Sioux Lookout Urban Drinking Water System
DWS Number:	220001405
DWS Category:	Large Municipal Residential
DWS Owner:	The Corporation of the Municipality of Sioux Lookout
DWS Operating Authority:	Northern Waterworks Inc.
DWS Components:	<ul style="list-style-type: none"> • Raw water pumping station • Sioux Lookout Water Treatment Plant • Sioux Lookout water distribution system, including the community standpipe and a booster station
Treatment Processes:	<ul style="list-style-type: none"> • Chemical coagulation and flocculation • Membrane ultrafiltration • Ultraviolet disinfection (primary disinfection) • Free chlorine disinfection (primary and secondary disinfection) • Fluoridation • pH adjustment

Water production begins as raw water flows by gravity from the intake structure located in Pelican Lake to an underground reservoir located at the raw water pumping station. Pumps then transfer water from the reservoir and through a transmission line to the flocculation tanks at the water treatment plant. At the treatment facility, aluminum sulphate (coagulant) and sodium hydroxide (pH/alkalinity adjustment) are injected and rapidly mixed into the raw water immediately upstream from the flocculation tanks. In the tanks water is gently mixed to promote floc formation, which will in turn facilitate filtration.

Flocculated water is directed to underground process reservoirs containing submerged membrane ultrafilters. Permeate (filtered water) is drawn through the filters using a vacuum generated by pumps, effectively filtering impurities from the water. Permeate is then passed through one of two available UV reactors for disinfection and is injected with sodium hypochlorite (disinfectant), fluorosilicic acid (fluoridation) and sodium hydroxide (pH/alkalinity adjustment) as it is directed to the chlorine contact chamber and reservoir. The disinfected water is held in the contact chamber and reservoir for a sufficient amount of time to achieve free chlorine primary disinfection.

Treated water is delivered from the reservoir to the water distribution system using pumps located at the treatment facility. The Sioux Lookout water distribution system consists of approximately 34 km of water mains, 250 water main gate valves, 172 hydrants, a community standpipe for regulating pressure and providing extra storage, and a booster station serving the northeast portion of the system. Secondary disinfection requirements in the 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.

Treatment Chemical	Application
aluminum sulphate	coagulant
fluorosilicic acid	fluoridation
sodium hydroxide	pH/alkalinity adjustment
sodium hypochlorite ¹	disinfectant, membrane filter cleans
calcium thiosuphate ¹	membrane filter cleans (dechlorination)
citric acid ¹	membrane filter cleans (pH adjustment)
hydrochloric acid ¹	membrane filter cleans (pH adjustment)

1. Cleaning and neutralizing agents used for membrane filter cleans are applied in smaller amounts. These chemicals are not injected into the process water stream.

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. This Report also summarizes those expenses related to strengthening equipment inventories and to maintenance activities undertaken by subcontracted service providers. Major expenses incurred in 2022 are summarized in Table 3.

Category	Description	Expense
Replace	PLC replacement	\$38,336
Replace	Floc tank pH probes	\$2,604
Replace	Permeate pH probes	\$2,469
Replace	Final residual chlorine probe and pH probe	\$914
Inventory	Chemical dosing pump repair kits	\$2,906
Inventory	Spare UV ballast	\$1,590
Replace	Fluoride probes	\$3,393
Replace	Level transmitter for standpipe	\$2,651
Repair	3" backflow device for filter to waste (failed inspection)	\$7,928
Replace	Bray actuators for membrane skids	\$2,143
Maintenance	Annual flow meter verifications	\$1,689
Maintenance	Annual SCADA programming	\$1,892
Replace	Replacement HMI for Trojan UV unit #2	\$3,355
Replace	Watermain Replacement – First Ave/Wellington Ave. ¹	\$2,240,670
Extension	Watermain Extension – Bigwood Lake ²	\$2,428,360

1 – The project includes watermain, roads and sanitary work. The cost listed is for the entire project which is approximately 86% complete.
 2 - The project includes watermain, roads and sanitary work. The cost listed is for the entire project which is approximately 38% complete.

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 2022, a total of 372 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.

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	51 ²	0 to 4	0 to 727	---	---
Treated Water	51 ²	absent	Absent	49 ²	0 to 1
Distribution	270	absent	absent	152	0 to 18

- 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 is considered an exceedance.
- One weekly raw and treated sample was not received at the lab in time to be tested. Two other treated water samples were not tested for HPC. Notification was provided to the MECP and no further action was required.

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, treated water fluoride residuals and free chlorine residuals associated with primary and secondary disinfection. 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. No Adverse Water Quality Incidents (AWQIs) pertaining to operational parameters occurred during the reporting period.

Table 5: Results summary for operational parameters

Parameter (Sample Type)	No. of Samples	Units	Min. Result	Max. Result	Annual Avg.	Adverse Result
Turbidity (Raw Water)	52	NTU	0.30	1.66	0.69	n/a
Turbidity (Filter 1)	Continuous	NTU	0.023	0.100	0.029	>1.0
Turbidity (Filter 2)	Continuous	NTU	0.029	0.224	0.029	>1.0
Turbidity (Treated)	365	NTU	0.048	0.146	0.064	n/a
pH (Treated)	Continuous	---	6.6	8.2	7.7	n/a
Alkalinity (Treated)	52	mg/L	20	40	25	n/a
Aluminum Residual (Treated)	53	mg/L	0.001	0.031	0.012	n/a
Fluoride Residual (Treated)	Continuous	mg/L	0.46	0.97	0.77	>1.5
FCR ¹ (Treated)	Continuous	mg/L	0.65	2.75	2.11	n/a
FCR ¹ (Distribution) ²	520+	mg/L	0.38	2.49	n/a	<0.05

1. FCR = free chlorine residual.
 2. Free chlorine residuals are tested at various locations in the distribution system. The free chlorine residual varies with water age and distribution system location, and the values in the table pertain to the minimum and maximum results collected across all locations in the calendar year.

3.4 Membrane Filtration & UV Disinfection Performance

In accordance with the *Municipal Drinking Water Licence*, the filtration process must meet certain performance criteria in order to claim removal credits for *Cryptosporidium* oocysts and *Giardia* cysts. Specifically, filter integrity must be monitored, and turbidity must be less than or equal to 0.1 NTU in at least 99% of the measurements each month. Table 6 summarizes filtrate turbidity compliance against the <0.1 NTU/99% performance criterion, and minimum and maximum values in the table correspond to the proportion of time that turbidity was less than or equal to 0.1 NTU in a calendar month in 2022. No Adverse Water Quality Incidents (AWQIs) pertaining to membrane filtration performance occurred during the reporting period.

Filter	Minimum Result	Maximum Result	Adverse Result
Filter 1	100%	100%	<99%
Filter 2	100%	100%	<99%

To achieve primary disinfection, the UV reactors at the Sioux Lookout WTP must operate within their validated operating conditions to achieve a minimum continuous pass-through UV dose of 20 mJ/cm² (based on a *Cryptosporidium* bracket reduction equivalent dose). The dose is a function of the flow through the reactors, the applied UV intensity and the UV transmittance (purity) of the filtrate. The reactors are considered to be operating “off-specification” any time when conditions are below a minimum calculated dosage, below a minimum UV transmittance or above a maximum flow rate for more than 2 minutes. Table 7 summarizes UV equipment performance against the validated operating conditions. An off-specification event is classified as an AWQI if UV equipment operates outside of the validated range for a continuous period of 10 minutes. No AWQIs pertaining to UV disinfection occurred during the reporting period.

Parameter	Number of Samples	Units	Min. Result	Max. Result	Annual Avg.	Adverse Result
Flow (Combined Filtrate)	Continuous	L/s	n/a	55.2	45.8	>65.0
UV Dosage (Reactor 1)	Continuous	mJ/cm ²	3.72 ¹	n/a	28.5	<20.0
UV Dosage (Reactor 2)	Continuous	mJ/cm ²	24.36	n/a	43.5	<20.0
UV Transmittance (Filter 1)	114	%/1cm	84.4	90.6	88.6	<82.0
UV Transmittance (Filter 2)	114	%/1cm	84.4	90.6	88.7	<82.0

1 – see notes above. The minimum dosage was 22.43 mJ/cm² when “off-specification” events are excluded

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 8. All results were below the Ontario Drinking Water Quality Standards.

Table 8: Nitrate and nitrite results

Sample Date	Nitrate		Nitrite	
	Result (mg/L)	ODWQS (mg/L)	Result (mg/L)	ODWQS (mg/L)
15-Feb-2022	0.101	10	<0.050	1
17-May-2022	0.801		<0.010	
16-Aug-2022	0.023		<0.010	
15-Nov-2022	0.082		<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 9 and Table 10, respectively. Compliance with the provincial standards for trihalomethane and haloacetic acid concentrations is determined by calculating a running annual average (RAA). The RAA for HAA for Q4 of 2022 was above the ODWQS limit and was reported in January of 2023. The information for the adverse will be reported in the 2023 Annual Report.

The HAA results were reviewed with Northwestern Health Unit. The health unit recommended monitoring the levels until the replacement membranes are installed (which is expected in Q3).

Sample Date	Result (µg/L)
15-Feb-2022	66.6
17-May-2022	73.1
16-Aug-2022	97.7
15-Nov-2022	64.3
Regulatory Average (RAA)	75.4
ODWQS (RAA)	100

Sample Date	Result (µg/L)
15-Feb-2022	75.1
17-May-2022	82.2
16-Aug-2022	126
7-Sep-2022	108
13-Sep-2022	102
15-Nov-2022	76.8
Regulatory Average (RAA)	86.5
ODWQS (RAA)	80

3.7 Lead Sampling

Based upon favourable drinking-water lead sampling results in the community, the Sioux Lookout Urban Drinking Water System previously qualified for reduced lead sampling and ultimately became exempt from sampling at plumbing locations in accordance with Schedule 15.1 (Lead) of O. Reg. 170/03. Distribution samples must now be collected every year and analyzed for pH and alkalinity. Additionally, these distribution system samples must be analyzed for lead in every third 12-month period (last completed in 2021) after the plumbing sample exemption was activated. Table 11 summarizes the results of lead sampling and related required tests.

Table 11: Distribution pH, alkalinity and lead sampling results

Sample Date	Distribution Sample Location	pH	Alkalinity (mg/L)	Lead Result ¹ (µg/L)
5-Apr-2022	Bleeder, Queen St./2nd	7.6	30	<1.0
5-Apr-2022	Bleeder, 168 Queen St.	7.6	35	<1.0
5-Apr-2022	Ethal Bleeder	7.7	30	<1.0
23-Sep-2022	Bleeder, Prince/4 th	7.6	40	<1.0
23-Sep-2022	Hydrant, Airport	7.6	40	<1.0
23-Sep-2022	Ethal Bleeder	7.5	35	<1.0

1. The Ontario Drinking Water Quality Standard for lead in drinking-water is 10 µg/L.

3.8 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 parameter sodium is sampled every five (5) years in treated water in accordance with Schedules 13 and 23 of O. Reg. 170/03. Although grab samples may be analyzed, regulatory testing for fluoride is achieved using continuous monitoring equipment at the Sioux Lookout Water Treatment Plant in accordance with Schedule 6 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	16-Aug-2022	µg/L	<0.60	6
Arsenic	16-Aug-2022	µg/L	<1.0	10
Barium	16-Aug-2022	µg/L	<10	1000
Boron	16-Aug-2022	µg/L	<50	5000
Cadmium	16-Aug-2022	µg/L	<0.10	5
Chromium	16-Aug-2022	µg/L	<1.0	50
Fluoride	25-Feb-2020	mg/L	0.688	1.5
Mercury	16-Aug-2022	µg/L	<0.10	1
Selenium	16-Aug-2022	µg/L	<1.0	50
Sodium	25-Feb-2020	mg/L	13.4	20
Uranium	16-Aug-2022	µg/L	<2.0	20

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 the organic parameters was conducted on August 16, 2022. Sampling results for organic parameters are provided in Table 13; all results were below the associated Ontario Drinking Water Quality Standards.

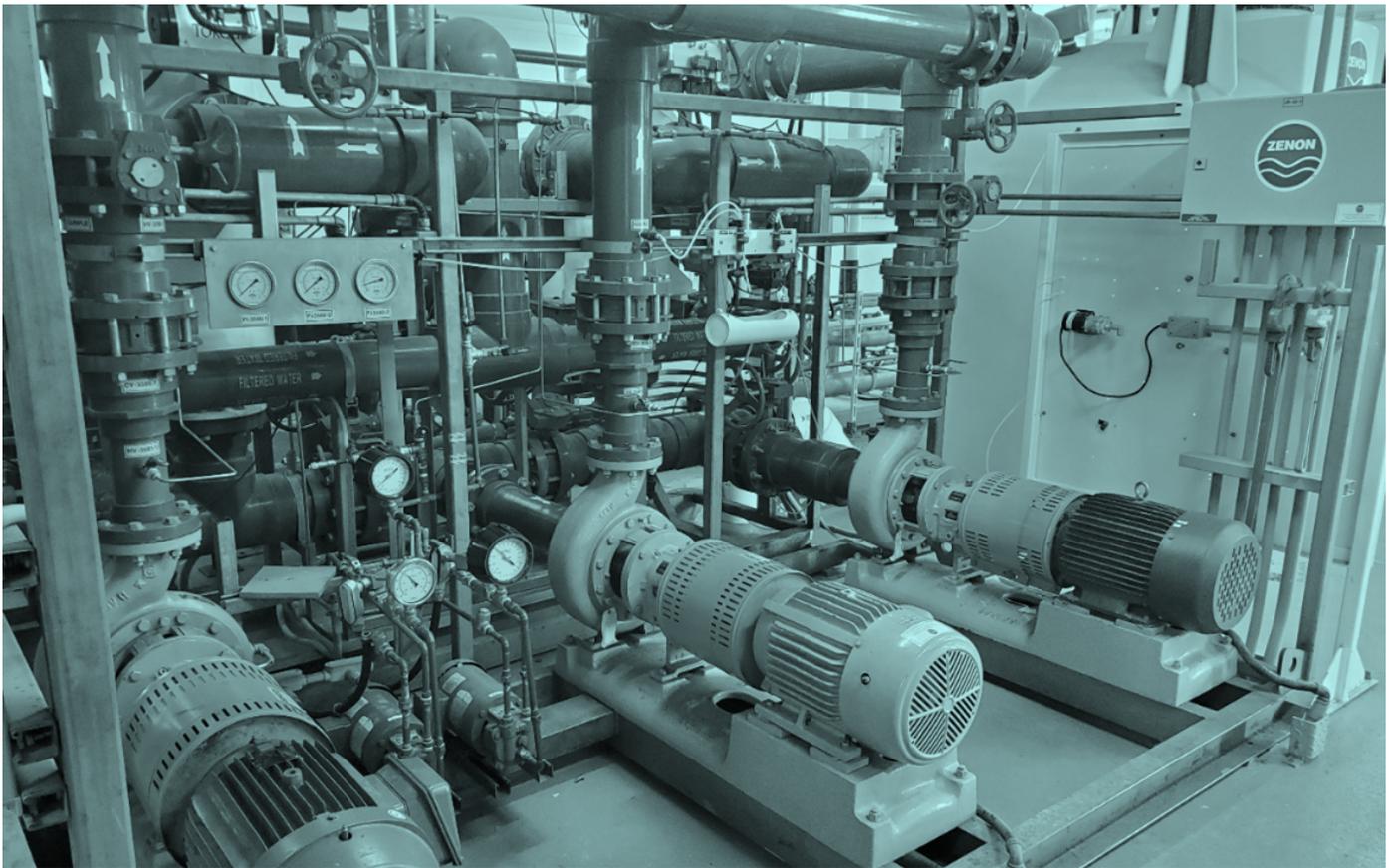


Table 13: Organic parameter sampling results

Parameter	Result (µg/L)	ODWQS (µg/L)	Parameter	Result (µg/L)	ODWQS (µg/L)
Alachlor	<0.10	5	Diuron	<1.0	150
Atrazine & Metabolites	<0.20	5	Glyphosate	<5.0	280
Azinphos-methyl	<0.10	20	Malathion	<0.10	190
Benzene	<0.50	1	MCPA	<0.20	100
Benzo(a)pyrene	<0.005	0.01	Metolachlor	<0.10	50
Bromoxynil	<0.20	5	Metribuzin	<0.10	80
Carbaryl	<0.20	90	Monochlorobenzene	<0.50	80
Carbofuran	<0.20	90	Paraquat	<1.0	10
Carbon Tetrachloride	<0.20	2	Pentachlorophenol	<0.50	60
Chlorpyrifos	<0.10	90	Phorate	<0.10	2
Diazinon	<0.10	20	Picloram	<0.20	190
Dicamba	<0.20	120	Total PCBs	<0.035	3
1,2-Dichlorobenzene	<0.50	200	Prometryne	<0.10	1
1,4-Dichlorobenzene	<0.50	5	Simazine	<0.10	10
1,2-Dichloroethane	<0.50	5	Terbufos	<0.20	1
1,1-Dichloroethylene	<0.50	14	Tetrachloroethylene	<0.50	10
Dichloromethane	<5.0	50	2,3,4,6-Tetrachlorophenol	<0.50	100
2,4-Dichlorophenol	<0.30	900	Triallate	<0.10	230
2,4-D	<0.20	100	Trichloroethylene	<0.50	5
Diclofop-methyl	<0.20	9	2,4,6-Trichlorophenol	<0.50	5
Dimethoate	<0.10	20	Trifluralin	<0.10	45
Diquat	<1.0	70	Vinyl Chloride	<0.20	1

3.9 Harmful Algae 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 two (2) suspected blooms in 2022. Testing results shown in Table 15 did not identify any microcystin.

Occurrence Date	18-Jul-2022		30-Aug-2022	
Microcystin (µg/L)	Raw (4) ¹	Treated (4) ¹	Raw (3) ¹	Treated (3) ¹
	<0.1	<0.1	<0.1	<0.1

1 – this indicates the number of weekly samples taken



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 Sioux Lookout Urban Drinking Water System operated within its rated capacity and supplied a total of 690,435 m³ of treated water. On an average day in 2022, 1,892 m³ of treated water was supplied to the community, which represents 36% of the rated capacity of the Sioux Lookout Water Treatment Plant (5,200 m³/day). The maximum daily flow in 2022 was 2,700 m³/day, which represents 52% of the rated capacity of the treatment facility. Flow monitoring results are summarized in Figure 1 and Table 14. The capacity assessments in the table compare the average and maximum daily flows to the rated capacity of the treatment facility.

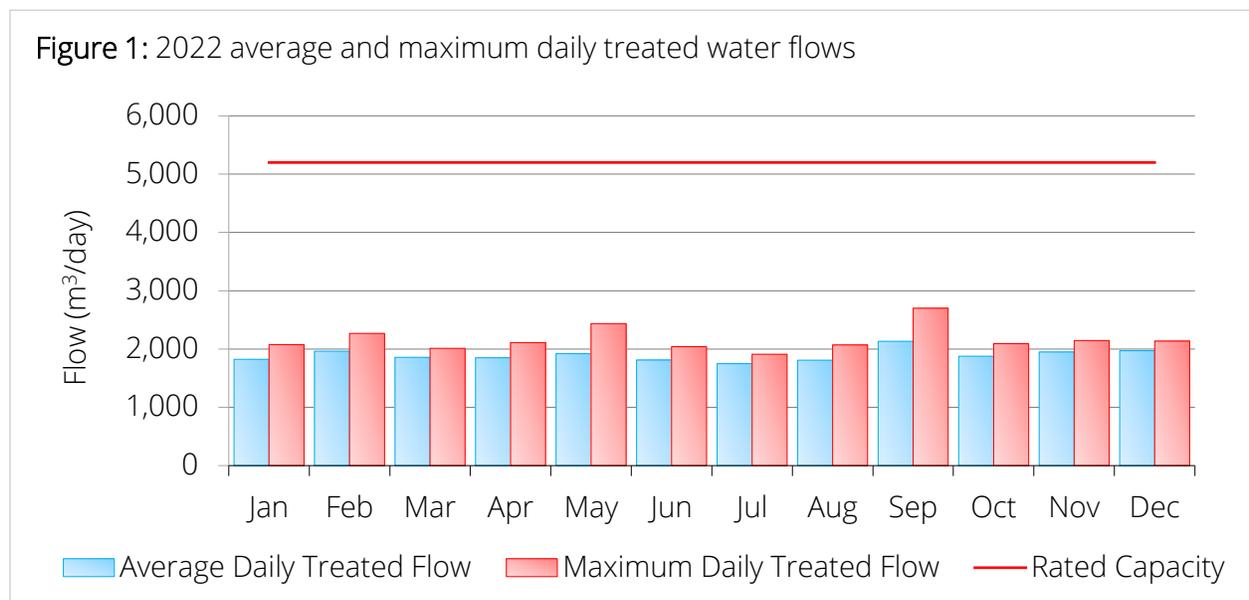


Table 14: 2022 water production summary

Month	Total Volumes (m ³)		Daily Flows (m ³ /day)		Capacity Assessments	
	Raw Water	Treated Water	Average - Treated Water	Maximum - Treated Water	Average - Treated Water	Maximum - Treated Water
Jan	65,341	56,553	1,824	2,076	35%	40%
Feb	64,337	54,958	1,963	2,268	38%	44%
Mar	67,235	57,591	1,858	2,012	36%	39%
Apr	63,225	55,505	1,850	2,111	36%	41%
May	67,500	59,507	1,920	2,436	37%	47%
Jun	62,429	54,332	1,811	2,041	35%	39%
Jul	63,531	54,214	1,749	1,911	34%	37%
Aug	65,773	56,065	1,809	2,070	35%	40%
Sep	74,656	63,980	2,133	2,700	41%	52%
Oct	67,521	58,173	1,877	2,092	36%	40%
Nov	67,590	58,458	1,949	2,146	37%	41%
Dec	70,891	61,099	1,971	2,136	38%	41%
Total	800,029	690,435	---	---	---	---
Average	66,669	57,536	1,892	---	36%	---



4.3 Recent Historical Flows

Table 15 summarizes recent historical flow monitoring results for the Sioux Lookout Urban Drinking Water System. There was a slight increase in the volumes of source water withdrawn and treated water supplied in 2022 when compared to 2021, and system flows have remained stable over the previous decade. Total annual volumes of treated water supplied in the near future may be expected to be between 600,000 m³ and 800,000 m³, which represents approximately 32% to 42% of the rated capacity of the Sioux Lookout Water Treatment Plant.

Table 15: Recent historical water production summary

Year	Total Volumes (m ³)		Daily Flows (m ³ /day)		Annual % Change	
	Raw Water	Treated Water	Average – Treated Water	Maximum – Treated Water	Raw Water	Treated Water
2011	888,430	729,341	1,998	3,008	-3.8%	+6.1%
2012	979,670	785,457	2,146	2,837	+10.3%	+7.7%
2013	846,566	697,954	1,912	3,411	-13.6%	-11.1%
2014	710,645	606,465	1,662	2,385	-16.1%	-13.1%
2015	819,063	663,813	1,819	2,495	+15.3%	+9.5%
2016	804,401	679,025	1,855	2,522	-1.8%	+2.3%
2017	782,201	680,914	1,866	3,111	-2.8%	+0.3%
2018	760,142	652,723	1,788	2,446	-2.8%	-4.1%
2019	755,581	657,334	1,801	2,517	-0.6%	+0.7%
2020	760,661	660,678	1,805	2,363	+0.7%	+0.5%
2021	759,972	656,924	1,800	2,311	-0.1%	-0.6%
2022	800,029	690,435	1,892	2,700	5.3%	5.1%

5 Compliance

5.1 Overview

Northern Waterworks Inc. and the Municipality of Sioux Lookout 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 Sioux Lookout;
- 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 recurrence of all identified incidents of adverse water quality and regulatory noncompliance.

5.2 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.

One (1) inspection by Ontario's Ministry of the Environment, Conservation and Parks was initiated during the reporting period. The inspection was initiated on September 19, 2022; the final inspection rating was 99.3%. One (1) incident of regulatory non-compliance was identified. Information concerning the incident is provided below.

- **Noncompliance item no. 1**

The owner/operating authority was not in compliance with the requirement to prepare Form 1 documents as required by their DWWP during the inspection review period. Two Form 1's were generated during the inspection review period: one for a new watermain and fire hydrant install in the area of Front, 8th and Prince Streets (form dated October 14, 2021), and a second for a new watermain in the area of Hillcrest Drive (form dated

October 26, 2022). In accordance with DWWP 236-202, Schedule B, Condition 3.3, Form 1's are to be prepared for "future" alterations, with the intent that all planning and engineering will be completed prior to the alteration. The Form 1 which is dated October 26, 2022, was prepared after the alteration.

Effective immediately, the Corporation of the Municipality of Sioux Lookout and Northern Waterworks Inc. shall ensure that all Form 1's are prepared in advance of the alteration. Compliance will be re-assessed during the next inspection.

5.3 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.

No adverse water quality incidents occurred during the reporting period.