

# Annual Report

## Hudson Drinking Water System



# 2020

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



# Contents

<b>1</b>	<b>Introduction .....</b>	<b>3</b>
1.1	Annual Reporting Requirements .....	3
1.2	Report Availability .....	3
<b>2</b>	<b>System Overview &amp; Expenses .....</b>	<b>4</b>
2.1	System Description .....	4
2.2	Water Treatment Chemicals .....	5
2.3	System Expenses .....	6
<b>3</b>	<b>Water Quality.....</b>	<b>7</b>
3.1	Overview .....	7
3.2	Microbiological Parameters .....	7
3.3	Operational Parameters .....	8
3.4	Conventional Filtration & UV Disinfection Performance.....	9
3.5	Nitrate & Nitrite .....	10
3.6	Trihalomethanes & Haloacetic Acids .....	10
3.7	Environmental Discharge Sampling .....	11
3.8	Lead Sampling.....	11
3.9	Inorganic & Organic Parameters.....	12
<b>4</b>	<b>Water Production.....</b>	<b>14</b>
4.1	Overview .....	14
4.2	Flow Monitoring Results .....	14
4.3	Recent Historical Flows.....	16
<b>5</b>	<b>Compliance .....</b>	<b>17</b>
5.1	Overview .....	17
5.2	Adverse Water Quality Incidents .....	17
5.3	Regulatory Compliance .....	18

# 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, 2020).

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, on the Municipality's website, and on NWI'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* 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 O. Reg. 170/03.

System users and members of Council are strongly encouraged to 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](mailto:compliance@nwi.ca).

## 2 System Overview & Expenses

### 2.1 System Description

The Hudson 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.

<b>Table 1:</b> System information	
Drinking-Water System Name:	Hudson Drinking Water System
DWS Number:	220005385
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"> <li>• Raw water pumping station</li> <li>• Hudson Water Treatment Plant</li> <li>• Hudson water distribution system</li> </ul>
Treatment Processes:	<ul style="list-style-type: none"> <li>• Chemical coagulation, flocculation, and clarification</li> <li>• Dual media (rapid sand) filtration</li> <li>• Ultraviolet disinfection (primary disinfection)</li> <li>• Free chlorine disinfection (secondary disinfection)</li> <li>• pH adjustment</li> </ul>

Water production begins as raw water flows by gravity from the intake structure located in Lost Lake to an underground reservoir located at the raw water pumping station. Pumps then transfer water from the reservoir and through a short transmission line to the treatment units at the water treatment plant. At the Hudson Water Treatment Plant, polyaluminum chloride (coagulant) is injected and rapidly mixed into the raw water immediately upstream from the package treatment units. Coagulated water enters two treatment units each including a three-chambered flocculation basin, a clarifier and filter.

Water is gently mixed as it passes through the flocculation basins to promote floc formation, and the optional application of polymer (flocculant) at this stage of treatment is intended to form larger floc aggregates. Process water then enters the clarifier where its velocity is reduced to allow for the separation and settling of floc. Supernatant overflows into the clarifier effluent launders and is directed to the filter; settled floc is automatically removed from 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. 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 using dedicated pumps. Sodium metabisulfite may be used as required to dechlorinate the treated water that is used clean the filters.

Filtered water then passes through one of two available UV reactors for disinfection as it is directed to the treated water storage reservoir. Prior to entering the reservoir, a super-chlorinated solution (secondary disinfection – gas chlorine) and sodium hydroxide (pH/alkalinity adjustment) are applied to the filtrate. Disinfected water is stored in the reservoir and is transferred to the Hudson water distribution system using dedicated pumps.

The Hudson water distribution system was installed exclusively in 1990 and includes approximately 6 km of water mains, 46 valves and 7 hydrants. Watermain materials consist of HDPE and PVC ranging in size from 50 to 150 mm in diameter. Secondary disinfection requirements 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 2020

Treatment Chemical	Application
polyaluminum chloride	coagulant
sodium hydroxide	pH/alkalinity adjustment
chlorine gas	secondary 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. This Report also summarizes those expenses related to strengthening equipment inventories and to maintenance activities undertaken by subcontracted service providers. Major expenses incurred in 2020 are summarized in Table 3.

**Table 3:** Major expenses incurred in 2020

Category	Description	Expense
Replace	Raw water pumping station programmable logic controller and communications upgrades	\$20,975
Replace	High lift pump variable frequency drive motor controller	\$18,387
Inventory	One (1) ultrasonic liquid level transmitter	\$4,354
Maintenance/Repair	Distribution system maintenance and repair activities <sup>1</sup>	\$2,500
Repair/Replace	Various automation and programming upgrades	\$1,865
Inventory/Replace	Two (2) pressure transmitters for filter units	\$1,571
Maintenance	Flow meter calibration verifications	\$1,429
Repair/Replace	Chemical metering pump repair kits and accessories	\$1,382
<p>1. Distribution system maintenance and repair activities included the excavation and replacement of a curb stop. The curb stop is associated with a service connection at an abandoned lot that had experienced a water leak.</p>		

### 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 2020, a total of 265 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 <sup>1</sup> (MPN/100mL)	TC Results Range <sup>1</sup> (MPN/100mL)	# of HPC Samples	HPC Results Range (CFU/mL)
Raw Water	53	0 to 5	0 to 2420	---	---
Treated Water	53	absent	absent	51	0 to >300
Treated Water (nonroutine)	2	absent	absent	---	---
Distribution	159	absent	absent	102	0 to 2
Distribution (nonroutine)	6	absent	absent	---	---

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 is considered 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 residual associated with 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. No Adverse Water Quality Incidents (AWQIs) pertaining to operational parameters occurred during the reporting period.

Parameter (Sample Type) <sup>1</sup>	No. of Samples	Units	Min. Result	Max. Result	Annual Avg.	Adverse Result
Turbidity (Raw Water)	55	NTU	0.43	3.16	1.18	n/a
Turbidity (Filter 1)	Continuous	NTU	0.01	0.30	0.03	>1.0
Turbidity (Filter 2)	Continuous	NTU	0.01	1.21 <sup>2</sup>	0.05	>1.0
Turbidity (Treated)	366	NTU	0.060	0.274	0.118	n/a
pH (Treated)	Continuous	---	7.5	8.7	8.0	n/a
Alkalinity (Treated)	160	mg/L	40	60	48	n/a
Aluminum Residual (Treated)	53	mg/L	0.004	0.056	0.022	n/a
FCR (Treated)	Continuous	mg/L	0.04	1.92	1.12	n/a
FCR (Distribution) <sup>3</sup>	460+	mg/L	0.47	1.92	n/a	<0.05

1. FCR = free chlorine residual.
2. This turbidity result pertains to a transient turbidity spike recorded on May 20, 2020, and no other results above 0.30 NTU were recorded on this day. No Adverse Water Quality Incident occurred due to the short duration of the event.
3. 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 for this reason an annual average cannot be provided. The values in the table pertain to the minimum and maximum results collected across all locations in the calendar year.



### 3.4 Conventional Filtration & UV Disinfection Performance

In accordance with the system's *Municipal Drinking Water Licence*, the conventional filtration process 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 2020. No Adverse Water Quality Incidents (AWQIs) pertaining to conventional filtration performance occurred during the reporting period.

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

To ensure primary disinfection, the UV reactors at the facility must operate within their validated operating conditions to achieve a minimum continuous pass-through UV dose of 40 mJ/cm<sup>2</sup>. 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 UV intensity, below a minimum UV transmittance or above a maximum flow rate. 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	No. of Samples	Units	Min. Result	Max. Result	Annual Avg.	Adverse Result
Flow (Combined Filtrate)	Continuous	L/s	n/a	6.48	5.05	>9.3
UV Intensity (Reactor 1)	Continuous	W/m <sup>2</sup>	0.0	n/a	90.0	<50.6
UV Intensity (Reactor 2)	Continuous	W/m <sup>2</sup>	67.2	n/a	85.0	<50.6
UV Transmittance (Filter 1)	53	%/1cm	87.3	96.0	91.3	<85.1
UV Transmittance (Filter 2)	53	%/1cm	88.0	95.7	91.2	<85.1

### 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)
18-Feb-2020	0.049	10	<0.010	1
19-May-2020	<0.020		<0.010	
11-Aug-2020	<0.020		<0.010	
17-Nov-2020	0.020		<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 2020 running annual averages for THMs and HAAs were below the respective Ontario Drinking Water Quality Standards.

**Table 9:** Total THM results

Sample Date	Result (µg/L)
18-Feb-2020	52.3
19-May-2020	54.5
11-Aug-2020	102.0
17-Nov-2020	66.8
Regulatory Average (RAA)	68.9
ODWQS (RAA)	100

**Table 10:** Total HAA results

Sample Date	Result (µg/L)
18-Feb-2020	40.5
19-May-2020	41.6
11-Aug-2020	55.6
17-Nov-2020	39.9
Regulatory Average (RAA)	44.4
ODWQS (RAA)	80

### 3.7 Environmental Discharge Sampling

The *Municipal Drinking Water Licence* for the Hudson Drinking Water System requires additional sampling associated with discharges to the natural environment. Specifically, samples must be collected from settling tank effluent on a quarterly basis and tested for the parameter total suspended solids (TSS). This effluent is discharged to a disbursement field which has been designed for the management of residues produced during the normal operation of the treatment facility. Environmental discharge sampling results are provided in Table 11.

Sample Date	25-Feb-2020	20-May-2020	11-Aug-2020	17-Nov-2020
TSS Result (mg/L)	155	8.3	<3.0	<3.0

### 3.8 Lead Sampling

In accordance with Schedule 15.1 (Lead) of O. Reg. 170/03, a *Corrosion Control Plan* was required to be developed in 2011 for the Hudson DWS following unfavourable results associated with community lead sampling. The selected corrosion control measure involves maintaining treated water pH at a value of 7.8 +/- 0.2 units using a sodium hydroxide chemical feed system. Corrosion control has been effective and data suggest that reductions in both average and 90<sup>th</sup> percentile lead concentrations are between 70% to 80%. The ODWQS sample exceedance rate has also been reduced from 16.4% to 3.6%. 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 12 summarizes the results of community lead sampling conducted in 2020. All distribution and plumbing samples were collected on October 5, 2020, and all results were below the ODWQS for lead.

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	No. of Sample Exceedances
Treated	1	1	<1.0		10	0	0
Distribution	2	2	<1.0			0	0
Plumbing <sup>1</sup>	5	10	<1.0	2.7		0	0

1. In accordance with the 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.

### 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 13. All results were below the associated Ontario Drinking Water Quality Standards.

Parameter	Most Recent Sample Date	Units	Result	ODWQS
Antimony	11-Aug-2020	µg/L	<0.60	6
Arsenic	11-Aug-2020	µg/L	<1.0	10
Barium	11-Aug-2020	µg/L	<10	1000
Boron	11-Aug-2020	µg/L	<50	5000
Cadmium	11-Aug-2020	µg/L	<0.10	5
Chromium	11-Aug-2020	µg/L	<1.0	50
Fluoride	25-Feb-2020	mg/L	<0.020	1.5
Mercury	11-Aug-2020	µg/L	<0.10	1
Selenium	11-Aug-2020	µg/L	<1.0	50
Sodium	25-Feb-2020	mg/L	9.34	20
Uranium	11-Aug-2020	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 all organic parameters was conducted on August 11, 2020, and results are provided in Table 14. All results were below the associated Ontario Drinking Water Quality Standards.

**Table 14: 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

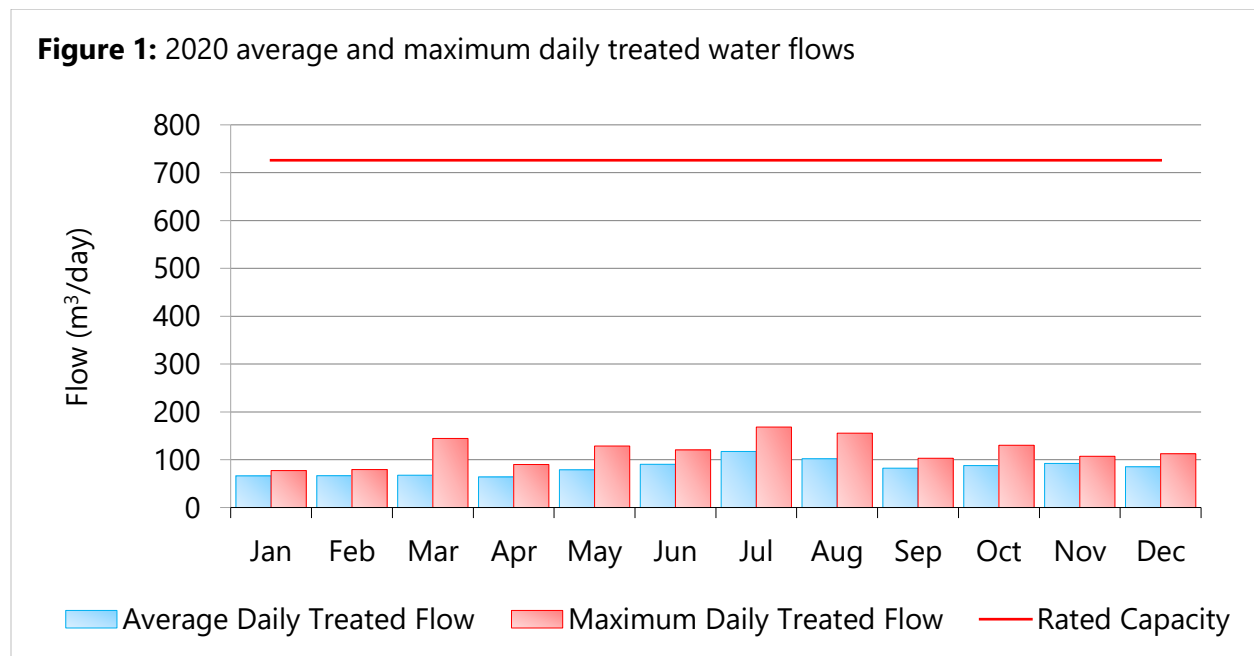
## 4 Water Production

### 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 Hudson Drinking Water System operated within its rated capacity and supplied a total of 30,521 m<sup>3</sup> of treated water. On an average day in 2020, 83 m<sup>3</sup> of treated water was supplied to the community, which represents 11% of the rated capacity of the Hudson Water Treatment Plant (726 m<sup>3</sup>/day). The maximum daily flow in 2020 was 168 m<sup>3</sup>/day, which represents 23% 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 flows to the rated capacity of the treatment facility.



**Table 15:** 2020 water production summary

Month	Total Volumes (m <sup>3</sup> )		Daily Flows (m <sup>3</sup> /day)		Capacity Assessments	
	Raw Water	Treated Water	Average - Treated	Maximum - Treated	Average - Treated	Maximum - Treated
Jan	2,171	2,049	66	77	9%	11%
Feb	2,018	1,928	66	79	9%	11%
Mar	2,233	2,094	68	144	9%	20%
Apr	2,028	1,915	64	90	9%	12%
May	2,719	2,443	79	129	11%	18%
Jun	2,889	2,711	90	120	12%	17%
Jul	3,798	3,632	117	168	16%	23%
Aug	3,299	3,159	102	155	14%	21%
Sep	2,578	2,467	82	103	11%	14%
Oct	2,883	2,717	88	130	12%	18%
Nov	3,011	2,765	92	107	13%	15%
Dec	3,016	2,640	85	112	12%	15%
Total	32,642	30,521	---	---	---	---
Average	2,720	2,543	83	---	11%	---

### 4.3 Recent Historical Flows

Table 16 summarizes recent historical flow monitoring results for the Hudson Drinking Water System. There were appreciable increases in the volumes of source water withdrawn and treated water supplied in 2020 when compared to 2019. However, this amount of variation is expected for a small system as average daily flows and annual total volumes may be disproportionately affected by events such as a significant watermain break or a heavy user. Total annual volumes of treated water supplied in the near future may be expected to be between 15,000 m<sup>3</sup> and 40,000 m<sup>3</sup>, which represents approximately 6% to 15% of the rated capacity of the Hudson Water Treatment Plant.

**Table 16:** Recent historical water production summary

Year	Total Volumes (m <sup>3</sup> )		Daily Flows (m <sup>3</sup> /day)		Annual % Change	
	Raw Water	Treated Water	Average – Treated	Maximum – Treated	Raw Water	Treated Water
2011	52,922	45,980	126	238	+23.2%	+22.7%
2012	33,668	25,760	70	236	-36.4%	-44.0%
2013	28,380	20,642	57	136	-15.7%	-19.9%
2014	32,466	24,077	66	202	+14.4%	+16.6%
2015	29,321	22,501	62	157	-9.7%	-6.5%
2016	27,326	21,186	58	119	-6.8%	-5.8%
2017	37,731	32,219	88	208	+38.1%	+52.1%
2018	28,237	26,006	71	196	-25.2%	-19.3%
2019	26,557	24,668	68	183	-6.0%	-5.1%
2020	32,642	30,521	83	168	+22.9%	+23.7%



## 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 Hudson;
- 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 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. The one (1) adverse water quality incident that occurred during the reporting period is summarized below.

- **AWQI No. 150297 (June 17, 2020)**

There was a sustained water distribution system pressure loss event originating at the Hudson Water Treatment Plant. The event was reported as an observation of improper disinfection.

Corrective actions were performed in accordance with Schedule 17 of O. Reg. 170/03 and included restoring system pressure, issuing a system-wide precautionary Boil Water Advisory, and collecting drinking-water samples. All samples tested absent for E. coli and total coliform parameters and the Boil Water Advisory was rescinded on June 22, 2020.

### **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 initiated on June 16, 2020. The final inspection rating was 100% and no incidents of regulatory noncompliance were identified.