ONTARIO CLEAN WATER AGENCY
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2024 Annual/Summary Report for the New Liskeard Drinking Water System

PREPARED BY

Ontario Clean Water Agency
on behalf of the City of Temiskaming Shores

Date: February 6, 2025
Rev: 0

Revision History

Rev. No.	Date	Prepared by:	Approved by:	Description
0	February 6, 2025	I. Bruneau, PCT	B. Logan, Senior Operations Manager	Revision 0 issued

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Background

Municipalities throughout Ontario are required to comply with Ontario Regulation 170/03 made under the Safe Drinking Water Act (SDWA) since June 2003. The Act was passed following recommendations made by Commissioner O'Conner after the Walkerton Inquiry. The Act's purpose is to protect human health through the control and regulation of drinking-water systems. O. Reg. 170/03 regulates drinking water testing, use of licensed laboratories, treatment requirements and reporting requirements.

O. Reg. 170/03 requires the owner to produce an Annual Report, under Section 11. This report must include the following:

1. Description of system and chemical(s) used
2. Summary of any adverse water quality reports and corrective actions
3. Summary of all required testing
4. Description of any major expenses incurred to install, repair or replace equipment

This Annual Report must be completed by February 28th of each year.

The regulation also requires a Summary Report which must be presented and accepted by Council by March 31st of each year for the preceding calendar year reporting period.

The report must list the requirements of the Act, its regulations, the system's Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), Certificate of Approval (if applicable), and any regulatory requirement the system failed to meet during the reporting period. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

The Safe Drinking Water Act, 2002 and the drinking water regulations can be viewed at the following website: http://www.e-laws.gov.on.ca.

To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.

1. A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and the maximum daily flows.
2. A comparison of the summary to the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water licence or a written agreement if the system is receiving all its water from another system under an agreement.

The two reports have been prepared by the Ontario Clean Water Agency (OCWA) on behalf of the Owner and presented to council as the 2024 Annual/Summary Report.

Section 11 – Annual Report

1. Introduction

Drinking-Water System Name	**New Liskeard Drinking Water System**
Drinking-Water System Number	220000344
Drinking-Water System Owner	The Corporation of the City of Temiskaming Shores
Drinking-Water System Category	Large Municipal, Residential System
Municipal Drinking Water Licence No.	218-103-3 (issued July 23, 2021)
Drinking Water Work Permit No.	218-203-4 (issued July 23, 2021)
Permit to Take Water No.	4417-AF2JAM (issued November 2, 2016)
Reporting Period	January 1, 2024 to December 31, 2024

Does your Drinking-Water System serve more than 10,000 people? No

Is your annual report available to the public at no charge on a web site on the Internet?

Yes at: https://www.temiskamingshores.ca

Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:

City of Temiskaming Shores Municipal Office
325 Farr Drive, P.O. Box 2050
Haileybury, ON P0J 1K0

Drinking Water Systems that receive drinking water from the New Liskeard Drinking Water System

The New Liskeard Drinking Water System provides drinking water to the communities of New Liskeard and Dymond within the City of Temiskaming Shores.

The Annual Report was provided to all connected Drinking Water System Owners

The Ontario Clean Water Agency prepared the 2024 Annual/Summary Report for the New Liskeard Drinking Water System and provided a copy to the system owner; the City of Temiskaming Shores.

System Users are notified that the Annual Report is available for viewing through:

- Notice on the City's Facebook page
- Notice in the local newspaper

2. Description of the New Liskeard Drinking Water System

The New Liskeard Drinking Water System is owned by The Corporation of the City of Temiskaming Shores and consists of a Class 1 water treatment system and a Class 3 water distribution subsystem. The system is a communal ground water well supply that services the communities of New Liskeard and Dymond. The Ontario Clean Water Agency is the accredited operating authority and is designated as the Overall Responsible Operator for both the water treatment and water distribution facilities.

Raw Water Supply

The New Liskeard water treatment plant, located at 301 McCamus Avenue and is supplied by two main production wells; Well No. 3 and Well No. 4.

Well No. 3 was originally constructed on December 2, 1950. It is a 54.9 m deep drilled well equipped with a magnetic flow meter and a vertical turbine pump rated at 2700 L/min. It consists of a 660 mm diameter outer casing and 406 mm inner steel casing with a 7.6 m long stainless steel (shutter style) screen. The well is housed in a secure building located directly across from the water plant.

Well No. 4 was originally constructed on August 13, 1977. It is a 54.9 m deep drilled well also equipped a magnetic flow meter and with a vertical turbine pump rated at 2700 L/min. It consists of a 762 mm diameter outer steel casing, to a depth of 27.4 m and 356 mm inner steel casing, to a depth of 46.3 m with a 7.6 m long stainless steel screen, 30.5 cm in diameter. This well is located inside the water treatment plant building.

There is approximately 23 m of low permeability clay between the ground surface and the aquifer protecting the groundwater from surface spills.

Water Treatment

The production wells feed the main water treatment plant that has a maximum rated capacity of 7865 cubic meters per day (m^3/d).

The treatment process consists of two iron and manganese removal/pressure filtration systems rated at 94.6 L/s that are filled with Filtronic's Electromedia®, a proprietary media. The configuration allows either filter to be supplied with raw water from either of the two wells and the filter effluent is continuously monitored for turbidity and free chlorine residual. The two pressurized filters are automatically backwashed, based on high filter turbidity or maximum filter runtime. Manual backwashes can also be initiated when required. The backwash wastewater is discharged into the municipal sanitary sewage system which flows into the New Liskeard Lagoon.

Prior to filtration, chlorine gas is injected into the water to aid the oxidation process and precipitate the iron and manganese. After filtration, the treated water is re-chlorinated and directed into a contact tank comprised of two clearwells.

Water Storage

The clearwells are located directly below the water treatment plant and have a total storage capacity of 271 m^3 (clearwell No. 1: 126 m^3; clearwell No. 2: 145 m^3). The baffles in the clearwell help to ensure sufficient chlorine contact time (CT). The free chlorine residual, pH, temperature, level and flow are continuously monitored to ensure adequate primary disinfection before the water enters the distribution system. The two clearwells are connected via an isolation valve to enable either clearwell to be drained for maintenance without compromising a continuous supply of water to users.

Two vertical turbine high lift pumps, equipped with variable frequency drives (VFDs) are each rated at 3272 L/min. They direct the treated water from the clear well to the Shepherdson Road Reservoir and the Dymond Reservoir. If the high lifts are off then the Dymond Reservoir is fed by the Shepherdson Road Reservoir.

The Shepherdson Road Reservoir is located at 150 Shepherdson Road in New Liskeard and has a storage capacity of 1818 m^3. Three vertical turbine pumps, all equipped with variable frequency drives (VFDs), supply water to pressure zones 2 and 3 in the system. A secondary disinfection system is in place at the reservoir using sodium hypochlorite to boost the chlorine levels leaving the reservoir if required.

The Dymond Reservoir is located at 286 Raymond Street and has a capacity of 1395 m^3. The reservoir is a single story building with an underground clearwell consisting of four interconnected baffled cells. A second building houses a sodium hypochlorite feed system, if boosting is required and four vertical turbine pumps (equipped with VFDs) two rated at 70 L/s and two rated at 28.1 L/s.

Control System

The New Liskeard Water Treatment System is controlled by a dedicated Programmable Logic Controller (PLC) and monitored through a Control System Supervisory Control and Data Acquisition (SCADA) system. All analyzing, monitoring and control module equipment information is routed through the SCADA system for operator monitoring and control. Control of equipment can be accomplished locally using the Human Machine Interface (HMI) touch screen at the New Liskeard water treatment plant or remotely via the SCADA computer located at the Haileybury water treatment plant. Operators can also access the system using their computers

and cell phones. Alarm capability and set point adjustment along with trend monitoring are also available through SCADA system controls.

Emergency Power

An emergency stand-by 300 kW diesel powered generator with a 1000L fuel tank is available at the Well No. 3 pump house to ensure continued operation of the water treatment facility during a power outage.

A 230 kW diesel generator with a 2000 L fuel tank is on-site at the Shepherdson Street Reservoir

A 260 kW standby diesel generator with two (2) 1000 L fuel tanks are available at the Dymond Reservoir in case of power failures.

Distribution System

The New Liskeard Drinking Water System is classified as a Large Municipal Residential Drinking Water System that provides water to the communities of New Liskeard and Dymond. The distribution system consists of approximately 5750 residents and 2300 service connections and is comprised of various pipe materials including cast iron, ductile iron and PVC ranging from 4 to 16 " in New Liskeard and 6 to 12 " in Dymond. Approximately 535 m of 150 mm diameter HDPE feeder main to the Dymond Reservoir was installed in May 2020. There are several isolation valves to allow for the repair and maintenance of selected sections of the distribution system, three air relief valves and five pressure reducing valves. Approximately 313 fire hydrants are connected to the system to aid in fire protection.

This distribution system is broken down into three (3) service zones. It should be noted that the feeder main from the McCamus water treatment plant to the storage reservoir on Shepherdson Road also acts as a distribution line within Zone I. The three zones are supplied with potable water in the following manner:

Zone I – Gravity Zone is supplied with water through a distribution line from the Shepherdson Road Reservoir as well as the feeder main to the reservoir from the WTP. Zone I is isolated from Zones II and III via natural topography and closed valves. Zone I also supplies water from Shepherdson Road to the Dymond Reservoir which feeds the Dymond Distribution System.

Zone II – Intermediate Zone is fed through a separate distribution line from the Shepherdson Road reservoir through pumping. The area is generally comprised of residential units as well as the recently developed (2011) Dymond Industrial Park. The interconnected distribution piping between this zone and Zone I (gravity) is isolated via closed gate valves.

Zone III – High Zone is fed through a separate distribution line from the Shepherdson Road reservoir through pumping. The area is generally comprised of limited industrial users and is the main feed for Temiskaming Hospital.

3. List of Water Treatment Chemicals Used

- Chlorine Gas – disinfection
- Sodium Hypochloride – disinfection; re-chlorination at the reservoirs

All treatment chemicals meet AWWA and NSF/ANSI standards.

4. Significant Expense Incurred in 2024

OCWA is committed to maintaining the assets of the drinking water system and sustains a program of scheduled inspection and maintenance activities using a computerized Work Management System (WMS).

Significant maintenance and capital expenses incurred in the system include the following:

- Installed a level logger on Well No. 4,
- Replaced failed pH probe,
- Replaced feed water back flow preventer on Well No. 4,
- Installed new pressure gauges for Well No. 4 singer valves,
- Replaced chlorine residual analyzer (CL-17) photo cell,
- Installed intrusion alarm at the plant,
- Replaced exhaust vents at the water treatment plant and Dymond Reservoir,
- Repaired two compressors,
- Shepherdson Road Reservoir – emergency repair of singer valve,
- Shepherdson Road Reservoir – installed new pressure transmitter in parallel with current header PT,
- Dymond Reservoir – installed new pressure transmitter in parallel with current header PT,
- Manitoulin – replaced UV sensor and solenoid,
- Distribution system – valve and hydrant replacements,
- Distribution system – four (4) emergency watermain repairs,
- Emergency chlorine gasket kits,
- Installed new cellular communication panel (BTP) and antenna for Wonderware,
- Quality and Environmental Management System (QEMS) external surveillance audit conducted by Intertek-SAI Global.

5. Details of Notices Reported & Submitted to the Spills Action Center

Based on information kept on record by OCWA, twenty-one (21) adverse water quality incidents (AWQIs) were reported to the Ministry's Spills Action Centre in 2024.

- Thirteen (13) AWQIs were reported for planned maintenance (hydrant and valve replacements). Category 2 repairs resulted in a loss of pressure and the issuance of precautionary boil water advisories.
- Four (4) AWQIs due to emergency water main breaks.
- Three (3) AWQIs due to adverse total coliforms results. One during regular weekly sampling, one after a valve replacement and one after a watermain repair.
- One (1) AWQI due to suspected sewage contamination of a service line. Sewer pipe accidently struck and broke when the service line was being replaced. There was concern that a small amount of sewage entered the service line and distribution main.

Refer to *Appendix A* for a summary of AWQIs.

6. Microbiological Testing

Table 1: Summary of Microbiological Results

Sample Type	# of Samples	*Range of E.coli* Results *(min to max)*	Range of Total Coliform Results *(min to max)*	# of HPC Samples	Range of HPC Results *(min to max)*
Raw – Well 3	53	0 to 0	0 to 0	N/A	N/A
Raw – Well 4	53	0 to 0	0 to 1	N/A	N/A
Treated	53	0 to 0	0 to 0	53	< 10 to 160
Distribution	212	0 to 0	0 to 1*	106	< 10 to 60

Maximum Acceptable Concentration (MAC) for treated and distribution samples: *E. coli* = 0 CFUs/100 mL and MAC for Total Coliforms = 0 CFUs/100 mL

"<" denotes less than the laboratory's method detection limit

Notes:

One microbiological sample is collected and tested each week from the raw and treated water supply. A total of four microbiological samples are collected and tested each week from the distribution system. At least 25% of the distribution samples must be tested for HPC bacteria.

* One (1) total coliform was detected in a distribution sample collected at No. 783498 Gray Road (Gray Road sewage pumping station). The sample was collected on July 22, 2024 at 11:05 AM. Free chlorine residual = 1.05 mg/L. AWQI No. 165735.

7. Operational Testing

Table 2: Summary of Raw Water Turbidity Results

Parameter	# of Samples	Range of Results *(min to max)*	Unit of Measure
Turbidity – Well 3	52	0.14 to 2.48	NTU
Turbidity – Well 4	51	0.16 to 1.78	NTU

Notes:

Turbidity samples are required once every month.

Table 3: Continuous Monitoring in the Treatment Process

Parameter	# of Samples	Range of Results *(min to max)*	Unit of Measure	Standard
Free Chlorine Residual	8760	0.85 to 2.15	NTU	CT Note 2

Notes:

1. For continuous monitors 8760 is used as the number of samples.
2. CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the New Liskeard water plant if the free chlorine residual level drops below 0.40 mg/L to ensure primary disinfection is achieved.

Table 4: Summary of Chlorine Residuals in the Distribution System

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure	Standard
Free Chlorine Residual	368	0.45 to 1.68	mg/L	$\geq$ 0.05

Note: A total of seven operational checks for chlorine residual in the distribution system are collected each week. Four (4) samples are tested one day and three (3) on a second day. The sample sets are collected at least 48-hours apart and samples collected on the same day are from different locations.

Refer to *Appendix B* for a monthly summary of the above microbiological and operational test results.

8. Chemical Testing

Table 5: Summary of Nitrate & Nitrite Data from the Water Treatment Plant

Date of Sample	Nitrate Result	Nitrite Result	Unit of Measure	Exceedance
January 8	< 0.05	< 0.05	mg/L	No
April 8	< 0.05	< 0.05	mg/L	No
July 8	< 0.05	< 0.05	mg/L	No
October 7	< 0.1	< 0.01	mg/L	No

Maximum Allowable Concentration (MAC) for Nitrate = 10 mg/L and for Nitrite = 1 mg/L

Table 6: Summary of Total Trihalomethane Results from the Distribution System

Date of Sample	THM Result	Unit of Measure	Running Average	Exceedance
January 8	38.7	ug/L	Q1 = 43.4	No
April 8	29.7	ug/L	Q2 = 40.4	No
July 8	63.2	ug/L	Q3 = 55.2	No
October 7	57.6	ug/L	Q4 = 47.3	No

Maximum Allowable Concentration (MAC) for Total Trihalomethanes = 100 ug/L (Four Quarter Running Average)

Table 7: Summary of Total Haloacetic Acid Results from the Distribution System

Date of Sample	Result Value	Unit of Measure	Running Average	Exceedance
January 8	20	ug/L	Q1 = 28.8	No
April 8	18	ug/L	Q2 = 25.5	No
July 8	39	ug/L	Q3 = 29.0	No
October 7	41	ug/L	Q4 = 29.5	No

Maximum Allowable Concentration (MAC) for Total Haloacetic Acid = 80 ug/L (Four Quarter Running Average)

Table 8: Summary of Lead Results under Schedule 15.1 (from the distribution system)

Date of Sample	# of Samples	Field pH *(min to max)*	Field Temperature (°C) *(min to max)*	Alkalinity (mg/L) *(min to max)*	Lead (ug/L) *(min to max)*
March 20	3	7.01 to 7.72	7.5 to 8.5	219 to 229	< 0.1 to < 0.1
September 9	3	7.53 to 7.55	12.5 to 14.1	219 to 223	< 0.1 to 0.2

Maximum Allowable Concentration (MAC) for Lead -10 ug/L

The system is required to test for total alkalinity and pH in three distribution samples collected during the period of December 15 to April 15 (winter period) and three distribution sample during the period of June 15 to October 15 (summer period). This testing is required in every 12-month period with lead testing in every third 12-month period. Lead testing was performed in 2024.

Next lead sampling is scheduled for 2027.

Table 9: Most Recent Schedule 23 Inorganic Results from the Water Treatment Plant

Parameter	Result Value	Unit of Measure	MAC	MAC Exceedance	½ MAC Exceedance
Antimony	< 0.5	ug/L	6	No	No
Arsenic	< 1.0	ug/L	10	No	No
Barium	104	ug/L	1000	No	No
Boron	97	ug/L	5000	No	No
Cadmium	< 0.1	ug/L	5	No	No
Chromium	2	ug/L	50	No	No
Mercury	< 0.1	ug/L	1	No	No
Selenium	0.5	ug/L	50	No	No
Uranium	< 1	ug/L	20	No	No

Note: Sample required every 36 months (sample date = *October 16, 2023).* Next sampling scheduled for October 2026.

Table 10: Most Recent Schedule 24 Organic Results from the Water Treatment Plant

Parameter	Result Value	Unit of Measure	Standard	MAC Exceedance	½ MAC Exceedance
Alachlor	< 0.308	ug/L	5	No	No

Parameter	Result Value	Unit of Measure	Standard	MAC Exceedance	½ MAC Exceedance
Atrazine + N-dealkylated metobolites	< 0.5	ug/L	5	No	No
Azinphos-methyl	< 0.308	ug/L	20	No	No
Benzene	< 0.1	ug/L	1	No	No
Benzo(a)pyrene	< 0.01	ug/L	0.01	No	No
Bromoxynil	< 0.0971	ug/L	5	No	No
Carbaryl	< 3	ug/L	90	No	No
Carbofuran	< 4	ug/L	90	No	No
Carbon Tetrachloride	< 0.2	ug/L	2	No	No
Chlorpyrifos	< 0.231	ug/L	90	No	No
Diazinon	< 0.231	ug/L	20	No	No
Dicamba	< 0.085	ug/L	120	No	No
1,2-Dichlorobenzene	< 0.2	ug/L	200	No	No
1,4-Dichlorobenzene	< 0.3	ug/L	5	No	No
1,2-Dichloroethane	< 0.2	ug/L	5	No	No
1,1-Dichloroethylene (vinylidene chloride)	< 0.3	ug/L	14	No	No
Dichloromethane	< 1	ug/L	50	No	No
2-4 Dichlorophenol	< 0.2	ug/L	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	< 0.364	ug/L	100	No	No
Diclofop-methyl	< 0.121	ug/L	9	No	No
Dimethoate	< 0.231	ug/L	20	No	No
Diquat	< 0.2	ug/L	70	No	No
Diuron	< 10	ug/L	150	No	No
Glyphosate	< 20	ug/L	280	No	No
Malathion	< 0.231	ug/L	190	No	No
Metolachlor	< 0.154	ug/L	50	No	No

Parameter	Result Value	Unit of Measure	Standard	MAC Exceedance	½ MAC Exceedance
Metribuzin	< 0.154	ug/L	80	No	No
Monochlorobenzene	< 0.5	ug/L	80	No	No
Paraquat	1.3	ug/L	10	No	No
Polychlorinated Biphenyls (PCBs)	< 0.08	ug/L	3	No	No
Pentachlorophenol	< 0.3	ug/L	60	No	No
Phorate	< 0.154	ug/L	2	No	No
Picloram	< 0.085	ug/L	190	No	No
Prometryne	< 0.077	ug/L	1	No	No
Simazine	< 0.231	ug/L	10	No	No
Terbufos	< 0.154	ug/L	1	No	No
Tetrachloroethylene	< 0.3	ug/L	10	No	No
2,3,4,6-Tetrachlorophenol	< 0.3	ug/L	100	No	No
Triallate	< 0.154	ug/L	230	No	No
Trichloroethylene	< 0.2	ug/L	5	No	No
2,4,6-Trichlorophenol	< 0.2	ug/L	5	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA)	< 6.07	ug/L	100	No	No
Trifluralin	< 0.154	ug/L	45	No	No
Vinyl Chloride	< 0.1	ug/L	1	No	No

Note: Sample required every 36 months (sample date = *October 16, 2023.* Next sampling scheduled for October 2026.

Inorganic or Organic Parameter(s) that Exceeded Half the Standard Prescribed in Schedule 2 of Ontario Drinking Water Quality Standards

No inorganic or organic parameter(s) listed in Schedule 23 and 24 of Ontario Regulation 170/03 (parameters listed in Table 9 and Table 10 of this report) exceeded half the standard found in Schedule 2 of the Ontario Drinking Water Standard (O. Reg.169/03) during the reporting period.

Table 11: Most Recent Sodium Data (from the Water Treatment Plant)

Date of Sample	# of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 16, 2023	1	17	mg/L	20	No

Note: Sample required every 60 months. Next sampling scheduled for October 2028.

The aesthetic objective for sodium in drinking water is 200 mg/L at which it can be detected by a salty taste. It is required that the local Medical Officer of Health be notified when the concentration exceeds 20 mg/L so that persons on sodium restricted diets can be notified by their physicians.

Table 12: Most Recent Fluoride Data Sampled at the Water Treatment Plant

Date of Sample	# of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 16, 2023	1	0.70	mg/L	1.5	No

Note: Sample required every 60 months. Next sampling scheduled for October 2028.

9. Additional Testing Performed in Accordance with a Legal Instrument

Section 2.0 to Schedule D of Municipal Drinking Water Licence #218-103-3 issued on July 23, 2021 provides relief from regulatory requirements Schedule 1-2(2) 4i and 16-3(1) 4 which states that:

Notwithstanding the provisions of Ontario Reg. 170/03, the Owner is not required to comply with the following:

- The free chlorine residual at 399 Radley Hill Road is never less than 0.05 mg/L.

- A result indicating that the free chlorine residual is less than 0.05 mg/L in a sample of drinking water at 399 Radley Hill Road is an adverse result of a drinking water test for the purpose of section 18 of the Ontario Safe Drinking Water Act (SDWA, 2002) if a report under subsection 18(1) of the SDWA has not been made in respect of free chlorine residual in the preceding 24 hours.

  In exchange, the following conditions apply:

- An ultraviolet light (UV) point of entry treatment unit owned or leased by the owner of the system is connected to the plumbing of every building and other structure that is served by the drinking water system at 399 Radley Hill Road.

- The UV unit(s) is validated through biodosimetry testing for a dose of 40 mJ/cm^2.

- In the event that the UV unit malfunctions, loses power or ceases to provide the appropriate level of disinfection:

  - The UV unit has a feature that ensures that no water is directed to users of water treated by the unit and a certified operator takes appropriate action at the location where the unit is installed if such an event occurs before water is again directed to users of water treated by the unit, or

  - The UV unit has a feature that causes an alarm to sound immediately at the building or structure where the point of entry treatment unit is installed and a location where a certified operator is present, if a certified operator is not always present at the building or structure where the point of entry treatment unit is installed. If an alarm sounds, a certified operator must take appropriate action as soon as possible.

Table 13: Summary of UV Dosage

UV System	# of Samples	*Range of* Results *(min to max)*	Unit of Measure	Standard
UV Unit	189	68.9 to 334.6	mJ/cm^2	40

Schedule 22 – Summary Reports for Municipalities

10. Requirements the System Failed to Meet

The following table lists the requirements of the Safe Drinking Water Act (2002), the drinking water regulations, the Permit to Take Water (PTTW), the Municipal Drinking Water Licence (MDWL), the Drinking Water Works Permit (DWWP), and any other orders applicable to the system that were not met at any time during the reporting period.

According to information kept on record by OCWA, the New Liskeard Drinking Water System failed to meet the following requirements which were identified in the MECP inspection report March 27, 2024.

Table 14: Requirements the System Failed to Meet

Legislation	Requirement(s) not Met	Duration	Corrective Action(s)
O. Regulation 128/04	Logbooks were not properly maintained by City operators. They are not recording the beginning of each operating shift.	Issue addressed through training on April 26, 2024.	City provided training to their operational staff and provided training records to the MECP. Five pages of the Environmental Superintendent's diary indicating the time of day for the beginning and ending of each shift was provided to the MECP.
O. Regulation 170/03, Municipal Drinking Water License (MDWL) No. 218-103, Drinking Water Works Permit (DWWP) No. 218-203	All parts of the drinking water system were not disinfected as required under the DWWP. Disinfection procedures required under AWWA Std. C654 were not properly carried out for the replacement of Well No. 4 pump.	November 22 and 23, 2023	The City developed an SOP which will be provided to the contractors and/or Engineers as part of the Scope of the Work for future projects. An OCWA certified operator will be on-site to oversee, monitor and ensure proper documentation of the project. The Owner will have meetings with OCWA (the ORO) and the contractor and/or Engineer prior to the start of the work and after the work is complete to ensure compliance with the procedures.

Also noted in this section, twenty-one (21) adverse water quality incidents were reported to the Ministry's Spills Action Center during the reporting period. Refer to *Section 5* - Details of Notices Reported & Submitted to the Spills Action Center on page 7 of this report for details.

11. Summary of Quantities and Flow Rates

11.1 Flow Monitoring

Municipal Drinking Water Licence (MDWL) No. 218-103 requires the owner to install a sufficient number of flow measuring devices to permit the continuous measurement and recording of:

- the flow rate and daily volume of water conveyed from the treatment system to the distribution system,
- the flow rate and daily volume of water conveyed into the treatment system.

The systems' Permit to Take Water (PTTW) No. 4417-AF2JAM requires that on each day water is taken from the source, the date, the volume of water taken on that date and the rate at which it was taken be recorded.

The New Liskeard drinking water system has two flow meters to monitor the raw water from each well entering the treatment plant and one to monitor the treated water entering the distribution system. These flow metering devices were calibrated in accordance to manufacturers' specifications on an annual basis and are operating as required.

11.2 Rated Capacity & Flow Rates

The system's PTTW No. 4417-AF2JAM allows the plant to withdraw a maximum volume of 4000 cubic meters from each well each day and a total combined volume of 8000 cubic meters each day. A review of the raw water flow data indicates that the system did not exceed these allowable limits. The raw water flow data indicates that the total daily volume of water taken from each well never exceeded the allowable limits. The maximum water taking from Well No. 3 was 2921 m^3, the maximum taking from Well No. 4 was 3052 m^3 and the combined maximum was 5670 m^3.

The Permit also allows a maximum flow rate of 4500 L/minute from each well. Well No. 3 and Well No. 4 operated within their allowable flow rates having a maximum flow rate of 3740 and 3052 L/minute respectively.

Condition 1.0 (1.1) to Schedule C of MDWL No. 218-103 states that the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system not exceed a maximum flow of 7865 m^3 on any calendar day. The New Liskeard DWS complied with this limit having a recorded maximum volume of 5386 m3/day, which is 68% of the rated capacity.

The following tables (Table 14, Table 15, Table 16 and Table 17) indicate the quantities and flow rates of water taken and produced during the reporting period, including monthly average flows,

maximum daily flows and total monthly volumes. A comparison of the water data is made to the rated capacity and flow rates specified in the system's Permit to Take Water and the Municipal Drinking Water License.

Figure 1 is a comparison of the maximum allowed water taking identified in the system's PTTW to the average and maximum raw water flows entering the water treatment plant.

Figure 2 is a comparison of the maximum rate specified in the system's MDWL to the average and maximum flows entering the treatment system.

Table 18 lists historical maximum raw and treated flows from 2018 to 2024.

Table 15: 2024 – Monthly Summary of Water Takings from the Source (Well No. 3)

Regulated by Permit to Take Water (PTTW) #4417-AF2JAM, issued November 2, 2016

Well No. 3	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Volume (m^3)	61589	64521	68391	67204	66204	63242	70147	64908	50488	51901	50656	52282	731533
Average Volume (m^3/d)	1987	2225	2206	2240	2136	2108	2263	2094	1683	1674	1689	1686	1999
Maximum Volume (m^3/d)	2678	2765	2852	2770	2650	2528	2854	2921	2285	2298	2306	2591	2921
PTTW - Maximum Allowable Volume (m^3/day)	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Maximum Flow Rate (L/min)	3740	3527	3689	3219	3254	3252	3231	3676	3561	3556	3609	3700	3740
PTTW - Maximum Allowable Flow Rate (L/min)	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500

Table 16: 2024 – Monthly Summary of Water Takings from the Source (Well No. 4)

Regulated by Permit to Take Water (PTTW) #4417-AF2JAM, issued November 2, 2016

Well No. 4	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Volume (m^3)	59260	60180	65895	60157	62839	62035	66536	64459	54621	52151	48953	50005	707090
Average Volume (m^3/d)	1912	2075	2126	2005	2027	2068	2146	2079	1821	1682	1632	1613	1932
Maximum Volume (m^3/d)	2715	2872	2638	2545	2551	2931	3052	2660	2323	2217	1964	2460	3052
PTTW - Maximum Allowable Volume (m^3/day)	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Maximum Flow Rate (L/min)	2891	2812	2725	2891	2908	2896	2896	2902	2900	2894	2880	2860	2908
PTTW - Maximum Allowable Flow Rate (L/min)	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500

Table 17: 2024 – Monthly Summary of Combined Water Takings from the Source (Wells 3 & 4)

Combined (Well 3 & 4)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Volume (m^3)	120849	124701	134286	127360	129043	125277	136683	129367	105110	104052	99609	102286	1438623
Average Volume (m^3/d)	3898	4300	4332	4245	4163	4176	4409	4173	3504	3357	3320	3300	3931
Maximum Volume (m^3/d)	4363	4656	4652	4613	5025	5246	5670	5388	3927	3949	4039	5051	5670
PTTW - Maximum Allowable Flow Rate (L/min)	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000

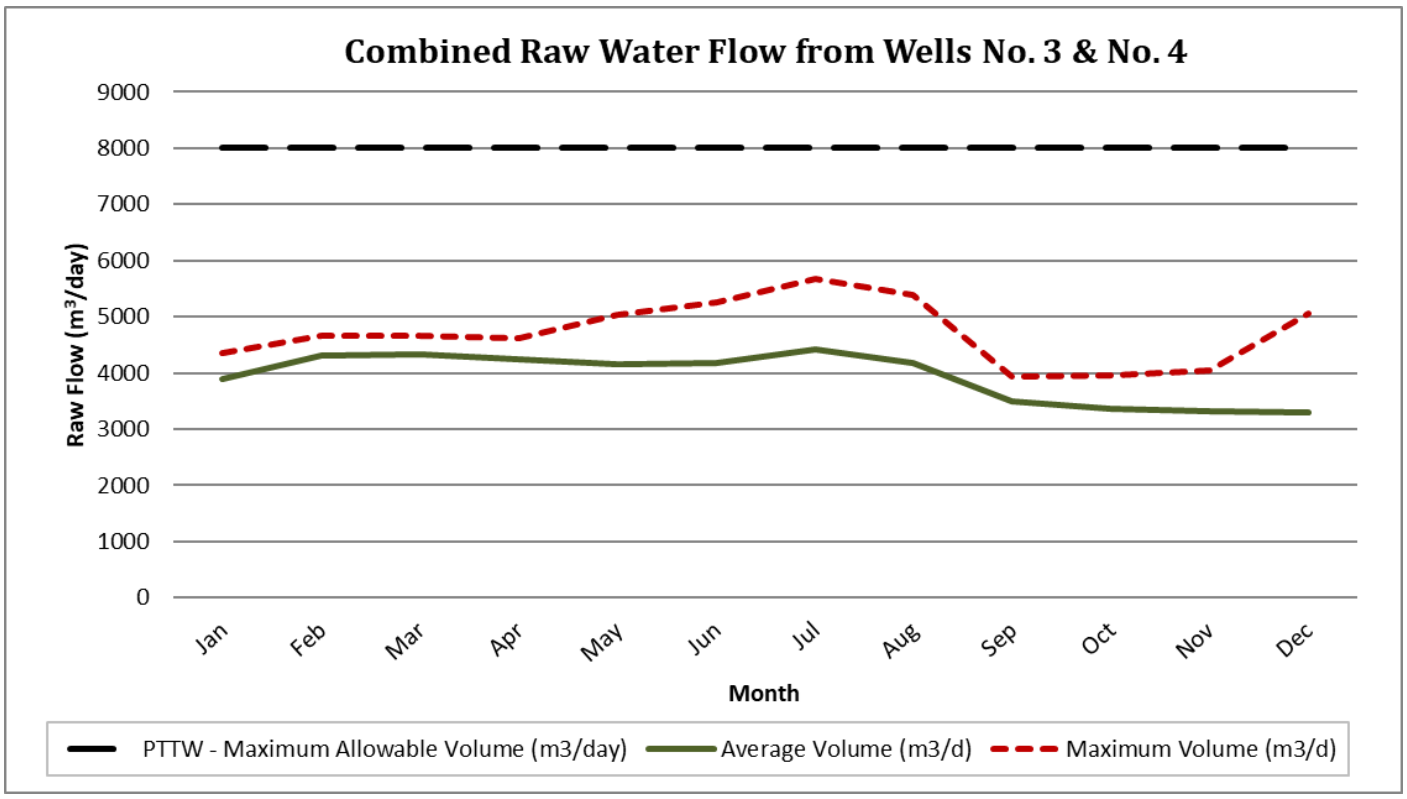

Figure 1: Comparison of Raw Water Flows to the Maximum Allowable Water Taking

Table 18: 2024 – Monthly Summary of Treated Water Supplied to the Distribution System

Regulated by Municipal Drinking Water Licence (MDWL) #218-103-3, issued July 23, 2021

Treatment Plant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total Volume (m^3)	114922	117748	126056	119419	120136	116779	127416	120588	97293	96610	92572	95239	1344780
Average Volume (m^3/d)	3707	4060	4066	3981	3875	3893	4110	3890	3243	3116	3086	3072	3675
Maximum Volume (m^3/d)	4134	4367	4313	4366	4663	4962	5386	5102	3642	3687	3782	4688	5386
MDWL - Rated Capacity (m^3/day)	7865	7865	7865	7865	7865	7865	7865	7865	7865	7865	7865	7865	7865

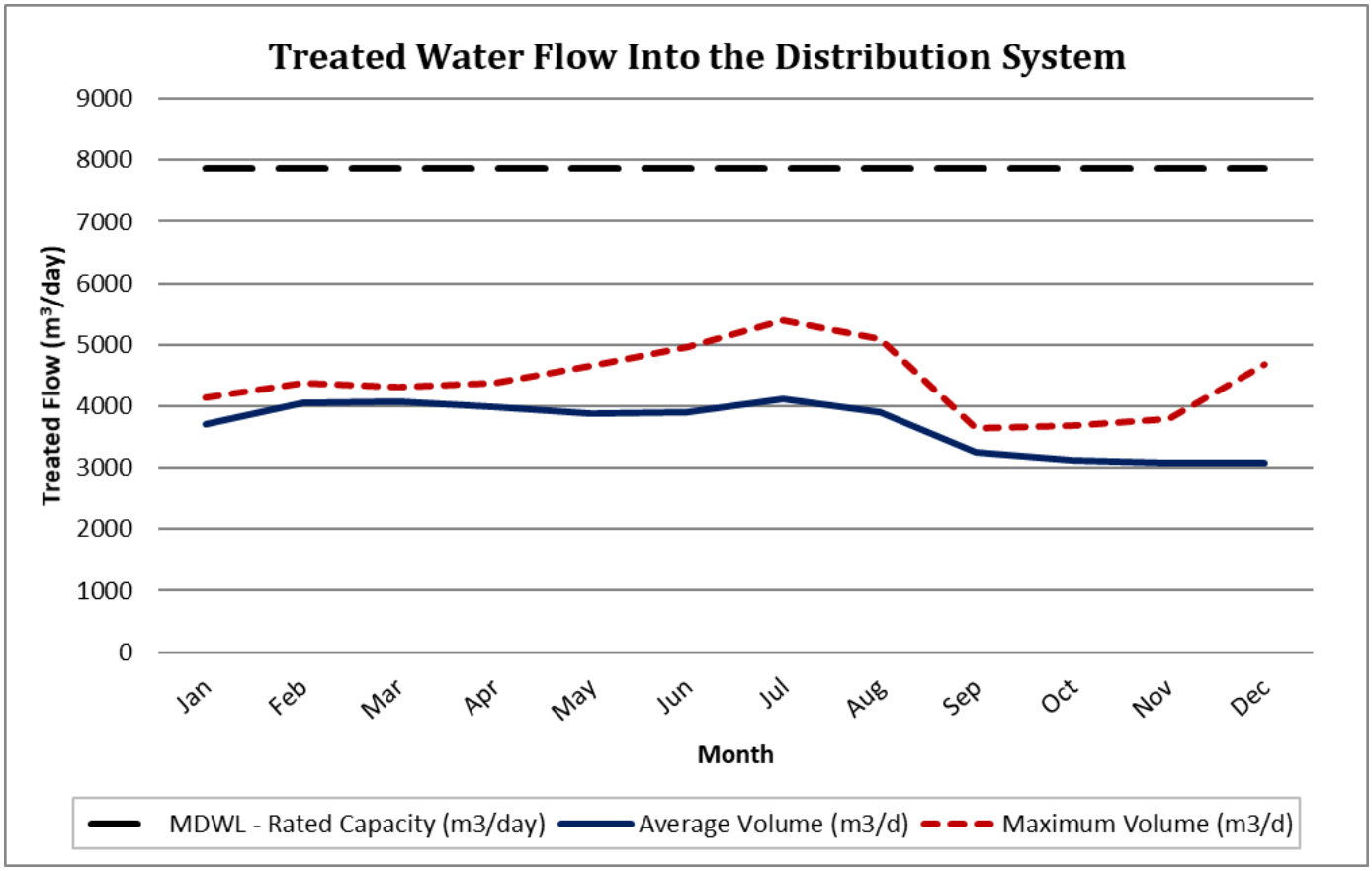

Figure 2: Comparison of Treated Flows to the Maximum Rated Capacity

11.3 System Performance

The following information is provided to enable the Owner to assess the capability of the system to meet existing and future water usage needs:

Rated Capacity of the Plant (MDWL)	7865 m^3/day	
Average Daily Flow for 2024	3675 m^3/day	47% of the rated capacity
Maximum Daily Flow for 2024	5386 m^3/day	68 % of the rated capacity
Total Treated Water Produced in 2024	1,344,780 m^3	

Table 19: 2024 – Historical Maximum Flows (2018 to 2024)

Year	Maximum Raw Flow (m^3/d)	Max. Day % of PTTW Allowable (8000 m3/d)	Maximum Treated Flow (m^3/d)	Max. Day % of MDWL Capacity (7865 m^3/d)
2024	5670	71%	5386	68%
2023	5296	66%	5073	65%
2022	5211	65%	4984	63%
2021	4885	61%	4708	60%
2020	5921	74%	6326	80%
2019	5464	68%	6112	78%
2018	6163	77%	5993	76%

Conclusion

The water quality data collected in 2024 demonstrates that the New Liskeard drinking water system provided high quality drinking water to its users.

The system was able to operate in accordance with the terms and conditions of the Permit to Take Water and in accordance with the rated capacity of the Municipal Drinking Water Licence while meeting the community's demand for water use.

Any non-compliances that were identified during the reporting period were addressed promptly and effectively. All Adverse Water Quality Incidents and events that occurred were reported to the Local Health Unit and the Ministry's Spills Action Center as required. All corrective actions were completed and the incidents were resolved as soon as possible.

APPENDIX A

Summary of Adverse Water Quality Incidents (AWQIs)

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #1: Emergency Repair/ Loss of Pressure / BWA

AWQI No.	164307
Date	January 8, 2024
Details	A loss of pressure occurred to 3 homes at the end of Robin Street during a category 1 watermain repair on Dawson Point Road. The homes were located at a higher elevation than the repair which resulted in the lost pressure. The local Health Unit was notified and issued a precautionary boil water advisory (BWA) for the 3 homes. The Health Unit advised that one sample be collected at a hydrant located across the street from the last house which is a dead end (264 Robin Street).
Corrective Actions	After the watermain repair was complete, the pressure was restored and the area was flushed until an acceptable chlorine residual was achieved (0.72 mg/L). Two bacteriological samples were collected 24 hours apart on January 8th and 9th at the hydrant. Sample results indicated zero total coliforms and *E.coli*. The BWA was lifted on January 11th at 2:20 PM.

Incident #2: Planned Service Line Replacement with Potential Sewage Contamination

AWQI No.	164453
Date	February 7, 2024
Details	The City of Temiskaming Shores was replacing a copper water service at 64 Armstrong Street in New Liskeard (OK Tire) when a sewage pipe was accidently struck and broke. There was concern that a small amount of sewage entered the service line and distribution main. The area affected included the following businesses: OK Tire, Rene's Garage, Scotia Bank, and Temiskaming Vision Care.
Corrective Actions	The local Health Unit issued a BWA for the affected businesses. A Disinfection and Sampling was developed with the local MOH and MECP.

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #2: Planned Service Line Replacement with Potential Sewage Contamination

	Disinfection: follow disinfection requirements for a Category 2 watermain break. Sampling: 2 sets of 4 bacteriological and chlorine residual samples to be collected 24 hours apart at all 4 businesses. Additional chlorine residual sampling to be done on the third day and prior to lifting the BWA. Samples were collected on February 7th and 8th and all results were acceptable having no total coliforms or *E. coli*. Free chlorine residuals were tested on February, 7th, 8th, 9th and 12th and results ranged from 0.51 mg/L to 1.75 mg/L. The BWA was lifted on February 12, 2024 at 12:20 PM.

Incident #3: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	164872
Date	April 24, 2024
Details	A fire hydrant replacement on a dead end resulted in a loss of pressure to 1 business at 200 Riverside Drive. The local Health Unit was notified on and issued a precautionary BWA for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable chlorine residual was achieved. Two sets of 3 bacteriological samples were collected (2 upstream and 1 near the site of the work) 24 hours apart on April 25th and 26th. All results were acceptable having zero total coliforms and *E.coli*. The BWA was lifted on April 29, 2024 at 8:45 AM .

Incident #4: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	164946
Date	May 14, 2024

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #4: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

Details	A planned valve replacement resulted in a loss of pressure to 30 homes on Pine Street West (from Beavis Terrance to Heard Street) and on Heard Street (from Pine Street West. to Haliburton West). The local Health Unit issued a precautionary BWA for the affected residences.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable chlorine residual was achieved (0.89 mg/L). Two sets of 3 bacteriological samples were collected (1 upstream, 1 downstream and 1 near the site of the work) on May 14th and 15th. All results were acceptable having zero total coliforms and *E.coli.* The BWA was lifted on May 21, 2024 at 9:15 AM .

Incident #5: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	165433
Date	July 4, 2024
Details	A planned valve replacement resulted in a loss of pressure to 25 homes on Helmer Pedersen Drive (from Shepherdson Rd. to Nixon Cres.). The local Health Unit issued a precautionary BWA for the affected homes.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable chlorine residual was achieved (1.03 mg/L). Two sets of 3 bacteriological samples were collected (1 upstream, 1 downstream and 1 near the site of the work) on July 4th and 5th. All results were acceptable having zero total coliforms and *E.coli*. The BWA was lifted on July 8, 2024 at 10:05 AM.

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #6: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	165636
Date	July 17, 2024
Details	A planned valve replacement on Farah Avenue resulted in a loss of pressure to 20 homes. The local Health Unit issued a precautionary BWA for the affected residences.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (0.63 mg/L). Two sets of 3 bacteriological samples were to be collected (upstream, downstream and near the site of the work) 24 to 48 hours apart on July 19th and 20th. The upstream sample collected on July 19th at 10:23 AM from 150 Shepherdson Road had a result of one (1) total coliform (AWQI No. 165677). Two sets of four (4) re-samples were collected on July 20th and 21st in response to this adverse result and to lift the BWA. Sample results were acceptable having zero total coliforms and *E.coli.* The BWA was lifted on July 23rd at approximately 10:45 AM.

Incident #7: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	165650
Date	July 18, 2024
Details	A planned valve replacement resulted in a loss of pressure to approximately 20 commercial buildings on Hwy 11 and Brazeau Blvd. in the Dymond Industrial Park. The local Health Unit issued a precautionary BWA for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable chlorine residual was achieved (0.75 mg/L).

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #7: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

	Two sets of 3 bacteriological samples were collected (1 upstream, 1 downstream and 1 near the site of the work) 24 hours apart on July 22nd and 23rd. All results were acceptable having zero total coliforms and *E.coli.* The Health Unit provided the BWA lifted notices on July 26th, 2024 at 3:00 PM.

Incident #8: Total Coliforms

AWQI No.	165677
Date	July 20, 2024
Details	One (1) total coliform was detected in a distribution sample collected at 150 Shepherdson Road. The sample was collected on July 19th at 10:23 AM (free chlorine residual = 1.07 mg/L). The sample was collected after valve replacement (AWQI 165636).
Corrective Actions	Re-samples (upstream, downstream and the site of the adverse result) were collected on July 20th and 21st and results were acceptable have zero total coliforms and *E. coli.* The BWA was lifted on July 23rd at approximately 10:45 AM. The incident was resolved with the submission of the Notice of Issue Resolution report and resample results to SAC, the local Health Unit, the local MECP and Owner on July 23, 2024.

Incident #9: Total Coliforms

AWQI No.	165735
Date	July 22, 2024
Details	One (1) total coliform was detected in a distribution sample collected at No. 783498 Gray Road (Gray Rd. SPS). The sample was collected on July 22nd at 11:05 AM (free chlorine residual = 1.05 mg/L).

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #9: Total Coliforms

Corrective Actions	Re-samples (upstream, downstream and the site of the adverse result) were collected on July 24th. All results were acceptable having zero total coliforms and *E.coli*. The incident was resolved with the submission of the Notice of Issue Resolution report and resample results to SAC, the local Health Unit, the local MECP and Owner on July 26, 2024.

Incident #10: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	165861
Date	August 1, 2024
Details	A loss of pressure occurred for 15 homes and 1 commercial building on Grills Street and Regina Street due to a planned valve replacement. The local Health Unit issued a precautionary BWA for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (1.21 mg/L). Two sets of 3 bacteriological samples were to be collected (upstream, downstream and near the site of the work) 24 hours apart on August 1st and 2nd. Sample results were acceptable having zero total coliforms and *E.coli.* The BWA was lifted on August 6th at approximately 11:45 AM

Incident #11: Category 2 - Emergency Watermain Break / Loss of Pressure / BWA

AWQI No.	165908
Date	August 6, 2024
Details	A category 2 watermain break/repair resulted in a loss of pressure to 5 homes on Lakeshore Road.

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #11: Category 2 - Emergency Watermain Break / Loss of Pressure / BWA

	The local Health Unit issued a precautionary BWA for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (0.99 mg/L). Two sets of 3 bacteriological samples were to be collected (upstream, downstream and at the site of the work) 24 hours apart on August 8th and 9th. Sample results were acceptable having zero total coliforms and *E.coli*. The BWA was lifted on August 12th at approximately 10:10 AM.

Incident #12: Category 2 – Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	166142
Date	August 29, 2024
Details	A planned hydrant and valve replacement resulted in a loss of pressure to 40 homes on Pine Street West between Lane Street and Kennedy Street. The local Health Unit issued a precautionary BWA for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (0.99 mg/L). Two sets of 3 bacteriological samples were to be collected (1 upstream, 1 downstream and 1 near the site of the work) 24 hours apart on August 29th and 30th. Sample results were acceptable having zero total coliforms and *E.coli*. The BWA was lifted on September 2nd at 10:00 AM.

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #13: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	166162
Date	August 30, 2024
Details	A planned valve replacement resulted in a loss of pressure to the New Liskeard Public School. The local Health Unit issued a precautionary BWA for the school.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (1.15 and 0.99 mg/L). Two sets of 3 bacteriological samples were to be collected (2 upstream, and 1 near the site of the work) 24 hours apart on August 30th and 31st. Sample results were acceptable having zero total coliforms and *E.coli.* The BWA was lifted on September 2nd at 10:00 AM.

Incident #14: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	166186
Date	September 4, 2024
Details	Replacement of an isolation valve resulted in a loss of pressure to 47 homes on Crystal Crescent between Laurette Street to Driftwood Drive. The local Health Unit issued a precautionary BWA for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (0.68 mg/L). Two sets of 3 bacteriological samples were to be collected (1 upstream, 1 downstream and 1 near the site of the work) 24 hours apart on September 4th and 5th. Sample results were acceptable having zero total coliforms and *E.coli*. The BWA was lifted on September 6th at approximately 2:00 PM.

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #15: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	166261
Date	September 11, 2024
Details	A planned valve and hydrant replacement resulted in a loss of pressure to two commercial buildings on Grant Drive in Dymond (Walmart and Canadian Tire) The local Health Unit issued a precautionary BWA for the affected buildings.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (0.68 mg/L). Two sets of 3 bacteriological samples were collected (1 upstream, 1 downstream and 1 near the site of the work) 24 hours apart on September 16th and 17th. Sample results were acceptable having zero total coliforms and *E.coli*. The BWA was lifted on September 19th at approximately 11:15 AM.

Incident #16: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	166509
Date	October 1, 2024
Details	A planned valve and hydrant replacement resulted in a loss of pressure to one industrial building at 375 Shepherdson Road. The local Health Unit issued a precautionary BWA for the affected building.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (0.85 mg/L and 1.03 mg/L). Two sets of 3 bacteriological samples were collected (1 upstream, 1 downstream and 1 near the site of the work) 24 hours apart on October 2nd and 3rd. Sample results were acceptable having zero total coliforms and *E.coli.*

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #16: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

	The BWA was lifted on October 7th at approximately 9:15 AM.

Incident #17: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	166614
Date	October 10, 2024
Details	Planned distribution maintenance (replaced valve and piping) resulted in a loss of pressure to 17 homes and 8 businesses on Whitewood Avenue and Niven Street. The local Health Unit issued a precautionary BWA for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (1.23 mg/L). Two sets of 3 bacteriological samples were collected (1 upstream, 1 downstream and 1 near the site of the work) 24 hours apart on October 10th and 11th. Sample results were acceptable having zero total coliforms and *E.coli.* The BWA was lifted on October 15th at approximately 9:30 AM.

Incident #18: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

AWQI No.	166703
Date	October 21, 2024
Details	Planned distribution maintenance (replacement of a water control valve) resulted in a loss of pressure to 15 homes and 18 businesses on sections of Whitewood Avenue and Wellington Street. The local Health Unit issued a precautionary BWA for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (1.29 mg/L).

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #18: Category 2 - Planned Watermain Repair / Loss of Pressure / BWA

	Two sets of 3 bacteriological samples were collected (1 upstream, 1 downstream and 1 near the site of the work) 24 hours apart on October 22nd and 23rd. Sample results were acceptable having zero total coliforms and *E.coli.* The BWA was lifted on October 25th at approximately 9:45 AM.

Incident #19: Category 2 - Emergency Watermain Break / Loss of Pressure / BWA

AWQI No.	167026
Date	December 6, 2024
Details	A category 2 watermain break/repair on Lakeshore Road North between Radley Hill Road and Melville Street resulted in a loss of pressure to 26 homes. The local Health Unit issued a precautionary boil water advisory (BWA) for the affected residences.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (1.42 mg/L). Two sets of 3 bacteriological samples were collected (upstream, downstream and at the site of the break) 24 hours apart on December 9th and 10th. The sample collected on December 9th at 10:00 AM from 479 Lakeshore Road N. (the break site) had a result of one (1) total coliform. The samples collected on December 10th had no detectable total coliforms or *E. coli*. A third set of re-samples were collected on December 11th in response to the adverse total coliform result and to lift the BWA. Sample results were acceptable having zero total coliforms and *E.coli.* The BWA was lifted on December 13, 2024 at 1:25 PM.

Incident #20: Total Coliforms

AWQI No.	167055
Date	December 9, 2024

New Liskeard DWS

Notices Reported & Submitted to the Spills Action Center

Incident #20: Total Coliforms

Details	One (1) total coliform was detected in a distribution sample collected at 479 Lakeshore Road. The sample was collected on December 9th at 10:00 AM. Free chlorine residual = 1.03 mg/L. The sample was collected after a category 2 watermain break/repair. A precautionary BWA was issued by the local Health Unit for approximately 26 homes affected by a loss of pressure on December 6, 2024. (AWQI 167026)
Corrective Actions	Re-samples (upstream, downstream and the site of the adverse result) were collected on December 11th and results were acceptable have zero total coliforms and *E. coli.* The BWA was lifted on December 13, 2024 at 1:25 PM. The incident was resolved with the submission of the Notice of Issue Resolution report and resample results to SAC, the local Health Unit, the local MECP and Owner on December 13, 2024.

Incident #21: Category 2 - Emergency Watermain Break / Loss of Pressure / BWA

AWQI No.	167101
Date	December 23, 2024
Details	A valve at the corner of Grills Street and Regina Street exploded internally causing a loss of pressure to 14 residences and 2 businesses. The local Health Unit issued a precautionary boil water advisory (BWA) for the affected area.
Corrective Actions	After the work was complete and pressure restored, the area was flushed until an acceptable free chlorine residual was achieved (1.02 mg/L). Two sets of 3 bacteriological samples were collected (upstream, downstream and at the site of the break) 24 hours apart on December 23rd and 24th. All results were acceptable having zero total coliforms and *E. coli.* The MOH lifted the BWA on December 27, 2024 at 10:00 AM.

APPENDIX B

Monthly Summary of Microbiologcal & Operational Test Results

Raw Water

Well 3	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Total Coliform: TC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
E. Coli: EC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
Turbidity - NTU																
IH Edited Count	5.00	3.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	52.00			
IH Month.Max	0.68	0.49	0.49	0.75	0.57	1.02	1.12	2.48	0.28	0.45	0.50	0.51			2.48	
IH Month.Mean	0.57	0.34	0.25	0.43	0.34	0.74	0.83	0.91	0.27	0.34	0.47	0.35		0.49		
IH Month.Min	0.44	0.21	0.14	0.24	0.14	0.56	0.49	0.24	0.25	0.23	0.42	0.25				0.14

Well 4	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Total Coliform: TC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			1.00	
Lab Month.Mean	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.02		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
E. Coli: EC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
Turbidity - NTU																
IH Edited Count	5.00	3.00	3.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	51.00			
IH Month.Max	0.61	0.45	1.04	0.90	0.70	1.78	0.78	1.14	0.53	1.18	0.38	0.36			1.78	
IH Month.Mean	0.38	0.45	0.78	0.59	0.55	1.23	0.70	0.56	0.43	0.60	0.26	0.27		0.56		
IH Month.Min	0.22	0.44	0.44	0.33	0.43	0.49	0.56	0.28	0.38	0.39	0.16	0.19				0.16

Treated Water

Treated Water POE	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Cl Residual: Free (Min 0.40 mg/L) - mg/L																
OL Month.Max	1.95	2.15	1.77	1.68	1.75	1.63	1.84	1.99	1.73	1.73	1.78	1.94			2.15	
OL Month.Mean	1.72	1.76	1.43	1.33	1.42	1.42	1.46	1.51	1.51	1.52	1.51	1.60		1.52		
OL Month.Min	1.46	1.16	1.12	0.86	0.85	1.15	1.21	1.13	1.25	1.13	1.14	0.88				0.85
Total Coliform: TC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
E. Coli: EC - cfu/100mL																
Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
HPC - cfu/mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	160.00	10.00	20.00	40.00	< 10.00	30.00	10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00			160.00	
Lab Month.Mean	< 40.00	< 10.00	< 12.50	< 24.00	< 10.00	< 15.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00		< 14.72		
Lab Month.Min	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00				< 10.00

Distribution Water

1st Bacti/Residual	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Cl Residual: Free - mg/L																
IH Edited Count	9.00	9.00	8.00	9.00	9.00	8.00	9.00	9.00	8.00	10.00	8.00	9.00	105.00			
IH Month.Max	1.40	1.63	1.13	1.15	1.11	1.00	1.17	1.20	1.15	1.01	1.39	1.42			1.63	
IH Month.Mean	1.25	1.27	0.99	0.93	0.94	0.84	0.98	0.98	0.93	0.84	0.97	1.10		1.00		
IH Month.Min	1.13	0.98	0.75	0.65	0.80	0.63	0.85	0.82	0.78	0.74	0.79	0.79				0.63
Total Coliform: TC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00

E. Coli - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00

2nd Bacti/Residual	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Cl Residual: Free - mg/L																
IH Edited Count	9.00	9.00	8.00	9.00	9.00	8.00	9.00	9.00	8.00	10.00	8.00	9.00	105.00			
IH Month.Max	1.31	1.63	1.08	1.19	1.28	1.15	1.11	1.27	1.15	1.23	1.23	1.32			1.63	
IH Month.Mean	1.21	1.20	0.97	0.99	1.07	1.00	0.98	1.03	0.92	0.85	0.94	1.04		1.02		
IH Month.Min	1.12	0.80	0.72	0.87	0.87	0.88	0.63	0.81	0.71	0.45	0.78	0.75				0.45
Total Coliform: TC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00			1.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00		0.02		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
E. Coli - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
HPC - cfu/mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	< 10.00	30.00	10.00	< 10.00	40.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00			40.00	
Lab Month.Mean	< 10.00	< 15.00	< 10.00	< 10.00	< 17.50	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00		< 10.94		
Lab Month.Min	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00				< 10.00

3rd Bacti/Residual	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Cl Residual: Free - mg/L																
IH Edited Count	9.00	9.00	8.00	9.00	9.00	8.00	9.00	9.00	8.00	10.00	8.00	9.00	105.00			
IH Month.Max	1.35	1.58	1.20	1.09	1.20	1.04	1.10	1.68	1.08	1.13	1.14	1.10			1.68	
IH Month.Mean	1.18	1.32	0.99	0.93	1.01	0.99	0.94	0.99	0.85	0.94	0.94	1.03		1.01		
IH Month.Min	0.92	0.95	0.81	0.73	0.88	0.92	0.84	0.75	0.64	0.77	0.80	0.96				0.64

Total Coliform: TC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
E. Coli - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00

4th Bacti/Residual	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Cl Residual: Free - mg/L																
IH Edited Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
IH Month.Max	1.29	1.55	1.27	1.05	1.25	1.06	1.07	1.01	1.22	1.28	0.89	1.43			1.55	
IH Month.Mean	1.15	1.37	1.10	0.93	1.04	0.98	1.02	0.92	0.92	1.05	0.81	1.01		1.02		
IH Month.Min	0.96	1.02	0.98	0.78	0.96	0.86	0.95	0.74	0.75	0.74	0.74	0.80				0.74
Total Coliform: TC - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
E. Coli - cfu/100mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	
Lab Month.Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		
Lab Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00
HPC - cfu/mL																
Lab Count	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	53.00			
Lab Month.Max	40.00	60.00	10.00	60.00	< 10.00	< 10.00	< 10.00	< 10.00	30.00	< 10.00	10.00	10.00			60.00	
Lab Month.Mean	< 16.00	< 27.50	< 10.00	< 20.00	< 10.00	< 10.00	< 10.00	< 10.00	< 15.00	< 10.00	< 10.00	< 10.00		< 13.21		
Lab Month.Min	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00				< 10.00

NOTES:

1. July 22 - one (1) total coliform was detected in a distribution sample collected at 783498 Gray Road (Gray Road sewage pumping station). AWQI No. 165735.