



DRINKING WATER WORKS PERMIT

Permit Number: 234-201

Issue Number: 4

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this drinking water works permit under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

Red Lake, The Corporation of the Municipality of

2 Fifth St

Balmertown, ON P0V 1C0

For the following municipal residential drinking water system:

Balmertown, Cochenour, & McKenzie Island Drinking Water System

This drinking water works permit includes the following:

Schedule	Description
Schedule A	Drinking Water System Description
Schedule B	General
Schedule C	All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system
Schedule D	Process Flow Diagrams

Upon the effective date of this drinking water works permit, all previously issued versions are revoked and replaced by this permit.

DATED at TORONTO this 29th day of May, 2026

Signature

Aziz Ahmed, P.Eng.

Director

Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Description

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-201
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 System Description

- 1.1 The following is a summary description of the works comprising the above drinking water system:

Overview

The **Balmertown, Cochenour, & McKenzie Island Drinking Water System** consists of one (1) drinking water treatment plant, one (1) storage reservoir and approximately 18.1 kilometers of distribution watermain.

Cochenour Water Supply Plant

Drinking Water Supply Plant

- Cochenour Water Treatment Plant

Storage Reservoir and Pumping Station

- Balmertown Reservoir/Pumping Station

Cochenour & McKenzie Island Distribution

Balmertown Distribution

Cochenour Water Supply Plant

Location and System Type

Street Address	Highway125/Lakeview Ave. Cochenour
UTM Coordinates	NAD 83, UTM Zone 15: 443072 m E., 5658260 m N
System Type	Surface water supply and treatment
Notes	

Surface Water Supply

Intake Facility

Description	Intake structure and pipe extending from Red Lake (Bruce Channel) to the low lift pumping station
Dimensions	Approximately 135 m length of 300 mm diameter intake pipe
Discharges to	Raw water well at low lift pumping station
Notes	

Low Lift Works

Low Lift Pumping Station

Description	A low lift pumping station located approximately 625 m from the water treatment plant building
Discharge to	Water treatment package units
Equipment	One (1) wet well with two (2) removable screens
	Two (2) contact chambers/reservoirs with total volume of 240 m ³
	Two (2) pump wells and three (3) vertical turbine low lift pumps each at 2,214 L/min at 28 m TDH
	One (1) 125 kW standby diesel generator
Notes	

Flocculation/Clarification/Filtration

Package Treatment Units

Description	Three (3) proprietary package flocculator/clarifier/filtration units (in parallel)
Capacity	Each unit rated 2,125 m ³ /day
Discharge to	Treated water reservoir/clearwell
Equipment (at each package unit)	One (1) three-stage flocculation tank equipped with two (2) variable speed flocculators
	One (1) settling tank equipped with up-flow tube settlers complete with de-sludge system discharging to the sludge holding tank
	A dual media filter consisting of layers of anthracite, silica sand and supporting gravel covering the underdrain, complete with air scour and backwash systems
Notes	

Fuel Oil Systems

Cochenour Low Lift (Raw Water) Pumping Station

Location	NAD 83, UTM Zone 15: 443175 m E., 5658450 m N
Description	Diesel fuel double-walled vacuum monitored tank 910 L
Fuel Type	Diesel
Source Protection Area	Not Applicable
Notes	

Cochenour Water Treatment Plant

Location	NAD 83, UTM Zone 15: 443072 m E., 5658260 m N
Description	Diesel fuel double-walled vacuum monitored tank 1135 L
Fuel Type	Diesel
Source Protection Area	Not Applicable
Notes	

Balmertown Reservoir Pumping Station

Location	NAD 83, UTM Zone 15: 447240 m E., 5656519 m N
Description	Diesel fuel double-walled vacuum monitored tank 1135 L
Fuel Type	Diesel
Source Protection Area	Not Applicable
Notes	

Chemical Addition**Coagulant**

Description	Alum addition for coagulation
Feed Point	Raw water header upstream of the package treatment units
Equipment	Two (2) metering pumps (duty and standby)
	Two (2) bulk storage tanks and one (1) day tank complete with spill containment
Notes	

Polymer

Description	Polymer addition as coagulant aid and for sludge treatment
Feed Point	Flocculation tanks
	Wastewater settling tank
Equipment	Six (6) metering pumps (three duty for treatment units, one duty for wastewater settling tank and two standby)
	Two (2) polymer preparation systems (duty and standby) each consists of one (1) bulk storage tank with mixer and one (1) day tank complete with spill containment
Notes	

Soda Ash

Description	Soda ash addition for pre-treatment and pH/alkalinity control
Feed Point	Raw water header upstream of the package treatment units
	Filter effluent line
	Distribution headers
Equipment	Three (3) metering pumps (two duty for pre-treatment and post-treatment, and one standby)
	One (1) soda ash preparation system consists of bag loader, hopper feeder, and one (1) dissolving tank with mixer for post-treatment
	One (1) soda ash preparation system consists of one (1) dissolving tank with mixer and one (1) day tank for pre-treatment
Notes	

Chlorine

Description	Gaseous chlorine for disinfection
Feed Points	Filter effluent line
Equipment	Three (3) gas chlorinators, gas cylinders, regulators, weigh scales and alarm system
Notes	

Waste Residual Management**Holding Tank**

Description	Backwash and wastewater holding tank with transfer pump
Capacity	255 m ³
Equipment	One (1) submersible pump at 1,680 L/min. to transfer wastewater to settling tank
Notes	

Settling Tank

Description	Backwash and wastewater settling tank with sludge discharge pump
Capacity	121 m ³
Equipment	One (1) submersible pump at 1,680 L/min. to discharge settled sludge for truck haulage or to sanitary system
	A gravity drain system to discharge supernatant to Red Lake (Bruce Channel)
Notes	

On-Site Storage/High Lift Works

Reservoir/Clearwell

Description	One (1) two-cell storage reservoir and three (3) clearwells for distribution, chlorine contact and filter backwash
Dimensions	Each reservoir cell of 491 m ³
	Clearwell No. 1 of 57.5 m ³
	Clearwell No. 2 of 70 m ³
	Clearwell No. 3 of 69 m ³
Discharge to	Cochenour & McKenzie Island distribution system
	Balmertown reservoir/pumping station
Equipment	Four (4) variable speed vertical turbine high lift pumps (three duty, one standby) each at 1,771 m ³ /day at 60 m TDH for delivering treated water to Cochenour & McKenzie distribution system
	Two (2) vertical turbine transfer pumps (duty and standby) each at 4,026 m ³ /day at 28.7 m TDH for delivering treated water to Balmertown reservoir/pumping station
	Two (2) vertical turbine pumps (duty and standby) for filter backwash, each at 13 m ³ /day
Notes	

Instrumentation and Control

SCADA System

Description	Process control and monitoring equipment
Notes	System control with data acquisition including various on-line analyzers and monitors

Emergency Power

Backup Power Supply

Description	One (1) standby diesel generator rated 300 kW complete with one (1) fuel tank
Notes	

Storage Reservoir and Pumping Station

Balmertown Reservoir/Pumping Station

Location	10 Mine Rd., Balmertown
UTM Coordinates	NAD 83, UTM Zone 15: 447240 m E., 5656519 m N
Description	Facility for treated water storage, high lift pumping and rechlorination
Dimensions	A two-cell reservoir each cell of 979.5 m ³
	Clearwell No. 1 of 147 m ³
	Clearwell No. 2 of 132 m ³
Equipment	Four (4) variable speed vertical turbine pumps (three duty, one standby) each at 3,732 m ³ /day at 55 m TDH
Notes	Following chlorination at the Cochenour WTP, CT takes place at the Balmertown Reservoir prior to distribution to Balmertown.

Watermains

1.2 Watermains within the distribution system comprise:

1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

Table 1: Watermains	
Column 1 Document or File Name	Column 2 Date
Balmertown, Cochenour & McKenzie Island Distribution	December, 2025

1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

Schedule B: General

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-201
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 Applicability

- 1.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence #234-101.
- 1.2 The definitions and conditions of licence #234-101 are incorporated into this permit and also apply to this drinking water system.

2.0 Alterations to the Drinking Water System

- 2.1 Any document issued by the Director to be incorporated into Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance with the applicable conditions of this drinking water works permit and licence #234-101.
- 2.2 All documents issued by the Director as described in condition 2.1 shall form part of this drinking water works permit.
- 2.3 All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:
 - a) The ministry's Watermain Disinfection Procedure, dated August 1, 2020;
 - b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
 - c) Subject to condition 2.3.3,
 - a. AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
 - b. AWWA C653 – Standard for Disinfection of Water Treatment Plants;
 - and,
 - c. AWWA C654 – Standard for Disinfection of Wells.
- 2.3.1 For greater certainty, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3. above.
- 2.3.2 Updated requirements described in condition 2.3 b) are effective six months from the date of publication of the updated Watermain Disinfection Procedure.

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- 2.3.3 Requirements described in condition 2.3 c) are effective until:
- a) In the case of AWWA C652, six months after the issue date of the ministry's Water Storage Facility Disinfection Procedure;
 - b) In the case of AWWA C653, six months after the issue date of the ministry's Water Treatment Plant Disinfection Procedure; and,
 - c) In the case of AWWA C654, six months after the issue date of the ministry's Wells Disinfection Procedure.
- 2.3.4 The ministry documents described in condition 2.3.3 shall be implemented within the timeframe specified in condition 2.3.3 and once implemented all parts of the drinking water system in contact with drinking water that are added, modified, replaced or extended shall be disinfected in accordance with the applicable provisions of the document or a procedure approved by the Director.
- 2.3.5 After the initial issue date, any updated requirements are effective six months from the date of publication of the updated Water Storage Facility Disinfection Procedure, Water Treatment Plant Disinfection Procedure or Wells Disinfection Procedure.
- 2.3.6 For greater certainty the timeframes described in conditions 2.3.2, 2.3.3 and 2.3.5 are intended to provide a period for transition. Implementation may occur at any point within the identified timeframe in these conditions.
- 2.4 The owner shall notify the Director in writing within thirty (30) days of the placing into service or the completion of any addition, modification, replacement, removal or extension of the drinking water system which had been authorized through:
- 2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;
 - 2.4.2 Any document to be incorporated in Schedule C to this drinking water works permit respecting works other than watermain; or
 - 2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermain which were not in service at the time of the issuance of the first drinking water works permit.
- 2.5 The notification required in condition 2.4 shall be submitted using the "Director Notification Form" published by the Ministry.
- 2.6 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement, removal or extension in respect of the drinking water system which:
- 2.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;
 - 2.6.2 Constitutes maintenance or repair of the drinking water system; or
 - 2.6.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.

- 2.7 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.
- 2.8 For greater certainty, the owner may only carry out alterations to the drinking water system in accordance with this drinking water works permit after having satisfied other applicable legal obligations, including those arising from the *Environmental Assessment Act*, *Niagara Escarpment Planning and Development Act*, *Oak Ridges Moraine Conservation Act*, 2001 and *Greenbelt Act*, 2005.

3.0 Watermain Additions, Modifications, Replacements and Extensions

- 3.1 The owner may alter the drinking water system, or permit it to be altered by a person acting on the owner's behalf, by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:
- 3.1.1 The design of the watermain addition, modification, replacement or extension:
- a) Has been prepared by a licensed engineering practitioner;
 - b) Has been designed only to transmit water and has not been designed to treat water;
 - c) Satisfies the design criteria set out in the Ministry publication "Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012", as amended from time to time; and
 - d) Is consistent with or otherwise addresses the design objectives contained within the Ministry publication "Design Guidelines for Drinking Water Systems, 2008", as amended from time to time.
- 3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
- 3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system's ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.
- 3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.
- 3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.
- 3.1.6 The owner of the drinking water system consents in writing to the watermain addition, modification, replacement or extension.

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- 3.1.7 A licensed engineering practitioner has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.
- 3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.
- 3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:
- 3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;
- 3.2.2 Has a nominal diameter greater than 900 mm;
- 3.2.3 Results in the fragmentation of the drinking water system; or
- 3.2.4 Connects to another drinking water system, unless:
- a) Prior to construction, the owner of the drinking water system seeking the connection obtains written consent from the owner or owner's delegate of the drinking water system being connected to; and
- b) The owner of the drinking water system seeking the connection retains a copy of the written consent from the owner or owner's delegate of the drinking water system being connected to as part of the record that is recorded and retained under condition 3.3.
- 3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:
- 3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration", as published by the Ministry, prior to the watermain addition, modification, replacement or extension being placed into service; and
- 3.3.2 Retained for a period of ten (10) years by the owner.
- 3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
- 3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
- 3.4.2 Constitutes maintenance or repair of the drinking water system.
- 3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.
- 3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.

- 3.7 Despite clause (a) of condition 3.1.1 and condition 3.1.7, with respect to the replacement of an existing watermain or section of watermain that is 6.1 meters in length or less, if a licensed engineering practitioner has:
- 3.7.1 inspected the replacement prior to it being put into service;
 - 3.7.2 prepared a report confirming that the replacement satisfies clauses (b), (c) and (d) of condition 3.1.1 (i.e. "Form 1 – Record of Watermains Authorized by a Future Alteration" (Form 1), Part 3, items No. 2, 3 and 4); and
 - 3.7.3 appended the report referred to in condition 3.7.2 to the completed Form 1,
- the replacement is exempt from the requirements that the design of the replacement be prepared by a licensed engineering practitioner and that a licensed engineering practitioner verify on Form 1, Part 3, item No. 1 that a licensed engineering practitioner prepared the design of the replacement.
- 3.8 For greater certainty, the exemption in condition 3.7 does not apply to the replacement of an existing watermain or section of watermain if two or more sections of pipe, each of which is 6.1 meters in length or less, are joined together, if the total length of replacement pipes joined together is greater than 6.1 meters.

4.0 Minor Modifications to the Drinking Water System

- 4.1 The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:
- 4.1.1 Coagulant feed systems in the treatment system, including the location and number of dosing points:
 - a) Prior to making any alteration to the drinking water system under condition 4.1.1, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.1.1 and shall provide the Director with a copy of the review.
 - c) The notification required in condition 4.1.1 b) shall be submitted using the "Director Notification Form" published by the Ministry
 - 4.1.2 Instrumentation and controls, including new SCADA systems and upgrades to SCADA system hardware;
 - 4.1.3 SCADA system software or programming that:
 - a) Measures, monitors or reports on a regulated parameter;
 - b) Measures, monitor or reports on a parameter that is used to calculate CT; or,
 - c) Calculates CT for the system or is part of the process algorithm that calculates log removal, where the impacts of addition, modification or replacement have been reviewed by a licensed engineering practitioner;

- 4.1.4 Filter media, backwashing equipment, filter troughs, and under-drains and associated equipment in the treatment system;
 - 4.1.5 Spill containment works; or,
 - 4.1.6 Coarse screens and fine screens
- 4.2 The drinking water system may be altered by adding, modifying, replacing or removing the following components in the drinking water system:
- 4.2.1 Treated water pumps, pressure tanks, and associated equipment;
 - 4.2.2 Raw water pumps and process pumps in the treatment system;
 - 4.2.3 Inline booster pumping stations that are not associated with distribution system storage facilities and are on a watermain with a nominal diameter not exceeding 200 mm;
 - 4.2.4 Re-circulation devices within distribution system storage facilities;
 - 4.2.5 In-line mixing equipment;
 - 4.2.6 Chemical metering pumps and chemical handling pumps;
 - 4.2.7 Chemical storage tanks and associated equipment;
 - 4.2.8 Measuring and monitoring devices that are not required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry.
 - 4.2.9 Chemical injection points;
 - 4.2.10 Valves;
 - 4.2.11 Fuel storage tanks and spill containment works, and associated equipment or,
 - 4.2.12 Any other component(s) where the Director has provided authorization in writing to proceed with the alteration.
- 4.3 The drinking water system may be altered by replacing the following:
- 4.3.1 Raw water piping, treatment process piping or treated water piping within the treatment subsystem;
 - 4.3.2 Measuring and monitoring devices that are required by regulation, by a condition in the Drinking Water Works Permit or by a condition otherwise imposed by the Ministry.
 - 4.3.3 Coagulants and pH adjustment chemicals, where the replacement chemicals perform the same function;

- a) Prior to making any alteration to the drinking water system under condition 4.3.3, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.3.3 and shall provide the Director with a copy of the review.
 - c) The notification required in condition 4.3.3 b) shall be submitted using the "Director Notification Form" published by the Ministry.
- 4.4 Any alteration of the drinking water system made under conditions 4.1, 4.2 or 4.3 shall not result in:
- 4.4.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
 - 4.4.2 The bypassing or removal of any unit process within a treatment subsystem;
 - 4.4.3 The addition of any new unit process other than coagulation within a treatment subsystem;
 - 4.4.4 A deterioration in the quality of drinking water provided to consumers;
 - 4.4.5 A reduction in the reliability or redundancy of any component of the drinking water system;
 - 4.4.6 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or
 - 4.4.7 An adverse effect on the environment.
- 4.5 The owner shall verify in writing that any addition, modification, replacement or removal of drinking water system components in accordance with conditions 4.1, 4.2 or 4.3 has met the requirements of the conditions listed in condition 4.4.
- 4.6 The verifications and documentation required in condition 4.5 shall be:
- 4.6.1 Recorded on "Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System" published by the Ministry, prior to the modified or replaced components being placed into service; and
 - 4.6.2 Retained for a period of ten (10) years by the owner.
- 4.7 For greater certainty, the verification requirements set out in conditions 4.5 and 4.6 do not apply to any addition, modification, replacement or removal in respect of the drinking water system which:
- 4.7.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 4.7.2 Constitutes maintenance or repair of the drinking water system, including software changes to a SCADA system that are not listed in condition 4.1.3

- 4.8 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the air:
- 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
 - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;
 - 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
 - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
 - 5.1.5 Maintenance welding stations;
 - 5.1.6 Minor painting operations used for maintenance purposes;
 - 5.1.7 Parts washers for maintenance shops;
 - 5.1.8 Emergency chlorine and ammonia gas scrubbers and absorbers;
 - 5.1.9 Venting for activated carbon units for drinking water taste and odour control;
 - 5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
 - 5.1.11 Venting for an ozone treatment unit;
 - 5.1.12 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; or
 - 5.1.13 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.
- 5.2 The owner shall not make an addition, modification, or replacement described in condition 5.1 in relation to an activity that is not related to the treatment and/or distribution of drinking water.

- 5.3 The emergency generators identified in condition 5.1.13 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.
- 5.4 The owner shall ensure that the criteria outlined for standby power sources in s.20.4 of O. Reg. 419/05 (Air Pollution – Local Air Quality) are met for all discharge that occurs from the use of emergency generators added, modified or replaced under condition 5.1.13.

Performance Limits

- 5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.13 is operated at all times to comply with the following limits:
 - 5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;
 - 5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive receptors shall not exceed the applicable point of impingement limit, and at non-sensitive receptors shall not exceed the Ministry half-hourly screening level of 1880 ug/m³ as amended; and
 - 5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-300, as applicable.
- 5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.
- 5.7 The owner shall document how compliance with the performance limits outlined in condition 5.5.3 is being achieved, through noise abatement equipment and/or operational procedures.
- 5.8 The verifications and documentation required in conditions 5.6 and 5.7 shall be:
 - 5.8.1 Recorded on “Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere”, as published by the Ministry, prior to the additional, modified or replacement equipment being placed into service; and
 - 5.8.2 Retained for a period of ten (10) years by the owner.
- 5.9 For greater certainty, the verification and documentation requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:
 - 5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 5.9.2 Constitutes maintenance or repair of the drinking water system.
- 5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

6.0 Previously Approved Works

- 6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:
 - 6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification, replacement or extension and operation of that part of the municipal drinking water system;
 - 6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and
 - 6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

7.0 System-Specific Conditions

- 7.1 Not Applicable

8.0 Source Protection

- 8.1 Not Applicable

Schedule C: Authorization to Alter the Drinking Water System

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-201
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 General

- 1.1** Table 2 provides a reference list of all documents to be incorporated into Schedule C that have been issued as of the date that this permit was issued.

1.1.1 Table 2 is not intended to be a comprehensive list of all documents that are part of Schedule C. For clarity, any document issued by the Director to be incorporated into Schedule C after this permit has been issued is considered part of this drinking water works permit.

Table 2: Schedule C Documents				
Column 1 Issue #	Column 2 Issued Date	Column 3 Description	Column 4 Status	Column 5 DN#
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

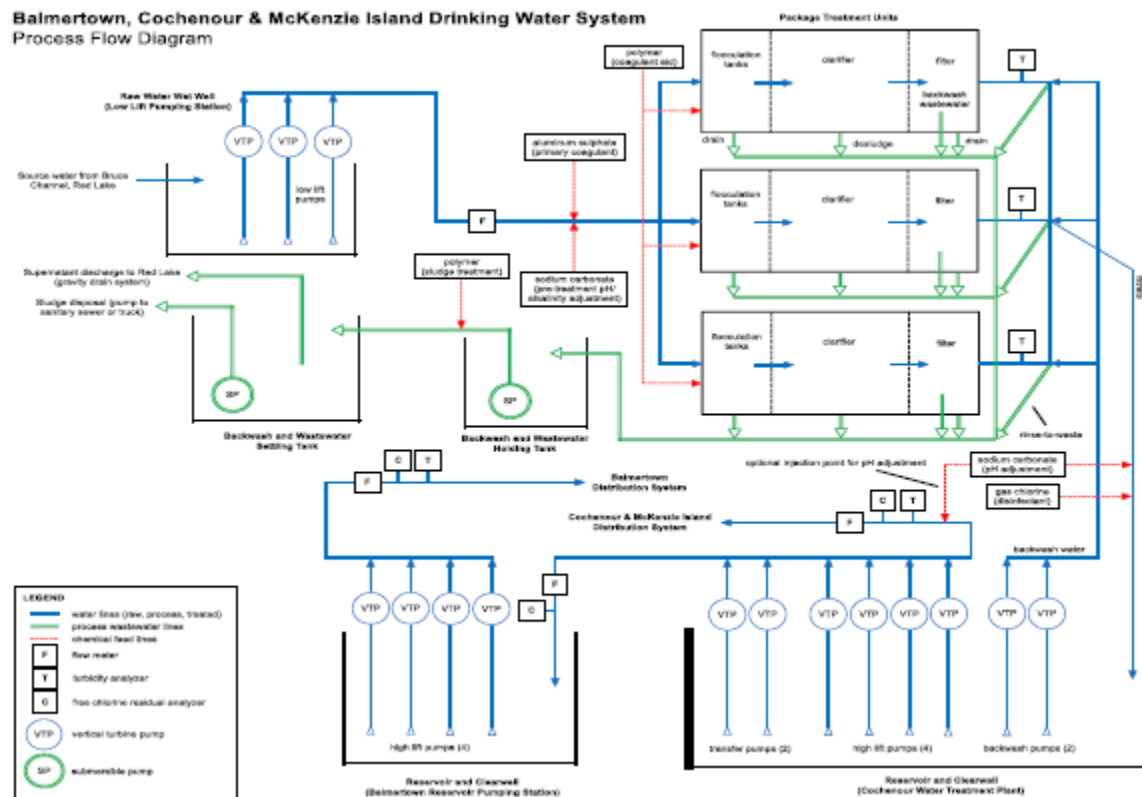
- 1.2** For each document described in columns 1, 2 and 3 of Table 2, the status of the document is indicated in column 4. Where this status is listed as 'Archived', the approved alterations have been completed and relevant portions of this permit have been updated to reflect the altered works. These 'Archived' Schedule C documents remain as a record of the alterations.

Schedule D: Process Flow Diagrams

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-201
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 Process Flow Diagrams

Balmertown, Cochenour, & McKenzie Island Drinking Water System



Note: this process flow diagram is for reference only, and represents a high level overview of the system as of December, 2025.



DRINKING WATER WORKS PERMIT

Permit Number: 234-202

Issue Number: 4

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this drinking water works permit under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

Red Lake, The Corporation of the Municipality of

0 Fifth St

Balmertown, ON P0V 1C0

For the following municipal residential drinking water system:

Madsen Drinking Water System

This drinking water works permit includes the following:

Schedule	Description
Schedule A	Drinking Water System Description
Schedule B	General
Schedule C	All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system
Schedule D	Process Flow Diagrams

Upon the effective date of this drinking water works permit, all previously issued versions are revoked and replaced by this permit.

DATED at TORONTO this 29th day of May, 2026

Signature

Aziz Ahmed, P.Eng.

Director

Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Description

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-202
Drinking Water System Name	Madsen Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 System Description

- 1.1 The following is a summary description of the works comprising the above drinking water system:

Overview

The **Madsen Drinking Water System** consists of one (1) drinking water treatment plant and approximately 2.6 kilometers of distribution watermains.

Madsen Water Supply Plant

Drinking Water Supply Plant

- Madsen Water Treatment Plant

Madsen Distribution

Madsen Water Supply Plant

Location and System Type

Street Address	Lake Road, Madsen
UTM Coordinates	NAD 83, UTM Zone 15: 435186 m E., 5646868 m N
System Type	Surface water supply and treatment
Notes	

Surface Water Supply

Intake Facility

Description	Intake structure and pipe extending from Russett Lake to the low lift pumphouse
Dimensions	Approximately 45 m length of 300 mm diameter intake pipe
Discharges to	Low lift pumphouse
Notes	

Low Lift Works

Low Lift Pumphouse

Description	A low lift pumphouse for delivering raw water
Discharge to	Raw water storage reservoir at water treatment plant through approx. 400 m long 150 mm diameter pipe
Equipment	Two (2) centrifugal low lift pumps each at 960 L/min at 64 m TDH
Notes	

Raw Water Storage

Raw Water Storage Reservoir

Description	A two chambers raw water storage reservoir
Dimensions	Total volume of 99 m ³
Discharge to	Package treatment units
Equipment	Two (2) centrifugal pumps each at 240 L/min. at 18 m TDH
Notes	Raw water firefighting line connecting to camlock valve system outside of WTP

Flocculation/Clarification/Filtration

Package Treatment Units

Description	Two (2) proprietary package flocculator/clarifier/filtration units (in parallel)
Capacity	Each unit rated 345.6 m ³ /day
Discharge to	Treated water reservoir
Equipment (at each package unit)	One (1) three-stage flocculation tank One (1) settling tank equipped with upflow tube settlers complete with desludge system discharging to the sludge holding tank A dual media filter consisting of layers of anthracite, silica sand and supporting gravel covering the underdrain, complete with air scour and backwash systems together with filter-to-waste capability
Notes	

Fuel Oil Systems

Madsen Water Treatment Plant

Location	NAD 83, UTM Zone 15: 435186 m E., 5646868 m N
Description	Diesel fuel double-walled vacuum monitored tank 680 L
Fuel Type	Diesel
Source Protection Area	Not Applicable
Notes	Standby power

Madsen Water Treatment Plant

Location	NAD 83, UTM Zone 15: 435186 m E., 5646868 m N
Description	Diesel fuel double-walled vacuum monitored tank 230 L
Fuel Type	Diesel
Source Protection Area	Not Applicable
Notes	Building heating system

Madsen Water Treatment Plant

Location	NAD 83, UTM Zone 15: 435186 m E., 5646868 m N
Description	Diesel fuel double-walled vacuum monitored tank 4500 L
Fuel Type	Diesel
Source Protection Area	Not Applicable
Notes	Building heating system

Chemical Addition**Coagulant**

Description	Polyaluminum chloride (PAC) addition for coagulation
Feed Point	Raw water upstream of the package treatment units
Equipment	Two (2) metering pumps (duty and standby) One (1) bulk storage tank and one (1) day tank complete with spill containment
Notes	

Polymer

Description	Polymer addition as coagulant aid and for sludge treatment
Feed Point	Flocculation tanks Wastewater settling tank
Equipment	Four (4) metering pumps (two metering pumps per treatment unit, duty and standby) and one (1) day tank for coagulant aid at flocculation tanks One (1) metering pump for sludge treatment at wastewater settling tank
Notes	

Potassium Permanganate

Description	Potassium permanganate addition for iron/manganese oxidation
Feed Points	Raw water upstream of the raw water reservoir
Equipment	One (1) metering pump and one (1) day tank
Notes	

Soda Ash

Description	Soda ash addition for pH/alkalinity control
Feed Point	Filter effluent line
Equipment	Two (2) metering pumps (duty and standby) and one (1) day tank complete with spill containment for pH/alkalinity control at filter effluent line
Notes	

Chlorine

Description	Sodium hypochlorite addition for disinfection
Feed Points	Filter effluent line
	High lift discharge header
Equipment	Two (2) metering pumps (duty and standby) and one (1) day tank complete with spill containment for primary disinfection at filter effluent line and for secondary disinfection at high lift discharge header
Notes	

Waste Residual Management**Holding Tank**

Description	A 50 m ³ backwash and wastewater holding tank with transfer pump
Equipment	One (1) submersible pump at 1,680 L/min. to transfer wastewater to settling tank
Notes	

Settling Tank

Description	A 50 m ³ backwash and wastewater settling tank with discharge pumps
	One (1) submersible pump at 1,680 L/min. to discharge supernatant to an existing sewage lagoon
Notes	

On-Site Storage/High Lift Works

Chlorine Contact/Storage Reservoir

Description	A two-cell underground baffled chlorine contact/storage reservoir with a high lift pump well at each cell
Dimensions	Total volume of 190 m ³
Discharge to	Distribution system
	Filter units
Equipment	Four (4) vertical turbine high lift pumps (two at each high lift pump well) each at 691 m ³ /day at 45 m TDH
	Two (2) vertical turbine pumps (one at each high lift well) for filter backwash, each at 2,333 m ³ /day at 14 m TDH
	Four (4) 165 L hydropneumatic tanks for system pressure control
Notes	

Instrumentation and Control

SCADA System

Description	Process control and monitoring equipment
Notes	System control with data acquisition including various on-line analyzers and monitors

Emergency Power

Backup Power Supply

Description	One (1) standby diesel generator rated 80 kW complete with one (1) fuel tank
Notes	

Watermains

1.2 Watermains within the distribution system comprise:

- 1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

Table 1: Watermains	
Column 1 Document or File Name	Column 2 Date
Madsen Distribution System	December, 2025

- 1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.
- 1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

Schedule B: General

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-202
Drinking Water System Name	Madsen Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 Applicability

- 1.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence #234-102.
- 1.2 The definitions and conditions of licence #234-102 are incorporated into this permit and also apply to this drinking water system.

2.0 Alterations to the Drinking Water System

- 2.1 Any document issued by the Director to be incorporated into Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance with the applicable conditions of this drinking water works permit and licence #234-102.
- 2.2 All documents issued by the Director as described in condition 2.1 shall form part of this drinking water works permit.
- 2.3 All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:
 - a) The ministry's Watermain Disinfection Procedure, dated August 1, 2020;
 - b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
 - c) Subject to condition 2.3.3,
 - a. AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
 - b. AWWA C653 – Standard for Disinfection of Water Treatment Plants;
 - and,
 - c. AWWA C654 – Standard for Disinfection of Wells.
- 2.3.1 For greater certainty, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3. above.
- 2.3.2 Updated requirements described in condition 2.3 b) are effective six months from the date of publication of the updated Watermain Disinfection Procedure.
- 2.3.3 Requirements described in condition 2.3 c) are effective until:

- a) In the case of AWWA C652, six months after the issue date of the ministry's Water Storage Facility Disinfection Procedure;
 - b) In the case of AWWA C653, six months after the issue date of the ministry's Water Treatment Plant Disinfection Procedure; and,
 - c) In the case of AWWA C654, six months after the issue date of the ministry's Wells Disinfection Procedure.
- 2.3.4 The ministry documents described in condition 2.3.3 shall be implemented within the timeframe specified in condition 2.3.3 and once implemented all parts of the drinking water system in contact with drinking water that are added, modified, replaced or extended shall be disinfected in accordance with the applicable provisions of the document or a procedure approved by the Director.
- 2.3.5 After the initial issue date, any updated requirements are effective six months from the date of publication of the updated Water Storage Facility Disinfection Procedure, Water Treatment Plant Disinfection Procedure or Wells Disinfection Procedure.
- 2.3.6 For greater certainty the timeframes described in conditions 2.3.2, 2.3.3 and 2.3.5 are intended to provide a period for transition. Implementation may occur at any point within the identified timeframe in these conditions.
- 2.4 The owner shall notify the Director in writing within thirty (30) days of the placing into service or the completion of any addition, modification, replacement, removal or extension of the drinking water system which had been authorized through:
 - 2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;
 - 2.4.2 Any document to be incorporated in Schedule C to this drinking water works permit respecting works other than watermain; or
 - 2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermain which were not in service at the time of the issuance of the first drinking water works permit.
- 2.5 The notification required in condition 2.4 shall be submitted using the "Director Notification Form" published by the Ministry.
- 2.6 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement, removal or extension in respect of the drinking water system which:
 - 2.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;
 - 2.6.2 Constitutes maintenance or repair of the drinking water system; or
 - 2.6.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.
- 2.7 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the

requirements of the licence and this drinking water works permit as applicable to the prescribed system.

- 2.8 For greater certainty, the owner may only carry out alterations to the drinking water system in accordance with this drinking water works permit after having satisfied other applicable legal obligations, including those arising from the *Environmental Assessment Act*, *Niagara Escarpment Planning and Development Act*, *Oak Ridges Moraine Conservation Act*, 2001 and *Greenbelt Act*, 2005.

3.0 Watermain Additions, Modifications, Replacements and Extensions

- 3.1 The owner may alter the drinking water system, or permit it to be altered by a person acting on the owner's behalf, by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:
- 3.1.1 The design of the watermain addition, modification, replacement or extension:
- a) Has been prepared by a licensed engineering practitioner;
 - b) Has been designed only to transmit water and has not been designed to treat water;
 - c) Satisfies the design criteria set out in the Ministry publication "Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012", as amended from time to time; and
 - d) Is consistent with or otherwise addresses the design objectives contained within the Ministry publication "Design Guidelines for Drinking Water Systems, 2008", as amended from time to time.
- 3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
- 3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system's ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.
- 3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.
- 3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.
- 3.1.6 The owner of the drinking water system consents in writing to the watermain addition, modification, replacement or extension.
- 3.1.7 A licensed engineering practitioner has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.

- 3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.
- 3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:
 - 3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;
 - 3.2.2 Has a nominal diameter greater than 900 mm;
 - 3.2.3 Results in the fragmentation of the drinking water system; or
 - 3.2.4 Connects to another drinking water system, unless:
 - a) Prior to construction, the owner of the drinking water system seeking the connection obtains written consent from the owner or owner's delegate of the drinking water system being connected to; and
 - b) The owner of the drinking water system seeking the connection retains a copy of the written consent from the owner or owner's delegate of the drinking water system being connected to as part of the record that is recorded and retained under condition 3.3.
- 3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:
 - 3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration", as published by the Ministry, prior to the watermain addition, modification, replacement or extension being placed into service; and
 - 3.3.2 Retained for a period of ten (10) years by the owner.
- 3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
 - 3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 3.4.2 Constitutes maintenance or repair of the drinking water system.
- 3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.
- 3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.

- 3.7 Despite clause (a) of condition 3.1.1 and condition 3.1.7, with respect to the replacement of an existing watermain or section of watermain that is 6.1 meters in length or less, if a licensed engineering practitioner has:
- 3.7.1 inspected the replacement prior to it being put into service;
 - 3.7.2 prepared a report confirming that the replacement satisfies clauses (b), (c) and (d) of condition 3.1.1 (i.e. "Form 1 – Record of Watermains Authorized by a Future Alteration" (Form 1), Part 3, items No. 2, 3 and 4); and
 - 3.7.3 appended the report referred to in condition 3.7.2 to the completed Form 1,
- the replacement is exempt from the requirements that the design of the replacement be prepared by a licensed engineering practitioner and that a licensed engineering practitioner verify on Form 1, Part 3, item No. 1 that a licensed engineering practitioner prepared the design of the replacement.
- 3.8 For greater certainty, the exemption in condition 3.7 does not apply to the replacement of an existing watermain or section of watermain if two or more sections of pipe, each of which is 6.1 meters in length or less, are joined together, if the total length of replacement pipes joined together is greater than 6.1 meters.

4.0 Minor Modifications to the Drinking Water System

- 4.1 The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:
- 4.1.1 Coagulant feed systems in the treatment system, including the location and number of dosing points:
 - a) Prior to making any alteration to the drinking water system under condition 4.1.1, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.1.1 and shall provide the Director with a copy of the review.
 - c) The notification required in condition 4.1.1 b) shall be submitted using the "Director Notification Form" published by the Ministry
 - 4.1.2 Instrumentation and controls, including new SCADA systems and upgrades to SCADA system hardware;
 - 4.1.3 SCADA system software or programming that:
 - a) Measures, monitors or reports on a regulated parameter;
 - b) Measures, monitor or reports on a parameter that is used to calculate CT; or,
 - c) Calculates CT for the system or is part of the process algorithm that calculates log removal, where the impacts of addition, modification or replacement have been reviewed by a licensed engineering practitioner;

- 4.1.4 Filter media, backwashing equipment, filter troughs, and under-drains and associated equipment in the treatment system;
 - 4.1.5 Spill containment works; or,
 - 4.1.6 Coarse screens and fine screens
- 4.2 The drinking water system may be altered by adding, modifying, replacing or removing the following components in the drinking water system:
- 4.2.1 Treated water pumps, pressure tanks, and associated equipment;
 - 4.2.2 Raw water pumps and process pumps in the treatment system;
 - 4.2.3 Inline booster pumping stations that are not associated with distribution system storage facilities and are on a watermain with a nominal diameter not exceeding 200 mm;
 - 4.2.4 Re-circulation devices within distribution system storage facilities;
 - 4.2.5 In-line mixing equipment;
 - 4.2.6 Chemical metering pumps and chemical handling pumps;
 - 4.2.7 Chemical storage tanks and associated equipment;
 - 4.2.8 Measuring and monitoring devices that are not required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry.
 - 4.2.9 Chemical injection points;
 - 4.2.10 Valves;
 - 4.2.11 Fuel storage tanks and spill containment works, and associated equipment or,
 - 4.2.12 Any other component(s) where the Director has provided authorization in writing to proceed with the alteration.
- 4.3 The drinking water system may be altered by replacing the following:
- 4.3.1 Raw water piping, treatment process piping or treated water piping within the treatment subsystem;
 - 4.3.2 Measuring and monitoring devices that are required by regulation, by a condition in the Drinking Water Works Permit or by a condition otherwise imposed by the Ministry.
 - 4.3.3 Coagulants and pH adjustment chemicals, where the replacement chemicals perform the same function;

-
- a) Prior to making any alteration to the drinking water system under condition 4.3.3, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.3.3 and shall provide the Director with a copy of the review.
 - c) The notification required in condition 4.3.3 b) shall be submitted using the "Director Notification Form" published by the Ministry.
 - 4.4 Any alteration of the drinking water system made under conditions 4.1, 4.2 or 4.3 shall not result in:
 - 4.4.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
 - 4.4.2 The bypassing or removal of any unit process within a treatment subsystem;
 - 4.4.3 The addition of any new unit process other than coagulation within a treatment subsystem;
 - 4.4.4 A deterioration in the quality of drinking water provided to consumers;
 - 4.4.5 A reduction in the reliability or redundancy of any component of the drinking water system;
 - 4.4.6 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or
 - 4.4.7 An adverse effect on the environment.
 - 4.5 The owner shall verify in writing that any addition, modification, replacement or removal of drinking water system components in accordance with conditions 4.1, 4.2 or 4.3 has met the requirements of the conditions listed in condition 4.4.
 - 4.6 The verifications and documentation required in condition 4.5 shall be:
 - 4.6.1 Recorded on "Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System" published by the Ministry, prior to the modified or replaced components being placed into service; and
 - 4.6.2 Retained for a period of ten (10) years by the owner.
 - 4.7 For greater certainty, the verification requirements set out in conditions 4.5 and 4.6 do not apply to any addition, modification, replacement or removal in respect of the drinking water system which:
 - 4.7.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 4.7.2 Constitutes maintenance or repair of the drinking water system, including software changes to a SCADA system that are not listed in condition 4.1.3

- 4.8 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the air:
- 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
 - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;
 - 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
 - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
 - 5.1.5 Maintenance welding stations;
 - 5.1.6 Minor painting operations used for maintenance purposes;
 - 5.1.7 Parts washers for maintenance shops;
 - 5.1.8 Emergency chlorine and ammonia gas scrubbers and absorbers;
 - 5.1.9 Venting for activated carbon units for drinking water taste and odour control;
 - 5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
 - 5.1.11 Venting for an ozone treatment unit;
 - 5.1.12 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; or
 - 5.1.13 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.
- 5.2 The owner shall not make an addition, modification, or replacement described in condition 5.1 in relation to an activity that is not related to the treatment and/or distribution of drinking water.

- 5.3 The emergency generators identified in condition 5.1.13 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.
- 5.4 The owner shall ensure that the criteria outlined for standby power sources in s.20.4 of O. Reg. 419/05 (Air Pollution – Local Air Quality) are met for all discharge that occurs from the use of emergency generators added, modified or replaced under condition 5.1.13.

Performance Limits

- 5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.13 is operated at all times to comply with the following limits:
 - 5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;
 - 5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive receptors shall not exceed the applicable point of impingement limit, and at non-sensitive receptors shall not exceed the Ministry half-hourly screening level of 1880 ug/m³ as amended; and
 - 5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-300, as applicable.
- 5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.
- 5.7 The owner shall document how compliance with the performance limits outlined in condition 5.5.3 is being achieved, through noise abatement equipment and/or operational procedures.
- 5.8 The verifications and documentation required in conditions 5.6 and 5.7 shall be:
 - 5.8.1 Recorded on “Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere”, as published by the Ministry, prior to the additional, modified or replacement equipment being placed into service; and
 - 5.8.2 Retained for a period of ten (10) years by the owner.
- 5.9 For greater certainty, the verification and documentation requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:
 - 5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 5.9.2 Constitutes maintenance or repair of the drinking water system.
- 5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

6.0 Previously Approved Works

- 6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:
 - 6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification, replacement or extension and operation of that part of the municipal drinking water system;
 - 6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and
 - 6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

7.0 System-Specific Conditions

- 7.1 Not Applicable

8.0 Source Protection

- 8.1 Not Applicable

Schedule C: Authorization to Alter the Drinking Water System

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-202
Drinking Water System Name	Madsen Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 General

1.1 Table 2 provides a reference list of all documents to be incorporated into Schedule C that have been issued as of the date that this permit was issued.

1.1.1 Table 2 is not intended to be a comprehensive list of all documents that are part of Schedule C. For clarity, any document issued by the Director to be incorporated into Schedule C after this permit has been issued is considered part of this drinking water works permit.

Table 2: Schedule C Documents				
Column 1 Issue #	Column 2 Issued Date	Column 3 Description	Column 4 Status	Column 5 DN#
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

1.2 For each document described in columns 1, 2 and 3 of Table 2, the status of the document is indicated in column 4. Where this status is listed as 'Archived', the approved alterations have been completed and relevant portions of this permit have been updated to reflect the altered works. These 'Archived' Schedule C documents remain as a record of the alterations.

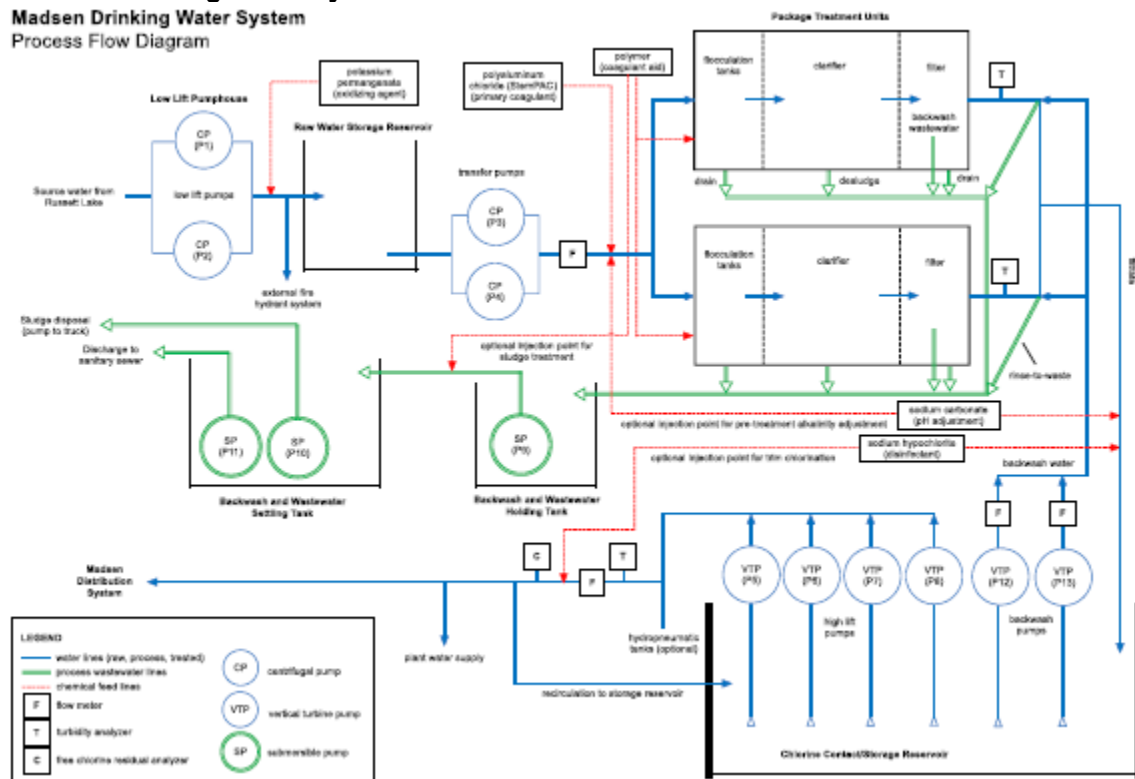
Schedule D: Process Flow Diagrams

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-202
Drinking Water System Name	Madsen Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 Process Flow Diagrams

Madsen Drinking Water System

Madsen Drinking Water System Process Flow Diagram



Note: this process flow diagram is for reference only, and represents a high level overview of the system as of December, 2025.



DRINKING WATER WORKS PERMIT

Permit Number: 234-203

Issue Number: 5

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this drinking water works permit under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

Red Lake, The Corporation of the Municipality of

0 Fifth St

Balmertown, ON P0V 1C0

For the following municipal residential drinking water system:

Red Lake Drinking Water System

This drinking water works permit includes the following:

Schedule	Description
Schedule A	Drinking Water System Description
Schedule B	General
Schedule C	All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system
Schedule D	Process Flow Diagrams

Upon the effective date of this drinking water works permit, all previously issued versions are revoked and replaced by this permit.

DATED at TORONTO this 29th day of May, 2026

Signature

Aziz Ahmed, P.Eng.

Director

Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Description

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-203
Drinking Water System Name	Red Lake Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 System Description

- 1.1 The following is a summary description of the works comprising the above drinking water system:

Overview

The **Red Lake Drinking Water System** consists of one (1) drinking water treatment plant, one (1) elevated storage tank and approximately 20.8 kilometers of distribution watermain.

Red Lake Water Supply Plant

Drinking Water Supply Plant

- Red Lake Water Treatment Plant

Elevated Storage

- Red Lake Water Tower

Red Lake Distribution

Red Lake Water Supply Plant

Location and System Type

Street Address	103, Forestry Rd., Red Lake
UTM Coordinates	NAD 83, UTM Zone 15: 440650 m E., 5653141 m N
System Type	Surface water supply and treatment
Notes	

Surface Water Supply

Intake Facility

Description	Intake structure and pipe extending from Skookum Bay to the water treatment plant
Dimensions	Approximately 610 m length of 400 mm diameter intake pipe
Discharges to	Low lift wet wells at water treatment plant building
Notes	

Low Lift Works

Low Lift Wet Well

Description	Two (2) interconnected low lift pump wells
Discharge to	Water treatment package units
Equipment	Two (2) manual bar screens Three (3) vertical turbine low lift pumps each at 1,500 L/min at 14 m TDH
Notes	

Flocculation/Clarification/Filtration

Package Treatment Units

Description	Two (2) proprietary package flocculator/clarifier/filtration units (in parallel)
Capacity	Each unit rated 3,024 m ³ /day
Discharge to	Treated water reservoir
Equipment (at each package unit)	One (1) flocculation tank divided into four chambers One (1) settling tank equipped with upflow tube settlers complete with desludge system discharging to the sludge holding tank A dual media filter consisting of layers of anthracite, silica sand and supporting gravel covering the underdrain, complete with air scour and backwash systems
Notes	Static mixer in the raw water transfer line

Fuel Oil Systems

Red Lake Water Treatment Plant

Location	NAD 83, UTM Zone 15: 440650 m E., 5653141 m N
Description	Diesel fuel, two (2) double-walled vacuum monitored tanks configured in series, 1,135 L per tank
Fuel Type	Diesel
Source Protection Area	Not Applicable
Notes	

Chemical Addition

Coagulant

Description	Aluminum sulphate addition for coagulation
Feed Point	Raw water upstream of the package treatment units
Equipment	Two (2) metering pumps (duty and standby One (1) bulk storage tank and one (1) day tank
Notes	

Polymer

Description	Polymer addition as coagulant aid and for sludge treatment
Feed Point	Flocculation tanks Wastewater settling tank
Equipment	Two (2) metering pumps and one (1) day tank for coagulant aid at flocculation tanks One (1) metering pump and one (1) day tank for sludge treatment at wastewater settling tank
Notes	

Soda Ash

Description	Soda ash addition for pre-treatment and pH/alkalinity control
Feed Point	Raw water upstream of the package treatment units
	Filter effluent line
Equipment	Two (2) metering pumps (duty and standby) and one (1) day tank for pre-treatment at package treatment units
	Two (2) metering pumps (duty and standby) and one (1) day tank for pH/alkalinity control at filter effluent line
Notes	

Chlorine

Description	Gaseous chlorine for disinfection
Feed Points	Filter effluent line
Equipment	Two (2) gas chlorinators, gas cylinders, regulators, weigh scales and alarm system
Notes	

Waste Residual Management**Holding Tank**

Description	Backwash and wastewater holding tank with transfer pump
Equipment	One (1) submersible pump at 360 L/min. at 5 m TDH to transfer wastewater to settling tank
Notes	

Settling Tank

Description	Backwash and wastewater settling tank with discharge pumps
Equipment	One (1) submersible pump at 1,200 L/min. at 8 m TDH to discharge settled sludge for truck haulage
	One (1) submersible pump at 1,500 L/min. at 10 m TDH to discharge supernatant to Red Lake
Notes	

On-Site Storage/High Lift Works

Reservoir

Description	Two (2) interconnected underground storage reservoirs each with a pump well
Dimensions	Total volume of 563 m ³
Discharge to	Distribution system
	Filter units
Equipment	Four (4) vertical turbine high lift pumps each at 1,728 m ³ /day at 70 m TDH
	Connection from high lift discharge header to filter units for backwash purposes
Notes	

Instrumentation and Control

SCADA System

Description	Process control and monitoring equipment
Notes	System control with data acquisition including various on-line analyzers and monitors

Emergency Power

Backup Power Supply

Description	One (1) standby diesel generator rated 135 kW complete with two (2) fuel tanks
Notes	

Elevated Storage

Red Lake Water Tower

Location	Poplar Crescent, Red Lake
UTM Coordinates	NAD 83, UTM Zone 15: 441747 m E., 5652370 m N
Description	Treated water storage
Dimensions	Total volume of 1,465 m ³
Notes	

Watermains

1.2 Watermains within the distribution system comprise:

- 1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

Table 1: Watermains	
Column 1 Document or File Name	Column 2 Date
Red Lake Distribution System	December, 2025

- 1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.
- 1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

Schedule B: General

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-203
Drinking Water System Name	Red Lake Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 Applicability

- 1.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence #234-103.
- 1.2 The definitions and conditions of licence #234-103 are incorporated into this permit and also apply to this drinking water system.

2.0 Alterations to the Drinking Water System

- 2.1 Any document issued by the Director to be incorporated into Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance with the applicable conditions of this drinking water works permit and licence #234-103.
- 2.2 All documents issued by the Director as described in condition 2.1 shall form part of this drinking water works permit.
- 2.3 All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:
 - a) The ministry's Watermain Disinfection Procedure, dated August 1, 2020;
 - b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
 - c) Subject to condition 2.3.3,
 - a. AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
 - b. AWWA C653 – Standard for Disinfection of Water Treatment Plants;
 - and,
 - c. AWWA C654 – Standard for Disinfection of Wells.
- 2.3.1 For greater certainty, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3. above.
- 2.3.2 Updated requirements described in condition 2.3 b) are effective six months from the date of publication of the updated Watermain Disinfection Procedure.
- 2.3.3 Requirements described in condition 2.3 c) are effective until:

- a) In the case of AWWA C652, six months after the issue date of the ministry's Water Storage Facility Disinfection Procedure;
 - b) In the case of AWWA C653, six months after the issue date of the ministry's Water Treatment Plant Disinfection Procedure; and,
 - c) In the case of AWWA C654, six months after the issue date of the ministry's Wells Disinfection Procedure.
- 2.3.4 The ministry documents described in condition 2.3.3 shall be implemented within the timeframe specified in condition 2.3.3 and once implemented all parts of the drinking water system in contact with drinking water that are added, modified, replaced or extended shall be disinfected in accordance with the applicable provisions of the document or a procedure approved by the Director.
- 2.3.5 After the initial issue date, any updated requirements are effective six months from the date of publication of the updated Water Storage Facility Disinfection Procedure, Water Treatment Plant Disinfection Procedure or Wells Disinfection Procedure.
- 2.3.6 For greater certainty the timeframes described in conditions 2.3.2, 2.3.3 and 2.3.5 are intended to provide a period for transition. Implementation may occur at any point within the identified timeframe in these conditions.
- 2.4 The owner shall notify the Director in writing within thirty (30) days of the placing into service or the completion of any addition, modification, replacement, removal or extension of the drinking water system which had been authorized through:
 - 2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;
 - 2.4.2 Any document to be incorporated in Schedule C to this drinking water works permit respecting works other than watermain; or
 - 2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermain which were not in service at the time of the issuance of the first drinking water works permit.
- 2.5 The notification required in condition 2.4 shall be submitted using the "Director Notification Form" published by the Ministry.
- 2.6 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement, removal or extension in respect of the drinking water system which:
 - 2.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;
 - 2.6.2 Constitutes maintenance or repair of the drinking water system; or
 - 2.6.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.
- 2.7 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the

requirements of the licence and this drinking water works permit as applicable to the prescribed system.

- 2.8 For greater certainty, the owner may only carry out alterations to the drinking water system in accordance with this drinking water works permit after having satisfied other applicable legal obligations, including those arising from the *Environmental Assessment Act*, *Niagara Escarpment Planning and Development Act*, *Oak Ridges Moraine Conservation Act*, 2001 and *Greenbelt Act*, 2005.

3.0 Watermain Additions, Modifications, Replacements and Extensions

- 3.1 The owner may alter the drinking water system, or permit it to be altered by a person acting on the owner's behalf, by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:

- 3.1.1 The design of the watermain addition, modification, replacement or extension:

- a) Has been prepared by a licensed engineering practitioner;
- b) Has been designed only to transmit water and has not been designed to treat water;
- c) Satisfies the design criteria set out in the Ministry publication "Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012", as amended from time to time; and
- d) Is consistent with or otherwise addresses the design objectives contained within the Ministry publication "Design Guidelines for Drinking Water Systems, 2008", as amended from time to time.

- 3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.

- 3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system's ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.

- 3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.

- 3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.

- 3.1.6 The owner of the drinking water system consents in writing to the watermain addition, modification, replacement or extension.

- 3.1.7 A licensed engineering practitioner has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.

- 3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.
- 3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:
 - 3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;
 - 3.2.2 Has a nominal diameter greater than 900 mm;
 - 3.2.3 Results in the fragmentation of the drinking water system; or
 - 3.2.4 Connects to another drinking water system, unless:
 - a) Prior to construction, the owner of the drinking water system seeking the connection obtains written consent from the owner or owner's delegate of the drinking water system being connected to; and
 - b) The owner of the drinking water system seeking the connection retains a copy of the written consent from the owner or owner's delegate of the drinking water system being connected to as part of the record that is recorded and retained under condition 3.3.
- 3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:
 - 3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration", as published by the Ministry, prior to the watermain addition, modification, replacement or extension being placed into service; and
 - 3.3.2 Retained for a period of ten (10) years by the owner.
- 3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
 - 3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 3.4.2 Constitutes maintenance or repair of the drinking water system.
- 3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.
- 3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.

- 3.7 Despite clause (a) of condition 3.1.1 and condition 3.1.7, with respect to the replacement of an existing watermain or section of watermain that is 6.1 meters in length or less, if a licensed engineering practitioner has:
- 3.7.1 inspected the replacement prior to it being put into service;
 - 3.7.2 prepared a report confirming that the replacement satisfies clauses (b), (c) and (d) of condition 3.1.1 (i.e. "Form 1 – Record of Watermains Authorized by a Future Alteration" (Form 1), Part 3, items No. 2, 3 and 4); and
 - 3.7.3 appended the report referred to in condition 3.7.2 to the completed Form 1,
- the replacement is exempt from the requirements that the design of the replacement be prepared by a licensed engineering practitioner and that a licensed engineering practitioner verify on Form 1, Part 3, item No. 1 that a licensed engineering practitioner prepared the design of the replacement.
- 3.8 For greater certainty, the exemption in condition 3.7 does not apply to the replacement of an existing watermain or section of watermain if two or more sections of pipe, each of which is 6.1 meters in length or less, are joined together, if the total length of replacement pipes joined together is greater than 6.1 meters.

4.0 Minor Modifications to the Drinking Water System

- 4.1 The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:
- 4.1.1 Coagulant feed systems in the treatment system, including the location and number of dosing points:
 - a) Prior to making any alteration to the drinking water system under condition 4.1.1, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.1.1 and shall provide the Director with a copy of the review.
 - c) The notification required in condition 4.1.1 b) shall be submitted using the "Director Notification Form" published by the Ministry
 - 4.1.2 Instrumentation and controls, including new SCADA systems and upgrades to SCADA system hardware;
 - 4.1.3 SCADA system software or programming that:
 - a) Measures, monitors or reports on a regulated parameter;
 - b) Measures, monitor or reports on a parameter that is used to calculate CT; or,
 - c) Calculates CT for the system or is part of the process algorithm that calculates log removal, where the impacts of addition, modification or replacement have been reviewed by a licensed engineering practitioner;

- 4.1.4 Filter media, backwashing equipment, filter troughs, and under-drains and associated equipment in the treatment system;
- 4.1.5 Spill containment works; or,
- 4.1.6 Coarse screens and fine screens
- 4.2 The drinking water system may be altered by adding, modifying, replacing or removing the following components in the drinking water system:
 - 4.2.1 Treated water pumps, pressure tanks, and associated equipment;
 - 4.2.2 Raw water pumps and process pumps in the treatment system;
 - 4.2.3 Inline booster pumping stations that are not associated with distribution system storage facilities and are on a watermain with a nominal diameter not exceeding 200 mm;
 - 4.2.4 Re-circulation devices within distribution system storage facilities;
 - 4.2.5 In-line mixing equipment;
 - 4.2.6 Chemical metering pumps and chemical handling pumps;
 - 4.2.7 Chemical storage tanks and associated equipment;
 - 4.2.8 Measuring and monitoring devices that are not required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry.
 - 4.2.9 Chemical injection points;
 - 4.2.10 Valves;
 - 4.2.11 Fuel storage tanks and spill containment works, and associated equipment or,
 - 4.2.12 Any other component(s) where the Director has provided authorization in writing to proceed with the alteration.
- 4.3 The drinking water system may be altered by replacing the following:
 - 4.3.1 Raw water piping, treatment process piping or treated water piping within the treatment subsystem;
 - 4.3.2 Measuring and monitoring devices that are required by regulation, by a condition in the Drinking Water Works Permit or by a condition otherwise imposed by the Ministry.
 - 4.3.3 Coagulants and pH adjustment chemicals, where the replacement chemicals perform the same function;

- a) Prior to making any alteration to the drinking water system under condition 4.3.3, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.3.3 and shall provide the Director with a copy of the review.
 - c) The notification required in condition 4.3.3 b) shall be submitted using the "Director Notification Form" published by the Ministry.
- 4.4 Any alteration of the drinking water system made under conditions 4.1, 4.2 or 4.3 shall not result in:
 - 4.4.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
 - 4.4.2 The bypassing or removal of any unit process within a treatment subsystem;
 - 4.4.3 The addition of any new unit process other than coagulation within a treatment subsystem;
 - 4.4.4 A deterioration in the quality of drinking water provided to consumers;
 - 4.4.5 A reduction in the reliability or redundancy of any component of the drinking water system;
 - 4.4.6 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or
 - 4.4.7 An adverse effect on the environment.
- 4.5 The owner shall verify in writing that any addition, modification, replacement or removal of drinking water system components in accordance with conditions 4.1, 4.2 or 4.3 has met the requirements of the conditions listed in condition 4.4.
- 4.6 The verifications and documentation required in condition 4.5 shall be:
 - 4.6.1 Recorded on "Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System" published by the Ministry, prior to the modified or replaced components being placed into service; and
 - 4.6.2 Retained for a period of ten (10) years by the owner.
- 4.7 For greater certainty, the verification requirements set out in conditions 4.5 and 4.6 do not apply to any addition, modification, replacement or removal in respect of the drinking water system which:
 - 4.7.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 4.7.2 Constitutes maintenance or repair of the drinking water system, including software changes to a SCADA system that are not listed in condition 4.1.3

- 4.8 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the air:
- 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
 - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;
 - 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
 - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
 - 5.1.5 Maintenance welding stations;
 - 5.1.6 Minor painting operations used for maintenance purposes;
 - 5.1.7 Parts washers for maintenance shops;
 - 5.1.8 Emergency chlorine and ammonia gas scrubbers and absorbers;
 - 5.1.9 Venting for activated carbon units for drinking water taste and odour control;
 - 5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
 - 5.1.11 Venting for an ozone treatment unit;
 - 5.1.12 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; or
 - 5.1.13 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.
- 5.2 The owner shall not make an addition, modification, or replacement described in condition 5.1 in relation to an activity that is not related to the treatment and/or distribution of drinking water.
- 5.3 The emergency generators identified in condition 5.1.13 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.

- 5.4 The owner shall ensure that the criteria outlined for standby power sources in s.20.4 of O. Reg. 419/05 (Air Pollution – Local Air Quality) are met for all discharge that occurs from the use of emergency generators added, modified or replaced under condition 5.1.13.

Performance Limits

- 5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.13 is operated at all times to comply with the following limits:
- 5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;
 - 5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive receptors shall not exceed the applicable point of impingement limit, and at non-sensitive receptors shall not exceed the Ministry half-hourly screening level of 1880 ug/m³ as amended; and
 - 5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-300, as applicable.
- 5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.
- 5.7 The owner shall document how compliance with the performance limits outlined in condition 5.5.3 is being achieved, through noise abatement equipment and/or operational procedures.
- 5.8 The verifications and documentation required in conditions 5.6 and 5.7 shall be:
- 5.8.1 Recorded on “Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere”, as published by the Ministry, prior to the additional, modified or replacement equipment being placed into service; and
 - 5.8.2 Retained for a period of ten (10) years by the owner.
- 5.9 For greater certainty, the verification and documentation requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:
- 5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 5.9.2 Constitutes maintenance or repair of the drinking water system.
- 5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

6.0 Previously Approved Works

- 6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:
 - 6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification, replacement or extension and operation of that part of the municipal drinking water system;
 - 6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and
 - 6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

7.0 System-Specific Conditions

- 7.1 Not Applicable

8.0 Source Protection

- 8.1 Not Applicable

Schedule C: Authorization to Alter the Drinking Water System

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-203
Drinking Water System Name	Red Lake Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 General

- 1.1 Table 2 provides a reference list of all documents to be incorporated into Schedule C that have been issued as of the date that this permit was issued.

- 1.1.1 Table 2 is not intended to be a comprehensive list of all documents that are part of Schedule C. For clarity, any document issued by the Director to be incorporated into Schedule C after this permit has been issued is considered part of this drinking water works permit.

Table 2: Schedule C Documents				
Column 1 Issue #	Column 2 Issued Date	Column 3 Description	Column 4 Status	Column 5 DN#
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

- 1.2 For each document described in columns 1, 2 and 3 of Table 2, the status of the document is indicated in column 4. Where this status is listed as 'Archived', the approved alterations have been completed and relevant portions of this permit have been updated to reflect the altered works. These 'Archived' Schedule C documents remain as a record of the alterations.

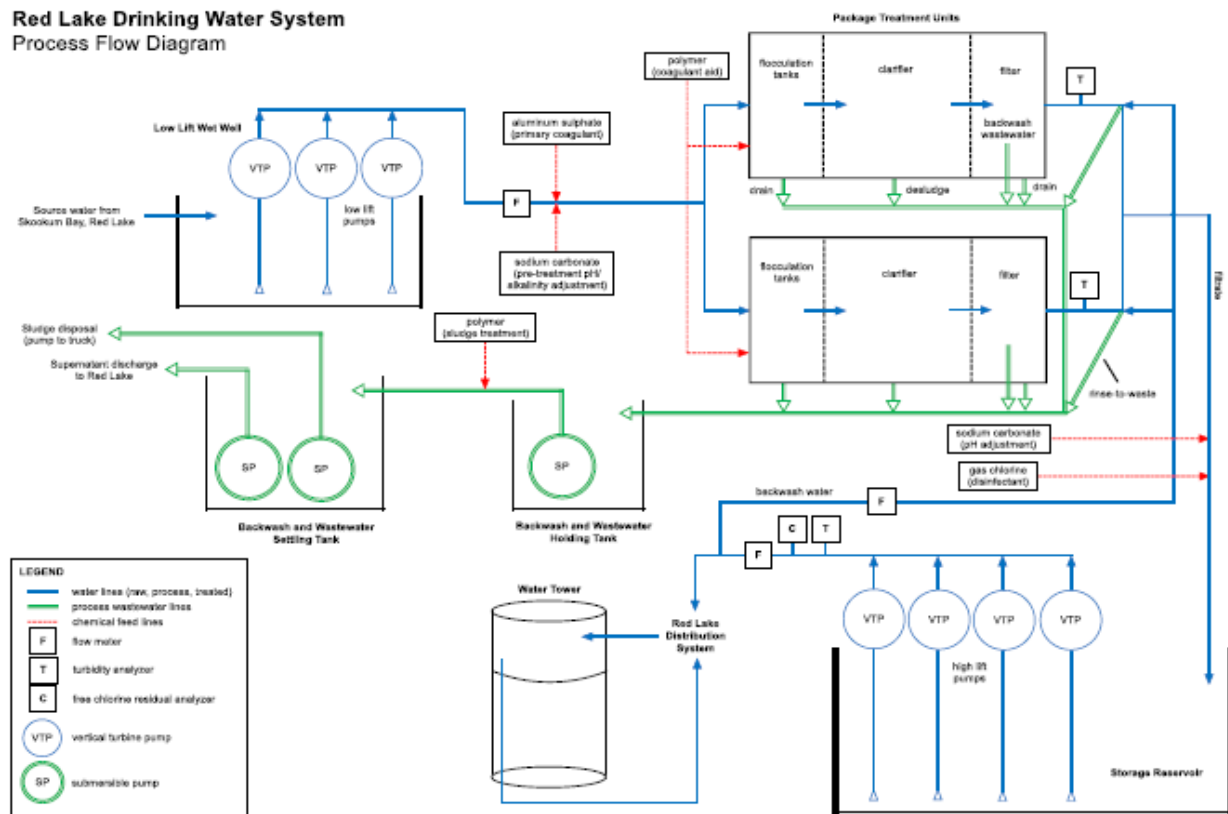
Schedule D: Process Flow Diagrams

System Owner	Red Lake, The Corporation of the Municipality of
Permit Number	234-203
Drinking Water System Name	Red Lake Drinking Water System
Permit Effective Date	May 29th, 2026

1.0 Process Flow Diagrams

Red Lake Drinking Water System

Red Lake Drinking Water System
Process Flow Diagram



Note: this process flow diagram is for reference only, and represents a high level overview of the system as of December, 2025.

MUNICIPAL DRINKING WATER LICENCE

Licence Number: 234-101

Issue Number: 5

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this municipal drinking water licence under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

Red Lake, The Corporation of the Municipality of

0 Fifth St

Balmertown, ON P0V 1C0

For the following municipal residential drinking water system:

Balmertown, Cochenour, & McKenzie Island Drinking Water System

This municipal drinking water licence includes the following:

Schedule

Description

Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements
Schedule E	Pathogen Log Removal/Inactivation Credits

Upon the effective date of this drinking water licence, all previously issued versions are revoked and replaced by this licence.

DATED at TORONTO this 29th day of May, 2026

Signature



Aziz Ahmed, P.Eng.
Director
Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Information

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-101
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Licence Information

Licence Issue Date	2026-05-29
Licence Effective Date	2026-05-29
Licence Expiry Date	2031-05-28
Application for Licence Renewal Date	2030-11-26

2.0 Incorporated Documents

The following documents are applicable to the above drinking water system and form part of this licence:

2.1 Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
Balmertown, Cochenour, & McKenzie Island Drinking Water System	234-201	2026-05-29

2.2 Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Red Lake (Bruce Channel)	0176-B4WPPS	October 5, 2018

3.0 Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	234-301
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	234-301A

4.0 Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
Balmertown, Cochenour, & McKenzie Island Drinking Water System	Northern Water Works Inc.	234-401	234-OA1

Schedule B: General Conditions

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-101
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

“**adverse effect**”, “**contaminant**” and “**natural environment**” shall have the same meanings as in the EPA;

“**alteration**” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“**Clean Water Act**” means the *Clean Water Act*, 2005, S.O. 2006, c. 22.

“**compound of concern**” means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged to the air from a component of the drinking water system in an amount that is not negligible;

“**CT**” means the CT Disinfection Concept, as described in subsection 3.1.1 of the Ministry’s Procedure for Disinfection of Drinking Water in Ontario, dated July 29 2016.

“**Director**” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“**Duty**” means the unit installed and used in regular operation of the drinking water system. The duty unit is included in determining the design capacity calculation.

“**drinking water works permit**” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**EPA**” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

“**financial plan**” means the financial plan required by O. Reg. 453/07;

"Harmful Algal Bloom (HAB)" means an overgrowth of aquatic algal bacteria that produce or have the potential to produce toxins in the surrounding water, when the algal cells are damaged or die. Such bacteria are harmful to people and animals and include microcystins produced by cyanobacterial blooms.

"licence" means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

"licensed engineering practitioner" means a person who holds a licence, limited licence, or temporary licence under the *Ontario Professional Engineers Act* R.S.O. 1990, c. P.28.

"Minister" means the Minister of the Ministry or such other member of the Executive Council as may be assigned the administration of the SDWA under the Executive Council Act, R.S.O. 1990, c. E.25.

"Ministry" means the Ministry of the Minister and includes all employees or other persons acting on its behalf.

"operational plan" means an operational plan developed in accordance with the Director's Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

"owner" means the owner of the drinking water system as identified in Schedule A of this licence;

"OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. 0.40;

"permit to take water" means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

"point of impingement" has the same meaning as in section 2 of O. Reg. 419/05 under the EPA;

"point of impingement limit" means the appropriate standard from Schedule 2 or 3 of O. Reg. 419/05 under the EPA and if a standard is not provided for a compound of concern, the concentration set out for the compound of concern in the document titled "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", as amended from time to time and published by the Ministry and available on a government of Ontario website;

"provincial officer" means a provincial officer designated pursuant to section 8 of the SDWA;

"publication NPC-300" means the Ministry publication titled "Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning" dated August 2013, as amended;

“SCADA system” means a supervisory control and data acquisition system used for process monitoring, automation, recording and/or reporting within the drinking water system;

“SDWA” means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

“sensitive receptor” means any location where routine or normal activities occurring at reasonably expected times would experience adverse effect(s) from a discharge to air from an emergency generator that is a component of the drinking water system, including one or a combination of:

- (a) private residences or public facilities where people sleep (e.g.: single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.),
- (b) institutional facilities (e.g.: schools, churches, community centres, day care centres, recreational centres, etc.),
- (c) outdoor public recreational areas (e.g.: trailer parks, play grounds, picnic areas, etc.), and
- (d) other outdoor public areas where there are continuous human activities (e.g.: commercial plazas and office buildings).

“Spare” means a separate unit that is not connected and can be installed and placed into operation when the Duty unit is out of service (not operational). The spare should be the same size or larger than the duty unit it may be replacing.

“Standby” means a separate unit that is connected for use and operation. The standby unit is available for operation when the duty unit is offline or out of service. The standby unit is not considered in determining the design capacity calculation, but should be the same size or larger than the duty unit it may be replacing.

“sub-system” has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts) under the SDWA;

“surface water” means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

“UV” means ultraviolet, as in ultraviolet light produced from an ultraviolet reactor.

2.0 Applicability

- 2.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

- 4.1** Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

- 5.1** The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

- 6.1** At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1** A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.
- 7.2** A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.

8.0 Financial Plan

- 8.1** For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
- 8.1.1** Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
 - 8.1.2** Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

9.0 Interpretation

- 9.1** Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- 9.1.1** The SDWA;
 - 9.1.2** A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;

- 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
- 9.1.4 Any regulation made under the SDWA;
- 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
- 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
- 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and
- 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.1.9 Any other technical bulletin or procedure issued by the Ministry from the most recent to the earliest.
- 9.2** If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3** The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
 - 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
 - 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- 9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

- 10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:
 - 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
 - 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.

- 10.2** All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3** Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

- 11.1** This licence is not transferable without the prior written consent of the Director.
- 11.2** The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
- 11.2.1** Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

12.0 Information to be Provided

- 12.1** Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request and in a timeframe outlined by the Director or provincial officer.

13.0 Records Retention

- 13.1** Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 or section 13 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

- 14.1** All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/14, NSF/60, NSF/61 and NSF/372.
- 14.1.1** In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical

and material used in the operation of the drinking water system that comes into contact with water within the system.

14.3 Conditions 14.1 and 14.2 do not apply in the case of the following:

14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high-density polyethylene (HDPE);

14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;

14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;

14.3.4 Gaskets that are made from NSF approved materials;

14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use that may come into contact with drinking water, but are not added directly to the drinking water; or

14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.

15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the alteration being completed or placed into service.

15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference to all persons responsible for all or part of the operation or maintenance of the drinking water system.

16.1.1 For clarity, up-to-date in the context of condition 16.1 means an operations and maintenance manual or manuals that reflects the current procedures in use within the drinking water system.

16.2 The operations and maintenance manual or manuals, shall include at a minimum:

16.2.1 The requirements of this licence and associated procedures;

16.2.2 The requirements of the drinking water works permit for the drinking water system;

16.2.3 A description of the processes used to achieve primary and secondary disinfection within the drinking water system including where applicable:

a) A copy of the CT calculations used to ensure that at all times, CT provided shall be greater than or equal to the CT required for the pathogen inactivation; and,

b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;

16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;

16.2.5 Procedures for the operation and maintenance of monitoring equipment;

16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;

16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;

16.3 Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.

16.4 All of the procedures included or referenced within the operations and maintenance manual must be implemented.

17.0 CT Calculations

Table B1: CT Calculations	
Column 1 Document Title or File Name	Column 2 Version Number and Date
Disinfection Summary [BCMIDWS-SOP-DS]	December, 2025

- 17.1** Any changes to the CT calculations used as the basis for primary disinfection in the drinking water system, described in Table B1 must be:
- 17.1.1 structured to ensure that the provided CT is greater than or equal to the CT (or log inactivation) required for the pathogen inactivation as described in Schedule E of this licence;
 - 17.1.2 included in the operations and maintenance manual described in condition 16 of Schedule B in this licence prior to being implemented;
 - 17.1.3 reviewed by a Licensed Engineering Practitioner; and,
 - 17.1.4 submitted to the Director no later than 30 days after the date that the changes have been implemented.

Schedule C: System-Specific Conditions

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-101
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 System Performance

Rated Capacity

1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

1.1.1 Despite condition 1.1, where maximum flow rates in Table 2 limit the volume of water that may be treated by the treatment subsystem, the maximum daily volume of treated water that flows from the treatment subsystem listed in column 1 of Table 1 to the distribution system shall not exceed the value identified as the operational capacity in column 3 of the same.

Table 1: Rated Capacity		
Column 1 Treatment Subsystem Name	Column 2 Rated Capacity (m ³ /day)	Column 3 Operational Capacity (m ³ /day)
Cochenour Water Treatment Plant	6,065	6,065

Maximum Flow Rates

1.2 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

Table 2: Maximum Flow Rates		
Column 1 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 Maximum Flow Rate (L/s)
Not Applicable	Not Applicable	Not Applicable

1.3 Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.

- 1.4 Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Residuals Management

- 1.5 In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
- 1.5.1 The annual average concentration of a test parameter identified in column 2 shall:
- a) not exceed the value in column 3 of the same row; and
 - b) be calculated at least once monthly as the running annual average based on the previous twelve months of results;
- 1.5.2 Where the average concentration of a test parameter identified in column 2 exceeds the value in column 3, the concentration shall be reported to the local Ministry district office within 72 hours of receipt of the last lab result used in the calculation;
- 1.5.3 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row;
- 1.5.4 Where the maximum concentration of a test parameter identified in column 2 exceeds the value in column 4, the discharge shall be reported in accordance with s.13.2 of O. Reg. 675.98 and recorded in accordance with s.12.2 of O. Reg. 675.98 within 24 hours of receipt of the lab result; and,
- 1.5.5 The test parameters listed in column 2 of Table 3 shall be sampled in accordance with conditions 5.2, 5.3 and 5.4 of Schedule C in this Licence.

Table 3: Residuals Management			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Cochenour Water Treatment Plant	Suspended Solids	25	Not Applicable

UV Disinfection Equipment Performance

- 1.6 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system and being used to meet pathogen log removal/inactivation credits specified in Schedule E:
- 1.6.1 The UV disinfection equipment shall be operated within the validated limits for the equipment at all times such that a continuous pass-through UV dose is

maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row

- 1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;
- 1.6.3 If there is a UV disinfection equipment alarm signaling that the disinfection equipment is malfunctioning, has lost power, or is not providing the appropriate level of disinfection the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;
- 1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm described in condition 1.6.3, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

Table 4: UV Disinfection Equipment

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm ²)	Column 3 Control Strategy	Column 4 Test Parameter
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Filtration Performance

- 1.7 For each treatment subsystem in column 1 of Table 1, filtrate turbidity shall be continuously monitored from each filter while the filter effluent line is directing water to the next stage of the treatment process and being used to meet pathogen log removal/inactivation credits specified in Schedule E.
 - 1.7.1 Filtrate turbidity performance shall be calculated for each filter using all turbidity measurements taken in a calendar day ('daily filtrate turbidity performance').
 - 1.7.2 When filtrate turbidity test results are examined within 72 hours after the tests are conducted in accordance with Schedule 6, condition 6-5(1)(3), daily filtrate turbidity performance shall be evaluated against the percentage criterion specified in Schedule E.
 - 1.7.3 If an evaluation of daily filtrate turbidity performance indicates performance for a filter does not meet the percentage criterion specified in Schedule E, the owner shall ensure that:
 - a) Appropriate action is taken to identify the cause(s) and resolve where necessary.

- b) A record is created to describe the action(s) taken.
- 1.7.4 The owner shall ensure that performance criterion for filtered water turbidity specified in Schedule E is achieved for each filter using all turbidity measurements taken in a calendar month ('monthly filtrate turbidity performance').
- a) Within 72 hours of the end of each calendar month, the monthly filtrate turbidity performance shall be evaluated against the percentage criterion specified in Schedule E.
 - b) If an evaluation of monthly filtrate turbidity performance indicates performance for a filter does not meet the percent criterion specified in Schedule E, an adverse water quality report shall be made as per Schedule 16-4 of O. Reg. 170/03 immediately after the evaluation is conducted.
- 1.8 The requirement for the Owner to comply with condition 1.7 shall come into force June 13, 2027.
- 1.8.1 Prior to transitioning to the requirements set out in condition 1.7, the owner shall ensure that performance criterion for filtered water turbidity specified in Schedule E is achieved for each filter using all turbidity measurements taken in calendar month.
- 1.8.2 For greater certainty the timeframe described in condition 1.8 is intended to provide a period for transition. Implementation may occur on or before the date indicated in this condition.

2.0 Flow Measurement and Recording Requirements

- 2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:
- 2.1.1 The flow rate (L/s) and daily volume (m³/day) of treated water that flows from the treatment subsystem to the distribution system.
 - 2.1.2 The flow rate (L/s) and daily volume (m³/day) of water that flows into the treatment subsystem.
- 2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.

- 2.3** Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:
- 2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;
 - 2.3.2 The time and date of the measurement;
 - 2.3.3 The reason for the exceedance; and
 - 2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

- 3.1** All flow measuring devices that are required by regulation, by a condition in the drinking water works permit 234-201, or by a condition otherwise imposed by the Ministry, shall be checked and where necessary calibrated in accordance with the manufacturer's instructions.
- 3.2** If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation.
- 3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

4.0 Calibration of CT Monitoring System

- 4.1** Any measuring instrumentation that forms part of the monitoring system for CT shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation, or more frequently in accordance with the manufacturer's instructions.
- 4.1.1 For greater certainty, if condition 4.1 applies, the instrumentation shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

5.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

- 5.1** For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

Table 5: Drinking Water Health Related Parameters			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Table 6: Drinking Water Non-Health Related Parameters			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Environmental Discharge Parameters

- 5.2** For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.
- 5.3** For the purposes of Table 7:
- 5.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and
- 5.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.
- 5.4** Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard

Methods for the Examination of Water and Wastewater", 23rd Edition, 2017, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sample Type	Column 4 Sampling Frequency	Column 5 Monitoring Location
Cochenour Water Treatment Plant	Suspended Solids	Composite	Monthly	Point of discharge to Red Lake

5.5 Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:

5.5.1 The discharge of potable water from a watermain to a road or storm sewer;

5.5.2 The discharge of potable water from a water storage facility or pumping station:

- a) To a road or storm sewer; or
- b) To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

5.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;

5.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and

5.5.5 The discharge of raw water, potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

5.5.6 The discharge of any excess water to a road, storm sewer or the environment, associated with the management of materials excavated as part of watermain construction or repair, where necessary sediment, erosion and environmental control measures have been implemented.

6.0 Studies Required

Study Title

Not applicable

7.0 Harmful Algal Blooms

- 7.1 The owner shall develop and keep up to date a Harmful Algal Bloom Monitoring, Reporting and Sampling Plan (herein known as the “Plan”) that, at a minimum:
- 7.1.1 Meets the requirements set out in the Ministry document titled “Harmful Algal Bloom Guide for Owners and Operators of Municipal Residential Drinking Water Systems”, dated January 29, 2024;
 - 7.1.2 Is updated within 12 months of any update to the guide described in condition 7.1.1;
 - 7.1.3 Is maintained in a format that is available onsite at the drinking water system, for inspection upon request by Ministry staff; and,
 - 7.1.4 Is implemented each year for the period identified within the Plan.
- 7.2 The owner must ensure that all relevant drinking water system staff are provided with training on the Plan each year, prior to the period described in the Plan.
- 7.3 When a Harmful Algal Bloom is suspected or occurring:
- 7.3.1 Water samples must be:
 - a) Collected at least once per week from locations identified in the Plan, or otherwise as directed by the Ministry or the medical officer of health;
 - b) Repeatedly collected until 3 consecutive samples have shown non-detection of microcystin and the algal bloom is no longer suspected or visually observed; and,
 - c) Submitted to a laboratory licensed to perform ELISA testing for total microcystin
 - 7.3.2 The bloom must be reported to the local medical officer of health and the Ministry in accordance with procedures outlined in the Plan.

8.0 Source Protection

- 8.1 The Owner shall implement risk management measures, as appropriate, to manage any potential threat to drinking water that results from the operation of the drinking water system.
- 8.2 Where the drinking water system, or a portion thereof, is located in a source protection area as defined in the *Clean Water Act, 2006*, the owner shall prepare an “Assessment of Fuel Storage and Handling” (the “Assessment”) on or before June 13, 2027.
- 8.3 At a minimum, the Assessment shall:
- 8.3.1 Identify all locations that are part of drinking water system where fuel is stored or handled within a well head protection area (WHPA) or intake protection zone

- (IPZ), as identified in the ministry's Source Protection Information Atlas (SPIA) mapping tool.
- 8.3.2 For each location identified under 8.3.1, document an evaluation of the fuel storage or handling for the purposes of determining if the fuel storage or handling is a Significant Drinking Water Threat by using the SPIA, the latest Technical Rules under the *Clean Water Act, 2006* and in particular, the tables of drinking water quality threats, having regard to the circumstances set out in the table and the vulnerability score of each fuel storage or handling location in the WHPA or IPZ.
- 8.3.3 Having regard to conditions 8.8, 8.9 and 8.10, determine and document the risk management measures that shall be implemented in respect of each fuel storage or handling location mentioned in condition 8.3.2 that is determined to be a Significant Drinking Water Threat.
- 8.4 If the Owner proposes to make alterations to the drinking water system authorized in Schedule B of the drinking water works permit that would result in any new or modified fuel storage or handling that is part of the drinking water system, the Owner shall, before making the alteration, ensure that the new or modified fuel storage or handling is identified and evaluated in accordance with conditions 8.3.1, 8.3.2 and 8.3.3, and the Assessment is updated accordingly.
- 8.5 The owner shall review the Assessment at least once every twelve (12) months and:
- 8.5.1 If the Technical Rules under the *Clean Water Act, 2006*, the delineation of any WHPA or IPZ in the source protection area, or any applicable source protection plan policies have changed since the Assessment was last reviewed under this condition, identify and evaluate fuel storage or handling in accordance with conditions 8.3.1, 8.3.2 and 8.3.3 and update the Assessment accordingly.
- 8.5.2 Record the date that the review was completed and outcome(s) of the review.
- 8.6 The owner shall notify the Director in writing within thirty (30) days of preparing or updating an Assessment that identifies or changes one or more fuel storage or handling Significant Drinking Water Threats.
- 8.7 The notification required in condition 8.6 shall:
- 8.7.1 list new location(s) where fuel storage or handling has been identified as a Significant Drinking Water Threat;
- 8.7.2 list the locations where existing fuel storage or handling has become or is no longer a Significant Drinking Water Threat; and,
- 8.7.3 be submitted using the "Director Notification Form" published by the Ministry.
- 8.8 Where fuel storage or handling is identified as a Significant Drinking Water Threat, the owner shall implement risk management measures for the fuel oil storage systems that ensure fuel is appropriately stored and managed to protect the raw water source of supply for the drinking water system or subsystem.

The measures shall include the following:

- 8.8.1 The storage tank(s) associated with the fuel oil systems shall be inspected at least once every twelve months, or more frequently as recommended by the manufacturer or required by the Technical Standards and Safety Act (TSSA) 2000, and applicable regulations, codes and standards.
- 8.8.2 the inspection required by condition 8.8.1 shall be performed by a person certified for that purpose under the TSSA and shall include, at a minimum,
- 8.8.3 Visual inspection of the fuel oil tank, tubing, and piping for leaks;
- 8.8.4 Where the tank is below grade (underground), visible components of the tank should be inspected, including the fill pipe and vent;
- 8.8.5 Visual inspection of any grade-level secondary containment;
- 8.8.6 Inspection of any equipment installed to monitor or measure fuel levels;
- 8.8.7 Inspection of any cut-off or control valves and associated equipment;
- 8.8.8 Visual inspection of any fuel pumps and/or sumps and testing of such devices for proper operation;
- 8.8.9 Inspection of any installed corrosion protection systems;
- 8.8.10 Testing for water at the bottom of storage tanks that are not bottom outlet tanks; and,
- 8.8.11 Inspection of any installed electronic or mechanical leak-detection equipment.
- 8.9 A record of the inspections performed in accordance with condition 8.8.1 and a record of any associated repairs, maintenance or upgrades shall be kept on-site and available for review by ministry staff.
- 8.10 Spill or leak detection and spill response procedures shall be incorporated into the Operations and Maintenance Manual required under condition 16 of this licence.
- 8.11 Where the local source protection plan outlines risk management measures for fuel storage or handling in addition to those identified in 8.8, the measures identified in the source protection plan shall also be implemented.
- 8.12 The owner shall undertake alterations and develop operating procedures as appropriate to ensure that the storage and handling of fuel is adequately managed to protect the source of drinking water.

9.0 Additional System Specific Conditions

- 9.1 Not applicable.

Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-101
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Coagulation Interruption Relief

- 1.1 Subject to Conditions 1.2, 1.3, 1.4, and 1.5, the Owner/Operating Authority is not required to comply with Section 16-4, Schedule 16 of O.Reg 170/03, "Duty to report other observations", specific to loss of coagulant.
- 1.2 The Owner/Operating Authority shall operate and maintain flow-measuring instruments at each coagulant feed line.
- 1.3 The treatment units shall automatically and immediately shutdown and lock out when there is an alarm for coagulant loss. The coagulant feed system issue shall be checked and resolved before re-starting the treatment units.
- 1.4 Once the treatment units are re-started, the normal operation of the coagulant feed system shall be confirmed within 8 minutes.
- 1.5 The owner shall keep records of any confirmed loss of coagulant feed available for inspection. If the records are kept in a log book, the date and time when coagulation interruption relief granted under 1.1 above is utilized shall be displayed in a manner that these records are readily identifiable.

2.0 Continuous Monitoring

- 2.1 Notwithstanding the requirements of O. Reg. 170/03 and the table to Schedule 6, the last column (Minimum Alarm Standard), items 1 and 2 shall be changed from:

"0.1 milligrams per litre *less* than the concentration of free chlorine residual that is required to achieve primary disinfection", to:

"at least 0.1 milligrams per litre *greater* than the concentration of free chlorine residual that is required to achieve primary disinfection"

3.0 Chlorine Residual in the Distribution System

- 3.1 Where a chlorine residual below the values set out in s.1-2(2)(4) of Schedule 1 of O. Reg. 170/03 is identified at a location within the distribution system and:
 - 3.1.1 the drinking water system's water treatment equipment is confirmed to be operating effectively;

- 3.1.2 any adverse result is reported in accordance with s.16-3(1)(4) or s.16-3(1)(5) in Schedule 16 of O. Reg. 170/03;
- 3.1.3 the operator undertakes corrective action required by s.17-4 in Schedule 17 or s.18-4 in Schedule 18 of O. Reg. 170/03; and
- 3.1.4 actions are taken to prevent recurrence(s) of low chlorine residual results at the location,

the owner shall be deemed not to have contravened s.1-2(2)(4) in Schedule 1 of O. Reg. 170/03.

- 3.2** For clarity, actions taken under condition 2.1 d) may include but are not limited to implementation of a flushing program, enhancement of an existing flushing program, or infrastructure upgrades.

Schedule E: Pathogen Log Removal/Inactivation Credits

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-101
Drinking Water System Name	Balmertown, Cochenour, & McKenzie Island Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

Cochenour Water Supply Plant

Red Lake [SURFACE WATER]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts ^a	Viruses ^b
Cochenour Water Supply Plant	2	3	4

^a At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.

^b At least 2 log inactivation of viruses shall be achieved by disinfection.

Log Removal/Inactivation Credits Assigned ^c	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Conventional Filtration	2	2.5	2
Chlorination [CT: Reservoir]	-	0.5	2+

^c Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

Treatment Component	Log Removal/Inactivation Credit Assignment Criteria
Conventional Filtration	1. A chemical coagulant shall be used at all times when the treatment plant is in operation; 2. Chemical dosages shall be monitored and adjusted in response to variations in raw water quality; 3. Effective backwash procedures shall be maintained including filter-to-waste or an equivalent procedure during filter ripening to ensure that effluent turbidity requirements are met at all times; 4. Filtrate turbidity shall be continuously monitored from each filter; and 5. Performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month shall be met for each filter.
Chlorination	1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.
Primary Disinfection Notes	

MUNICIPAL DRINKING WATER LICENCE

Licence Number: 234-102

Issue Number: 5

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this municipal drinking water licence under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

Red Lake, The Corporation of the Municipality of

0 Fifth St

Balmertown, ON P0V 1C0

For the following municipal residential drinking water system:

Madsen Drinking Water System

This municipal drinking water licence includes the following:

Schedule

Description

Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements
Schedule E	Pathogen Log Removal/Inactivation Credits

Upon the effective date of this drinking water licence, all previously issued versions are revoked and replaced by this licence.

DATED at TORONTO this 29th day of May, 2026

Signature



Aziz Ahmed, P.Eng.
Director
Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Information

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-102
Drinking Water System Name	Madsen Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Licence Information

Licence Issue Date	2026-05-29
Licence Effective Date	2026-05-29
Licence Expiry Date	2031-05-28
Application for Licence Renewal Date	2030-11-26

2.0 Incorporated Documents

The following documents are applicable to the above drinking water system and form part of this licence:

2.1 Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
Madsen Drinking Water System	234-202	2026-05-29

2.2 Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Russett Lake	1457-BNELVM	April 6, 2020

3.0 Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	234-302
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	234-301A

4.0 Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
Madsen Drinking Water System	Northern Water Works Inc.	234-402	234-OA1

Schedule B: General Conditions

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-102
Drinking Water System Name	Madsen Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

“adverse effect”, “contaminant” and “natural environment” shall have the same meanings as in the EPA;

“alteration” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“Clean Water Act” means the *Clean Water Act*, 2005, S.O. 2006, c. 22.

“compound of concern” means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged to the air from a component of the drinking water system in an amount that is not negligible;

“CT” means the CT Disinfection Concept, as described in subsection 3.1.1 of the Ministry’s Procedure for Disinfection of Drinking Water in Ontario, dated July 29 2016.

“Director” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“Duty” means the unit installed and used in regular operation of the drinking water system. The duty unit is included in determining the design capacity calculation.

“drinking water works permit” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“emission summary table” means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;

“EPA” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

“financial plan” means the financial plan required by O. Reg. 453/07;

“Harmful Algal Bloom (HAB)” means an overgrowth of aquatic algal bacteria that produce or have the potential to produce toxins in the surrounding water, when the algal cells are damaged or die. Such bacteria are harmful to people and animals and include microcystins produced by cyanobacterial blooms.

“licence” means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

“licensed engineering practitioner” means a person who holds a licence, limited licence, or temporary licence under the *Ontario Professional Engineers Act* R.S.O. 1990, c. P.28.

“Minister” means the Minister of the Ministry or such other member of the Executive Council as may be assigned the administration of the SDWA under the Executive Council Act, R.S.O. 1990, c. E.25.

“Ministry” means the Ministry of the Minister and includes all employees or other persons acting on its behalf.

“Ministry” means the Ontario Ministry of the Environment, Conservation and Parks;

“operational plan” means an operational plan developed in accordance with the Director’s Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

“owner” means the owner of the drinking water system as identified in Schedule A of this licence;

“OWRA” means the *Ontario Water Resources Act*, R.S.O. 1990, c. 0.40;

“permit to take water” means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“point of impingement” has the same meaning as in section 2 of O. Reg. 419/05 under the EPA;

“point of impingement limit” means the appropriate standard from Schedule 2 or 3 of O. Reg. 419/05 under the EPA and if a standard is not provided for a compound of concern, the concentration set out for the compound of concern in the document titled “Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants”, as amended from time to time and published by the Ministry and available on a government of Ontario website;

“licensed engineering practitioner” means a person who holds a licence, limited licence or temporary licence under the Professional Engineers Act;

"provincial officer" means a provincial officer designated pursuant to section 8 of the SDWA;

"publication NPC-300" means the Ministry publication titled "Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning" dated August 2013, as amended;

"SCADA system" means a supervisory control and data acquisition system used for process monitoring, automation, recording and/or reporting within the drinking water system;

"SDWA" means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

"sensitive receptor" means any location where routine or normal activities occurring at reasonably expected times would experience adverse effect(s) from a discharge to air from an emergency generator that is a component of the drinking water system, including one or a combination of:

- (a) private residences or public facilities where people sleep (e.g.: single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.),
- (b) institutional facilities (e.g.: schools, churches, community centres, day care centres, recreational centres, etc.),
- (c) outdoor public recreational areas (e.g.: trailer parks, play grounds, picnic areas, etc.), and
- (d) other outdoor public areas where there are continuous human activities (e.g.: commercial plazas and office buildings).

"Spare" means a separate unit that is not connected and can be installed and placed into operation when the Duty unit is out of service (not operational). The spare should be the same size or larger than the duty unit it may be replacing.

"Standby" means a separate unit that is connected for use and operation. The standby unit is available for operation when the duty unit is offline or out of service. The standby unit is not considered in determining the design capacity calculation, but should be the same size or larger than the duty unit it may be replacing.

"sub-system" has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts) under the SDWA;

"surface water" means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

"UV" means ultraviolet, as in ultraviolet light produced from an ultraviolet reactor.

2.0 Applicability

- 2.1** In addition to any other applicable legal requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

- 6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1 A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.
- 7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.

8.0 Financial Plan

- 8.1 For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
- 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

9.0 Interpretation

- 9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- 9.1.1 The SDWA;

- 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
 - 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
 - 9.1.4 Any regulation made under the SDWA;
 - 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
 - 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
 - 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and
 - 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
 - 9.1.9 Any other technical bulletin or procedure issued by the Ministry from the most recent to the earliest.
- 9.2** If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3** The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
- 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
 - 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- 9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

- 10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:

- 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
- 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- 10.2 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3 Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

- 11.1 This licence is not transferable without the prior written consent of the Director.
- 11.2 The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
 - 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

12.0 Information to be Provided

- 12.1 Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request and in a timeframe outlined by the Director or provincial officer.

13.0 Records Retention

- 13.1 Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 or section 13 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

- 14.1 All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/14, NSF/60, NSF/61 and NSF/372.

- 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
- 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;
- 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;
- 14.3.4 Gaskets that are made from NSF approved materials;
- 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use that may come into contact with drinking water, but are not added directly to the drinking water; or
- 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

- 15.1** All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
- 15.2** Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the alteration being completed or placed into service.
- 15.3** Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

- 16.1** An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference to all persons responsible for all or part of the operation or maintenance of the drinking water system.
- 16.1.1 For clarity, up-to-date in the context of condition 16.1 means an operations and maintenance manual or manuals that reflects the current procedures in use within the drinking water system.
- 16.2** The operations and maintenance manual or manuals, shall include at a minimum:
- 16.2.1 The requirements of this licence and associated procedures;
- 16.2.2 The requirements of the drinking water works permit for the drinking water system;
- 16.2.3 A description of the processes used to achieve primary and secondary disinfection within the drinking water system including where applicable:
- a) A copy of the CT calculations used to ensure that at all times, CT provided shall be greater than or equal to the CT required for the pathogen inactivation; and,
 - b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;
- 16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;
- 16.2.5 Procedures for the operation and maintenance of monitoring equipment;
- 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
- 16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;
- 16.3** Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
- 16.4** All of the procedures included or referenced within the operations and maintenance manual must be implemented.

17.0

CT Calculations

Table B1: CT Calculations	
Column 1 Document Title or File Name	Column 2 Version Number and Date
Disinfection Summary [MDWS-SOP-DS]	December, 2025

17.1 Any changes to the CT calculations used as the basis for primary disinfection in the drinking water system, described in Table B1 must be:

17.1.1 structured to ensure that the provided CT is greater than or equal to the CT (or log inactivation) required for the pathogen inactivation as described in Schedule E of this licence;

17.1.2 included in the operations and maintenance manual described in condition 16 of Schedule B in this licence prior to being implemented;

17.1.3 reviewed by a Licensed Engineering Practitioner; and,

submitted to the Director no later than 30 days after the date that the changes have been implemented.

Schedule C: System-Specific Conditions

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-102
Drinking Water System Name	Madsen Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 System Performance

Rated Capacity

1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

1.1.1 Despite condition 1.1, where maximum flow rates in Table 2 limit the volume of water that may be treated by the treatment subsystem, the maximum daily volume of treated water that flows from the treatment subsystem listed in column 1 of Table 1 to the distribution system shall not exceed the value identified as the operational capacity in column 3 of the same.

Table 1: Rated Capacity

Column 1 Treatment Subsystem Name	Column 2 Rated Capacity (m ³ /day)	Column 3 Operational Capacity (m ³ /day)
Madsen Water Treatment Plant	691	691

Maximum Flow Rates

1.2 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

Table 2: Maximum Flow Rates

Column 1 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 Maximum Flow Rate (L/s)
Not Applicable	Not Applicable	Not Applicable

1.3 Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.

- 1.4** Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Residuals Management

- 1.5** In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
- 1.5.1** The annual average concentration of a test parameter identified in column 2 shall:
- a) not exceed the value in column 3 of the same row; and
 - b) be calculated at least once monthly as the running annual average based on the previous twelve months of results;
- 1.5.2** Where the average concentration of a test parameter identified in column 2 exceeds the value in column 3, the concentration shall be reported to the local Ministry district office within 72 hours of receipt of the last lab result used in the calculation;
- 1.5.3** The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row;
- 1.5.4** Where the maximum concentration of a test parameter identified in column 2 exceeds the value in column 4, the discharge shall be reported in accordance with s.13.2 of O. Reg. 675.98 and recorded in accordance with s.12.2 of O. Reg. 675.98 within 24 hours of receipt of the lab result; and,
- 1.5.5** The test parameters listed in column 2 of Table 3 shall be sampled in accordance with conditions 5.2, 5.3 and 5.4 of Schedule C in this Licence.

Table 3: Residuals Management			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Not Applicable	Not Applicable	Not Applicable	Not Applicable

UV Disinfection Equipment Performance

- 1.6** For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system and being used to meet pathogen log removal/inactivation credits specified in Schedule E:
- 1.6.1** The UV disinfection equipment shall be operated within the validated limits for the equipment at all times such that a continuous pass-through UV dose is

maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row

- 1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;
- 1.6.3 If there is a UV disinfection equipment alarm signaling that the disinfection equipment is malfunctioning, has lost power, or is not providing the appropriate level of disinfection the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;
- 1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm described in condition 1.6.3, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

Table 4: UV Disinfection Equipment

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm ²)	Column 3 Control Strategy	Column 4 Test Parameter
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Filtration Performance

- 1.7 For each treatment subsystem in column 1 of Table 1, filtrate turbidity shall be continuously monitored from each filter while the filter effluent line is directing water to the next stage of the treatment process and being used to meet pathogen log removal/inactivation credits specified in Schedule E.
 - 1.7.1 Filtrate turbidity performance shall be calculated for each filter using all turbidity measurements taken in a calendar day ('daily filtrate turbidity performance').
 - 1.7.2 When filtrate turbidity test results are examined within 72 hours after the tests are conducted in accordance with Schedule 6, condition 6-5(1)(3), daily filtrate turbidity performance shall be evaluated against the percentage criterion specified in Schedule E.
 - 1.7.3 If an evaluation of daily filtrate turbidity performance indicates performance for a filter does not meet the percentage criterion specified in Schedule E, the owner shall ensure that:
 - a) Appropriate action is taken to identify the cause(s) and resolve where necessary.

- b) A record is created to describe the action(s) taken.
- 1.7.4 The owner shall ensure that performance criterion for filtered water turbidity specified in Schedule E is achieved for each filter using all turbidity measurements taken in a calendar month ('monthly filtrate turbidity performance').
- a) Within 72 hours of the end of each calendar month, the monthly filtrate turbidity performance shall be evaluated against the percentage criterion specified in Schedule E.
 - b) If an evaluation of monthly filtrate turbidity performance indicates performance for a filter does not meet the percent criterion specified in Schedule E, an adverse water quality report shall be made as per Schedule 16-4 of O. Reg. 170/03 immediately after the evaluation is conducted.
- 1.8 The requirement for the Owner to comply with condition 1.7 shall come into force on June 13, 2027.
- 1.8.1 Prior to transitioning to the requirements set out in condition 1.7, the owner shall ensure that performance criterion for filtered water turbidity specified in Schedule E is achieved for each filter using all turbidity measurements taken in calendar month.

For greater certainty the timeframe described in condition 1.8 is intended to provide a period for transition. Implementation may occur on or before the date indicated in this condition.

2.0 Flow Measurement and Recording Requirements

- 2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:
- 2.1.1 The flow rate (L/s) and daily volume (m³/day) of treated water that flows from the treatment subsystem to the distribution system.
 - 2.1.2 The flow rate (L/s) and daily volume (m³/day) of water that flows into the treatment subsystem.
- 2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.
- 2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:
- 2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;
 - 2.3.2 The time and date of the measurement;

2.3.3 The reason for the exceedance; and

2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

3.1 All flow measuring devices that are required by regulation, by a condition in the drinking water works permit 234-202, or by a condition otherwise imposed by the Ministry, shall be checked and where necessary calibrated in accordance with the manufacturer's instructions.

3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation.

3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

4.0 Calibration of CT Monitoring System

4.1 Any measuring instrumentation that forms part of the monitoring system for CT shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation, or more frequently in accordance with the manufacturer's instructions.

4.1.1 For greater certainty, if condition 4.1 applies, the instrumentation shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

5.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

5.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

Table 5: Drinking Water Health Related Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Table 6: Drinking Water Non-Health Related Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Environmental Discharge Parameters

- 5.2** For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.
- 5.3** For the purposes of Table 7:
- 5.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and
- 5.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.
- 5.4** Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 23rd Edition, 2017, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sample Type	Column 4 Sampling Frequency	Column 5 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

5.5 Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:

5.5.1 The discharge of potable water from a watermain to a road or storm sewer;

5.5.2 The discharge of potable water from a water storage facility or pumping station:

a) To a road or storm sewer; or

b) To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

5.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;

5.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and

5.5.5 The discharge of raw water, potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

5.5.6 The discharge of any excess water to a road, storm sewer or the environment, associated with the management of materials excavated as part of watermain construction or repair, where necessary sediment, erosion and environmental control measures have been implemented.

6.0 Studies Required

Study Title

Not applicable

7.0 Harmful Algal Blooms

- 7.1** The owner shall develop and keep up to date a Harmful Algal Bloom Monitoring, Reporting and Sampling Plan (herein known as the “Plan”) that, at a minimum:
- 7.1.1 Meets the requirements set out in the Ministry document titled “Harmful Algal Bloom Guide for Owners and Operators of Municipal Residential Drinking Water Systems”, dated January 29, 2024;
 - 7.1.2 Is updated within 12 months of any update to the guide described in condition 7.1.1;
 - 7.1.3 Is maintained in a format that is available onsite at the drinking water system, for inspection upon request by Ministry staff; and,
 - 7.1.4 Is implemented each year for the period identified within the Plan.
- 7.2** The owner must ensure that all relevant drinking water system staff are provided with training on the Plan each year, prior to the period described in the Plan.
- 7.3** When a Harmful Algal Bloom is suspected or occurring:
- 7.3.1 Water samples must be:
 - a) Collected at least once per week from locations identified in the Plan, or otherwise as directed by the Ministry or the medical officer of health;
 - b) Repeatedly collected until 3 consecutive samples have shown non-detection of microcystin and the algal bloom is no longer suspected or visually observed; and,
 - c) Submitted to a laboratory licensed to perform ELISA testing for total microcystin
 - 7.3.2 The bloom must be reported to the local medical officer of health and the Ministry in accordance with procedures outlined in the Plan.

8.0 Source Protection

- 8.1** The Owner shall implement risk management measures, as appropriate, to manage any potential threat to drinking water that results from the operation of the drinking water system.
- 8.2** Where the drinking water system, or a portion thereof, is located in a source protection area as defined in the *Clean Water Act, 2006*, the owner shall prepare an “Assessment of Fuel Storage and Handling” (the “Assessment”) on or before June 13, 2027.
- 8.3** At a minimum, the Assessment shall:
- 8.3.1 Identify all locations that are part of drinking water system where fuel is stored or handled within a well head protection area (WHPA) or intake protection zone (IPZ), as identified in the ministry’s Source Protection Information Atlas (SPIA) mapping tool.

- 8.3.2 For each location identified under 8.3.1, document an evaluation of the fuel storage or handling for the purposes of determining if the fuel storage or handling is a Significant Drinking Water Threat by using the SPIA, the latest Technical Rules under the *Clean Water Act, 2006* and in particular, the tables of drinking water quality threats, having regard to the circumstances set out in the table and the vulnerability score of each fuel storage or handling location in the WHPA or IPZ.
- 8.3.3 Having regard to conditions 8.8, 8.9 and 8.10, determine and document the risk management measures that shall be implemented in respect of each fuel storage or handling location mentioned in condition 8.3.2 that is determined to be a Significant Drinking Water Threat.
- 8.4 If the Owner proposes to make alterations to the drinking water system authorized in Schedule B of the drinking water works permit that would result in any new or modified fuel storage or handling that is part of the drinking water system, the Owner shall, before making the alteration, ensure that the new or modified fuel storage or handling is identified and evaluated in accordance with conditions 8.3.1, 8.3.2 and 8.3.3, and the Assessment is updated accordingly.
- 8.5 The owner shall review the Assessment at least once every twelve (12) months and:
- 8.5.1 If the Technical Rules under the *Clean Water Act, 2006*, the delineation of any WHPA or IPZ in the source protection area, or any applicable source protection plan policies have changed since the Assessment was last reviewed under this condition, identify and evaluate fuel storage or handling in accordance with conditions 8.3.1, 8.3.2 and 8.3.3 and update the Assessment accordingly.
- 8.5.2 Record the date that the review was completed and outcome(s) of the review.
- 8.6 The owner shall notify the Director in writing within thirty (30) days of preparing or updating an Assessment that identifies or changes one or more fuel storage or handling Significant Drinking Water Threats.
- 8.7 The notification required in condition 8.6 shall:
- 8.7.1 list new location(s) where fuel storage or handling has been identified as a Significant Drinking Water Threat;
- 8.7.2 list the locations where existing fuel storage or handling has become or is no longer a Significant Drinking Water Threat; and,
- 8.7.3 be submitted using the "Director Notification Form" published by the Ministry.
- 8.8 Where fuel storage or handling is identified as a Significant Drinking Water Threat, the owner shall implement risk management measures for the fuel oil storage systems that ensure fuel is appropriately stored and managed to protect the raw water source of supply for the drinking water system or subsystem.

The measures shall include the following:

- 8.8.1 The storage tank(s) associated with the fuel oil systems shall be inspected at least once every twelve months, or more frequently as recommended by the manufacturer or required by the Technical Standards and Safety Act (TSSA) 2000, and applicable regulations, codes and standards.
- 8.8.2 the inspection required by condition 8.8.1 shall be performed by a person certified for that purpose under the TSSA and shall include, at a minimum,
- 8.8.3 Visual inspection of the fuel oil tank, tubing, and piping for leaks;
- 8.8.4 Where the tank is below grade (underground), visible components of the tank should be inspected, including the fill pipe and vent;
- 8.8.5 Visual inspection of any grade-level secondary containment;
- 8.8.6 Inspection of any equipment installed to monitor or measure fuel levels;
- 8.8.7 Inspection of any cut-off or control valves and associated equipment;
- 8.8.8 Visual inspection of any fuel pumps and/or sumps and testing of such devices for proper operation;
- 8.8.9 Inspection of any installed corrosion protection systems;
- 8.8.10 Testing for water at the bottom of storage tanks that are not bottom outlet tanks; and,
- 8.8.11 Inspection of any installed electronic or mechanical leak-detection equipment.
- 8.9 A record of the inspections performed in accordance with condition 8.8.1 and a record of any associated repairs, maintenance or upgrades shall be kept on-site and available for review by ministry staff.
- 8.10 Spill or leak detection and spill response procedures shall be incorporated into the Operations and Maintenance Manual required under condition 16 of this licence.
- 8.11 Where the local source protection plan outlines risk management measures for fuel storage or handling in addition to those identified in 8.8, the measures identified in the source protection plan shall also be implemented.
- 8.12 The owner shall undertake alterations and develop operating procedures as appropriate to ensure that the storage and handling of fuel is adequately managed to protect the source of drinking water.

9.0 Additional System Specific Conditions

- 9.1 Not applicable.

Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-102
Drinking Water System Name	Madsen Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Coagulation Interruption Relief

- 1.1 Subject to Conditions 1.2, 1.3, 1.4, and 1.5, the Owner/Operating Authority is not required to comply with Section 16-4, Schedule 16 of O.Reg 170/03, "Duty to report other observations", specific to loss of coagulant.
- 1.2 The Owner/Operating Authority shall operate and maintain flow-measuring instruments at each coagulant feed line.
- 1.3 The treatment units shall automatically and immediately shutdown and lock out when there is an alarm for coagulant loss. The coagulant feed system issue shall be checked and resolved before re-starting the treatment units.
- 1.4 Once the treatment units are re-started, the normal operation of the coagulant feed system shall be confirmed within 8 minutes.
- 1.5 The owner shall keep records of any confirmed loss of coagulant feed available for inspection. If the records are kept in a log book, the date and time when coagulation interruption relief granted under 1.1 above is utilized shall be displayed in a manner that these records are readily identifiable.

2.0 Continuous Monitoring

- 2.1 Notwithstanding the requirements of O. Reg. 170/03 and the table to Schedule 6, the last column (Minimum Alarm Standard), items 1 and 2 shall be changed from:

"0.1 milligrams per litre *less* than the concentration of free chlorine residual that is required to achieve primary disinfection", to:

"at least 0.1 milligrams per litre *greater* than the concentration of free chlorine residual that is required to achieve primary disinfection"

3.0 Chlorine Residual in the Distribution System

- 3.1 Where a chlorine residual below the values set out in s.1-2(2)(4) of Schedule 1 of O. Reg. 170/03 is identified at a location within the distribution system and:
 - a) the drinking water system's water treatment equipment is confirmed to be operating effectively;

- b) any adverse result is reported in accordance with s.16-3(1)(4) or s.16-3(1)(5) in Schedule 16 of O. Reg. 170/03;
- c) the operator undertakes corrective action required by s.17-4 in Schedule 17 or s.18-4 in Schedule 18 of O. Reg. 170/03; and
- d) actions are taken to prevent recurrence(s) of low chlorine residual results at the location,

the owner shall be deemed not to have contravened s.1-2(2)(4) in Schedule 1 of O. Reg. 170/03.

- 3.2** For clarity, actions taken under condition 2.1 d) may include but are not limited to implementation of a flushing program, enhancement of an existing flushing program, or infrastructure upgrades.

Schedule E: Pathogen Log Removal/Inactivation Credits

System Owner	Red Lake, The Corporation of the Municipality of
Licence Number	234-102
Drinking Water System Name	Madsen Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

Madsen Water Supply Plant

Russett Lake [SURFACE WATER]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts ^a	Viruses ^b
Madsen Water Supply Plant	2	3	4

^a At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.

^b At least 2 log inactivation of viruses shall be achieved by disinfection.

Log Removal/Inactivation Credits Assigned ^c	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Conventional Filtration	2	2.5	2
Chlorination [CT: Reservoir]	-	0.5	2+

^c Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

Treatment Component	Log Removal/Inactivation Credit Assignment Criteria
Conventional Filtration	1. A chemical coagulant shall be used at all times when the treatment plant is in operation; 2. Chemical dosages shall be monitored and adjusted in response to variations in raw water quality; 3. Effective backwash procedures shall be maintained including filter-to-waste or an equivalent procedure during filter ripening to ensure that effluent turbidity requirements are met at all times; 4. Filtrate turbidity shall be continuously monitored from each filter; and 5. Performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month shall be met for each filter.
Chlorination	1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.
Primary Disinfection Notes	



MUNICIPAL DRINKING WATER LICENCE

Licence Number: 234-103

Issue Number: 7

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this municipal drinking water licence under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

The Corporation of the Municipality of Red Lake

**2 Fifth Street, Box 1000
Balmertown, ON
P0V 1C0**

For the following municipal residential drinking water system:

Red Lake Drinking Water System

This municipal drinking water licence includes the following:

Schedule	Description
Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements
Schedule E	Pathogen Log Removal/Inactivation Credits

Upon the effective date of this drinking water licence, all previously issued versions are revoked and replaced by this licence.

DATED at TORONTO this 29th day of May, 2026

Signature

Aziz Ahmed, P.Eng.
Director
Part V, *Safe Drinking Water Act*, 2002

Schedule A: Drinking Water System Information

System Owner	The Corporation of the Municipality of Red Lake
Licence Number	234-103
Drinking Water System Name	Red Lake Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Licence Information

Licence Issue Date	2026-05-29
Licence Effective Date	2026-05-29
Licence Expiry Date	2031-05-28
Application for Licence Renewal Date	2030-11-26

2.0 Incorporated Documents

The following documents are applicable to the above drinking water system and form part of this licence:

2.1 Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
Red Lake Drinking Water System	234-203	2026-05-29

2.2 Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Red Lake	3023-A7PHL7	March 9, 2016

3.0 Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	234-303
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	234-301A

4.0 Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
Red Lake Drinking Water System	Northern Water Works Inc.	234-403	234-OA1

Schedule B: General Conditions

System Owner	The Corporation of the Municipality of Red Lake
Licence Number	234-103
Drinking Water System Name	Red Lake Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Definitions

1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

1.2 In this licence and the associated drinking water works permit:

“adverse effect”, “contaminant” and “natural environment” shall have the same meanings as in the EPA;

“alteration” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“Clean Water Act” means the *Clean Water Act*, 2005, S.O. 2006, c. 22.

“compound of concern” means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged to the air from a component of the drinking water system in an amount that is not negligible;

“CT” means the CT Disinfection Concept, as described in subsection 3.1.1 of the Ministry’s Procedure for Disinfection of Drinking Water in Ontario, dated July 29 2016.

“Director” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“Duty” means the unit installed and used in regular operation of the drinking water system. The duty unit is included in determining the design capacity calculation.

“drinking water works permit” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“emission summary table” means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;

“EPA” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

"financial plan" means the financial plan required by O. Reg. 453/07;

"Harmful Algal Bloom (HAB)" means an overgrowth of aquatic algal bacteria that produce or have the potential to produce toxins in the surrounding water, when the algal cells are damaged or die. Such bacteria are harmful to people and animals and include microcystins produced by cyanobacterial blooms.

"licence" means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

"licensed engineering practitioner" means a person who holds a licence, limited licence, or temporary licence under the *Ontario Professional Engineers Act* R.S.O. 1990, c. P.28.

"Minister" means the Minister of the Ministry or such other member of the Executive Council as may be assigned the administration of the SDWA under the Executive Council Act, R.S.O. 1990, c. E.25.

"Ministry" means the Ministry of the Minister and includes all employees or other persons acting on its behalf.

"operational plan" means an operational plan developed in accordance with the Director's Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

"owner" means the owner of the drinking water system as identified in Schedule A of this licence;

"OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. 0.40;

"permit to take water" means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

"point of impingement" has the same meaning as in section 2 of O. Reg. 419/05 under the EPA;

"point of impingement limit" means the appropriate standard from Schedule 2 or 3 of O. Reg. 419/05 under the EPA and if a standard is not provided for a compound of concern, the concentration set out for the compound of concern in the document titled "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", as amended from time to time and published by the Ministry and available on a government of Ontario website;

"licensed engineering practitioner" means a person who holds a licence, limited licence or temporary licence under the Professional Engineers Act;

"provincial officer" means a provincial officer designated pursuant to section 8 of the SDWA;

“publication NPC-300” means the Ministry publication titled “Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning” dated August 2013, as amended;

“SCADA system” means a supervisory control and data acquisition system used for process monitoring, automation, recording and/or reporting within the drinking water system;

“SDWA” means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;

“sensitive receptor” means any location where routine or normal activities occurring at reasonably expected times would experience adverse effect(s) from a discharge to air from an emergency generator that is a component of the drinking water system, including one or a combination of:

- (a) private residences or public facilities where people sleep (e.g.: single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.),
- (b) institutional facilities (e.g.: schools, churches, community centres, day care centres, recreational centres, etc.),
- (c) outdoor public recreational areas (e.g.: trailer parks, play grounds, picnic areas, etc.), and
- (d) other outdoor public areas where there are continuous human activities (e.g.: commercial plazas and office buildings).

“Spare” means a separate unit that is not connected and can be installed and placed into operation when the Duty unit is out of service (not operational). The spare should be the same size or larger than the duty unit it may be replacing.

“Standby” means a separate unit that is connected for use and operation. The standby unit is available for operation when the duty unit is offline or out of service. The standby unit is not considered in determining the design capacity calculation, but should be the same size or larger than the duty unit it may be replacing.

“sub-system” has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts) under the SDWA;

“surface water” means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

“UV” means ultraviolet, as in ultraviolet light produced from an ultraviolet reactor.

2.0 Applicability

- 2.1** In addition to any other applicable legal requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

- 6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permit to Take Water and Drinking Water Works Permit

- 7.1 A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.
- 7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.

8.0 Financial Plan

- 8.1 For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
- 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

9.0 Interpretation

- 9.1 Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- 9.1.1 The SDWA;

- 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
- 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
- 9.1.4 Any regulation made under the SDWA;
- 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
- 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
- 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and
- 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.1.9 Any other technical bulletin or procedure issued by the Ministry from the most recent to the earliest.
- 9.2** If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3** The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
 - 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
 - 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- 9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

- 10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:
 - 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or

10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.

10.2 All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

10.3 Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

11.1 This licence is not transferable without the prior written consent of the Director.

11.2 The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.

11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

12.0 Information to be Provided

12.1 Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request and in a timeframe outlined by the Director or provincial officer.

13.0 Records Retention

13.1 Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 or section 13 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

14.1 All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/14, NSF/60, NSF/61 and NSF/372.

14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.

- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
 - 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;
 - 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;
 - 14.3.4 Gaskets that are made from NSF approved materials;
 - 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use that may come into contact with drinking water, but are not added directly to the drinking water; or
 - 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

- 15.1** All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
- 15.2** Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the alteration being completed or placed into service.
- 15.3** Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

- 16.1** An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference to all persons responsible for all or part of the operation or maintenance of the drinking water system.

16.1.1 For clarity, up-to-date in the context of condition 16.1 means an operations and maintenance manual or manuals that reflects the current procedures in use within the drinking water system.

16.2 The operations and maintenance manual or manuals, shall include at a minimum:

16.2.1 The requirements of this licence and associated procedures;

16.2.2 The requirements of the drinking water works permit for the drinking water system;

16.2.3 A description of the processes used to achieve primary and secondary disinfection within the drinking water system including where applicable:

- a) A copy of the CT calculations used to ensure that at all times, CT provided shall be greater than or equal to the CT required for the pathogen inactivation; and,
- b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;

16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;

16.2.5 Procedures for the operation and maintenance of monitoring equipment;

16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;

16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;

16.3 Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.

16.4 For each production and standby well, where below grade components have not been inspected since 10 years before issue date of this licence, a below grade inspection of that well shall be completed on or before June 13, 2028.

16.5 The requirement for the Owner to comply with conditions 16.2.8 and 16.2.11 shall come into force on June 13, 2027.

17.0 CT Calculations

Table B1: CT Calculations	
Column 1 Document Title or File Name	Column 2 Version Number and Date
Disinfection Summary [RLDWS-SOP-DS]	December, 2025

- 17.1** Any changes to the CT calculations used as the basis for primary disinfection in the drinking water system, described in Table B1 must be:
- 17.1.1 structured to ensure that the provided CT is greater than or equal to the CT (or log inactivation) required for the pathogen inactivation as described in Schedule E of this licence;
 - 17.1.2 included in the operations and maintenance manual described in condition 16 of Schedule B in this licence prior to being implemented;
 - 17.1.3 reviewed by a Licensed Engineering Practitioner; and,
- 17.2** submitted to the Director no later than 30 days after the date that the changes have been implemented.

Schedule C: System-Specific Conditions

System Owner	The Corporation of the Municipality of Red Lake
Licence Number	234-103
Drinking Water System Name	Red Lake Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 System Performance

Rated Capacity

1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

1.1.1 Despite condition 1.1, where maximum flow rates in Table 2 limit the volume of water that may be treated by the treatment subsystem, the maximum daily volume of treated water that flows from the treatment subsystem listed in column 1 of Table 1 to the distribution system shall not exceed the value identified as the operational capacity in column 3 of the same.

Table 1: Rated Capacity

Column 1 Treatment Subsystem Name	Column 2 Rated Capacity (m ³ /day)	Column 3 Operational Capacity (m ³ /day)
Red Lake Water Treatment Plant	6,048	6,048

Maximum Flow Rates

1.2 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

Table 2: Maximum Flow Rates

Column 1 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 Maximum Flow Rate (L/s)
Not Applicable	Not Applicable	Not Applicable

1.3 Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.

- 1.4 Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Residuals Management

- 1.5 In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
- 1.5.1 The annual average concentration of a test parameter identified in column 2 shall:
- a) not exceed the value in column 3 of the same row; and
 - b) be calculated at least once monthly as the running annual average based on the previous twelve months of results;
- 1.5.2 Where the average concentration of a test parameter identified in column 2 exceeds the value in column 3, the concentration shall be reported to the local Ministry district office within 72 hours of receipt of the last lab result used in the calculation;
- 1.5.3 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row;
- 1.5.4 Where the maximum concentration of a test parameter identified in column 2 exceeds the value in column 4, the discharge shall be reported in accordance with s.13.2 of O. Reg. 675.98 and recorded in accordance with s.12.2 of O. Reg. 675.98 within 24 hours of receipt of the lab result; and,
- 1.5.5 The test parameters listed in column 2 of Table 3 shall be sampled in accordance with conditions 5.2, 5.3 and 5.4 of Schedule C in this Licence.

Table 3: Residuals Management			
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Red Lake Water Treatment Plant	Suspended Solids	25	Not Applicable

UV Disinfection Equipment Performance

- 1.6 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system and being used to meet pathogen log removal/inactivation credits specified in Schedule E:
- 1.6.1 The UV disinfection equipment shall be operated within the validated limits for the equipment at all times such that a continuous pass-through UV dose is

maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row

- 1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;
- 1.6.3 If there is a UV disinfection equipment alarm signaling that the disinfection equipment is malfunctioning, has lost power, or is not providing the appropriate level of disinfection the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;
- 1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm described in condition 1.6.3, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

Table 4: UV Disinfection Equipment

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm²)	Column 3 Control Strategy	Column 4 Test Parameter
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Filtration Performance

- 1.7 For each treatment subsystem in column 1 of Table 1, filtrate turbidity shall be continuously monitored from each filter while the filter effluent line is directing water to the next stage of the treatment process and being used to meet pathogen log removal/inactivation credits specified in Schedule E.
- 1.7.1 Filtrate turbidity performance shall be calculated for each filter using all turbidity measurements taken in a calendar day ('daily filtrate turbidity performance').
- 1.7.2 When filtrate turbidity test results are examined within 72 hours after the tests are conducted in accordance with Schedule 6, condition 6-5(1)(3), daily filtrate turbidity performance shall be evaluated against the percentage criterion specified in Schedule E.
- 1.7.3 If an evaluation of daily filtrate turbidity performance indicates performance for a filter does not meet the percentage criterion specified in Schedule E, the owner shall ensure that:

- a) Appropriate action is taken to identify the cause(s) and resolve where necessary.
 - b) A record is created to describe the action(s) taken.
- 1.7.4 The owner shall ensure that performance criterion for filtered water turbidity specified in Schedule E is achieved for each filter using all turbidity measurements taken in a calendar month ('monthly filtrate turbidity performance').
- a) Within 72 hours of the end of each calendar month, the monthly filtrate turbidity performance shall be evaluated against the percentage criterion specified in Schedule E.
 - b) If an evaluation of monthly filtrate turbidity performance indicates performance for a filter does not meet the percent criterion specified in Schedule E, an adverse water quality report shall be made as per Schedule 16-4 of O. Reg. 170/03 immediately after the evaluation is conducted.
- 1.8 The requirement for the Owner to comply with condition 1.7 shall come into force June 13, 2027.
- 1.8.1 Prior to transitioning to the requirements set out in condition 1.7, the owner shall ensure that performance criterion for filtered water turbidity specified in Schedule E is achieved for each filter using all turbidity measurements taken in calendar month.

For greater certainty the timeframe described in condition 1.8 is intended to provide a period for transition. Implementation may occur on or before the date indicated in this condition.

2.0 Flow Measurement and Recording Requirements

- 2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:
- 2.1.1 The flow rate (L/s) and daily volume (m³/day) of treated water that flows from the treatment subsystem to the distribution system.
 - 2.1.2 The flow rate (L/s) and daily volume (m³/day) of water that flows into the treatment subsystem.
- 2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.

- 2.3** Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:
- 2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;
 - 2.3.2 The time and date of the measurement;
 - 2.3.3 The reason for the exceedance; and
 - 2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

- 3.1** All flow measuring devices that are required by regulation, by a condition in the drinking water works permit 234-203, or by a condition otherwise imposed by the Ministry, shall be checked and where necessary calibrated in accordance with the manufacturer's instructions.
- 3.2** If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation.
- 3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

4.0 Calibration of CT Monitoring System

- 4.1** Any measuring instrumentation that forms part of the monitoring system for CT shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation, or more frequently in accordance with the manufacturer's instructions.
- 4.1.1 For greater certainty, if condition 4.1 applies, the instrumentation shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

5.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

- 5.1** For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter

listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

Table 5: Drinking Water Health Related Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Table 6: Drinking Water Non-Health Related Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Environmental Discharge Parameters

5.2 For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.

5.3 For the purposes of Table 7:

5.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and

5.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

5.4 Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 23rd Edition, 2017, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sample Type	Column 4 Sampling Frequency	Column 5 Monitoring Location
Red Lake Water Treatment Plant	Suspended Solids	Composite	Monthly	Point of discharge

5.5 Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:

5.5.1 The discharge of potable water from a watermain to a road or storm sewer;

5.5.2 The discharge of potable water from a water storage facility or pumping station:

- a) To a road or storm sewer; or
- b) To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

5.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;

5.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and

5.5.5 The discharge of raw water, potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

5.5.6 The discharge of any excess water to a road, storm sewer or the environment, associated with the management of materials excavated as part of watermain construction or repair, where necessary sediment, erosion and environmental control measures have been implemented.

6.0 Studies Required

6.1 Corrosion Control Implementation

6.1.1 The Owner shall implement the Red Lake Drinking Water System Corrosion Control Plan dated October 15, 2009 and monitor the effectiveness of the corrosion control measures.

6.1.2 The Owner shall prepare an Evaluation Report to assess the effectiveness of the corrosion control measures. The report shall contain the following information in 5.1.3 – 5.1.7, where applicable:

- 6.1.3 A list of all lead results and a summary of any key corrosion control parameter measurements at the point treated water enters the distribution system and premise plumbing with the frequencies identified in Table 1:

Table 4: Monitoring the Effectiveness of Preferred Measures			
Column 1 Parameters ^{a)}	Column 2 Point of Entry	Column 3 Distribution System (Sampling Points)	Column 4 Residential and Non-Residential (Sampling Points) ^{b)}
Lead	N/A	2 minimum, annually	12 minimum, annually (10 private and 2 non-private)
Alkalinity	Bench testing weekly	2 minimum, annually	12 minimum, annually (10 private and 2 non-private)
pH	Continuously or by daily bench test	2 minimum, annually	12 minimum, annually (10 private and 2 non-private)
Inhibitor	N/A	N/A	N/A
Other Parameters in Table 6.1 the Ministry's Guidance Document for Corrosion Control Monitoring, dated December 2009.	N/A	N/A	N/A
a) All lead, pH and alkalinity samples shall be taken, tested and reported as outlined in O.Reg. 170/03 s.15.1-6 to 15.1-10 b) The system owner shall strive to monitor the effectiveness per sampling point, i.e. to sample as many residential and non-residential taps with known or suspected lead service lines as possible at the same recurring locations in every sampling period.			

- 6.1.4 A technical evaluation of the effectiveness of corrosion control measures including:
- a) Any key milestones of implementation, including equipment malfunction or upset conditions;
 - b) The ability to maintain operating conditions and inhibitor concentrations, in the distribution system and premise plumbing; and
 - c) The ability to achieve reduction in lead levels and other corrosion related parameters in the distribution system and premise plumbing.
- 6.1.5 A summary of lead levels and other metals monitored at the following locations, since implementation of corrosion control, and comparison to pre-implementation levels:
- a) Distribution system;
 - b) Residential plumbing; and,
 - c) Non-residential plumbing.

- 6.1.6 An evaluation of secondary impacts as a result of corrosion control implementation of corrosion control measures, including any:
- a) Customer feedback or water quality complaints, since implementation of corrosion control, with analysis of reasons;
 - b) Impacts on secondary disinfection, including biofilm formation; and,
 - c) Impacts on wastewater treatment plants receiving treated water from the owner, including estimates of increases in phosphorous loadings to the receiver, and comparison to effluent limits.
- 6.1.7 Summary of results of all other aspects of the Owner's lead mitigation strategy including:
- a) Lead service line replacement on public and private property;
 - b) Outreach and education, especially to populations vulnerable to lead in drinking water;
 - c) Faucet filter program, and,
 - d) Involvement of public health authorities.
- 6.2** The Corrosion Control Evaluation Report outlined in 5.1.2 shall cover each calendar year, and shall be submitted to the Director by March 31st, annually.
- 6.3** The lead sampling data shall be submitted every 6 months, no later than 30 days following the previous bi-annual sampling periods.

7.0 Harmful Algal Blooms

- 7.1** The owner shall develop and keep up to date a Harmful Algal Bloom Monitoring, Reporting and Sampling Plan (herein knowns as the "Plan") that, at a minimum:
- 7.1.1 Meets the requirements set out in the Ministry document titled "Harmful Algal Bloom Guide for Owners and Operators of Municipal Residential Drinking Water Systems", dated January 29, 2024;
 - 7.1.2 Is updated within 12 months of any update to the guide described in condition 7.1.1;
 - 7.1.3 Is maintained in a format that is available onsite at the drinking water system, for inspection upon request by Ministry staff; and,
 - 7.1.4 Is implemented each year for the period identified within the Plan.
- 7.2** The owner must ensure that all relevant drinking water system staff are provided with training on the Plan each year, prior to the period described in the Plan.
- 7.3** When a Harmful Algal Bloom is suspected or occurring:
- 7.3.1 Water samples must be:

- a) Collected at least once per week from locations identified in the Plan, or otherwise as directed by the Ministry or the medical officer of health;
- b) Repeatedly collected until 3 consecutive samples have shown non-detection of microcystin and the algal bloom is no longer suspected or visually observed; and,
- c) Submitted to a laboratory licensed to perform ELISA testing for total microcystin

7.3.2 The bloom must be reported to the local medical officer of health and the Ministry in accordance with procedures outlined in the Plan.

8.0 Source Protection

- 8.1 The Owner shall implement risk management measures, as appropriate, to manage any potential threat to drinking water that results from the operation of the drinking water system.
- 8.2 Where the drinking water system, or a portion thereof, is located in a source protection area as defined in the *Clean Water Act, 2006*, the owner shall prepare an "Assessment of Fuel Storage and Handling" (the "Assessment") on or before June 13, 2027.
- 8.3 At a minimum, the Assessment shall:
 - 8.3.1 Identify all locations that are part of drinking water system where fuel is stored or handled within a well head protection area (WHPA) or intake protection zone (IPZ), as identified in the ministry's Source Protection Information Atlas (SPIA) mapping tool.
 - 8.3.2 For each location identified under 8.3.1, document an evaluation of the fuel storage or handling for the purposes of determining if the fuel storage or handling is a Significant Drinking Water Threat by using the SPIA, the latest Technical Rules under the *Clean Water Act, 2006* and in particular, the tables of drinking water quality threats, having regard to the circumstances set out in the table and the vulnerability score of each fuel storage or handling location in the WHPA or IPZ.
 - 8.3.3 Having regard to conditions 8.8, 8.9 and 8.10, determine and document the risk management measures that shall be implemented in respect of each fuel storage or handling location mentioned in condition 8.3.2 that is determined to be a Significant Drinking Water Threat.
- 8.4 If the Owner proposes to make alterations to the drinking water system authorized in Schedule B of the drinking water works permit that would result in any new or modified fuel storage or handling that is part of the drinking water system, the Owner shall, before making the alteration, ensure that the new or modified fuel storage or handling is identified and evaluated in accordance with conditions 8.3.1, 8.3.2 and 8.3.3, and the Assessment is updated accordingly.

- 8.5** The owner shall review the Assessment at least once every twelve (12) months and:
- 8.5.1 If the Technical Rules under the *Clean Water Act, 2006*, the delineation of any WHPA or IPZ in the source protection area, or any applicable source protection plan policies have changed since the Assessment was last reviewed under this condition, identify and evaluate fuel storage or handling in accordance with conditions 8.3.1, 8.3.2 and 8.3.3 and update the Assessment accordingly.
 - 8.5.2 Record the date that the review was completed and outcome(s) of the review.
- 8.6** The owner shall notify the Director in writing within thirty (30) days of preparing or updating an Assessment that identifies or changes one or more fuel storage or handling Significant Drinking Water Threats.
- 8.7** The notification required in condition 8.6 shall:
- 8.7.1 list new location(s) where fuel storage or handling has been identified as a Significant Drinking Water Threat;
 - 8.7.2 list the locations where existing fuel storage or handling has become or is no longer a Significant Drinking Water Threat; and,
 - 8.7.3 be submitted using the "Director Notification Form" published by the Ministry.
- 8.8** Where fuel storage or handling is identified as a Significant Drinking Water Threat, the owner shall implement risk management measures for the fuel oil storage systems that ensure fuel is appropriately stored and managed to protect the raw water source of supply for the drinking water system or subsystem.
- The measures shall include the following:
- 8.8.1 The storage tank(s) associated with the fuel oil systems shall be inspected at least once every twelve months, or more frequently as recommended by the manufacturer or required by the Technical Standards and Safety Act (TSSA) 2000, and applicable regulations, codes and standards.
 - 8.8.2 the inspection required by condition 8.8.1 shall be performed by a person certified for that purpose under the TSSA and shall include, at a minimum,
 - 8.8.3 Visual inspection of the fuel oil tank, tubing, and piping for leaks;
 - 8.8.4 Where the tank is below grade (underground), visible components of the tank should be inspected, including the fill pipe and vent;
 - 8.8.5 Visual inspection of any grade-level secondary containment;
 - 8.8.6 Inspection of any equipment installed to monitor or measure fuel levels;
 - 8.8.7 Inspection of any cut-off or control valves and associated equipment;
 - 8.8.8 Visual inspection of any fuel pumps and/or sumps and testing of such devices for proper operation;

- 8.8.9 Inspection of any installed corrosion protection systems;
- 8.8.10 Testing for water at the bottom of storage tanks that are not bottom outlet tanks;
and,
- 8.8.11 Inspection of any installed electronic or mechanical leak-detection equipment.
- 8.9** A record of the inspections performed in accordance with condition 8.8.1 and a record of any associated repairs, maintenance or upgrades shall be kept on-site and available for review by ministry staff.
- 8.10** Spill or leak detection and spill response procedures shall be incorporated into the Operations and Maintenance Manual required under condition 16 of this licence.
- 8.11** Where the local source protection plan outlines risk management measures for fuel storage or handling in addition to those identified in 8.8, the measures identified in the source protection plan shall also be implemented.
- 8.12** The owner shall undertake alterations and develop operating procedures as appropriate to ensure that the storage and handling of fuel is adequately managed to protect the source of drinking water.

9.0 Additional System Specific Conditions

- 9.1.1 Not applicable.

Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	The Corporation of the Municipality of Red Lake
Licence Number	234-103
Drinking Water System Name	Red Lake Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Coagulation Interruption Relief

- 1.1 Subject to Conditions 1.2, 1.3, 1.4, and 1.5, the Owner/Operating Authority is not required to comply with Section 16-4, Schedule 16 of O.Reg 170/03, "Duty to report other observations", specific to loss of coagulant.
- 1.2 The Owner/Operating Authority shall operate and maintain flow-measuring instruments at each coagulant feed line.
- 1.3 The treatment units shall automatically and immediately shutdown and lock out when there is an alarm for coagulant loss. The coagulant feed system issue shall be checked and resolved before re-starting the treatment units.
- 1.4 Once the treatment units are re-started, the normal operation of the coagulant feed system shall be confirmed within 8 minutes.
- 1.5 The owner shall keep records of any confirmed loss of coagulant feed available for inspection. If the records are kept in a log book, the date and time when coagulation interruption relief granted under 1.1 above is utilized shall be displayed in a manner that these records are readily identifiable.

2.0 Continuous Monitoring

- 2.1 Notwithstanding the requirements of O. Reg. 170/03 and the table to Schedule 6, the last column (Minimum Alarm Standard), items 1 and 2 shall be changed from:

"0.1 milligrams per litre *less* than the concentration of free chlorine residual that is required to achieve primary disinfection", to:

"at least 0.1 milligrams per litre *greater* than the concentration of free chlorine residual that is required to achieve primary disinfection"

3.0 Chlorine Residual in the Distribution System

- 3.1 Where a chlorine residual below the values set out in s.1-2(2)(4) of Schedule 1 of O. Reg. 170/03 is identified at a location within the distribution system and:
- a) the drinking water system's water treatment equipment is confirmed to be operating effectively;

- b) any adverse result is reported in accordance with s.16-3(1)(4) or s.16-3(1)(5) in Schedule 16 of O. Reg. 170/03;
- c) the operator undertakes corrective action required by s.17-4 in Schedule 17 or s.18-4 in Schedule 18 of O. Reg. 170/03; and
- d) actions are taken to prevent recurrence(s) of low chlorine residual results at the location,

the owner shall be deemed not to have contravened s.1-2(2)(4) in Schedule 1 of O. Reg. 170/03.

- 3.2** For clarity, actions taken under condition 2.1 d) may include but are not limited to implementation of a flushing program, enhancement of an existing flushing program, or infrastructure upgrades.

Schedule E: Pathogen Log Removal/Inactivation Credits

System Owner	The Corporation of the Municipality of Red Lake
Licence Number	234-103
Drinking Water System Name	Red Lake Drinking Water System
Licence Effective Date	May 29th, 2026

1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

Red Lake Water Supply Plant

Red Lake [SURFACE WATER]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts ^a	Viruses ^b
Red Lake Water Supply Plant	2	3	4

^a At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.

^b At least 2 log inactivation of viruses shall be achieved by disinfection.

Log Removal/Inactivation Credits Assigned ^c	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Conventional Filtration	2	2.5	2
Chlorination [CT: Reservoir]	-	0.5	2+

^c Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

Treatment Component	Log Removal/Inactivation Credit Assignment Criteria
Conventional Filtration	1. A chemical coagulant shall be used at all times when the treatment plant is in operation; 2. Chemical dosages shall be monitored and adjusted in response to variations in raw water quality; 3. Effective backwash procedures shall be maintained including filter-to-waste or an equivalent procedure during filter ripening to ensure that effluent turbidity requirements are met at all times; 4. Filtrate turbidity shall be continuously monitored from each filter; and 5. Performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month shall be met for each filter.
Chlorination	1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.
Primary Disinfection Notes	