Ontario

DRINKING WATER WORKS PERMIT

Permit Number: 150-201
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:

The Corporation of the Municipality of Trent Hills

66 Front St. N.
Cambellford ON
P.O. Box 1030
K0L 1L0

For the following municipal residential drinking water system:

Warkworth 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 #150-201, all previously issued versions of permit #150-201 are revoked and replaced by this permit.

DATED at TORONTO this 25th day of June, 2021

Signature

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

Schedule A: Drinking Water System Description

System Owner	**The Corporation of the Municipality of Trent Hills**
Permit Number	**150-201**
Drinking Water System Name	**Warkworth Drinking Water System**
Permit Effective Date	**June 25, 2021**

1.0 System Description

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

Overview

The Warkworth water treatment plant is a conventional water treatment system, which draws all of its raw water supply from Mill Creek. The treatment system consists of a low lift pumping station, one (1) package treatment system consisting of primary and secondary flocculation, sedimentation and two (2) dual-media filters equipped with granular activated carbon for taste, odour and dissolved organic carbon removal, a baffled contact tank connected to the filter discharge providing primary disinfection, and high lift pumping station equipped with secondary disinfection capabilities accomplished by a chlorine injection system located on the plant discharge piping.

A 503 cubic meter off-site storage reservoir provides peak hour demands and fire flow protection. The water distribution system is comprised of various water main materials of different sizes with two separate pressure zones. The water distribution system has approximately 5.8 kilometers of distribution watermains.The system supplies drinking water to the Village of Warkworth. The system also includes a Booster Pumping Station located on Old Hastings Rd.

Warkworth Water Treatment Plant

Treatment Plant

Name	Warkworth Water Treatment Plant
System Type	Treatment and Distribution
Street Address	140 Banta Road, Warkworth Lot 14, Concession 3, Warkworth
UTM Coordinates	NAD 83, Zone 17, +/- 10m, 269246 m E. and 489510 m N
Notes	Source water is Mill Creek

Intake Manhole and Intake Pipe

Description	Intake manhole and intake pipe
Equipment	An Intake Manhole complete with bar screens, located in Mill Creek upstream of a 9.75 m wide dam
	One (1) Intake Pipe, 250 mm diameter and 25 m long, extending from the intake manhole to the low lift wet well
Notes	

Low Lift Works Treatment

Low Lift Equipment

Description	Low lift equipment
Equipment	One (1) Low Lift Wet Well, 3.8 m by 6.39 m
	Two (2) VFD Submersible Low Lift Pumps (one duty and one standby), each capable of pumping 14.3 L/s at a TDH of 7.8 m
	One (1) Static Mixer, located on the low lift pump common discharge header
Notes	

Flocculation

Flocculation Tanks

Description	Flocculation chamber and compartments
Equipment	One (1) Flocculator Chamber, consisting of three compartments in series, two upstream compartments 1.22 m by 1.35 m by 2.44 m side water depth (SWD) each complete with a variable speed agitator device, downstream compartment 2.43 m by 2.70 m by 2.44 m SWD complete with a variable speed agitator device
Notes	

Clarification

Settling Tanks

Description	Settling tank complete with tube settlers
Dimensions	6.70 m by 2.70 m by 2.44 m SWD
Notes	

Filtration

Filters

Description	Gravity granular filter units and turbine filter backwash pump
Equipment	Two (2) Rapid Gravity Granular Filter units, each 2.50 m by 1.35 m by 2.44 m deep, each packed with 455 mm gravel, 305 mm sand and 460 mm granular activated carbon (GAC) adsorber
	Two (2) (duty and standby) Vertical Turbine Filter Backwash Pumps, each capable of pumping 47 L/s at a TDH of 15.0 m discharging treated water from Clearwell No.4 described below to each of the rapid gravity filters
Notes	

Clearwell

Description	Clearwell and interconnected cells
Dimensions	One (1) Clearwell consisting of two (2) interconnected cells, 284 m^3 total usable volume
	One (1) Contact tank consisting of two (2) interconnected cells, 208 m^3 total volume with eight (8) Baffle Walls, each wall complete with two 500 mm by 500 mm and one 500 mm by 1,250 mm openings, four installed in cell No.1 and four installed in cell No.2
Notes	

High Lift Works Treatment

High Lift Pumps

Description	Three (3) Vertical Turbine High Lift Pumps (two duty and one standby), each discharging treated water from Clearwell No.2 to a common discharge header
Equipment	Each pump capable of pumping 10.8 L/s at a TDH of 46.0 m
Notes	Backflow Preventer device(s) on all in-plant water supply lines directly connected to the high lift pump common discharge header

Chemical Feed Systems

Coagulant Feed System

Description	Coagulant feed system (polyaluminum chloride)
Equipment	One (1) 15 m^3 chemical solution tank and one (1) 550 L day tank
	Two (2) chemical metering pumps (one duty and one standby), each capable of pumping 6.07 L/h at a backpressure of 690 kPa with feed line discharging polyaluminum chloride solution to the low lift pump common discharge header
Notes	

Coagulant Aid Feed System

Description	Coagulant aid feed system (polymer)
Equipment	One (1) 340 L day tank
	Two (2) (duty and standby) chemical metering pumps capable of pumping 19.0 L/h at a backpressure of 690 kPa with feed line discharging a polymer solution to the low lift pump common discharge header downstream of the coagulant application point
Notes	

Sodium Hypochlorite Feed Lines

Description	Sodium hypochlorite disinfection system
Feed Points	Feed lines discharging a sodium hypochlorite solution to each filter effluent and the high lift pump common discharge header
Equipment	One (1) 150 L chemical solution tank
	Four (4) chemical metering pumps (two duty and two standby Two(2) primary disinfection pumps (duty and standby) each capable of pumping 3.8 L/hr at a backpressure of 690 kPa and two (2) secondary disinfection pumps (duty and standby) each capable of pumping 1.9 L/hr at a backpressure of 690 kPa.
Notes	

Instrumentation and Control

SCADA System

Description	Supervisory Control and Data Acquisition (SCADA) System
Equipment	Two (2) Chlorine Residual Analyzers, measuring free chlorine residual concentration, in the contact tank discharge cell and the high lift pump common discharge header, both complete with 4-20 mA output to SCADA
	Four (4) Turbidimeters connected to the low lift pump common discharge, each filtrate line and the highlift pump discharge header, all complete with 4-20 mA output to SCADA
	Two (2) Flow Metering Devices, located on the low lift pump common discharge header, and the high lift pump common discharge header, all complete with 4-20 mA output to SCADA
	One (1) Chlorine Residual Analyzer measuring the concentration of free chlorine residuals, connected to the booster pump station discharge pipe, complete with 4-20 mA signal output to SCADA.
	One (1) pH Metering Device located on the contact effluent piping, complete with 4-20 mA output to SCADA (to be completed summer 2021)
Notes	Water levels in the Warkworth Off-Site Reservoir are also monitored.

Waste Residual Management

Residual Management

Description	Residual Management System
Equipment	One (1) Residual Settling Tank consisting of two compartments in series, upstream cell 23.1 m^3 usable volume, downstream cell 25.2 m^3 usable volumes
	Two (2) Submersible Pumps, each capable pf pumping 3.7 L/s at a TDH of 5.6m, one pump located in each residual settling tank, with discharge lines connected to a sludge thickening tank
	One (1) Sludge Thickening Tank, 45 m^3 usable volume, complete with a supernatant gravity discharge to Burnley Creek
	Two (2) Sludge Transfer Pumps (one duty and one standby), each capable of pumping 23 L/s at a TDH of 6.3 m
	One (1) floating suction head and two (2) motorized valves in the Sludge Thickening Tank to facilitate supernatant collecting and sludge transfer;
	Two (2) horizontal centrifugal Sludge Transfer Pumps (one duty one standby), each capable of pumping at 8.0 L/s at a TDH of 14 m, discharging to the municipal sewer through a sanitary forcemain
Notes	

Emergency Power

Backup Power Supply

Description	A 58 kW Diesel Engine Standby Power Generator Set.
Notes	

Fuel Oil Systems

Fuel Storage at WTP

Location	Warkworth Water Treatment Plant - Lot 14, Concession 3, Warkworth 44*11’52”N 77*54’6”W
Description	900 liters tank with spill containment contained within the Warkworth WTP building
Fuel Type	Diesel
Source Protection Area	Lower Trent
Notes	

Fuel Storage at Booster Pumping Station

Location	Warkworth Booster Pumping Station - 24 Old Hastings Road 44*12'5"N 77*53'26"W
Description	587 liters tank inside the Warkworth BPS building in a tank below/combined with generator.
Fuel Type	Diesel
Source Protection Area	Lower Trent
Notes	

Off Site Storage Reservoir

Description	Warkworth Off-Site Reservoir located at 31 Godolphin Road
Dimensions	Inground reservoir with total volume of 503 m^3 and useable volume of 250 m^3
Notes	

Pumping Stations

Warkworth Booster Pumping Station

Location	24 Old Hastings Road
UTM Coordinates	NAD83: UTM Zone 18: 269052.00 m E, 4898322 m N
Equipment	Three (3) vertical, multi-stage centrifugal pumps with variable frequency drives (VFD) rated at 3.4L/s each at 32.2 m TDH minimum (Two are duty and one standby)
	Two (2) vertical centrifugal pumps with single speed drives (SS) rated at 41 L/s each at 25.2 m TDH minimum (Pumps are for emergency use, one duty and one standby)
	Two (2) Pressure tanks with a volume of 471 L, 690 kPa (150 psig) rated pressure and pressure relief valve and return line.
Standby Power	80 kW diesel electric generator located in the pump station building to provide 100% emergency power requirements for the pump station and Fire Hall.
Notes	Pressure transmitters and gauges, magnetic flow meters/totalizers, chlorine analyzer

Watermains

1.1 Watermains within the distribution system comprise:

1.1.1 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
File Name: TrentHills Warkworth Water - v006.pdf 2018 Title: Warkworth Water System	October 05, 2018

1.1.2 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.

1.1.3 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	**The Corporation of the Municipality of Trent Hills**
Permit Number	**150-201**
Drinking Water System Name	**Warkworth Drinking Water System**
Permit Effective Date	**June 25 2021**

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 #150-101.

1.2 The definitions and conditions of licence #150-101 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 #150-101.

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) Until December 14, 2021 the ministry's Watermain Disinfection Procedure, dated November 2015. As of December 15, 2021 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) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
d) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
e) AWWA C654 – Standard for Disinfection of Wells.

2.3.1 For greater clarity, 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.

2.4 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 watermains; or

2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains 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 750 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 (excluding fuel storage tanks) and associated equipment; or,

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.

4.3 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 prepare an emission summary table for nitrogen oxides emissions only, for each addition, modification or replacement of emergency generators identified in 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/m^3 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	**The Corporation of the Municipality of Trent Hills**
Permit Number	**150-201**
Drinking Water System Name	**Warkworth Drinking Water System**
Permit Effective Date	**June 25, 2021**

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#
1	September 2, 2011	Design and construction of the Warkworth booster pumping station	Archived	1

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.

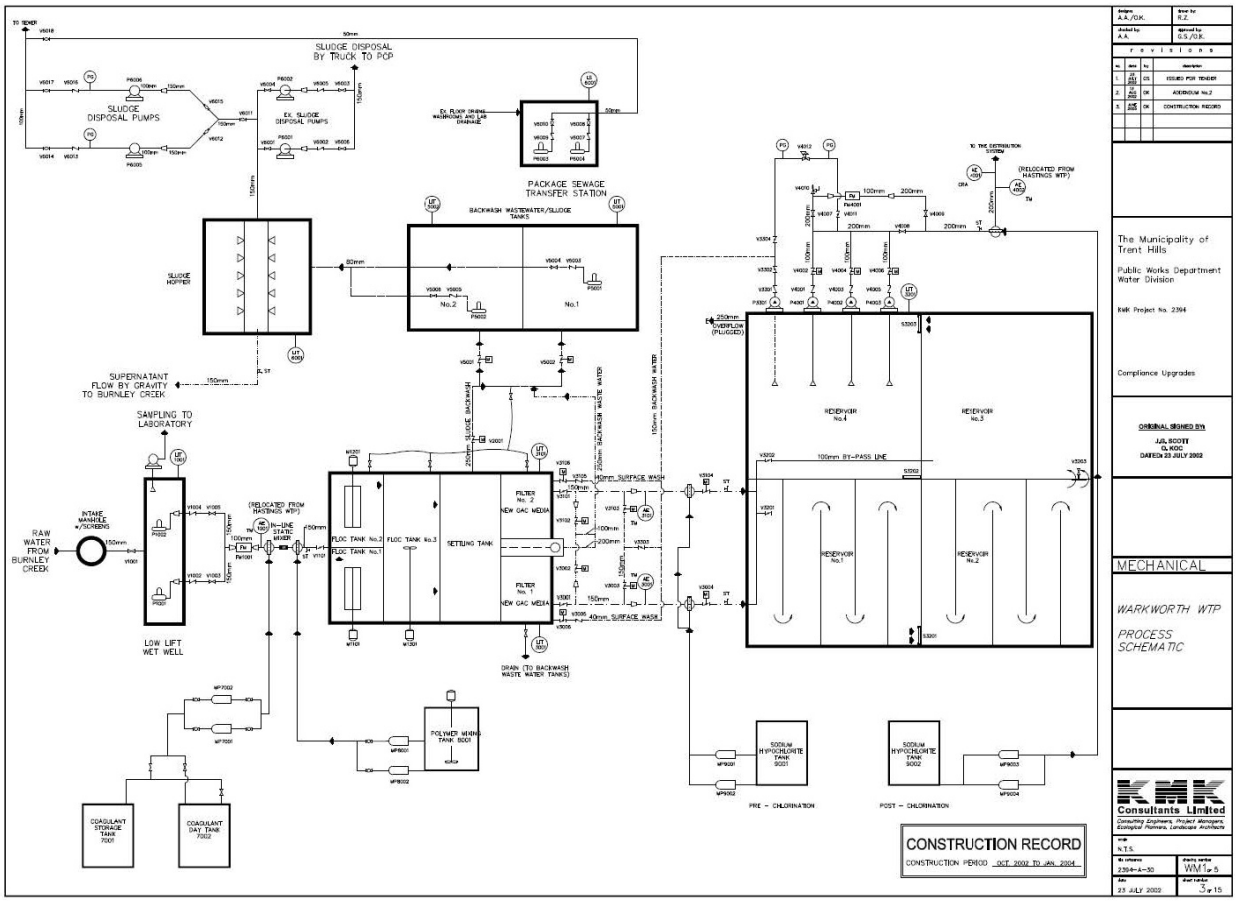
Schedule D: Process Flow Diagrams

System Owner	**The Corporation of the Municipality of Trent Hills**
Permit Number	**150-201**
Drinking Water System Name	**Warkworth Drinking Water System**
Permit Effective Date	**June 25, 2021**

1.0 Process Flow Diagrams

Warkworth Water Treatment Plant

Appendix 4 Water Treatment Plant – Warkworth



[Source: Operational Plan, Municipality of Trent Hills for the drinking water systems; Campbellford, Hastings, and Warkworth, Revision 8, August 13th, 2015]

Note: this process flow diagram is for reference only, and represents a high level overview of the system as of August 13th, 2015.