2023 ANNUAL PERFORMANCE REPORT

Water Pollution Control Plant

Amended Environmental Compliance Approval

Number 6418-BN2NUC

The 2023 WPCP Performance Report was prepared by:

Ted Joynt Overall Responsible Operator

Reviewed By;

Phil Kelly Operator in Charge / Manager

Tim Gilligan Public Works Admin and Compliance Coordinator

Heather McColl Public Works Clerk and Asset Management Coordinator

Andrew Harper Operator (OIT)

Executive Summary

The enclosed Performance Report is prepared in accordance with Amended Environmental Compliance Approval (ECA) # 6418 BN2NUC Condition 11 Reporting subsection (4) for the Township of Cramahe (Operating Authority) Village of Colborne Water Pollution Control Plant (WPCP) for submission to the Ministry of Environment Conservation & Parks (MECP) no later than March 31, 2024.

The secondary purpose of this 2023 Performance Report is to keep the Operating Authority, Owner (Council) informed regarding the general operation, maintenance and facility compliance regarding solids and liquid handling and disposal as per the ECA.

Each year it is a requirement that the owner prepares and submits a Performance Report for the previous calendar year and must contain the following information:

a summary and interpretation of all influent, imported Sewage monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

a summary and interpretation of all final effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this. Approval, including an overview of the success and adequacy of the Works.

a summary of all operating issues encountered, and corrective actions taken.

a summary of all normal and emergency repairs and maintenance activities carried out on anymajor structure, equipment, apparatus or mechanism forming part of the Works.

a summary of any effluent quality assurance or control measures undertaken.

a summary of the calibration and maintenance carried out on all influent, imported sewage and final effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this approval or recommended by the manufacturer.

a summary of efforts made to achieve the design objectives in this approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

i. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of final effluent quality.

ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.

a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed.

a summary of any complaints received, and any steps taken to address the complaints;

a summary of all pypasses, overflows, other situations outside normal operating conditions and spills within the meaning of Part X of EPA and abnormal discharge events.

a summary of all notice of modifications to sewage works completed under paragraph.

a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.

Referencing Information

Colborne Water Pollution Control Plant

Owner and Operating Authority – Corporation of the Township of Cramahe

April 30, 2020 Amended Environmental Compliance Approval –6418 - BN2NUC

Works Number	# 120000088
Mailing Address –	PO Box 357, 1 Toronto Street, Colborne, Ontario, K0K 1S0
Site Address -	1108 Ontario Street, Colborne, ON
CAO/Clerk	Holly Grant 905-355-2821, Ext 122
Municipal Contact	Phil Kelly, Operator-in-Charge WPCP Manager of Transportation and Environmental Services Voice – (905) 355-2982 Email – wwt@cramahetownship.ca
ORO WPCP	Ted Joynt Cellular - 613-284-7290 Email - jwwc_1@xplornet.ca
Compliance	Tim Gilligan Public Works Admin and Compliance
Administrative	Heather McColl Public Works Clerk & Asset Management Coordinator Phone: 905-355-2821, ext 221 Fax: 905-355-3430
WPCP Operator	Andrew Harper (OIT)

APPENDICES

Appendix A – Environmental Compliance Approval #6418

BN2NUC Appendix B – Monitoring Data and Comparison to

Effluent Limits Appendix C – Maintenance Records

Appendix D – Lethality Testing

Appendix E – Calibration Reports

Appendix F – Bypass Report

Appendix G – Operator Licenses

Appendix H – Sampling Schedule 2023

Appendix I – Consolidated Lineal Infrastructure

WPCP Description

The Colborne Wastewater Treatment Process is an extended aeration process by which the wastewater spends an extended period of time in the biological process.

There are two unique features in the plants design. The first being a peak flow attenuation pond, to which raw sewage flows is redirected when flows exceeds the designed peak flow. As such, there is virtually no chance for a sewage treatment bypass. The peak flow attenuation pond is emptied by directing flow back into the plant for treatment once peak flows subside. The attenuation pond can also be used to hold wastewater during facility maintenance.

The second feature is a bio solids/waste holding pond which has the capacity to hold sludge for an extended period. This bio solids holding pond decants by gravity into the peak flow attenuation pond. Sludge is removed as needed to maintain adequate storage room. The bio-solids/waste stabilization pond has a storage capacity of 4000 m^3. The Bio-solids Waste stabilization Pond controls odors' and allows the sludge to stabilize for land application.

There are two composite samplers, one for raw wastewater pretreatment and one for final effluent post treatment. There are two final effluent sample points, one at the dechlorinating facility and the second sampling point at Station 2 (final effluent), prior to discharge to Lake Ontario.

Raw wastewater from the collectors in the sanitary collection system flows by gravity to a single trunk line that discharges to an influent wet well located at the treatment facility.

Primary Treatment - From this wet well low lift pumps move the wastewater through a "Muffin Monster" (grinder) to grind the solids and other debris into small pieces, this grinder protects downstream equipment. After grinding the solids, the wastewater flows to grit channels where sand and other debris settles out, up to this point this is referred to as primary treatment. After grit removal, the wastewater flows aeration basin (Biological Treatment).

Secondary Treatment - In the aeration basin the biological microorganisms begin to feed on nutrients and other contaminates. After the biological process the wastewater continues to a secondary clarifier where the velocity of the wastewater slows down allowing solids to settle and the permits the removal of grease and other floatable solids which are skimmed off. Aluminum Sulphate (coagulant) is added to the wastewater at the head of the Secondary Clarifier. This coagulant allows electrically charged particles contained in the wastewater to clump together forming "floc". This floc then settles to the bottom of the clarifier leaving a much cleaner effluent wastewater (final effluent).

Final Effluent - The clear supernatant flows to an effluent pumping station (wet well), where liquid chlorine (sodium hypochlorite NaOCl) is added for disinfection. The final effluent is then pumped into a force main which takes the final effluent to a dechlorinating process. Sodium metabisulphite ($Na_2S_2O_5$) is added to the final effluent to remove any residual chlorine left over from the disinfection process. There can be no more than 0.02 mg/l of total chlorine discharged into the receiving body of water (Lake Ontario). Dechlorination occurs approximately 1.25 km south from the plant. After dechlorination the final effluent flows to the receiving body of water in this case Lake Ontario.

Process control – Automated control of the Water Pollution Control Plant (WPCP) is accomplished by a Supervisory Control and Data Acquisition (SCADA) computer system. This SCADA system controls all the process related mechanical devices including electrical. Chemical dosing is also controlled by SCADA. The SCADA system was updated in 2018, improving and allowing for better plant control, collection, interpreting, and trending of data.

The SCADA system allows the operators to control, monitor, trend and report all aspects of wastewater treatment processes (see below);

- Influent pump station pump control,
- Aeration tank blower control,
- Groundwater pump station pump control,
- Alum injection system control,
- RAS / WAS pump & valve control,
- Scum pumping station pump control,

- Effluent pumping station pump control including chlorination and dechlorination.
- Monitoring of various other alarms and process parameters including flow monitoring.

The SCADA process control system ultimately filters commands that control pumps, process interlocks and alarms that alert operators when equipment malfunctions or processes fail. The system also monitors and tracks large volumes of data that are used for trending, process control and compliance reporting. The servers that make up the SCADA system operate 24/7 and are rarely offline. SCADA computers typically have a lifecycle of 5 to 7 years at which time they are replaced.

Flow monitoring - There are three flow measuring devices/transmitters. FIT 330 Parshall flume is located immediately upstream of the grit channels and FIT340 after the secondary clarifier. These are used for flow monitoring during wastewater treatment. There is an electromagnetic flow meter (FIT615) located at the dechlorinating facility used for process control to dose the dechlorinating agent and measure flow to Lake Ontario. The effluent flow from the mag meter (FIT615) is used as a compliance flow.

Emergency power is provided by two generators, one is located at Building 1 (control room main plant) and the other at Building 3 (dechlorination). Both generators can provide all power requirements regardless of the situation. The generators are exercised monthly to make sure they are always ready to supply power during a power outage.

- ***A summary and interpretation of all Influent Sewage Monitoring data and a review of Historical trend of the sewage characteristics and flow rates;***

Influent Sewage Characteristics

The influent sewage characteristics have not changed nor is it anticipated to change. The wastewater is mostly residential with some commercial and light industry.

- ***A summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval including an overview of the success and adequacy of the Works.***

The Wastewater plant was operated and maintained so that the concentrations and waste loadings of material (CBOD5, TSS, TP, TKN, met all effluent parameters and did not exceed limitations. The monthly average concentration and average loadings were all within limits. The pH of the effluent was always maintained within range of set limitations. Flows were within the Design Flow Rate (based on monthly averages). This data is tracked by the plant's compliance reporting program (eRIS)

Please refer to Appendix B for Final Effluent monitoring and average flows over 8 years data

- ***A summary of all operating issues encountered, and corrective actions taken.***

There were no serious operating issues encountered

- ***A summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the works;***

The RACO dialer system for alarms was removed and WIN 911 system installed. The grinder bottom end was changed out with new. Preventative maintenance was carried out based on manufactures' recommendations and as needed.

Please refer to *Appendix D* for maintenance activities

- ***A summary of effluent quality assurance or control measures taken.***

Quality control is monitored using the daily SCADA printouts and online instrumentation located in the control room. Laboratory results are reviewed when received. Process changes are made based on an accredited laboratory results, in-house testing, and physical monitoring to achieve the best quality effluent.

Routine activities such as visual observation of the wastewater as it passes through the various processes. These visual observations of the wastewater provide the operator with an early warning should any processes start to not perform as expected. As well, checking dissolved oxygen and pH with handheld instruments also provide process control.

The WPCP can also be monitored remotely using VPN (Virtual Private Network). This remote monitoring allows for the operator to make changes to all control set points as well as responding to alarms while not onsite.

- ***A summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer.***

  The plant flow meters are annually calibrated by Franklin Empire Inc. Other instrumentation, such as pH meters are calibrated in-house. The flow meter validation report is contained in *Appendix E*

  The HACH DR3900 and 850 used for Total Chlorine Residual is validated using HACH chlorine standards.

- ***A summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:***

  i. *when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality.*

  ii. *When the running Annual Average Daily Flow reached 80% of the rated capacity*

  The plant effluent concentrations in terms of CBOD and Total Ammonia Nitrogen (TAN) Total Suspended Solids (TSS) and Total Phosphorous (TP) were all within the required ECA limits for 2023. The limits for Total Chlorine Residual were met. Data collected for 2023 shows that the extended aeration process provided a high quality of effluent. The nutrient loadings on the receiving body of water (Lake Ontario) were within the criteria noted in the Environmental Compliance Approval #6418 BN2NUC. (Schedule C)

Flows compared to plant capacity.

The 2023 Average Daily Flow (ADF) is based on FIT615 Final Effluent flow meter, the ADF was 1075.99 m^3/d (61.49 % of rated capacity). The rated capacity of the facility is 1750 m3/d. Eighty percent of the rated capacity would be 1400 m3/d. The effluent flows were below 80% (76.86 %)

- ***A tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed.***

It is estimated that 4 m^3 of sludge is generated per day. No raw sludge was removed during 2023 due to sludge removal in prior years. Having said that, sludge removal is planned for 2025 .

- ***A summary of any complaints received during the reporting period and any steps taken to address the complaints.***

  No formal complaints were received in 2023 regarding the Wastewater Treatment Plant or Collection system.

- ***A summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.***

  The plant includes a peak flow attenuation pond (14,000 m3) that allows for high flow to be redirected away from the main plant processes, as such there were no treatment plant bypass events or abnormal discharges or spills during the year. Quarterly reports were submitted to the MECP as per the ECA.

  See Appendix F– Bypass Report

- ***A copy of all notices of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification.***

  There were no modifications as a result of Schedule B, Section 1 of the ECA

- ***A summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.***

During 2023 continued monitoring of the collection system was conducted in order to determine future work. A CCTV program was started in 2023 this CCTV work will include both the Storm Water System and Sanitary System. This CCTV monitoring will continue into 2024

More work is planned for of 2024, exact costs and estimates are still being determined, however, money has been budgeted for mainline and lateral repairs during 2024.

Infiltration and Inflow (I&I) in the collection system are the focus of a control group made up of staff, with a goal to gather data that could be used to restore plant capacity for future development.

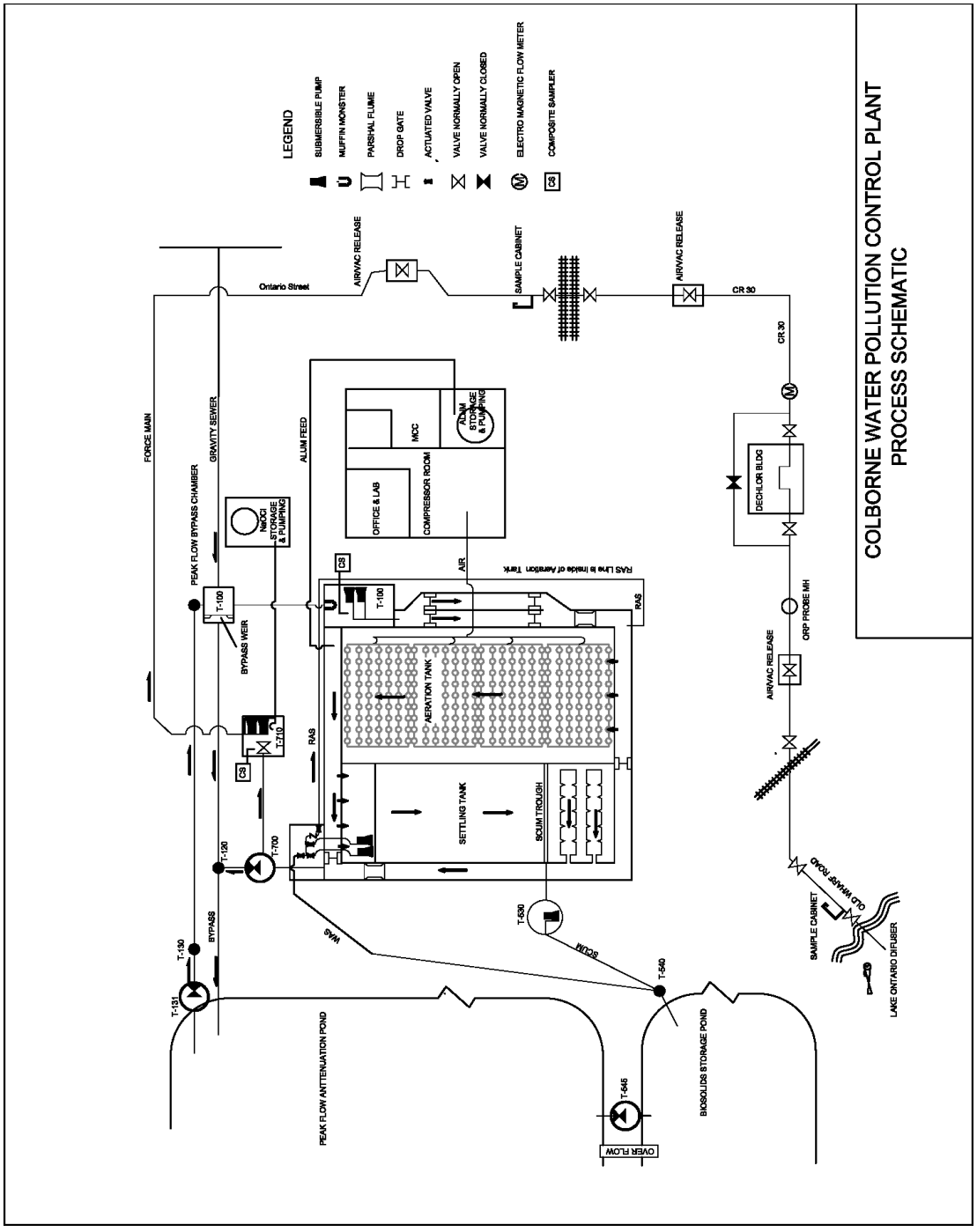
The methods used to monitor the collection system includes Open Channel flow Meters, CCTV, regular visual inspections of maintenance chambers, and the use of a ZOOM type HD camera to locate problem areas for further CCTV inspection. The aim is to use the data, observations and information gathered to form the basis of a future budget forecast for repairs.

- ***A summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year*** **and a schedule for the next reporting year;**

  There were no deviations from scheduled sampling during 2022.

  <u>Please refer to Appendix H Sampling schedule</u>

Please refer to the Process Schematic drawing on the following page.


COLBORNE WATER POLLUTION CONTROL PLANT
PROCESS SCHEMATIC
LEGEND
SUBMERSIBLE PUMP
MUFFIN MONSTER
PARSHAL FLUME
DROP GATE
ACTUATED VALVE
VALVE NORMALLY OPEN
VALVE NORMALLY CLOSED
ELECTRO MAGNETIC FLOW METER
COMPOSITE SAMPLER
Ontario Street
AIR/VAC RELEASE
SAMPLE CABINET
CR 30
FORCE MAIN
GRAVITY SEWER
PEAK FLOW BYPASS CHAMBER
ALUM FEED
MCC
OFFICE & LAB
COMPRESSOR ROOM
ALUM STORAGE & PUMPING
NaOCl STORAGE & PUMPING
DECHLOR BLDG
ORP PROBE MH
T-100
BYPASS WEIR
T-310
AIR
RAS
RAS Line is Intake of Aeration Tank
AERATION TANK
SETTLING TANK
SCUM TROUGH
T-700
T-120
T-130
T-131
BYPASS
WAS
SCUM
T-540
T-545
OVER FLOW
PEAK FLOW ANTTENUATION POND
BIOSOLIDS STORAGE POND
OLD WATER ROAD
LAKE ONTARIO DIFUSER

Appendix A – Amended Environmental Compliance Approval #6418-BN2NUC

Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 6418-BN2NUC
Issue Date: April 30, 2020

The Corporation of the Township of Cramahe
1 Toronto St
Post Office Box, No. 357
Cramahe, Ontario
K0K 1S0

Site Location: 1108 Ontario Street
Township of Cramahe, Ontario
K0K 1S0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

alteration, usage and operation of existing municipal sewage works, for the treatment of sanitary sewage and disposal of effluent to Lake Ontario via a Sewage Treatment Plant (Colborne Wastewater Treatment Plant) and Final Effluent disposal facilities as follows:

Classification of Collection System: Separate Sanitary Sewer System

Classification of Sewage Treatment Plant: Secondary Equivalent

Design Capacity of Sewage Treatment Plant

Design Capacity with All Treatment Trains in Operation	Existing Works
Rated Capacity	1,750 m^3/d

Influent and Imported Sewage

Receiving Location	Types
In Collection System	Sanitary
At Sewage Treatment Plant	Septage/Holding Tank Waste

Colborne Wastewater Treatment Plant:

Influent Sewers

- sanitary sewer on Ontario Street from approximately 230 m South of King Street and Sewage Treatment Plant access road to the influent chamber discharging to comminutator
- emergency peak flow diversion weir and 450 mm diameter diversion sewer to peak flow attenuation pond;

Peak Flow Attenuation Pond

- one (1) 15,000 m^3 peak flow attenuation pond for overflow of raw sewage, secondary treatment effluent and biosolids storage tank, with outlet sewer returning to the inlet chamber;

Sanitary Sewage Pumping Station

- one (1) comminutor;
- two (2) submersible pumps (one standby) each rated at 60.4 L/s at 8.3 m TDH;

Preliminary Treatment System

- one (1) manual bar screen;
- two (2) grit channels;
- one(1) Parshall Flume

Secondary Treatment Systems

Biological Treatment

- Influent channel with three inlet ports to the aeration tank
- one(1) 25 m X 8.5 m X 4.3 SWD aeration tank equipped with fine bubble aeration system;
- two (2) air blowers (one standby), each rated at 38 m^3/min at 55 kPa;

Secondary Sedimentation

- one(1) 25 m X 6.1 m X 4.8 m SWD secondary clarifier euipped with sludge and scum removal

mechanisms;

- a sludge hopper equipped with two (2) return/waste activated sludge pumps (one standby), each rated at 20.3 L/s at 9.4 m TDH;

- a scum tank equipped with one (1) scum pump rated at 5.0 L/s at 4.2 m TDH;

Supplementary Treatment Systems

Phosphorus Removal

- one(1) 28,000 L capacity phosphorus removal chemical storage tanks and two (2) metering pumps (one standby) each rated 60 L/h at 1034 kPa;

Disinfection System and effluent pumping

- one (1) 7,700 L sodium hypochlorite storage tank and two (2) metering pumps (one standby), each rated at 80 L/h at 400 kPa and paced with the effluent flow, with a feed line for injection into a 1.3 km effluent forcemain;

- one (1) 77 m^3 wet-well equipped with two (2) pumps (one standby), each rated at 60.4 L/s at 18.6 m TDH of 18.6 m;

- 1,000 m section of the effluent forcemain downstream of effluent pumping station serving as chlorine contact zone;

Final Effluent Flow Measurement, Dechorination and Sampling Point

- 350 mm diameter electromagnetic flowmeter located on County Road 31, approximately 1.3 km downstream of the WWTP

- one (1) 200 L sodium bisulphite storage tank and two (2) metering pumps (one standby), each rated at 80 L/h at 400 kPa and paced with the effluent flow located in dechlorination building on County Road 31, with a feed line for injection into the effluent forcemain;

- 350 mm effluent forcemain from dechlorination building to an outfall discharging to Lake Ontario through a diffuser approximately 150 m from shore

Biosolids Storage

- one (1) 4,000 m^3 biosolids storage pond;

including all other mechanical system, electrical system, instrumentation and control system, standby power system, piping, pumps, valves and appurtenances essential for the proper, safe and reliable operation of the Works in accordance with this Approval, in the context of process performance and general principles of

wastewater engineering only;

all in accordance with the submitted supporting documents listed in Schedule A.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Annual Average Effluent Concentration" is the mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar year, calculated and reported as per the methodology specified in Schedule F;

2. "Annual Average Daily Effluent Flow" means the cumulative total Final Effluent discharged during a calendar year divided by the number of days during which Final Effluent was discharged that year;

3. "Approval" means this environmental compliance approval and any schedules attached to it, and the application;

4. "BOD5" (also known as TBOD5) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demands;

5. "Bypass" means diversion of sewage around one or more treatment processes, excluding Preliminary Treatment System, within the Sewage Treatment Plant with the diverted sewage flows being returned to the Sewage Treatment Plant treatment train upstream of the Final Effluent sampling point(s) and discharged via the approved effluent disposal facilities;

6. "CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

7. "Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

8. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Works is geographically located;

9. "*E. coli* " refers to coliform bacteria that possess the enzyme beta-glucuronidase and are capable of cleaving a fluorogenic or chromogenic substrate with the corresponding release of a fluorogen or chromogen, that produces fluorescence under long wavelength (366 nm) UV light, or color development, respectively. Enumeration methods include tube, membrane filter, or multi-well procedures. Depending on the method selected, incubation temperatures include 35.5 $\pm$ 0.5 °C or 44.5 $\pm$ 0.2 °C (to enumerate thermotolerant species). Depending on the procedure used, data are reported as either colony forming units (CFU) per 100 mL (for membrane filtration methods) or as most probable number (MPN) per 100 mL (for tube or multi-well methods);

10. "EPA" means the *Environmental Protection Act* , R.S.O. 1990, c.E.19, as amended;

11. "Equivalent Equipment" means alternate piece(s) of equipment that meets the design requirements and

performance specifications of the piece(s) of equipment to be substituted;

12. "Event" means an action or occurrence, at a given location within the Works that causes a Bypass or Overflow. An Event ends when there is no recurrence of Bypass or Overflow in the 12-hour period following the last Bypass or Overflow. Overflows and Bypasses are separate Events even when they occur concurrently;

13. "Existing Works" means those portions of the Works included in the Approval that have been constructed previously;

14. "Final Effluent" means effluent that is discharged to the environment through the approved effluent disposal facilities, including all Bypasses, that are required to meet the compliance limits stipulated in the Approval for the Sewage Treatment Plant at the Final Effluent sampling point(s);

15. "Imported Sewage" means sewage hauled to the Sewage Treatment Plant by licensed waste management system operators of the types and quantities approved for co-treatment in the Sewage Treatment Plant, including hauled sewage and leachate within the meaning of R.R.O. 1990, Regulation 347: General – Waste Management, as amended;

16. "Influent" means flows to the Sewage Treatment Plant from the collection system and Imported Sewage but excluding process return flows.

17. "Limited Operational Flexibility" (LOF) means the conditions that the Owner shall follow in order to undertake any modification that is pre-authorized as part of this Approval;

18. "Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

19. "Monthly Average Effluent Concentration" is the mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month, calculated and reported as per the methodology specified in Schedule F;

20. "Monthly Average Daily Effluent Flow" means the cumulative total Final Effluent discharged during a calendar month divided by the number of days during which Final Effluent was discharged that month;

21. "Monthly Average Daily Effluent Loading" means the value obtained by multiplying the Monthly Average Effluent Concentration of a contaminant by the Monthly Average Daily Effluent Flow over the same calendar month;

22. "Monthly Geometric Mean Density" is the mean of all Single Sample Results of *E. coli* measurement in the samples taken during a calendar month, calculated and reported as per the methodology specified in Schedule F;

23. "Normal Operating Condition" means the condition when all unit process(es), excluding Preliminary Treatment System, in a treatment train is operating within its design capacity;

24. "Operating Agency" means the Owner or the entity that is authorized by the Owner for the management, operation, maintenance, or alteration of the Works in accordance with this Approval;

25. "Overflow" means a discharge to the environment from the Works at designed location(s) other than the approved effluent disposal facilities or via the effluent disposal facilities downstream of the Final Effluent sampling point;

26. "Owner" means The Corporation of the Township of Cramahe and its successors and assignees;

27. "OWRA" means the *Ontario Water Resources Act* , R.S.O. 1990, c. O.40, as amended;

28. "Preliminary Treatment System" means all facilities in the Sewage Treatment Plant associated with screening and grit removal;

29. "Professional Engineer" means a person entitled to practice as a Professional Engineer in the Province of Ontario under a license issued under the Professional Engineers Act;

30. "Proposed Works" means those portions of the Works included in the Approval that are under construction or to be constructed;

31. "Rated Capacity" means the Annual Average Daily Influent Flow for which the Sewage Treatment Plant is designed to handle;

32. "Sanitary Sewers" means pipes that collect and convey wastewater from residential, commercial, institutional and industrial buildings, and some infiltration and inflow from extraneous sources such as groundwater and surface runoff through means other than stormwater catch basins;

33. "Separate Sewer Systems" means wastewater collection systems that comprised of Sanitary Sewers while runoff from precipitation and snowmelt are separately collected in Storm Sewers;

34. "Sewage Treatment Plant" means all the facilities related to sewage treatment within the sewage treatment plant site excluding the Final Effluent disposal facilities;

35. "Single Sample Result" means the test result of a parameter in the effluent discharged on any day, as measured by a probe, analyzer or in a composite or grab sample, as required;

36. "Storm Sewers" means pipes that collect and convey runoff resulting from precipitation and snowmelt (including infiltration and inflow); (use only for Separate or Nominally Sewer Systems)

37. "Works" means the approved sewage works, and includes Existing Works and modifications made under Limited Operational Flexibility.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

1. The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the terms and conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2. The Owner shall design, construct, operate and maintain the Works in accordance with the conditions of this Approval.

3. Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence.

2. CHANGE OF OWNER AND OPERATING AGENCY

1. The Owner shall, within thirty (30) calendar days of issuance of this Approval, prepare/update and submit to the District Manager the Municipal and Local Services Board Wastewater System Profile Information Form, as amended (Schedule G) under any of the following situations:

   a. the form has not been previously submitted for the Works;

   b. this Approval is issued for extension, re-rating or process treatment upgrade of the Works;

   c. when a notification is provided to the District Manager in compliance with requirements of change of Owner or Operating Agency under this condition.

2. The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within thirty (30) days of the change occurring:

   a. change of address of Owner;

   b. change of Owner, including address of new owner;

   c. change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Business Names Act, R.S.O. 1990, c. B.17* , as amended, shall be included in the notification;

   d. change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the *Corporations Information Act, R.S.O. 1990, c. C.39* , as amended, shall be included in the notification.

3. The Owner shall notify the District Manager, in writing, of any of the following changes within thirty (30) days of the change occurring:

a. change of address of Operating Agency;

b. change of Operating Agency, including address of new Operating Agency.

4. In the event of any change in ownership of the Works, the Owner shall notify the succeeding owner in writing, of the existence of this Approval, and forward a copy of the notice to the District Manager.

5. The Owner shall ensure that all communications made pursuant to this condition refer to the environmental compliance approval number.

3. RECORD DRAWINGS

1. A set of record drawings of the Works shall be kept up to date through revisions undertaken from time to time and a copy shall be readily accessible for reference at the Works.

4. BYPASSES

1. Any Bypass is prohibited, except:

   a. an emergency Bypass when a structural, mechanical or electrical failure causes a temporary reduction in the capacity of a treatment process or when an unforeseen flow condition exceeds the design capacity of a treatment process that is likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset, if a portion of the flow is not bypassed;

   b. a planned Bypass that is a direct and unavoidable result of a planned repair and maintenance procedure or other circumstance(s), the Owner having notified the District Manager in writing at least fifteen (15) days prior to the occurrence of Bypass, including an estimated quantity and duration of the Bypass, an assessment of the impact on the quality of the Final Effluent and the mitigation measures if necessary, and the District Manager has given written consent of the Bypass;

2. Notwithstanding the exceptions given in Paragraph 1, the Operating Agency shall undertake everything practicable to maximize the flow through the downstream treatment process(es) prior to bypassing.

3. At the beginning of a Bypass Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the type of the Bypass as indicated in Paragraph 1 and the reason(s) for the Bypass;

   b. the date and time of the beginning of the Bypass;

   c. the treatment process(es) gone through prior to the Bypass and the treatment process(es) bypassed;

   d. the effort(s) done to maximize the flow through the downstream treatment process(es) and the

reason(s) why the Bypass was not avoided.

4. Upon confirmation of the end of a Bypass Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the date and time of the end of the Bypass;

   b. the estimated or measured volume of Bypass.

5. For any Bypass Event, the Owner shall collect daily sample(s) of the Final Effluent, inclusive of the Event and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples, following the same protocol specified in the Monitoring and Recording condition for the regular samples. The sample(s) shall be in addition to the regular Final Effluent samples required under the monitoring and recording condition. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.

6. The Owner shall submit a summary report of the Bypass Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary reports shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5) and either a statement of compliance or a summary of the non-compliance notifications submitted as required under Paragraph 1 of Condition 11. If there is no Bypass Event during a quarter, a statement of no occurrence of Bypass is deemed sufficient.

7. The Owner shall develop a notification procedure in consultation with the District Manager and SAC and notify the public and downstream water users that may be adversely impacted by any Bypass Event.

5. OVERFLOWS

1. Any Overflow is prohibited, except:

   a. an emergency Overflow in an emergency situation when a structural, mechanical or electrical failure causes a temporary reduction in the capacity of the Works or when an unforeseen flow condition exceeds the design capacity of the Works that is likely to result in personal injury, loss of life, health hazard, basement flooding, severe property damage, equipment damage or treatment process upset, if a portion of the flow is not overflowed;

   b. a planned Overflow that is a direct and unavoidable result of a planned repair and maintenance procedure or other circumstance(s), the Owner having notified the District Manager in writing at least fifteen (15) days prior to the occurrence of Overflow, including an estimated quantity and duration of the Overflow, an assessment of the impact on the environment and the mitigation measures if necessary, and the District Manager has given written consent of the Overflow;

2. Notwithstanding the exceptions given in Paragraph 1, the Operating Agency shall undertake everything

practicable to maximize the flow through the downstream treatment process(es) and Bypass(es) prior to overflowing.

3. At the beginning of an Overflow Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the type of the Overflow as indicated in Paragraph 1 and the reason(s) for the Overflow;

   b. the date and time of the beginning of the Overflow;

   c. the point of the Overflow from the Works, the treatment process(es) gone through prior to the Overflow, the disinfection status of the Overflow and whether the Overflow is discharged through the effluent disposal facilities or an alternate location;

   d. the effort(s) done to maximize the flow through the downstream treatment process(es) and Bypass(es) and the reason(s) why the Overflow was not avoided.

4. Upon confirmation of the end of an Overflow Event, the Owner shall immediately notify the Spills Action Centre (SAC) and the local Medical Officer of Health. This notice shall include, at a minimum, the following information:

   a. the date and time of the end of the Overflow;

   b. the estimated or measured volume of the Overflow.

5. For any Overflow Event

   a. in the Sewage Treatment Plant, the Owner shall collect grab sample(s) of the Overflow, one near the beginning of the Event and one every eight (8) hours for the duration of the Event, and have them analyzed at least for CBOD5, total suspended solids, total phosphorus, total ammonia nitrogen, total Kjeldahl nitrogen, *E.coli* except that raw sewage and primary treated effluent Overflow shall be analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen only.

   b. at a sewage pumping station in the collection system, the Owner shall collect at least one (1) grab sample representative of the Overflow Event and have it analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen.

6. The Owner shall submit a summary report of the Overflow Event(s) to the District Manager on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15. The summary report shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5). If there is no Overflow Event during a quarter, a statement of no occurrence of Overflow is deemed sufficient.

7. The Owner shall develop a notification procedure in consultation with the District Manager and SAC and notify the public and downstream water users that may be adversely impacted by any Overflow

Event.

6. DESIGN OBJECTIVES

1. The Owner shall design and undertake everything practicable to operate the Sewage Treatment Plant in accordance with the following objectives:

   a. Final Effluent parameters design objectives listed in the table(s) included in Schedule B.

   b. Final Effluent is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

   c. Total Residual Chlorine (TRC) in the Final Effluent shall be non-detectable as measured by a method with a sensitivity of at least 0.02 mg/L. Normal operation of de-chlorination equipment should provide for an excess of reagents to ensure that total chlorine residuals are not detected.

   d. Annual Average Daily Influent Flow is within the Rated Capacity of the Sewage Treatment Plant.

7. COMPLIANCE LIMITS

1. The Owner shall operate and maintain the Sewage Treatment Plant such that compliance limits for the Final Effluent parameters listed in the table(s) included in Schedule C are met.

8. OPERATION AND MAINTENANCE

1. The Owner shall ensure that, at all times, the Works and the related equipment and appurtenances used to achieve compliance with this Approval are properly operated and maintained. Proper operation and maintenance shall include effective performance, adequate funding, adequate staffing and training, including training in all procedures and other requirements of this Approval and the OWRA and regulations, adequate laboratory facilities, process controls and alarms and the use of process chemicals and other substances used in the Works.

2. The Owner shall update maintain the operations manual for the Works within six (6) months of completion of construction of the Proposed Works, that includes, but not necessarily limited to, the following information:

   a. operating procedures for the Works under Normal Operating Conditions;

   b. inspection programs, including frequency of inspection, for the Works and the methods or tests employed to detect when maintenance is necessary;

   c. repair and maintenance programs, including the frequency of repair and maintenance for the Works;

   d. procedures for the inspection and calibration of monitoring equipment;

e. operating procedures for the Works to handle situations outside Normal Operating Conditions and emergency situations such as a structural, mechanical or electrical failure, or an unforeseen flow condition, including procedures to minimize Bypasses and Overflows;

f. a spill prevention and contingency plan, consisting of procedures and contingency plans, including notification to the District Manager, to reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result from spills of pollutants;

g. procedures for receiving, responding and recording public complaints, including recording any followup actions taken.

3. The Owner shall maintain the operations manual up-to-date and make the manual readily accessible for reference at the Works.

4. The Owner shall ensure that the Operating Agency fulfills the requirements under O. Reg. 129/04, as amended for the Works, including the classification of facilities, licensing of operators and operating standards.

9. MONITORING AND RECORDING

1. The Owner shall, upon commencement of operation of the Works, carry out a scheduled monitoring program of collecting samples at the required sampling points, at the frequency specified or higher, by means of the specified sample type and analyzed for each parameter listed in the tables under the monitoring program included in Schedule D and record all results, as follows:

   a. all samples and measurements are to be taken at a time and in a location characteristic of the quality and quantity of the sewage stream over the time period being monitored.

   b. definitions and preparation requirements for each sample type are included in document referenced in Paragraph 3.b.

   c. definitions for frequency:

      i. Daily means once every day;

      ii. Weekly means once every week;

      iii. Monthly means once every month;

      iv. Quarterly means once every three months;

   d. a schedule of the day of the week/month for the scheduled sampling shall be created. The sampling schedule shall be revised and updated every year through rotation of the day of the week/month for the scheduled sampling program, except when the actual scheduled monitoring frequency is three (3) or more times per week.

2. In addition to the scheduled monitoring program required in Paragraph 1, the Owner shall collect daily sample(s) of the Final Effluent, on any day when there is any situation outside Normal Operating Conditions, and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples, following the same protocol specified in this condition for the regular samples. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.

3. The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following documents and all analysis shall be conducted by a laboratory accredited to the ISO/IEC:17025 standard or as directed by the District Manager:

    a. the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended;

    b. the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), PIBS 2724e02, as amended;

    c. the publication "Standard Methods for the Examination of Water and Wastewater", as amended.

    d. the Environment Canada publications "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout" (EPS 1/RM/13 Second Edition - December 2000) and "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia magna" (EPS 1/RM/14 Second Edition - December 2000), as amended, subject to the following:

        i. the use of pH stabilization in the determination of acute lethality of Final Effluent to Rainbow Trout in accordance with the Environment Canada publication "Procedure for pH Stabilization during the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout (EPS 1/RM/50)" (2008), as amended, is permitted only if:

            a. all the three criteria stipulated in the Environment Canada EPS 1/RM/50 are met; and

            b. the Final Effluent is not discharged to a receiver in which the Final Effluent contributes more than 50% of the total flow in the receiving water, unless the District Manager, having reviewed additional information submitted regarding the Final Effluent and the receiving water approves on the use of RM50 on a site-specific basis.

4. If the Owner monitors Bisulphite Residual as a surrogate to Total Residual Chlorine, then detected levels of Bisulphite Residual in the sample shall be deemed to confirm absence of Total Residual Chlorine.

5. The minimum monitoring frequency with respect to acute lethality to Rainbow Trout and Daphnia magna shall, after eight (8) consecutive quarters of monitoring results not indicating acute lethality, be reduced to annually. If any Final Effluent sample indicates acute lethality to Rainbow Trout or Daphnia magna, the monitoring frequency shall revert back to quarterly and the Owner shall carry out the following immediately:

a. Review the following:

i. Final Effluent quality and confirm that concentrations of ammonia are within the limits;

ii. plant operations around the time of the toxicity event; and

iii. all data available regarding plant operations and Final Effluent quality.

b. If the observed effluent toxicity is not associated with ammonia, an investigation shall be undertaken to determine the cause or source of the toxicity.

c. Upon determination of cause or source of acute lethality to Rainbow Trout and Daphnia magna, the Owner shall determine appropriate control measures to achieve non-acutely lethal effluent and time lines for the implementation of identified control measures. The Owner shall submit the proposed control measures and implementation time lines for approval to the District Manager.

6. The Owner shall monitor and record the flow rate and daily quantity using flow measuring devices or other methods of measurement as approved below calibrated to an accuracy within plus or minus 15 per cent (+/- 15%) of the actual flowrate of the following:

a. Final Effluent discharged from the Sewage Treatment Plant by continuous flow measuring devices and instrumentations/pumping rates/details of other methods (e.g. level of lagoons), or in lieu of an actual installation of equipment, adopt the flow measurements of the Influent for the purpose of estimating Final Effluent flows if the Influent and Final Effluent streams are considered not significantly different in flow rates and quantities;

b. each type of Imported Sewage received for co-treatment at the Sewage Treatment Plant by flow measuring devices/pumping rates/haul truck manifests;

7. The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

10. LIMITED OPERATIONAL FLEXIBILITY

1. The Owner may make pre-authorized modifications to the sewage pumping stations and Sewage Treatment Plant in Works in accordance with the document "Limited Operational Flexibility - Protocol for Pre-Authorized Modifications to Municipal Sewage Works" (Schedule E), as amended, subject to the following:

a. the modifications will not involve the addition of any new treatment process or the removal of an existing treatment process, including chemical systems, from the liquid or solids treatment trains as originally designed and approved.

b. the scope and technical aspects of the modifications are in line with those delineated in Schedule E

and conform with the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended, Ministry's regulations, policies, guidelines, and industry engineering standards;

c. the modifications shall not negatively impact on the performance of any process or equipment in the Works or result in deterioration in the Final Effluent quality;

d. where the pre-authorized modification requires notification, a "Notice of Modifications to Sewage Works" (Schedule E), as amended shall be completed with declarations from a Professional Engineer and the Owner and retained on-site prior to the scheduled implementation date. All supporting information including technical memorandum, engineering plans and specifications, as applicable and appropriate to support the declarations that the modifications conform with LOF shall remain on-site for future inspection.

2. The following modifications are not pre-authorized under Limited Operational Flexibility:

a. Modifications that involve addition or extension of process structures, tankages or channels;

b. Modifications that involve relocation of the Final Effluent outfall or any other discharge location or that may require reassessment of the impact to the receiver or environment;

c. Modifications that involve addition of or change in technology of a treatment process or that may involve reassessment of the treatment train process design;

d. Modifications that require changes to be made to the emergency response, spill prevention and contingency plan; or

e. Modifications that are required pursuant to an order issued by the Ministry.

11. REPORTING

1. The Owner shall report to the District Manager orally as soon as possible any non-compliance with the compliance limits, and in writing within seven (7) days of non-compliance.

2. The Owner shall, within fifteen (15) days of occurrence of a spill within the meaning of Part X of the EPA, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation, in addition to fulfilling the requirements under the EPA and O. Reg. 675/98 "Classification and Exemption of Spills and Reporting of Discharges".

3. The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

4. The Owner shall prepare performance reports on a calendar year basis and submit to the District Manager by March 31 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:

a. a summary and interpretation of all Influent, Imported Sewage monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

b. a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

c. a summary of all operating issues encountered and corrective actions taken;

d. a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

e. a summary of any effluent quality assurance or control measures undertaken;

f. a summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

g. a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

    i. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

    ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

h. a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

i. a summary of any complaints received and any steps taken to address the complaints;

j. a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

k. a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate and a schedule for the next reporting year;

l. Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

m. a summary of any deviation from the monitoring schedule and reasons for the current reporting year

Schedule B

Final Effluent Design Objectives

Concentration Objectives

Final Effluent Parameter	**Averaging Calculator**	**Objective** (milligrams per litre unless otherwise indicated)
CBOD5	Monthly Average Effluent Concentration	15 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	15 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	0.4 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	2.0 mg/L (May 1 to Oct 31) 4.0 mg/L (Nov 1 to Apr 30)
E. coli	Monthly Geometric Mean Density	*150 CFU/100 mL
pH	Single Sample Result	6.5 - 8.5 inclusive
Total Residual Chlorine**	Single Sample Result	Non-detectable

*If the MPN method is utilized for *E. coli* analysis the objective shall be 150 MPN/100 mL

**Total Residual Chlorine shall be non-detectable as measured by a method with a sensitivity of at least 0.02 mg/L

Schedule C

Final Effluent Compliance Limits

Concentration Limits

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Monthly Average Effluent Concentration	25 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	25 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	0.7 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	4.0 mg/L (May 1 to Oct 31) 8.0 mg/L (Nov 1 to Apr 30)
E. coli	Monthly Geometric Mean Density	*200 CFU/100 mL
pH	Single Sample Result	between 6.0 - 9.5 inclusive
Total Chlorine Residual	Single Sample Result	0.02

*If the MPN method is utilized for *E. coli* analysis the limit shall be 200 MPN/100 mL

**If continuous analyzer is used for monitoring of Total Residual Chlorine, reading shall be recorded at a minimum frequency of every 5 minutes and any record is not to exceed 0.1 mg/L and any two-hour moving average is not to exceed 0.02 mg/L

Loading Limits

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Monthly Average Daily Effluent Loading	43.8 kg/d
Total Suspended Solids	Monthly Average Daily Effluent Loading	43.8 kg/d
Total Phosphorus	Monthly Average Daily Effluent Loading	1.2 kg/d

Schedule D

Monitoring Program

Influent - Influent sampling point Inlet Works

Parameters	Sample Type	Minimum Frequency
BOD5	8 hour composite	Monthly
Total Suspended Solids	8 hour composite	Monthly
Total Phosphorus	8 hour composite	Monthly
Total Kjeldahl Nitrogen	8 hour composite	Monthly

Imported Sewage - Imported Sewage Receiving Station

Parameters	Sample Type	Minimum Frequency
BOD5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Schedule D

Monitoring Program

Final Effluent - Final Effluent sampling point

Parameters	Sample Type	Minimum Frequency
CBOD5	8 hour composite	Weekly
Total Suspended Solids	8 hour composite	Weekly
Total Phosphorus	8 hour composite	Weekly
Total Ammonia Nitrogen	8 hour composite	Weekly
Total Residual Chlorine	Grab	Weekly
E. coli	Grab	Weekly
Acute Lethality to Rainbow Trout and Daphnia magna	Grab	Quarterly
pH*	Grab	Weekly
Temperature*	Grab	Weekly

*pH and temperature of the Final Effluent shall be determined in the field at the time of sampling for Total Ammonia Nitrogen.

**The concentration of un-ionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended.

Schedule E

Limited Operational Flexibility

Protocol for Pre-Authorized Modifications to Municipal Sewage Works

1. General

1. Pre-authorized modifications are permitted only where Limited Operational Flexibility has already been granted in the Approval and only permitted to be made at the pumping stations and sewage treatment plant in the Works, subject to the conditions of the Approval.

2. Where there is a conflict between the types and scope of pre-authorized modifications listed in this document, and the Approval where Limited Operational Flexibility has been granted, the Approval shall take precedence.

3. The Owner shall consult the District Manager on any proposed modifications that may fall within the scope and intention of the Limited Operational Flexibility but is not listed explicitly or included as an example in this document.

4. The Owner shall ensure that any pre-authorized modifications will not:

    a. adversely affect the hydraulic profile of the Sewage Treatment Plant or the performance of any upstream or downstream processes, both in terms of hydraulics and treatment performance;

    b. result in new Overflow or Bypass locations, or any potential increase in frequency or quantity of Overflow(s) or Bypass(es).

    c. result in a reduction in the required Peak Flow Rate of the treatment process or equipment as originally designed.

2. Modifications that do not require pre-authorization:

1. Sewage works that are exempt from Ministry approval requirements;

2. Modifications to the electrical system, instrumentation and control system.

3. Pre-authorized modifications that do not require preparation of "Notice of Modification to Sewage Works"

1. Normal or emergency maintenance activities, such as repairs, renovations, refurbishments and replacements with Equivalent Equipment, or other improvements to an existing approved piece of equipment of a treatment process do not require pre-authorization. Examples of these activities are:

    a. Repairing a piece of equipment and putting it back into operation, including replacement of minor

components such as belts, gear boxes, seals, bearings;

b. Repairing a piece of equipment by replacing a major component of the equipment such as motor, with the same make and model or another with the same or very close power rating but the capacity of the pump or blower will still be essentially the same as originally designed and approved;

c. Replacing the entire piece of equipment with Equivalent Equipment.

2. Improvements to equipment efficiency or treatment process control do not require pre-authorization. Examples of these activities are:

a. Adding variable frequency drive to pumps;

b. Adding on-line analyzer, dissolved oxygen probe, ORP probe, flow measurement or other process control device.

4. Pre-Authorized Modifications that require preparation of "Notice of Modification to Sewage Works"

1. Pumping Stations

a. Replacement, realignment of existing sewers including manholes, valves, gates, weirs and associated appurtenances provided that the modifications will not add new influent source(s) or result in an increase in flow from existing sources as originally approved.

b. Extension or partition of wetwell to increase retention time for emergency response and improve station maintenance and pump operation;

c. Replacement or installation of inlet screens to the wetwell.

d. Replacement or installation of flowmeters, construction of station bypass.

e. Replacement, reconfiguration or addition of pumps and modifications to pump suctions and discharge piping's including valve, gates, motors, variable frequency drives and associated appurtenances to maintain firm pumping capacity or modulate the pump rate provided that the modifications will not result in a reduction in the firm pumping capacity or discharge head or an increase in the peak pumping rate of the pumping station as originally designed;

f. Replacement, realignment of existing forcemain(s) including valves, gates, and associated appurtenances provided that the modifications will not reduce the flow capacity or increase the total dynamic head and transient in the forcemain.

2. Sewage Treatment Plant

1. Sewers and appurtenances

a. Replacement, realignment of existing sewers (including pipes and channels) or construction of new

sewers, including manholes, valves, gates, weirs and associated appurtenances within the a sewage treatment plant, provided that the modifications will not add new influent source(s) or result in an increase in flow from existing sources as originally approved and that the modifications will remove hydraulic bottlenecks or improve the conveyance of sewage into and through the Works.

2. Flow Distribution Chambers/Splitters

    a. Replacement or modification of existing flow distribution chamber/splitters or construction of new flow distribution chamber/splitters, including replacements or installation of sluice gates, weirs, valves for distribution of flows to the downstream process trains, provided that the modifications will not result in a change in flow distribution ratio to the downstream process trains as originally designed.

3. Imported Sewage Receiving Facility

    a. Replacement, relocation or installation of loading bays, connect/disconnect hook-up systems and unloading/transferring systems.

    b. Replacement, relocation or installation of screens, grit removal units and compactors.

    c. Replacement, relocation or installation of pumps, such as dosing pumps and transfer pumps, valves, piping and appurtenances.

    d. Replacement, relocation or installation of storage tanks/chambers and spill containment systems.

    e. Replacement, relocation or installation of flow measurement and sampling equipment.

    f. Changes to the source(s) or quantity from each source, provided that changes will not result in an increase in the total quantity and waste loading of each type of Imported Sewage already approved for co-treatment.

4. Preliminary Treatment System

    a. Replacement of existing screens and grit removal units with equipment of the same or higher process performance technology, including where necessary replacement or upgrading of existing screenings dewatering washing compactors, hydrocyclones, grit classifiers, grit pumps, air blower's conveyor system, disposal bins and other ancillary equipment to the screening and grit removal processes.

    b. Replacement or installation of channel aeration systems, including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers.

5. Primary Treatment System

    a. Replacement of existing sludge removal mechanism, including sludge chamber.

    b. Replacement or installation of scum removal mechanism, including scum chamber.

    c. Replacement or installation of primary sludge pumps, scum pumps, provided that: the modifications will not result in a reduction in the firm pumping capacity or discharge head that the primary sludge pump(s) and scum pump(s) are originally designed to handle.

6. Secondary Treatment System

    1. Biological Treatment

        a. Conversion of complete mix aeration tank to plug-flow multi-pass aeration tank, including modifications to internal structural configuration.

        b. Addition of inlet gates in multi-pass aeration tank for step-feed operation mode.

        c. Partitioning of an anoxic/flip zone in the inlet of the aeration tank, including installation of submersible mixer(s);

        d. Replacement of aeration system including air blowers, air supply main, air headers, air laterals, air distribution grids and diffusers, provided that the modifications will not result in a reduction in the firm capacity or discharge pressure that the blowers are originally designed to supply or in the net oxygen transferred to the wastewater required for biological treatment as originally required.

    2. Secondary Sedimentation

        a. Replacement of sludge removal mechanism, including sludge chamber.

        b. Replacement or installation of scum removal mechanism, including scum chamber.

        c. Replacement or installation of return activated sludge pump(s), waste activated sludge pump(s), scum pump(s), provided that the modifications will not result in a reduction in the firm pumping capacity or discharge head that the activated sludge pump(s) and scum pump(s) are originally designed to handle.

7. Post-Secondary Treatment System

    a. Replacement of filtration system with equipment of the same filtration technology, including feed pumps, backwash pumps, filter reject pumps, filtrate extract pumps, holding tanks associated with the pumping system, provided that the modifications will not result in a reduction in the capacity of the filtration system as originally designed.

8. Disinfection System

    1. UV Irradiation

        a. Replacement of UV irradiation system, provided that the modifications will not result in a reduction in the design capacity of the disinfection system, or the radiation level as originally designed.

    2. Chlorination/Dechlorination and Ozonation Systems

        a. Extension and reconfiguration of contact tank to increase retention time for effective disinfection and reduce dead zones and minimize short-circuiting.

        b. Replacement or installation of chemical storage tanks, provided that the tanks are provided with effective spill containment.

9. Supplementary Treatment Systems

    1. Chemical systems

        a. Replacement, relocation or installation of chemical storage tanks for existing chemical systems only, provided that the tanks are sited with effective spill containment.

        b. Replacement or installation of chemical dosing pumps provided that the modifications will not result in a reduction in the firm capacity that the dosing pumps are originally designed to handle.

        c. Relocation and addition of chemical dosing point(s) including chemical feed pipes and valves and controls, to improve phosphorus removal efficiency.

        d. Use of an alternate chemical provided that it is a non-proprietary product and is a commonly used alternative to the chemical approved in the Works, provided that the chemical storage tanks, chemical dosing pumps, feed pipes and controls are also upgraded, as necessary.

10. Sludge Management System

    1. Sludge Holding and Thickening

        a. Replacement or installation of sludge holding tanks, sludge handling pumps, such as transfer pumps, feed pumps, recirculation pumps, provided that modifications will not result in reduction in the solids storage or handling capacities.

    2. Sludge Digestion

        a. Replacement or installation of digesters, sludge handling pumps, such as transfer pumps, feed pumps, recirculation pumps, provided that modifications will not result in reduction in the solids.

storage or handling capacities.

b. replacement of sludge digester covers.

3. Sludge Dewatering and Disposal

a. Replacement of sludge dewatering equipment, sludge handling pumps, such as transfer pumps, feed pumps, cake pumps, loading pumps, provided that modifications will not result in reduction in solids storage or handling capacities.

4. Processed Organic Waste

a. Changes to the source(s) or quantity from each source, provided that changes will not result in an increase in the total quantity already approved for co-processing.

11. Standby Power System

1. Replacement or installation of standby power system, including feed from alternate power grid, emergency power generator, fuel supply and storage systems, provided that the existing standby power generation capacity is not reduced.

12. Pilot Study

1. Small side-stream pilot study for existing or new technologies, alternative treatment process or chemical, provided:

a. all effluent from the pilot system is hauled off-site for proper disposal or returned back to the sewage treatment plant for at a point no further than immediately downstream of the location from where the side-stream is drawn.

b. no proprietary treatment process or propriety chemical is involved in the pilot study.

c. the effluent from the pilot system returned to the sewage treatment plant does not significantly alter the composition/concentration of or add any new contaminant/inhibiting substances to the sewage to be treated in the downstream process.

d. the pilot study will not have any negative impacts on the operation of the sewage treatment plant or cause a deterioration of effluent quality.

e. the pilot study does not exceed a maximum of two years and a notification of completion shall be submitted to the District Manager within one month of completion of the pilot project.

13. Lagoons

a. installing baffles in lagoon provided that the operating capacity of the lagoon system is not reduced;

b. raise top elevation of lagoon berms to increase freeboard.

c. replace or install interconnecting pipes and chambers between cells, provided that the process design operating sequence is not changed.

d. replace or install mechanical aerators, or replace mechanical aerators with diffused aeration system provided that the mixing and aeration capacity are not reduced.

e. removal of accumulated sludge and disposal to an approved location offsite.

3. Final Effluent Disposal Facilities

a. Replacement or realignment of the Final Effluent channel, sewer or forcemain, including manholes, valves and appurtenances from the end of the treatment train to the discharge outfall section, provided that the sewer conveys only effluent discharged from the Sewage Treatment Plant and that the replacement or re-aligned sewer has similar dimensions and performance criteria and is in the same or approximately the same location and that the hydraulic capacity will not be reduced.

This page contains an image of the form entitled "Notice of Modification to Sewage Works". A digital copy can be obtained from the District Manager.

Ontario Ministry of the Environment, Conservation and Parks

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA ON-SITE PRIOR TO THE SCHEDULED IMPLEMENTATION DATE.

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility

(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)

ECA Owner	Municipality

Part 2: Description of the modifications as part of the Limited Operational Flexibility

(Attach a detailed description of the sewage works)

Description shall include:
1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:
1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print)	PEO License Number

Signature	Date (mm/dd/yy)

Name of Employer

Part 4 – Declaration by Owner

I hereby declare that:
1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act*.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print)	Owner representative's title (Print)

Owner Representative's Signature	Date (mm/dd/yy)

Schedule F

Methodology for Calculating and Reporting Monthly Average Effluent Concentration, Annual Average Effluent Concentration and Monthly Geometric Mean Density

1. Monthly Average Effluent Concentration

Step 1: Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month and proceed as follows depending on the result of the calculation:

a. If the arithmetic mean does not exceed the compliance limit for the contaminant, then report and use this arithmetic mean as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval.

b. If the arithmetic mean exceeds the compliance limit for the contaminant and there was no Bypass Event during the calendar month, then report and use this arithmetic mean as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval.

c. If the arithmetic mean exceeds the compliance limit for the contaminant and there was Bypass Event(s) during the calendar month, then proceed to Step 2.

d. If the arithmetic mean does not exceed the compliance limit for the contaminant and there was Bypass Event(s) during the calendar month, the Owner may still elect to proceed to Step 2 calculation of the flow-weighted arithmetic mean.

Step 2: Calculate the flow-weighted arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month and proceed depending on the result of the calculation:

a. Group No Bypass Days (**NBPD**) data and Bypass Days (**BPD**) data during a calendar month separately.

b. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all NBPD during a calendar month and record it as **Monthly Average NBPD Effluent Concentration**.

c. Obtain the "**Total Monthly NBPD Flow**" which is the total amount of Final Effluent discharged on all NBPD during the calendar month.

d. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all BPD during a calendar month and record it as **Monthly Average BPD Effluent Concentration**.

e. Obtain the "**Total Monthly BPD Flow**" which is the total amount of Final Effluent discharged on all BPD during the calendar month.

f. Calculate the flow-weighted arithmetic mean using the following formula:

[(Monthly Average NBPD Effluent Concentration × Total Monthly NBPD Flow) + (Monthly Average BPD Effluent Concentration × Total Monthly BPD Flow)] ÷ (Total Monthly NBPD Flow + Total Monthly BPD Flow)

It should be noted that in this method, if there are no Bypass Event for the month, the calculated result would be the same as the non-flow-weighted arithmetic mean method.

g. Report and use the lesser of the flow-weighted arithmetic mean obtained in Step 2 and the arithmetic mean obtained in Step 1 as the Monthly Average Effluent Concentration for this parameter where applicable in this Approval.

2. Annual Average Effluent Concentration

Step 1: Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar year and proceed as follows depending on the result of the calculation:

a. If the arithmetic mean does not exceed the compliance limit for the contaminant, then report and use this arithmetic mean as the Annual Average Effluent Concentration for this parameter where applicable in this Approval.

b. If the arithmetic mean exceeds the compliance limit for the contaminant and there was no Bypass Event during the calendar year, then report and use this arithmetic mean as the Annual Average Effluent Concentration for this parameter where applicable in this Approval.

c. If the arithmetic mean exceeds the compliance limit for the contaminant and there was Bypass Event(s) during the calendar year, then proceed to Step 2.

d. If the arithmetic mean does not exceed the compliance limit for the contaminant and there was Bypass Event(s) during the calendar year, the Owner may still elect to proceed to Step 2 calculation of the flow-weighted arithmetic mean.

Step 2: Calculate the flow-weighted arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar year and proceed depending on the result of the calculation:

a. Group No Bypass Days (**NBPD**) data and Bypass Days (**BPD**) data during a calendar year separately.

b. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all NBPD during a calendar year.

and record it as **Annual Average NBPD Effluent Concentration**.

c. Obtain the "**Total Annual NBPD Flow**" which is the total amount of Final Effluent discharged on all NBPD during the calendar year.

d. Calculate the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured on all BPD during a calendar year and record it as **Annual Average BPD Effluent Concentration**.

e. Obtain the "**Total Annual BPD Flow**" which is the total amount of Final Effluent discharged on all BPD during the calendar year.

f. Calculate the flow-weighted arithmetic mean using the following formula:

[(Annual Average NBPD Effluent Concentration × Total Annual NBPD Flow) + (Annual Average BPD Effluent Concentration × Total Annual BPD Flow)] ÷ (Total Annual NBPD Flow + Total Annual BPD Flow)

It should be noted that in this method, if there are no Bypass Event for the calendar year, the calculated result would be the same as the non-flow-weighted arithmetic mean method.

g. Report and use the lesser of the flow-weighted arithmetic mean obtained in Step 2 and the arithmetic mean obtained in Step 1 as the Annual Average Effluent Concentration for this parameter where applicable in this Approval.

3. Monthly Geometric Mean Density

Geometric mean is defined as the n^{th} root of the product of n numbers. In the context of calculating Monthly Geometric Mean Density for *E. coli,* the following formula shall be used:

$$\sqrt[n]{x_1 x_2 x_3 \cdots x_n}$$

in which,

"n " is the number of samples collected during the calendar month; and

"x " is the value of each Single Sample Result.

For example, four weekly grab samples were collected and tested for *E. coli* during the calendar month. The *E. coli* densities in the Final Effluent were found below:

Sample Number	*E. coli* Densities* (CFU/100 mL)
1	10
2	100
3	300
4	50

The Geometric Mean Density for these data:

$$\sqrt[4]{10 \times 100 \times 300 \times 50} = 62$$

*If a particular result is zero (0), then a value of one (1) will be substituted into the calculation of the Monthly Geometric Mean Density. If the MPN method is utilized for E. coli analysis, values in the table shall be MPN/100 mL.

Schedule G

Municipal and Local Services Board Wastewater System
Profile Information Form

(For reference only, images of the form are attached on the next four pages. A digital copy can be obtained from the District Manger.)

Ministry of the Environment and Climate Change

Municipal and Local Services Board Wastewater System Profile Information Form

The information in this form is necessary to administer the Ministry's approvals, compliance and enforcement programs with respect to wastewater treatment and collection systems owned by municipalities and local services boards. These programs are authorized under the *Ontario Water Resources Act*, the *Environmental Protection Act*, the *Nutrient Management Act* and their respective regulations.

Email the completed form to reg170_formsubmission.moe@ontario.ca
For any questions call 1-866-793-2588.

[A] SYSTEM PROFILE INFORMATION

Wastewater System Number *(if assigned)*: 12000008

☐ New Profile
☒ Update Existing Profile

Name of System: Colborne WPCP

Name of Municipality or Local Services Board: Corporation of the Township of Cramahe

Level of Treatment (select one*)
☐ Primary
☒ Secondary
☐ Tertiary
☐ Secondary Equivalent
☐ Other (specify):
*See Terms and Concepts on page 4

Population Served:

Population (Design):

Type of System
☒ Treatment & Collection System ☐ Collection System Only

Design Rated Capacity (m^3/day)	Peak Flow Rate (m^3/day)	Current Environmental Compliance Approval (ECA) Number	Current ECA Issue Date (yyyy/mm/dd):
1750.00		6418 BN2NUC	2020 / 04 / 30

The treatment plant receives sewage from: (Check all that applies.* If you have checked more than one option below, indicate the approximate %)
☒ Sanitary Sewer ☐ Combined Sewer
☐ Nominally Separated Sewer ☐ Partially Separated Sewer *See Terms and Concepts on page 4

[B] OWNER INFORMATION

Legal Name of Municipality or Local Services Board: The Corporation of the Township of Cramahe

Unit No	Street No.	Street Name.	Street Type (St, Rd, etc)	Street Direction (N,S,E,W)
	1	Toronto	St	

PO Box	City/Town	Postal Code
357	Colborne	K0K 1S0

☐ Dr ☐ Miss ☒ Mr ☐ Mrs ☐ Ms

Owner Contact First Name	Owner Contact Last Name	Owner Contact Job Title
Ted	Joynt	ORO

Tel. No.	Fax Number	Email address
(613) 284 - 7290 ext.	( ) -	jwwc_1@xplornet.ca

[C] OPERATING AUTHORITY ☐ Check if same as owner

Legal Name of Operator: The Corporation of the Township of Cramahe

Unit No	Street No.	Street Name.	Street Type (St, Rd, etc)	Street Direction (N,S,E,W)
	1	Toronto	St	

PO Box	City/Town	Postal Code
357	Cramahe	K0K 1S0

☐ Dr ☐ Miss ☒ Mr ☐ Mrs ☐ Ms

Operator Contact First Name	Operator Contact Last Name	Operator Contact Job Title
Ted	Joynt	ORO

Tel. No.	Fax Number	Email address
(613) 284 - 7290 ext.	( ) -	jwwc_1@xplornet.ca

[D] 24/7 CONTACT

☐ Dr ☐ Miss ☒ Mr ☐ Mrs ☐ Ms	First Name	Last Name	Job Title
	Phil	Kelly	Manager

Tel. No.	Fax Number	Email address
(905) 396 - 0007 ext.	( ) -	wwt@cramahe.ca

[E] SYSTEM CIVIC LOCATION ADDRESS (I.E. ADDRESS OF TREATMENT PLANT)

Unit No	Street No.	Street Name.	Street Type (St, Rd, etc)	Street Direction (N,S,E,W)
	1108	Ontario	St	

PO Box	City/Town	Postal Code
	Colborne	K0K 1S0

If the Wastewater System has no street address

Geographical Township	Lot	Concession

Geographical Referencing (if known, enter the Geographical Reference Information for this Wastewater System)

Map Datum	Geo-Referencing Method	Accuracy Estimate	Location Reference	
Latitude	**Longitude**	**Zone**	**Easting**	**Northing**

[F] TREATMENT PROCESS

Preliminary	Primary	Secondary	Secondary Equivalent	Post-Secondary	Additional Treatment
☒ Screening	☐ Settling/sedimentation/ clarification	☒ Conventional Activated Sludge (CAS)	☐ Aerated Lagoon	☐ Filtration	☒ Phosphorous Removal
☐ Shredding/ grinding	☐ Scum Removal	☒ Extended Aeration	☐ Facultative Lagoon	☐ Clarification	☐ Biological
☒ Grit Removal	☐ Polymer Addition	☐ Membrane Bioreactor (MBR)	☐ Anaerobic Lagoon	☐ Intermittent Sand Filter (after lagoons)	☒ Chemical
☐ Other(specify):	☐ Other(specify):	☐ Sequencing Batch Reactor (SBR)	☐ Aerobic Lagoon	☐ Polishing Wetlands	If chemical is used, specify:
		☐ Rotating Biological Contactor (RBC)	☐ Other(specify):	☐ Polishing Lagoons	☐ Nitrification
		☐ Trickling Filter (TF)		☐ Other(specify):	☐ Denitrification
		☐ Biological Aerated Filter (BAF)			☐ Other(specify):
		☐ Other(specify):			

[G] DISINFECTION

Method of Disinfection	Disinfection Period
☒ Chlorination If you chlorinate, do you practice de-chlorination? ☒ Yes ☐ No	☒ Continuous ☐ Seasonal
☐ Ultraviolet Irradiation	☐ Continuous ☐ Seasonal
☐ Other (specify):	☐ Continuous ☐ Seasonal

[H] SLUDGE

Sludge Stabilization Process	Method of Sludge Disposal/Utilization
☐ Aerobic Digestion	☒ Agricultural
☐ Anaerobic Digestion	☐ Landfill
☐ Drying & Pelletization	☐ Incineration
☐ Lime Treatment	☐ Other (specify):
☐ Composting	
☐ Other (specify):	

Available Sludge Storage Capacity (m^3): 4000.00

[I] EFFLUENT

Effluent Disposal Method	Effluent Discharge Frequency
☒ Surface Water Receiving Water Body Name: Lake Ontario	☒ Continuous ☐ Seasonal
☐ Subsurface	☐ Continuous ☐ Seasonal
☐ Other (specify):	☐ Continuous ☐ Seasonal

Is the effluent discharged in a vulnerable area identified in the local source protection assessment report approved under the Clean Water Act, 2006?
☐ Yes ☒ No

[J] INFLUENT

Does the plant receive sewage from another municipality or local services board either through an interconnected collection system or hauled sewage?
☐ Yes ☒ No
(if yes, name(s) of other municipality or local services board):

Plant receives:
☐ Leachate (approximate annual volume in m^3):
☐ Septage (approximate annual volume in m^3):
☐ Industrial input (approximate annual volume in m^3): Unknown
or (approximate volume in %):

Terms and Concepts

The following Terms and Concepts are provided to assist you when completing Wastewater System Profile Information Form.

In order to determine the level of treatment that applies to the wastewater system, the effluent quality objectives that the wastewater treatment plant was designed to meet must be considered. The process based approach often used in the past has led to confusion and is open to interpretation due to recent developments and practices in the wastewater treatment industry. For example, a plant with a high rate filter (often referred to as a tertiary filter) after its secondary treatment was considered a tertiary treatment in the past since the filter was designed and operated to produce a tertiary quality effluent. However, secondary plants are now being constructed with these filters as a safeguard against any potential secondary clarifier performance degradation and not for the purpose of ensuring tertiary treatment performance. Also, new technologies have evolved that can produce tertiary quality effluent without having these high rate filters (e.g., membrane bioreactors). Lagoons were considered in the past as being capable of providing only secondary equivalent treatment. However, with add-on treatment after the lagoons (e.g. intermittent sand filters), many lagoon treatment systems are capable of producing secondary or tertiary quality effluent.

During the establishment of sewage works, site-specific effluent limits (including averaging periods) are provided by the Ministry's Regional Technical Support Section, considering the assimilative capacity of the receivers and the minimum treatment requirements provided in Procedure F-5-1. The designer of the sewage works then selects objective values that are acceptable to the Ministry and are less (i.e. more stringent) than the effluent limits , in order to provide an adequate safety factor based on the designer's confidence/experience with the technology chosen and other site-specific conditions. The sewage works are then designed (and operated) to meet these design objectives in a reliable and consistent manner. Therefore, the values that are to be used in the determination of the level of treatment that applies to the sewage works must be based on the design objectives, and not the effluent limits.

Two common parameters used in almost all sewage works designs and performance evaluations are $CBOD_5$ (carbonaceous biochemical oxygen demand) (BOD_5 – biochemical oxygen demand - for primary sewage works) and total suspended solids (TSS). Therefore, it is logical that the **objective values** of these two parameters are used to determine the level of treatment at the sewage works.

Level of Treatment:

Primary:
Wastewater treatment plants that have only settling/sedimentation (with or without chemical addition) and providing 30% and 50% or better reduction of BOD_5 and TSS respectively are considered primary plants (MOE Procedures F-5-1 and F-5-5).

Secondary:
Wastewater treatment plants that have biological processes (e.g. activated sludge process and its variations, fixed film processes) or physical-chemical processes producing an effluent quality of $CBOD_5$ and TSS of 15 mg/L or better are considered secondary plants (MOE Design Guidelines for Sewage Works, 2008).

Secondary Equivalent:
Wastewater treatment plants producing an effluent quality of $CBOD_5$ of 25 mg/L and TSS of 30 mg/L or better are considered as secondary equivalent plants.

Note: Wastewater treatment plants that provide only primary settling of solids and the addition of chemicals to improve the removal of TSS (and phosphorus) are not considered as secondary treatment plants or secondary equivalent plants (MOE Design Guidelines for Sewage Works, 2008).

Tertiary:
Wastewater treatment plants that have biological processes (e.g. activated sludge process and its variations, fixed film processes) and/or physical-chemical processes producing an effluent quality of $CBOD_5$ and TSS of 5 mg/L or better are considered tertiary plants.

Note: Biological processes such as nitrification, denitrification and enhanced biological phosphorus removal can be part of either a secondary or tertiary treatment plant. They may be described as secondary treatment plant with nitrification, secondary treatment plant with enhanced biological phosphorus removal, tertiary treatment plant with nitrification etc.

Sewer System Type:

Sanitary Sewers:
Pipes that convey sanitary sewage flows made up of wastewater discharges from residential, commercial, institutional and industrial establishments plus extraneous flow components from such sources as groundwater and surface run off.

Combined Sewers:
Pipes that convey both sanitary sewage and stormwater runoff through a single-pipe system.

Partially Separated Sewers:
Exist when either a portion of the combined sewer area was retrofitted to separate (sanitary and storm) sewers and/or a service area with combined sewers has had a new development area with separate sewers added to the service area; whatever the case may be, the final flows will be combined sewage.

Nominally Separated Sewers:
These sewers are constructed as separate sewers, but the sanitary sewers accept stormwater from roof and foundation drains (i.e., these are separated sewers in name only).

Appendix B – Monitoring Data and Comparison to Effluent Limits

Colborne Water Pollution Control Plant 2023 Annual Plant Performance

Parameter		Unit	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	ECA (5)		Annual
		m3	m3	m3	m3	m3	m3	m3	m3	m3	m3	2457	m3	m3	Objective	Limit	Avg
FIT615 EFFLUENT FLOWS																	
Maximum Effluent Flow(4)	FIT615 Effluent	m^3/d	3,193.63	3,218.95	3,287.11	3,498.80	2,457.21	2,493.00	3027.00	1428.50	1,046.61	1166.00	1,181.00	1,508.40	N/A	N/A	2,292.18
Minimum Plant Effluent Flow (4)	FIT615 Effluent	m^3/d	925.07	884.46	993.40	931.00	849.61	731.45	2561.00	709.60	482.54	535.30	559.81	748.65	N/A	N/A	909.32
Average Plant Effluent Flow (4)	FIT615 Effluent	m^3/d	1,391.00	1,385.50	1,672.35	1,541.00	1,194.70	901.99	917.00	874.10	677.10	605.41	696.89	1,003.78	N/A	N/A	1,071.74
Peak Instantaneous Flow Rate		m^3/d	3,875.25	4,035.88	4,593.00	7,156.00	3,667.01	4,543.00	4,102.00	4,052.00	3,893.42	4,089.00	4,358.00	4,350.00	N/A	N/A	4,392.88
Total Plant Flow	FIT615 Effluent		43,127.33	38,973.94	51,842.80	46,217.30	37,035.73	27,059.80	30,274.90	27,099.20	20,312.99	18767.7	20,906.00	3,117.18	N/A	1,750.00	364,734.87
																Total Flow	**364,734.87**
Diversion flow to Cell 1	FIT100 Cell 1	m^3/d	0.00	5,588.28	1334.55	3206.90	0.00	0.00	0.00	0.00	0.00	0.00	10,312.00	0.00			20,441.73
Raw Sewage BOD		mg/L	94.25	139.00	72.80	84.60	80.00	80.00	147.00	75.23	146.25	141.00	102.80	93.00	N/A	N/A	104.66
Raw Sewage TSS		mg/L	96.75	133.33	71.00	72.40	51.25	75.00	80.30	64.25	103.00	95.75	72.80	103.00	N/A	N/A	84.90
Raw Sewage TKN		mg/L	27.35	28.03	17.90	19.66	20.53	23.06	27.00	23.07	31.10	34.00	33.23	25.80	N/A	N/A	25.89
Raw Sewage TP		mg/L	3.20	3.51	1.77	2.19	2.09	2.31	2.87	2.26	2.97	3.29	3.99	3.10	N/A	N/A	2.80
Effluent CBOD		mg/L	4.75	2.75	4.8	4.00	3.50	2.80	2.8	3.5	4.00	4.00	8.00	5.00	15.0	25	4.15
Effluent CBOD Loading (4)		kg/d	6.61	2.81	8.03	6.16	4.18	2.35	2.52	3.06	2.71	2.42	5.58		43.8	43.8	4.22
Effluent TSS		mg/L	22.25	17.25	71.0	16.25	22.5	8.40	9.0	10.5	8.50	9.00	18	13.50	15.0	25	18.86
Effluent TSS Loading (4)		kg/d	30.25	23.90	33.78	25.03	26.88	7.58	8.26	9.18	5.76	5.45	12.68		N/A	43.8	17.16
Effluent NH3 and NH4		mg/L	0.10	0.100	0.56	0.93	0.10	0.10	0.13	0.10	0.18	0.38	2.23	0.10	2/4	4/8	N/A
Effluent TP		mg/L	0.24	0.170	0.19	0.14	0.17	0.13	0.21	0.29	0.36	0.39	7.76	0.20	0.40	0.70	0.85
Effluent TP Loading (4)		kg/d	0.34	0.240	0.32	0.21	0.20	0.12	0.19	0.21	0.24	0.24	0.28		N/A	1.2	0.24
Effluent TCR		mg/L	0.02	0.02	0.00	0.00	0.01	0.00	0.00	0.02	0.02	0.01	0.01	0.00	0.00	0.02	0.01
Effluent E. Coli		CFU/100 mL	7.50	8.50	16.20	2.00	4.75	36.80	138.20	165.06	111.73	154.43	60.50	97.10	100	200	N/A
Effluent Lethality Trout		%	N/A	N/A	N/A	N/a	N/A	N/A	N/A	N /A	N /A	N /A	ND	ND		N/A	N/A
Effluent Lethality Dm		%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND	N/A	N/A	N/A
Max pH			7.03	6.94	7.6	6.91	7.13	7.36	7.35	7.50	7.21	7.46	7.60	7.76	6.0 / 9.5	6.0 / 9.5	7.32
Min pH			6.59	6.51	6.7	6.64	6.77	6.81	6.63	6.86	6.62	7.15	7.40	7.07	6.0 / 9.5	6.0 / 9.5	6.81
Temperature		Celsius	10.33	8.50	8.90	10.40	12.96	16.23	18.10	19.01	19.42	15.02	14.50	12.64	N/A	N/A	13.83
Field pH			6.86	6.70	7.10	6.82	6.89	7.41	7.00	7.20	6.87	7.29	7.40	7.33	6.0 / 9.5	6.0 / 9.5	7.07

Colour Scheme

	Meets Objective or within design parameters
	Meets Limits
	Exceeds Limit
	Ran to Pond

Notes

The value listed is the design flow. There is not limit set in the Current ECA

(1) The greater number applies Nov 1 to Apr 30

(2) The ECA sets requirments if lethality is detected. The ECA provides that after eight (8) consecutive results with no lethality sampling can be reduced to annually.

(3) Note flow meters are calibrated at +/- 15% as such flows and loadings vary within this range ECA section 8 (9)

(4) ECA Number 6418 BN2NUC Amended April 30, 2020

Abbreviations

Dm	Daphnia magna	NO	No set objective
kg/d	kilograms per day	NS	Not sampled
m3/d	cubic metres per day	TAN	Total Ammonia Nitrogen
mg/L	milligrams per Litre	TP	Total Phosphorous
NA	Not Applicable	TSS	Total Suspened Solids
ND	Non Detect based on an average of <0.01 mg/L		

8 YEARS EFFLUENT FLOWS FIT615									
MONTH	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	
January	47,852.00	39,613.00	43,412.00	37,443.50	60,286.81	29,891.80	26,630.00	43,127.33	m^3
February	45,485.00	34,335.00	47,684.00	29,113.10	36,946.00	20,324.20	32,862.00	38,973.94	m^3
March	50,388.00	42,685.00	41,567.00	42,642.00	62,469.46	30,202.30	46,930.00	51,842.80	m^3
April	55,935.00	52,341.00	67,929.00	51,228.82	40,306.79	40,762.40	36,654.00	46,217.51	m^3
May	31,875.00	53,170.00	55,156.00	59,225.56	31,991.49	27,042.80	36,911.00	37,035.73	m^3
June	24,411.00	61,842.00	29,927.00	31,682.56	20,956.03	18,937.50	25,149.00	27,059.82	m^3
July	17,380.00	29,332.00	16,901.00	27,882.00	21,535.57	24,652.50	19,499.00	30,275.00	m^3
August	18,229.00	21,618.00	24,752.00	18,957.79	18,020.87	20,527.70	22,796.30	27,099.20	m^3
September	16,959.00	21,860.00	22,171.00	22,337.99	16,886.46	27,628.24	16,441.90	20,312.99	m^3
October	21,254.00	33,625.00	22,171.00	25,408.27	18,961.00	31,656.41	17,554.00	18,767.70	m^3
November	25,929.00	51,307.00	22,171.00	30,162.76	18,762.00	32,633.39	18,646.00	20,906.70	m^3
December	48,408.00	34,051.00	22,171.00	35,884.00	28,098.95	40,416.77	31,453.00	31,117.18	m^3
TOTAL m3/yr	404,105.00	475,779.00	22,171.00	411,968.34	375,221.42	344,676.01	331,526.20	392,735.90	m^3
Ave/day m3	1,107.14	1,303.50	22,171.00	1,128.68	1,028.00	944.32	908.29	1,075.99	m^3
% of Rated Capacity (1750 m^3)	63.00	74.40	22,171.00	64.50	58.30	53.90	51.00	61.49	%
% of 80% 1400 m^3	79.00	93.00	22,171.00	80.50	73.40	67.40	64.00	76.86	%

Rated Capacity (RC)	1750 m3
80 % of RC	1400 m3

Appendix C – Maintenance Records

January 1, 2023	SCUM TRAP CLEANED	
January 2, 2023	SCUM TRAP CLEANED	
January 3, 2023	SCUM TRAP CLEANED	
January 3, 2023	Cisco box faulted due to power outage and power surges	Eramosa contacted Jon Watson they are looking into the issue
January 4, 2023	Hypo pump fittings	replaced two separate fitting on hypo lines
January 4, 2023	Bysulphite Pump	plugged P617 back in because of power surges during christmas week
January 5, 2023	P618	P618 unplugged due to alarms left it until next day
January 6, 2023	P618 Bisulphite	AH working on P618 to try to get it working / Vijay from SPD will be onsite next week to fix
January 6, 2023	Heaters hypo room	both heaters not working properly Rowley Electric notifed and has ordered new heaters
January 6, 2023	VPN and Internert	Networks back up and running after storms christmas week
January 12, 2023	Bisulphate pump	Changed diapram P617 Phil rotated by sulphate pump they are now working
January 12, 2023	VPN	Eramosa Regina working on getting VPN accress working no luck today
January 16, 2023	SCUM TRAP CLEANED	Empied and cleaned
January 19, 2023	VPN	Eramosa onsite Regina onsite from 09:30 to 14:00 VPN still not working
January 20, 2023	SCUM TRAP CLEANED	Emptied
Febraury 4, 2023	wiers	Cleared ice from wiers
February 6, 2023	SCUM TRAP CLEANED	Cleared ice from wiers
/february 21, 2023	Hypo fittings	Leak repaired
Febraury 23, 2023	Genset	Genset test
/february 24, 2023	SCADA	Renew Scada license
Febraury 27, 2023	Collectors	Cleared ice from wiers and collectors
March 2, 2023	SCADA	Historian issue fixed
March 10, 2023	WIN 911	Testing still on RACO
Martch 17, 2023	Influent pump issue	(220 Influent pump issue pump ID not noted on log book

March 20, 2023	WIN 911	Further testing still on Forticlient WIN 911
March 29, 2023	Effluent pump returned in stock	Pump was sent for repair last February 2022 back in stock as of March 23, 2023
April 3, 2023	Scum trap	Tank emptied
April 5, 2023	power outage	Acknowledge and reset alarms
April 5, 2023	pH	Calibrate pH meters
April 6, 2023	Scum Trap	Emptied
April 6, 2023	Scum Trap	Franklin Empire contacted to set up site visit regarding Scum trap sensor Alen Andrrujevic
April 17, 2023	Genset	Both generators tested
April 18, 2023	P530	P530 pump not working
April 18, 2023	Scum Trap	Quinte contacted to vac out scum tank
April 19, 2023	Scum Trap	Quinte cleaning Scum pit and grit channels
April 20, 2023	pH	Calibrated
April 21, 2023	Grinder and Scum pump	Rowely contacted to disconnect Grinder
April 25, 2023	Grinder	Pulling old grinder out to swap out with new grinder installed
April 27, 2023	Scum Trap	Scum pump pulled and new pump installed
April 27, 2023	Scum Trap	Scum trap emptied
May 1, 2023	Genset test	
May 4, 2023	Scum transfer pipe	Piping between clarifier and scum tank plugged blockage cleared
May 10, 2023	Scum Trap	Scum pump not working volute cleart of. Debris and pump reinstalled and working
May 16, 2023	Scum Trap	Scum tank cleared
May 18, 2023	Scum Trap	Scum tank cleared
May 25, 2023	pH buffrers	Buffers changed
May 30, 2023	Scum Trap	Scum trap emptied
May 31, 2023	Samplers	Samplers getting serviced and checked
May 31, 2023	Scum Trap	Scum pump not working volute cleared of debris and pump reinstalled and working
June 1, 2023	Dialer WIN 911	Eramosa onsite working on WIN911 system
June 2, 2023	WIN911	WIN 911 now in service / RACO as backup
June 2, 2023	Drives	Gear oil changed

June 2, 2023	power outage	Ack alarms and reset equipment VFD's
June 2, 2023	WIN911	WIN 911 now in service / RACO as backup
June 2, 2023	Genset test	WIN 911 taken out of service issues 16:20 hrs / RACO inservice
June. 5, 2023	Scum Trap	Scum trap emptied
June 6, 2023	WIN911	worrking on WIN 911
June 6, 2023	SCADA	Cannot enable or disable alarms Eramosa resolved
June 7, 2023	Scum Trap	Scum trap emptied
June 9, 2023	Scum Trap	Scum trap emptied
June 12, 2023	Scum Trap	Scum trap emptied
June 12, 2023	WIN911	Eramosa working remotley on WIN 911 it is now back in service / RACO as backup
June 13, 202	Scum Trap	Scum trap emptied
June 14, 2023	Scum Trap	Scum trap emptied
June 16, 2023	Scum Trap	Scum trap emptied
June 16, 2023	Cell 1	Cell one draining into plant
June 21, 2023	P530	Scum pump not working volute cleared debris and pump reinstalled and working
June 22, 2023	Backflow preventors	Tested and verified by township
June 22, 2023	Genset test	Genset tested both sites
June 25, 2023	Blower	Blower filters changed
July 4, 2023	Heaters	Darke Heating onsite to check heaters
July 4, 2023	Cell 1	Cell 1 shut down
July 5, 2023	WIN911	WIN 911 alarms verification performed
July 6, 2023	WIN911	WIN 911 alarms verification performed
July 7, 2023	WIN911	Eramosa onsite working on WIN911 system
July 10, 2023	WIN911	Eramosa onsite working on WIN911 system
July 11, 2023	Scum Trap	Scum trap emptied
July 15, 2023	Exhaust	Hypo room exhaust motor drive belt changed
July 16, 2023	Overhead doors	cables repaired
July 19, 2023	Genset test	Geset testing both locations

July 19, 2023	SCADA	Eramosa having issue logging into SCADA internet issue resolved
July 20, 2023	Scum Trap	Scum trap emptied
July 20, 2023	Flow meters	Flow meter calibrations Mike
July 21, 2023	Bar Screen	Bar Screen cleaned
July 23, 2023	SCADA	Issue resolved connectivity
July 25, 2023	Scum level sensor	Rowley checking on sensor issues will be back to complete
July 31, 2023	Hypo	Hypo pumps and line flushed with hot water to clear any obstructions
August 1, 2023	Scum Trap	Scum trap emptied
August 4, 2023	Scum Trap	Scum trap emptied
August 8, 2023	Internet	Rebooted router
August 15, 2023	Internet	Rebooted router
August 14, 2023	Genset test	
August 15, 2023	SCADA	Driver installation related to WIN911
August 30, 2023	Genset test	
August 30, 2023	P210	Control loop issue with P210 being worked on possible wiring issue as well
August 31, 2023	Scum Trap	Scum trap emptied
September 5, 2023	SCADA	Multiple SCADA alarms however no indication on SCADA will monitor
September 5, 2023	P530	Pump not working requires investagion blockage cleared now working
September 5, 2023	Scum pit	New mounting bracket installed for sensor
September 6, 2023	Elkectrical	Emergency light replaced

September 6, 2023	Scum pit sensor	Sensor now working new one installed
September 7, 2023	P210	Control loop issue with p210 being worked on possible wiring issue as well
September 11, 2023	P210	P210 plugged cleared and back inservice
September 13, 2023	SCADA	Sending program files to Eramosa
September 20, 2023	Emergency lighting	Alum room lighting replaced
October 2, 2023	Blowers	Blower tripped VFD reset
October 2, 2023	Hypo pump	Hypo pump air locked required bleeding
Ocvtober 2, 2023	Raw sewage pump P210	No output pump turns green but no discharge ready pump to be pulled
October 3, 2023	Raw sewage pump P210	P210 pulled
October 3, 2023	Scum trap	Scum pit cleared
Oc tober 4, 2023	P210	New pump installed but still no discharge
October 4, 2023	pH meter	Calibrated
October 5, 2023	P210	P210 % output not reading correctly system integrator notified pump is now running but still needs some electrical tweaking
October 6, 2023	Scum trap	Scum trap cleared
October 11, 2023	Scum Trap	Scum pit cleared
October 12, 2023	pH	Calibrate pH meters
October 16, 2023	Scum Trap	Scum trap cleared

October 16, 2023	Cell 1 Valve	Valve closed between Cell 1 and Cell 2
October 17, 2023	Scum pit	No discharge from P530 pump pulled and debrisa cleared put back into service
October 17, 2023	CP-6	CP-6 needed to be power cycled okay now might need new switch
October 18, 2023	Hypo building	New electrical heater installed
October 18, 2023	Scum Trap	Scum pit cleared
October 19, 2023	Scum pit	Scum pit cleared
October 22, 2023	Power outage	Alarms reset including VFD
October 24, 2023	Genset test	Genset test all good
October 25, 2023	Scum pit	Scum pit cleared
October 25, 2023	Fuel tank	New cap installed onfuel transfer tank
October 26, 2023	Alarms	Discussion with Eramosa regarding some ghost alarms will keep monitoring
October 26, 2023	Scum pit	Scum pit cleared
November 1, 2023	Cell 1 Valve	Valve open between Cell 1 and plant to lower Cell 1
November 2, 2023	pH	Calibrate pH meters
November 2, 2023	Scum pit	Scum pit cleared
November 5, 2023	Alarms	LIT510A in alarm took it out of service need new sensor
November 6, 2023	Scum pit	Scum pit cleared
November 8, 2023	Eramosa	Working on ghost alarms

November 13, 2023	Scum pit	Scum pit cleared
November 15, 20233	Scum pit	Quinte Sewr onsite clearing scum trap and grit trough
November 16, 2023	pH meter	Calibrate pH meters
November 17, 2023	Scum pit	Discharge pipe clogged used rodder to clear
November 19, 2023	P511 RAS WAS Pump	Went into fault reset but did not work power cycled back inservice
November 22, 2023	Scum pit	Sum pipe plugged cleared
November 23, 2023	Scum pit P511	Rowely onsite to check P511 power cycled back in service
November 24, 2023	Scum pit P511	Rowley Electric found burnt contact in panel going to locate new contact
November 25, 2023	Scum pit P511	Further investigation P511
November 29, 2023	Scum pit P511	P511 not pumping shows it running on SCADA
November 30, 2023	Scum pit P511	P511 pulled and locked out pending further inspection
December 1, 2023	Scum pit P511	Installed new pump in scum pit
December 4, 2023	Scum pit P511	New pump wired and back in service
December 6, 2023	pH meter	Calibrate pH meters
Decmeber 11, 2023	pH meter	Calibrate pH meters
December 14, 2023	pH meter	Calibrate pH meters
December 14, 2023	Scum pit	Scum pit cleared
December 18, 2023	Cl2 analysers	Chlorine analysers calibrate using standard

December 19, 2023	Communication	Communication lost SCADA genset not running power cycled main disconnect power back on reset and acknowledged alarms
December 19, 2023	Gensets	Both genset tested alarms ack and VFD reset
December 21, 2023	pH meter	Calibrate pH meters
December 22, 2023	Alarms	Aeration level sensor reset back in service
December 25, 2023	Scum pit	Scum tank cleared
December 28, 2023	Scum pit	Scum pit cleared

Appendix D – Lethality Testing

Lethality testing is performed on the facility effluent to monitor the affect that the effluent water from the treatment plant has on the fish in the receiving body of water (Lake Ontario).

The treated effluent water from the WPCP for 2023 was within the limits set by Environment Canada. Test results are noted on the following 5 pages. There was 0 % lethality.

NAUTILUS ENVIRONMENTAL
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

Work Order : 251828
Sample Number : 78108

Company :	The Corporation of the Township of Cramahe	Sampling Date :	2023-06-08
Location :	Colborne ON	Sampling Time :	08:35
Substance :	Final Effluent Sample Station Lethality	Date Received :	2023-06-09
Sampling Method :	Grab	Time Received :	11:50
Sampled By :	A. Harper	Temperature at Receipt :	18 °C
Sample Description :	Clear, colourless.	Date Tested :	2023-06-09

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

Species :	*Daphnia magna*	Time to First Brood :	8 days
Organism Batch :	Dm23-10	Average Brood Size :	32.8
Culture Mortality :	1.0% (previous 7 days)		

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	None	Organisms / Replicate :	10
Pre-aeration Rate :	~30 mL/min/L	Organisms / Test Level :	30
Duration of Pre-Aeration :	0 minutes	Organism Loading Rate :	15.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	None	Test Method Deviation(s) :	None

Toxicant :	Sodium Chloride		
Date Tested :	2023-06-06	LC50 :	6.6 g/L
Organism Batch :	Dm23-10	95% Confidence Limits :	6.3 - 6.9 g/L
Analyst(s) :	KR, CFM	Historical Mean LC50 :	6.5 g/L
Statistical Method :	Spearman-Kärber	Warning Limits (± 2SD) :	5.8 - 7.4 g/L

COMMENTS

ï All test validity criteria as specified in the test method were satisfied.

Approved By : _____

Project Manager

Work Order : 251828
Sample Number : 78108

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.3	8.6	1263	20	99	310 mg/L

0 HOURS

Date & Time : 2023-06-09 13:10
Analyst(s) : JW/CFM (PG)

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
100	A	0	0	7.3	8.6	1263	20	99	310
100	B	0	0	7.3	8.6	1263	20	99	310
100	C	0	0	7.3	8.6	1263	20	99	310
Control	A	0	0	8.3	8.6	465	20	100	140
Control	B	0	0	8.3	8.6	465	20	100	140
Control	C	0	0	8.3	8.6	465	20	100	140

Notes:

24 HOURS

Date & Time : 2023-06-10 13:10
Analyst(s) : CFM (JW)

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature
100	A	–	0	–	–	–	21
100	B	–	0	–	–	–	21
100	C	–	0	–	–	–	21
Control	A	–	0	–	–	–	21
Control	B	–	0	–	–	–	21
Control	C	–	0	–	–	–	21

Notes:

48 HOURS

Date & Time : 2023-06-11 13:10
Analyst(s) : CFM (JGR)

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature
100	A	0	0	8.3	8.1	1265	20
100	B	0	0	8.3	8.1	1268	20
100	C	0	0	8.3	8.1	1272	20
Control	A	0	0	8.3	8.2	475	20
Control	B	0	0	8.3	8.3	475	20
Control	C	0	0	8.3	8.2	476	20

Notes:

Number immobile does not include number dead.

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : JJ

Date : 2023-06-13

NAUTILUS ENVIRONMENTAL
B-11 Nicholas Beaver Road
Puslinch, ON N0B 2J0
Tel. (519) 763-4412
Fax. (519) 763-4419

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

Work Order : 251828
Sample Number : 78108

Company :	The Corporation of the Township of Cramahe	Sampling Date :	2023-06-08
Location :	Colborne ON	Sampling Time :	08:35
Substance :	Final Effluent Sample Station Lethality	Date Received :	2023-06-09
Sampling Method :	Grab	Time Received :	11:50
Sampled By :	A. Harper	Temperature at Receipt :	18 °C
Sample Description :	Clear, colourless.	Date Tested :	2023-06-09

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007 and February 2016 amendments).

Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

Test Organism :	*Oncorhynchus mykiss*	Average Fork Length (± 2 SD) :	34.1 mm (±4.2)
Organism Batch :	T23-10	Range of Fork Lengths :	32 - 38 mm
Control Sample Size :	10	Average Wet Weight (± 2 SD) :	0.3 g (±0.1)
Cumulative stock tank mortality rate :	0% (previous 7 days)	Range of Wet Weights :	0.3 - 0.5 g
Control organisms showing stress :	0 (at test completion)	Organism Loading Rate :	0.3 g/L

Sample Treatment :	None	Volume Tested (L) :	10
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 1 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

Toxicant :	Potassium Chloride		
Organism Batch :	T23-10	LC50 :	3257 mg/L
Date Tested :	2023-06-01	95% Confidence Limits :	2991 - 3546 mg/L
Analyst(s) :	AJS, JGR, JCS	Historical Mean LC50 :	3932 mg/L
Statistical Method :	Spearman-Kärber	Warning Limits (± 2SD) :	3027 - 5108 mg/L

ï All test validity criteria as specified in the test method were satisfied.

Approved By : _____

Project Manager

Work Order : 251828
Sample Number : 78108

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)[3]
Initial Water Chemistry (100%) :	7.4	8.7	1141	16	93
After 30 min pre-aeration :	7.4	8.8	1140	16	94

0 HOURS

Date & Time 2023-06-09 13:55
Analyst(s) : LL/JGR

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation[3]
100%	0	0	7.4	8.8	1140	16	94
Control	0	0	8.5	9.0	570	16	98

Notes:

24 HOURS

Date & Time 2023-06-10 13:55
Analyst(s) : NM

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature
100%	0	0	–	–	–	15
Control	0	0	–	–	–	15

Notes:

48 HOURS

Date & Time 2023-06-11 13:55
Analyst(s) : JGR

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature
100%	0	0	–	–	–	15
Control	0	0	–	–	–	15

Notes:

72 HOURS

Date & Time 2023-06-12 13:55
Analyst(s) : LL

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature
100%	0	0	–	–	–	15
Control	0	0	–	–	–	15

Notes:

96 HOURS

Date & Time 2023-06-13 13:55
Analyst(s) : KR (KP)

Concentration	Dead	Impaired	pH	Dissolved O_2	Conductivity	Temperature
100%	0	0	8.2	9.2	1139	16
Control	0	0	8.4	9.1	611	16

Notes:

"–" = not measured/not required

Number impaired does not include number dead.

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : FS

Date : 2023-06-14

Appendix E - Calibration Reports

Franklin Empire
550 Braidwood Ave., Unit #4
Peterborough ON K9J 1W1, CANADA

Tel: (705) 745-1626
Fax: (705) 745-3493
Website: www.franklinempire.com

Colborne

WWTP

July 20, 2023

Leaders in Instrumentation and Control

Find your soulution at www.franklinempire.com

CALIBRATION REPORT

TAG NO.:	FIT 330
REPORT NO.:	230720
DATE:	20-Jul-23

SITE:	Colborne WWTP	DATE:	July 20, 2023
PROCESS AREA:	Influent Flow		
INSTR. TAG:	FIT 330	TECHNICIAN:	Mike Humphries
MANUFACTURER:	Milltronics		
MODEL:	OCM III	REPORT NO.:	230720
SERIAL No.:			
INSTR. RANGE:	0 to 6000 m³/day		

PRIMARY DEVICE:	6" Parshall Flume	
MAX FLOW:	6000	m³/day
MAX HEAD:	34.07	cm
CONSTANT:	32878.42	
EXPONENT:	1.580	

Output:	mA	Flow
Zero:	4	0.00
Max:	20	6000.0

P1 = 0
P2 = 0
P3 = 0
P4 = 1
P5 = 7
P6 = 6000
P7 = 34.0746
P46 = 65.14732
U0 = 1.58

D18 = 100

OCM Flow Table

Head Applied (cm)	Head Displayed (cm)	Error (%)	Calculated Flow (m³/day)	Flow Displayed (m³/day)	Error (%)	Calculated mA Output	Measured mA Output	Error (%)
0.00	0.00	0.00	0.00	0.00	0.00	4.00	4.00	0.00
10.00	9.96	-0.40	865	861	-0.44	6.31	6.28	-0.42
20.00	19.99	-0.05	2585	2583	-0.10	10.89	10.89	-0.04
30.00	29.98	-0.07	4906	4900	-0.13	17.08	17.07	-0.08
34.07	34.12	0.13	6000	6011	0.18	20.00	20.02	0.10
34.07		#DIV/0!	6000		#DIV/0!	20.00		#DIV/0!

Comments

AS FOUND: PASS AS LEFT: PASS CERTIFIED BY: Mike Humphries

CALIBRATION REPORT

TAG NO.:	FIT 340
REPORT NO.:	230720
DATE:	20-Jul-23

SITE:	Colborne WWTP	DATE:	July 20, 2023
PROCESS AREA:	Effluent Flow		
INSTR. TAG:	FIT 340	TECHNICIAN:	Mike Humphries
MANUFACTURER:	Milltronics		
MODEL:	OCM III	REPORT NO.:	230720
SERIAL No.:			
INSTR. RANGE:	0 to 6000 m³/day		

PRIMARY DEVICE:	6" Parshall Flume	
MAX FLOW:	6000	m³/day
MAX HEAD:	34.07	cm
CONSTANT:	32878.42	
EXPONENT:	1.580	

Output:	mA	Flow
Zero:	4	0.00
Max:	20	6000.0

P1 = 0
P2 = 0
P3 = 0
P4 = 1
P5 = 7
P6 = 6000
P7 = 34.0746
P46 = 83.28123
U0 = 1.58

D18 = 100

OCM Flow Table

Head Applied (cm)	Head Displayed (cm)	Error (%)	Calculated Flow (m³/day)	Flow Displayed (m³/day)	Error (%)	Calculated mA Output	Measured mA Output	Error (%)
0.00	0.00	0.00	0.00	0.00	0.00	4.00	3.97	-0.76
10.00	9.99	-0.10	865	864	-0.09	6.31	6.28	-0.42
20.00	20.03	0.15	2585	2589	0.14	10.89	10.90	0.05
30.00	30.05	0.17	4906	4912	0.11	17.08	17.10	0.10
34.07	34.12	0.13	6000	6013	0.22	20.00	20.04	0.20
34.07		#DIV/0!	6000		#DIV/0!	20.00		#DIV/0!

Comments

AS FOUND: PASS AS LEFT: PASS CERTIFIED BY: Mike Humphries

Flowmeter Verification Certificate Transmitter

Colborne
Customer

WW header to Lake
Plant

Order code
PROMAG 53 P DN350
Device type

- - - - -
Tag Name

EA095116000
Serial number

0.9786 - 0.9786
K-Factor

V2.03.00
Software Version Transmitter

-13
Zero point

20.07.2003
Verification date

V1.05.03
Software Version I/O-Module

13:29
Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details

550149
Production number

1.07.10
Software Version

04/2023
Last Calibration Date

Simubox Details

Production number

1.00.01
Software Version

04/2023
Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	**Colborne**	Plant	**WW header to Lake**
Order code		Tag Name	**--------**
Device type	**PROMAG 53 P DN350**	K-Factor	**0.9786 - 0.9786**
Serial number	**EA095116000**	Zero point	**-13**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**20.07.2003**	Verification time	**13:29**

Verification Flow end value (100 %): 384.845 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	19.242 l/s (5%)	1.50 %	0.77 %
✓		38.485 l/s (10.0%)	1.00 %	0.15 %
✓		192.424 l/s (50.0%)	0.60 %	0.13 %
✓		384.846 l/s (100%)	0.55 %	0.10 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.003 mA
✓		4.800 mA (5%)	0.05 mA	0.003 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.008 mA
✓		12.000 mA (50.0%)	0.05 mA	0.003 mA
✓		20.000 mA (100%)	0.05 mA	0.001 mA
▬	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	29.600 ms	0.000..52.500 ms	30.639 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	0.000 mV

Legend of symbols

✓	✗	▬	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**Colborne**
Order code	
Device type	**PROMAG 53 P DN350**
Serial number	**EA095116000**
Software Version Transmitter	**V2.03.00**
Verification date	**20.07.2003**

Plant	**WW header to Lake**
Tag Name	**--------**
K-Factor	**0.9786 - 0.9786**
Zero point	**-13**
Software Version I/O-Module	**V1.05.03**
Verification time	**13:29**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 l/s	250.01 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	0.114 m3/P	Passive/Positive	100.01 ms		

Actual System Ident. 125.0

Appendix F - Bypass Report

Colborne WWTP Quarterly Bypass and Plant Overflow Report 2023

This report is submitted to fufill requirements of ECA 6418-BN2NUC Section 4 (6)

Plant Works # 120000088

Quarter	Event #	Date	Volume	Duration	Reason/Cause	Treatment	Disinfection
			m^3	hr			
Feb-14	N/A	N/A	N/A	N/A	No bypass events	N/A	N/A
May-15	N/A	N/A	N/A	N/A	No bypass events	N/A	N/A
Aug-14	N/A	N/A	N/A	N/A	No bypass events	N/A	N/A
Nov-15	N/A	N/A	N/A	N/A	No bypass events	N/A	N/A

The plant has a peak flow anttenuation pond to which some flow is diverted during high flows and directed back for treatment as inflow diminishes.

Appendix G- Operators Licensing

WASTEWATER OPERATOR LICENCE / PERMIS D'EXPLOITANT DE RESEAU D'EGOUT

EDWARD A. JOYNT

has met the requirements under Ontario Regulation 129/04 made under the Ontario Water Resources Act, 1990 for the Wastewater Operator Licensing Program. / a satisfait aux exigences en vertu du Reglement de l'Ontario 129/04 pris en application de la Loi de 1990 sur les ressources en eau de l'Ontario du Programme de delivrance des permis d'exploitant de reseau d'egout.

WASTEWATER TREATMENT FACILITY
INSTALLATION DE TRAITEMENT DES EAUX USÉES

CLASS/CATEGORIE 4

Expiry Date:
Date d'expiration:

~~February 28, 2026~~

Licence No.
Permis n°

~~13359~~

C 69955

Director
Directeur(trice)

Ontario

WASTEWATER OPERATOR LICENCE / PERMIS D'EXPLOITANT DE RESEAU D'EGOUT

PHILIP B. KELLY

has met the requirements under Ontario Regulation 129/04 made under the Ontario Water Resources Act, 1990 for the Wastewater Operator Licensing Program. / a satisfait aux exigences en vertu du Reglement de l'Ontario 129/04 pris en application de la Loi de 1990 sur les ressources en eau de l'Ontario du Programme de delivrance des permis d'exploitant de reseau d'egout.

WASTEWATER TREATMENT FACILITY
INSTALLATION DE TRAITEMENT DES EAUX USÉES

CLASS/CATEGORIE 1

Expiry Date:
Date d'expiration:
~~September 30, 2025~~

Licence No.
Permis nº
~~67307~~

C 58258

Director
Directeur(trice)

Ontario

WASTEWATER OPERATOR LICENCE / PERMIS D'EXPLOITANT DE RESEAU D'EGOUT

ANDREW W. HARPER

has met the requirements under Ontario Regulation 129/04 made under the Ontario Water Resources Act, 1990 for the Wastewater Operator Licensing Program. / a satisfait aux exigences en vertu du Reglement de l'Ontario 129/04 pris en application de la Loi de 1990 sur les ressources en eau de l'Ontario du Programme de delivrance des permis d'exploitant de reseau d'egout.

WASTEWATER TREATMENT FACILITY
INSTALLATION DE TRAITEMENT DES EAUX USÉES

OPERATOR-IN-TRAINING/APPRENTI(E)-OPÉRATEUR(TRICE)

Expiry Date: *Date d'expiration:*		Licence No. *Permis n°*
November 30, 2026	**OT99102**	

C 75146

Director
Directeur(trice)

Ontario

APPENDIX H Sampling Schedule

Sampling Schedule D

Influent - Influent sampling point Inlet Works

Parameters	Sample Type	Minimum Frequency
BODS	8 hour composite	Monthly
Total Suspended Solids	8 hour composite	Monthly
Total Phosphorus	8 hour composite	Monthly
Total Kjeldahl Nitrogen	8 hour composite	Monthly

Imported Sewage - Imported Sewage Receiving Station

Parameters	Sample Type	Minimum Frequency
BODS	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Loading Limits

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBODS	Monthly Average Daily Effluent Loading	43.8 kg/d
Total Suspended Solids	Monthly Average Daily Effluent Loading	43.8 kg/d
Total Phosphorus	Monthly Average Daily Effluent Loading	1.2 kg/d

COLBORNE WATER POLLUTION CONTROL PLANT

Final Effluent Sampling Points

Parameters	Sample Type	Minimum Frequency
CBODS	8 hour composite	Weekly
Total Suspended Solids	8 hour composite	Weekly
Total Phosphorus	8 hour composite	Weekly
Total Ammonia Nitrogen	8 hour composite	Weekly
Total Residual Chlorine	Grab	Weekly
E. coli	Grab	Weekly
Acute Lethality to Rainbow Trout and Daphnia magna	Grab	Quarter
pH*	Grab	Weekly
Temperature*	Grab	Weekly

*pH and temperature of the Final Effluent shall be determined in the field at the time of sampling for Total Ammonia Nitrogen.

**The concentration ofun-ionized ammonia shall be calculated using the total "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended.

Appendix I

Consolidated Linear Infrastructure

Consolidate Linear Infrastructure

Ontario has adopted a Consolidated Linear Infrastructure Permissions Approach (CLI) for low risk projects related to sewage collection and stormwater management, with a goal of getting important, low-risk public infrastructure projects built sooner by reducing the time it takes between when needs are identified and when citizens can actually benefit.

Under the proposed consolidated process, a municipality would no longer need to submit individual “pipe by pipe” applications for future alterations provided they are built in accordance with new design criteria and all other ministry approved conditions. These pre-authorizations will allow municipalities to proceed without first having to obtain an individual ministry permission. In certain circumstances, and with municipal approval, developers who are constructing infrastructure on behalf of municipalities can receive pre-authorization if work is being carried out in accordance with the requirements of the municipality’s consolidated linear infrastructure Environmental Compliance Approval (ECA), including meeting ministry design standards.

Consolidated Linear Infrastructure will:

- create an efficient process for low-risk projects
- provide clear, transparent, and consistent requirements
- improve environmental protection through updated and consolidated terms and conditions
- establish a more comprehensive picture of sewage works across the province

The CLI Permissions Approach will replace the current approach for lower risk, routine sewage works and has been modelled after the current framework for municipal drinking water systems.

All existing and future approvals will be incorporated into two consolidated Environmental Compliance Approvals (ECAs):

- one for municipal sanitary collection systems
- one for stormwater management works

Ontario

ENVIRONMENTAL COMPLIANCE APPROVAL
For a Municipal Sewage Collection System

ECA Number: 138-W601
Issue Number: 1

Pursuant to the *Environmental Protection Act*, R.S.O 1990, c. E. 19 (EPA*),* and the regulations made thereunder and subject to the limitations thereof, this environmental compliance approval is issued under section 20.3 of Part II.1 of the EPA to:

Cramahe, The Corporation of the Township of

1 Toronto Rd P.O. Box 357
Colborne, ON K0K 1S0

For the following Sewage Works:

Corporation of the Township of Cramahe Sewage Collection System

This Environmental Compliance Approval (ECA) includes the following:

Schedule	Description
Schedule A	System Information
Schedule B	Municipal Sewage Collection System Description
Schedule C	List of Notices of Amendment to this ECA: Additional Approved Works
Schedule D	General
Schedule E	Operating Conditions
Schedule F	Residue Management

All prior ECAs, or portions thereof, issued by the Director for Sewage Works described in section 1 of Schedule B are revoked and replaced by this Approval.

DATED at TORONTO this 11th day of January, 2023

Signature

Aziz Ahmed, P.Eng.
Director, Part II.1, *Environmental Protection Act*

Schedule A: System Information

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-W601**
System Name	**Corporation of the Township of Cramahe Sewage Collection System**
ECA Issue Date	**January 11th, 2023**

1.0 ECA Information and Mandatory Review Date

ECA Issue Date	January 11th, 2023
Application for ECA Review Due Date	July 15, 2028

1.1 Pursuant to section 20.12 of the EPA, the Owner shall submit an application for review of the Approval no later than the Application for ECA Review Date indicated above.

2.0 Related Documents

2.1 STPs, Satellite Treatment Facilities, and Pumping Stations connected to the Authorized System that are not part of the Authorized System:

System/Facility Name	Wastewater System Number	Location	ECA Number	Issue Date
Colborne WPCP	120000088		6418-BN2NUC	April 30, 2020

2.2 Other Documents

Document Title	Version
Design Criteria for Sanitary Sewers, Storm Sewers, and Forcemains for Alterations Authorized under Environmental Compliance Approval	v.1.1 (Jul 28, 2022)

3.0 Asset Management Plan

Document Title	Version
The 2017 Asset Management Plan for the Township of Cramahe	September 2017

4.0 Pollution Prevention and Control Plan (if applicable)

Document Title	Version
N/A	N/A

5.0 Operating Authority

System	Operating Authority
Corporation of the Township of Cramahe Sewage Collection System	The Corporation of the Township of Cramahe

Schedule B: Municipal Sewage Collection System Description

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-W601**
System Name	**Corporation of the Township of Cramahe Sewage Collection System**
ECA Issue Date	**January 11th, 2023**

1.0 System Description

1.1 The following is a summary description of the Sewage Works comprising the Municipal Sewage Collection System:

Overview

The Village of Colborne consists of works for the collection and transmission of sewage, consisting of trunk sewers and collection sewers,

The Sanitary system is a separated system approximately 12,000 kilometers in length with discharge into a 1 Class II Extended Aeration Wastewater Treatment Plant (WPCP).

Sewage Collection System

1.2 The Authorized System comprises:

1.2.1 The Sewage Works described and depicted in each document or file identified in column 1 of Table B1.

Table B1: Infrastructure Map	
Column 1 Document or File Name	Column 2 Date
Colborne Sanitary Sewer System	July 17, 2017

1.2.2 Sewers, forcemains, pumping stations and other Sewage Works that have been added, modified, replaced, or extended through authorization provided in a Schedule C Notice respecting this Approval, where Completion occurs on or after the date identified in column 2 of Table B1 for each document or file identified in column 1.

1.2.3 Sewers, forcemains, pumping stations and other Sewage Works that have been added, modified, replaced, or extended through authorization provided in Schedule D of this Approval, where

Completion occurs on or after the date identified in column 2 of Table B1 for each document or file identified in column 1.

1.2.4 Any Sewage Works described in conditions 1.3, through 1.7 below.

Sewage Pumping Stations

1.3 The following are Sewage pumping stations in the Authorized System:

N/A

Real-Time Control

1.4 The following are identified Real-Time Control Systems in the Authorized System:

	Description
Process Equipment/System Elements	N/A
Flow Measurement Locations	N/A
Level Measurement Locations	N/A
Other Instrumentation and Controls	N/A

Combined Sewage Structures

1.5 The following are regulators and combined Sewage storage structures in the Authorized System:

Table B2: Identified Combined Sewer Overflow Regulators			
Column 1 Asset ID/Name	Column 2 Site Location (Latitude & Longitude)	Column 3 Regulator Capacity (m^3/s)	Column 4 Overflow Location (Latitude & Longitude)
N/A	N/A	N/A	N/A

Table B3: Identified Combined Sewage Storage Tanks and Storage Structures			
Column 1 Asset ID/Name	Column 2 Site Location (Latitude & Longitude)	Column 3 Regulator Capacity (m^3/s)	Column 4 Overflow Location (Latitude & Longitude)
N/A	N/A	N/A	N/A

Collection System Overflow Points

1.6 The following are Collection System Overflow points in the Authorized System:

Table B4: Identified Combined Sewer Overflow Points including Pumping Stations			
Column 1 Asset ID / Name	Column 2 Regulator or Combined Sewer Storage Asset ID	Column 3 Overflow Location (Latitude & Longitude)	Column 4 Point of Entry to Receiver (Latitude and Longitude)
N/A	N/A	N/A	N/A

Table B5: Identified Sanitary Sewer Overflow Points including Pumping Stations			
Column 1 Asset ID	Column 2 Asset Name	Column 3 Overflow Location (Latitude & Longitude)	Column 4 Point of Entry to Receiver (Latitude and Longitude)
N/A	N/A	N/A	N/A

Other Works:

1.7 The following works are part of Authorized System:

Table B6: Other Works			
Column 1 Asset ID / Name	Column 2 Site Location (Latitude & Longitude)	Column 3 Component	Column 4 Description
N/A	N/A	N/A	N/A

Schedule C: List of Notices of Amendment to this ECA: Additional Approved Sewage Works

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-W601**
System Name	**Corporation of the Township of Cramahe Sewage Collection System**
ECA Issue Date	**January 11th, 2023**

1.0 General

1.1 Table C1 provides a list of all notices of amendment to this Approval that have been issued pursuant to clause 20.3(1) of the EPA that impose terms and conditions in respect of the Authorized System after consideration of an application by the Director (Schedule C Notices).

Table C1: Schedule C Notices

Column 1 Issue #	Column 2 Issue Date	Column 3 Description	Column 4 Status	Column 5 DN#
N/A	N/A	N/A	N/A	N/A

Schedule D: General

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-W601**
System Name	**Corporation of the Township of Cramahe Sewage Collection System**
ECA Issue Date	**January 11th, 2023**

1.0 Definitions

1.1 For the purpose of this Approval, the following definitions apply:

"Adverse Effect(s)" has the same meaning as defined in section 1 of the EPA.

"Alteration(s)" includes the following, in respect of the Authorized System, but does not include repairs to the system:

a) An extension of the system,

b) A replacement or retirement of part of the system, or

c) A modification of, addition to, or enlargement of the system.

"Approval" means this Environmental Compliance Approval including any Schedules attached to it.

"Appurtenance(s)" has the same meaning as defined in O. Reg. 525/98 (Approval Exemptions) made under the OWRA.

"Authorized System" means the Sewage Works comprising the Municipal Sewage Collection System authorized under this Approval".

"Average Year" means the long term average of flow based on:

a) Simulation of at least twenty years of rainfall data;

b) A year in which the rainfall pattern (e.g., intensity, volume, and frequency) is consistent with the long-term mean of the area;

c) A year in which the runoff pattern resulting from the rainfall (e.g., rate, volume, and frequency) is consistent with the long-term mean of the area; or

d) Any combination of a), b) and c).

“Collection System Overflow(s)” means a discharge (SSO or CSO) to the environment at designed location(s) from the Authorized System.

“Combined Sewer(s)” means pipes that collect and transmit both sanitary Sewage and other Sewage from residential, commercial, institutional and industrial buildings, and facilities and Stormwater through a single-pipe system, but does not include Nominally Separate Sewers.

“Completion” means substantial performance as described in s.2 (1) of the *Construction Act*, R.S.O. 1990, c. C.30.

“Compound of Concern” means a Contaminant that is discharged from the Facility in an amount that is not negligible.

“Contaminant” has the same meaning as defined in section 1 of the EPA.

“CSO” means a combined sewer overflow which is a discharge to the environment at designated location(s) from a Combined Sewer or Partially Separated Sewer as per Table B4 that usually occurs as a result of precipitation when the capacity of the Sewer is exceeded. An intervening time of twelve hours or greater separating a CSO from the last prior CSO at the same location is considered to separate one overflow Event from another.

"CWA" means the *Clean Water Act*, R.S.O. 2006, c.22.

“Design Criteria” means the design criteria set out in the Ministry’s publication “Design Criteria for Sanitary Sewers, Storm Sewers and Forcemains for Alterations Authorized under Environmental Compliance Approval”, (as amended from time to time).

“Design Guidelines for Sewage Works” means the Ministry document titled “Design Guidelines for Sewage Works”, 2008 (as amended from time to time).

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of EPA (Environmental Compliance Approvals).

“Director Notification Form” means the most recent version of the Ministry form titled Director Notification – Alterations to a Municipal Sewage Collection System, as obtained directly from the Ministry or from the Ministry’s website.

"District Manager" means the district manager or a designated representative of the Local Ministry Office.

“Dry Weather Flow(s)” means Sewage flow resulting from both sanitary Sewage, and infiltration and inflows from foundation drains or other drains occurring during periods with an absence of rainfall or snowmelt.

"EAA" means the *Environmental Assessment Act*, R.S.O. 1990, c. E.18.

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

"Emergency Situation" means a structural, mechanical, electrical failure, or operational health and safety incident, that causes a temporary reduction in the capacity, function, or performance of any part of the Authorized System or an unforeseen flow condition that may result in:

a) Danger to the health or safety of any person;

b) Injury or damage to any property, or serious risk of injury or damage to any property;

c) Adverse Effect to the Natural Environment; or

d) Spill.

“Equipment” means equipment or processes described in this Approval and any other equipment or process that supports the operation or maintenance of the Authorized System.

“ESC” means erosion and sediment control.

"Event(s)" means an action or occurrence, at any given location within the Authorized System that causes a Collection System Overflow. An Event ends when there is no recurrence of a CSO or SSO in the collection system at the same location in the 12-hour period following the last Collection System Overflow.

“Facility” means the entire operation located on the property where the Sewage Works or Equipment is located.

“Form A1” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Equipment Discharging a Contaminant of Concern to the Atmosphere from a Municipal Sewage Collection System, as obtained directly from the Ministry or from the Ministry’s website.

“Form CS1” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Combined Sewers/Partially Separated Sewers/Combined Sewage Storage Tanks and Storage Structures as obtained directly from the Ministry or from the Ministry’s website.

“Form SS1” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Separate Sewers/Nominally Separate Sewers/Forcemains, as obtained directly from the Ministry or from the Ministry’s website.

“Form SS2” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Components of the Municipal Sewage Collection System, as obtained directly from the Ministry or from the Ministry’s website.

“Hauled Sewage” has the same meaning as defined in section 1 of Regulation 347 (General – Waste Management) made under the EPA.

"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.

“Local Ministry Office” means the local office of the Ministry responsible for the geographic area where the Authorized System is located.

"Minister" means the Minister of the Ministry, or such other member of the Executive Council as may be assigned the administration of the EPA and OWRA 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.

“Municipal Sewage Collection System” means all Sewage Works, located in the geographical area of a municipality that collect and transmit Sewage and are owned, or may be owned pursuant to an agreement with a municipality entered into under the *Planning Act* or *Development Charges Act*, 1997, by:

a) A municipality, a municipal service board established under the *Municipal Act*, 2001 or a city board established under the *City of Toronto Act*, 2006; or

b) A corporation established under sections 9, 10, and 11 of the *Municipal Act*, 2001 in accordance with section 203 of that Act or under sections 7 and 8 of the *City of Toronto Act*, 2006 in accordance with sections 148 and 154 of that Act.

“Natural Environment” has the same meaning as defined in section 1 of the EPA.

"Nominally Separate Sewer(s)" mean Separate Sewers that also have connections from roof leaders and foundation drains, and are not considered to be Combined Sewers.

“Operating Authority” means, in respect of the Authorized System, the person, entity, or assignee that is given responsibility by the Owner for the operation, management, maintenance or Alteration of the Authorized System or a portion of the Authorized System.

"Owner" for the purposes of this Approval means The Corporation of the Township of Cramahe and includes its successors and assigns.

"OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40.

“O&M Manual” means the operation and maintenance manual prepared and maintained by the Owner under condition 3.2 in Schedule E of this Approval.

"Partially Separated Sewer(s)" means Combined Sewers that have been retrofitted to transmit sanitary Sewage but in which roof leaders or foundation drains still contribute Stormwater inflow to the Partially Separated Sewer.

“Peak Hourly Flow” means the the largest volume of flow to be received during a one-hour period expressed as a volume per unit time. This is also referred to as maximum hourly flow or maximum hour flow.

“Point of Entry” has same meaning as in the Wastewater Systems Effluent Regulations (SOR/2012-139) under the *Fisheries Act*, R.S.C 1985, c. F-14.

“Pollution Prevention and Control Plan” or “PPCP” means a plan developed for Combined Sewers in the Authorized System to meet the goals of Procedure F-5-5.

"Prescribed Person” means a person prescribed in O. Reg. 208/19 (Environmental Compliance Approval in Respect of Sewage Works) for the purpose of ss. 20.6 (1) of the EPA, and where the alteration, extension, enlargement, or replacement is carried out under an agreement with the Owner.

"Procedure F-5-1" means the Ministry document titled “F-5-1 Determination of Treatment Requirements for Municipal and Private Sewage Treatment Works” (as amended from time to time).

"Procedure F-5-5" means the Ministry document titled “F-5-5 Determination of Treatment Requirements for Municipal and Private Combined and Partially Separated Sewer System” (as amended from time to time).

"Publication NPC-207" means the Ministry draft technical publication "Impulse Vibration in Residential Buildings", November 1983,

supplementing the Model Municipal Noise Control By-Law, Final Report, August 1978, (as amended from time to time).

"Publication NPC-300" means the Ministry publication NPC-300, "Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning" August 2013, (as amended from time to time).

"Pumping Station Capacity" means the design Peak Hourly Flow of Sewage which the Sewage pumping station is designed to handle.

"Real-time Control System" means the dynamic operation of the collection system, including Real-Time Physical Control Structures, by responding to continuous field monitoring to maintain and achieve performance and operational objectives, during dry and wet weather conditions.

"Real-time Physical Control Structure" means a structure (e.g., pumps, gates, and weirs) that reacts in real-time based on direction from the Real-Time Control System.

"Regulator Capacity" means the flowrate (m^3/s) at which Collection System Overflow begins.

"SAC" means the Ministry's Spills Action Centre.

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

"Schedule C Notice(s)" means a notice(s) of amendment to this Approval issued pursuant to clause 20.3(1) of the EPA that imposes terms and conditions in respect of the Authorized System after consideration of an application by the Director.

"Separate Sewer(s)" means pipes that collect and transmit sanitary Sewage and other Sewage from residential, commercial, institutional, and industrial buildings.

"Sewage" has the same meaning as defined in section 1 of the OWRA.

"Sewage Works" has the same meaning as defined in section 1 of the OWRA.

"Sewer" has the same meaning as defined in section 1 of O. Reg. 525/98 under the OWRA.

"Significant Drinking Water Threat" has the same meaning as defined in section 2 of the CWA.

“Significant Snowmelt Event(s)” means the melting of snow at a rate which adversely affects the performance and function of the Authorized System and/or the STP(s) identified in Schedule A of this Approval.

“Significant Storm Event(s)” means a minimum of 25 mm of rain in any 24 hours period.

“Source Protection Authority” has the same meaning as defined in section 2 of the CWA.

"Source Protection Plan" means a drinking water source protection plan prepared under the CWA.

“Spill(s)” has the same meaning as defined in subsection 91(1) of the EPA.

“SSO” means a sanitary sewer overflow which is a discharge of Sewage from a Separate Sewer or Nominally Separate Sewer to the environment from designated location(s) in the Authorized System as per Table B5.

“Standard Operating Policy for Sewage Works” means the standard operating policy developed by the Ministry to assist in the implementation of Source Protection Plan policies related to Sewage Works and providing minimum design and operational standards and considerations to mitigate risks to sources of drinking water, as amended from time to time.

“Storm Sewer” means Sewers that collect and transmit, but not exfiltrate or lose by design, Stormwater resulting from precipitation and snowmelt.

“Stormwater” means rainwater runoff, water runoff from roofs, snowmelt, and surface runoff.

“Stormwater Management Facility(ies)” means a Facility for the treatment, retention, infiltration, or control of Stormwater.

“STP” means sewage treatment plant.

“STP Bypass(es)” means diversion of Sewage around one or more treatment processes, excluding preliminary treatment system, within the STP with the diverted Sewage flows being returned to the STP treatment train upstream of the final effluent sampling point(s) and discharged via the approved effluent disposal facilities.

“STP Overflow(s)” means a discharge to the environment from the STP at designed location(s) other than the approved effluent disposal facilities or via the effluent disposal facilities downstream of the final effluent sampling point.

“Uncommitted Reserve Hydraulic Capacity” means uncommitted reserve capacity as described in the Ministry document titled “D-5-1 Calculating and Reporting Uncommitted Reserve Capacity at Sewage and Water Treatment Plants” (as amended from time to time).

"Undertaking" has the same meaning as in the EAA.

“Vulnerable Area(s)” has the same meaning as in the CWA.

“Wet Weather Flow(s)” means the flow resulting from the combination of sanitary Sewage and extraneous flows resulting from the inflow and infiltration of groundwater, rainfall or snowmelt, and snow or ice melt that enters the Authorized System.

2.0 General Conditions

2.1 The works comprising the Authorized System shall be constructed, installed, used, operated, maintained, replaced, or retired in accordance with the conditions of this Approval, which includes the following Schedules:

Schedule A – System Information

Schedule B – Municipal Sewage Collection System Description

Schedule C – List of Notices of Amendment to this ECA

Schedule D – General

Schedule E – Operating Conditions

Schedule F – Residue Management

2.2 The issuance of this Approval does not negate the requirements of other regulatory bodies, which includes but is not limited to, the Ministry of Northern Development, Mines, Natural Resources and Forestry and the local Conservation Authority.

2.3 Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence. Where there is a conflict between the information in a Schedule C Notice and another section of this Approval, the document bearing the most recent date shall prevail.

2.4 The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Authorized System is provided with a print or electronic copy of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2.5 The conditions of this Approval are severable. If any condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such

condition to other circumstances and the remainder of this Approval shall not be affected thereby.

3.0 Alterations to the Municipal Sewage Collection System

3.1 Any Schedule C Notice shall provide authority to alter the Authorized System in accordance with the conditions of this Approval.

3.2 All Schedule C Notices issued by the Director for the Municipal Sewage Collection System shall form part of this Approval.

3.3 The Owner and a Prescribed Person shall ensure that the documentation required through conditions in this Approval and the documentation required in the Design Criteria are prepared for any Alteration of the Authorized System.

3.4 The Owner shall notify the Director within thirty (30) calendar days of the placing into service or Completion of any Alteration of the Authorized System which had been authorized:

3.4.1 Under Schedule D to this Approval where the Alteration results in a change to Sewage Works or Equipment specifically described in Schedule B of this Approval;

3.4.2 Through a Schedule C Notice respecting Sewage Works other than Sewers or forcemains; or

3.4.3 Through another approval that was issued under the EPA prior to the issue date of this Approval.

3.5 The notification requirements set out in condition 3.4 do not apply to any Alteration in respect of the Authorized System which:

3.5.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98;

3.5.2 Constitutes maintenance or repair of the Authorized System; or

3.5.3 Is a Sewer or forcemain authorized by condition 4.1 of Schedule D of this Approval.

3.6 The Owner shall notify the Director within ninety (90) calendar days of:

3.6.1 The discovery of existing Sewage Works not described or depicted in Schedule B, or

3.6.2 Additional or revised information becoming available for any Sewage Works or Equipment described in Schedule B of this Approval.

3.7 The notifications required in condition 3.4 and 3.6 shall be submitted to the Director using the Director Notification Form.

3.8 The Owner shall ensure that an ESC plan is prepared, and temporary ESC measures are installed in advance of and maintained during any construction activity on the Authorized System, subject to the following conditions:

3.8.1 Inspections of ESC measures are to be conducted at a frequency specified per the ESC plan, for dry weather periods (active and inactive construction phases), after Significant Storm Events and Significant Snowmelt Events, and after any extreme weather events.

3.8.2 Any deficiencies shall be addressed, and any required maintenance actions(s) shall be undertaken as soon as practicable once they have been identified.

3.8.3 Inspections and maintenance of the temporary ESC measures shall continue until they are no longer required.

3.8.4 The ESC plan, ESC measures and its installation, inspections and maintenance shall have regard to at least one of the following:

a) CSA W202 Erosion and Sediment Control Inspection and Monitoring Standard, as amended from time to time;

b) Erosion and Sediment Control Guideline for Urban Construction (2019), as amended from time to time, prepared by the Toronto Region Conservation Authority; or

c) CSA W208 Erosion and Sediment Control Installation and Maintenance, as amended from time to time.

3.9 The Owner shall ensure that records of inspections required by this Approval during any construction activity, including those required under condition 3.8:

3.9.1 Include the name of the inspector, date of inspection, visual observations, and the remedial measures, if any, undertaken to maintain the temporary ESC measures.

3.9.2 Be retained with records relating to the Alteration that the construction relates to, such as the form required in conditions 4.3.1, 5.4.1, 6.9.1, or 7.6.1 of Schedule D, or the Schedule C Notice.

3.9.3 Be retrievable and made available to the Ministry upon request.

3.10 The document(s) or file(s) referenced in Table B1 of Schedule B of this Approval shall:

3.10.1 Be retained by the Owner;

3.10.2 Include at a minimum:

a) Identification of the type of Sewers in the Municipal Sewage Collection System (e.g., Separate Sewer; Combined Sewer; Partially Separated Sewer; Nominally Separate Sewer) including:

i Location of Sewers relative to street names or easements;

ii Sewer and/or forcemain diameters;

iii Identification of pumping stations and storage structures, including asset IDs;

iv Identification of SSO and/or CSO locations, including asset IDs;

v Identification of small-bore systems, if any; and

vi Identification of any source protection Vulnerable Areas.

3.10.3 Be updated to include:

a) Alterations authorized under Schedule D of this Approval or through a Schedule C Notice within twelve (12) months of the Alteration being placed into service.

b) Updates to information contained in the document(s) or files(s) not associated with an Alteration within twelve (12) months of becoming aware of the updated information.

3.11 An Alteration is not authorized under Schedule D of this Approval for projects that impact Indigenous treaty rights or asserted rights where:

3.11.1 The project is on Crown land or would alter access to Crown land;

3.11.2 The project is in an open or forested area where hunting, trapping or plant gathering occur;

3.11.3 The project involves the clearing of forested land unless the clearing has been authorized by relevant municipal, provincial, or federal authorities, where applicable;

3.11.4 The project alters access to a water body;

3.11.5 The proponent is aware of any concerns from Indigenous communities about the proposed project and these concerns have not been resolved; or

3.11.6 Conditions respecting Indigenous consultation in relation to the project were placed in another permit or approval and have not been met.

3.12 No less than 60 days prior to construction associated with an Alteration the Director may notify the Owner in writing that a project is not authorized through Schedule D of this Approval where:

3.12.1 Concerns regarding treaty rights or asserted rights have been raised by one or more Indigenous communities that may be impacted by the Alteration; or

3.12.2 The Director believes that it is in the public interest due to site specific, system specific, or project specific considerations.

3.13 Where an Alteration is not authorized under condition 3.11 or 3.12 above:

3.13.1 An application respecting the Alteration shall be submitted to the Ministry; and,

3.13.2 The Alteration shall not proceed unless:

a) Approval for the Alteration is granted by the Ministry (i.e., a Schedule C Notice); or,

b) The Director provides written notice that the Alteration may proceed in accordance with conditions in Schedule D of this Approval.

4.0 Authorizations of Future Alterations for Separate Sewers, Nominally Separate Sewers and Forcemains - Additions, Modifications, Replacements and Extensions

4.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending a Separate Sewer, Nominally Separate Sewer or forcemain within the Authorized System subject to the following conditions and condition 4.2 below:

4.1.1 The design of the addition, modification, replacement, or extension:

a) Has been prepared by a Licensed Engineering Practitioner;

b) Has been designed only to collect and transmit Sewage and has not been designed to treat Sewage;

c) Satisfies the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;

d) Is consistent with or otherwise addresses the design objectives contained within the Design Guidelines for Sewage Works; and

e) Includes design considerations to protect sources of drinking water, including those set out in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies.

4.1.2 The addition, modification, replacement, or extension shall be designed so that it will:

a) Not cause overflows or backups nor increase surcharging at any maintenance holes or privately owned infrastructure (e.g., service connections to basements) connected to the Authorized System or any Municipal Sewage Collection System connected to it;

b) Provide smooth flow transition to existing gravity Sewers; and

c) Not increase the generation of sulfides and other odourous compounds in the Municipal Sewage Collection System.

4.1.3 The maximum discharge/generation of Sewage by users who will be served by the addition, modification, replacement, or extension will not result in:

a) An exceedance of the Authorized System hydraulic capacity, STP Uncommitted Reserve Hydraulic Capacity, or the downstream Pumping Station Capacity as specified in this Approval;

b) Adverse Effects;

c) Any increase in Collection System Overflows that is not offset by measures; or

d) Any increase in the frequency or volume of STP Bypasses or STP Overflows that is not offset by measures.

4.1.4 The addition, modification, replacement, or extension is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent municipality respecting the Alteration and resulting Sewage Works.

4.1.5 The Owner consents in writing to the addition, modification, replacement, or extension.

4.1.6 A Licensed Engineering Practitioner has verified in writing that the addition, modification, replacement, or extension meets the requirements of conditions 4.1.1 a) to d).

4.1.7 The Owner has verified in writing that the addition, modification, replacement, or extension has complied with inspection and testing requirements in the Design Criteria.

4.1.8 The Owner has verified in writing that the addition, modification, replacement, or extension meets the requirements of conditions 4.1.1 e) and 4.1.2 to 4.1.6.

4.2 The Owner or a Prescribed Person is not authorized to undertake an Alteration described above in condition 4.1 where the Alteration relates to the addition, modification, replacement or extension of a Separate Sewer, Nominally Separate Sewer, or forcemain that:

4.2.1 Passes under or through a body of surface water unless trenchless construction methods are used, or the local Conservation Authority has authorized an alternative construction method.

4.2.2 Has a nominal diameter greater than 750 mm for a Separate Sewer or Nominally Separate Sewer.

4.2.3 Has a nominal diameter greater than 350 mm for a forcemain.

4.2.4 Is a Combined Sewer or Partially Separated Sewer.

4.2.5 Connects to another Municipal Sewage Collection System, unless:

a) Prior to construction, the Owner of the Authorized System obtains written consent from the Owner or Owner’s delegate of the Municipal Sewage Collection System being connected to; and

b) The Owner of the Authorized System retains a copy of the written consent from the Owner or Owner’s delegate of the

Municipal Sewage Collection System being connected to as part of the record that is recorded and retained under condition 4.3.

4.2.6 Creates a new discharge point to the Natural Environment.

4.2.7 Is part of an Undertaking in respect of which:

a) A request under s.16(6) of the EAA has been made, namely a request that the Minister make an order under s.16;

b) The Minister has made an order under s.16; or

c) The Director under that EAA has given notice under s.16.1 (2) that the Minister is considering making an order under s.16.

4.3 The consents and verifications required in conditions 4.1 and 4.2, if applicable, shall be:

4.3.1 Recorded on Form SS1 prior to the Separate Sewer, Nominally Separate Sewer or forcemain addition, modification, replacement, or extension being placed into service; and

4.3.2 Retained for a period of at least ten (10) years by the Owner.

4.4 For greater certainty, the verification requirements set out in condition 4.3 do not apply to any Alteration in respect of the Authorized System which:

4.4.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or

4.4.2 Constitutes maintenance or repair of the Authorized System.

5.0 Authorizations of Future Alterations for Combined Sewers, Partially Separated Sewers and Combined Sewage Storage Tanks and Storage Structures

5.1 Subject to conditions 5.2 and 5.3, the Owner or a Prescribed Person may alter the Combined Sewers, Partially Separated Sewers and combined Sewage storage tanks and storage structures in the Authorized System by:

5.1.1 Modifying or replacing Combined Sewers, Partially Separated Sewers, overflow Regulators and/or outfalls if the purpose of the project is to restore the Sewage Works to good condition.

5.1.2 Replacing Combined Sewers with Separate Sewers for Stormwater and sanitary Sewage.

5.1.3 Modifying or replacing Combined Sewers, Partially Separated Sewers, overflow regulators, outfalls, or combined Sewage storage tanks, provided that:

a) The Alteration is designed in such a manner that will contribute to the ultimate attainment of the capture and treatment for an Average Year of all the Dry Weather Flow plus a minimum of 90% of the volume resulting from Wet Weather Flow that is above Dry Weather Flow;

b) The volume control criterion described in 5.1.3 a) is applied:

i For a consecutive seven (7) month period commencing within fifteen (15) calendar days of April 1; and

ii To the flows collected by the Authorized System immediately above each Collection System Overflow location unless it can be shown through modelling that the criterion is being achieved on a system-wide basis.

c) The Alteration is designed in a manner that will not increase CSO volumes above existing levels at each outfall except where the increase is due to the elimination of upstream CSO outfalls as part of the Alteration; and

d) During the remainder of the year following the seven (7) month period described in condition 5.1.3 b) above, at least the same storage and treatment capacity are maintained for treating Wet Weather Flow.

5.1.4 Adding oversized pipes provided they are designed to alleviate local / neighbourhood basement flooding and the Alteration satisfies condition 5.1.3 a), b), c), and d).

5.2 Any Alteration to the Authorized System authorized under condition 5.1 is subject to the following conditions:

5.2.1 The design of the Alteration shall:

a) Be prepared by a Licensed Engineering Practitioner;

b) Be designed only to collect and transmit Sewage and shall not be designed to treat Sewage;

c) Satisfy the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;

d) Be consistent with or otherwise address the design objectives contained within the Design Guidelines for Sewage Works; and

e) Include design considerations to protect sources of drinking water, including those set out in the Standard Operating Policy for Sewage Works and any applicable local Source Protection Plan policies.

5.2.2 The design of the Alteration shall be:

a) Undertaken in accordance with a Pollution Prevention and Control Plan; or

b) If no Pollution Prevention and Control Plan is available, undertaken in accordance with an interim detailed plan for the local sewershed that:

i Describes the location, frequency, and volume of the CSOs, as well as the concentrations and mass pollutant loadings resulting from CSOs from the study area.

ii Includes the following minimum information:

1. Location and physical description of CSO outfalls in the Authorized System, Collection System Overflows at pumping stations in Emergency Situations, STP Bypass and STP overflows locations;
2. Location and identification of receiving water bodies, including sensitive receivers, for all Combined Sewer outfalls;
3. Authorized System flow and STP treatment component capacities, present and future expected peak flow rates during dry weather and wet weather;
4. Capacity of all regulators; and
5. Location of cross connections between Sewage and Stormwater infrastructure.

iii Is intended to reduce the overall CSO volume, frequency, duration, or by-pass of treatment in the Authorized and/or municipal STP; and

iv If there is a temporary Storm Sewer connection to a combined system as part of a Combined Sewer separation project, the construction plan includes a timeline to disconnect the Storm Sewer to a separated storm outlet.

5.2.3 The Alteration shall not result in:

a) An exceedance of hydraulic capacity of the Authorized System, STP Uncommitted Reserve Hydraulic Capacity, or the Pumping Station Capacity as specified in this Approval;

b) Adverse Effects;

c) Any increase in Collection System Overflows that is not offset by measures elsewhere in the Authorized System; or

d) Any increase in the frequency and/or volume of STP Bypasses or STP Overflows that is not offset by measures.

5.2.4 Where replacement of pipes to achieve Combined Sewer separation has been authorized under conditions 5.1.2 or 5.1.3, the following conditions apply:

a) Stormwater quantity, quality and water balance control shall be provided such that Combined Sewer separation shall not result in an overall increase in pollutants discharged to the Natural Environment;

b) Any new Storm Sewers that result from the Combined Sewer separation can be constructed but not operated until the proposed Stormwater Management Facilities designed to satisfy condition 5.2.4 a) are in operation; and

c) Where any temporary structures have been installed to facilitate Combined Sewer separation, the Owner shall ensure that immediately upon Completion of the Combined Sewer separation, the temporary structure connection shall be disconnected and decommissioned.

5.2.5 The Alteration shall:

a) Not cause overflows or backups nor increase surcharging at any maintenance holes or privately owned infrastructure (e.g., service connections to basements) connected to the Authorized System or any Municipal Sewage Collection System connected to it;

b) Provide smooth flow transition to existing gravity sewers; and

c) Not increase the generation of sulfides and other odourous compounds in the Authorized System.

5.2.6 The Alteration is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent municipality respecting the Alteration and resulting Sewage Works.

5.2.7 The Owner consents in writing to the Alteration authorized under condition 5.1.

5.2.8 A Licensed Engineering Practitioner has verified in writing that the Alteration authorized under condition 5.1 meets the design requirements of conditions 5.2.1 a) to d) and to 5.2.2.

5.2.9 The Owner has verified in writing that the Alteration authorized under condition 5.1 has complied with inspection and testing requirements in the Design Criteria.

5.2.10 The Owner has verified in writing that the Alteration authorized under condition 5.1 meets the requirements of conditions 5.2.1 e) and 5.2.3 to 5.2.8.

5.3 The authorization in condition 5.1 does not apply:

5.3.1 To the modification or replacement of a Combined Sewer or Partially Separated Sewer that has a nominal diameter greater than 750 mm.

5.3.2 To the modification or replacement of a Combined Sewer or Partially Separated Sewer that connects to another Municipal Sewage Collection System, unless:

a) Prior to construction, the Owner of the Authorized System seeking the connection obtains written consent from the Owner or Owner's delegate of the Municipal Sewage Collection System being connected to; and

b) The Owner of the Authorized System retains a copy of the written consent from the Owner or Owner's delegate of the Municipal Sewage Collection System being connected to as part of the record that is recorded and retained under condition 5.4.

5.3.3 Where the Alteration would create a new discharge point to the Natural Environment.

5.3.4 Where the Alteration would result in the addition of a new combined Sewage storage tank in the Authorized System.

5.4 The consents and verifications required in conditions 5.2.7 to 5.2.10, and 5.3.2 if applicable, shall be:

5.4.1 Recorded on Form CS1, prior to the Combined Sewer or Partially Separated Sewer modification or replacement being placed into service; and

5.4.2 Retained for a period of at least ten (10) years by the Owner.

5.5 For greater certainty, the verification requirements set out in condition 5.4 do not apply to any Alteration in respect of the Authorized System which:

5.5.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or,

5.5.2 Constitutes maintenance or repair of the Authorized System.

6.0 Authorizations of Future Alterations to Components of the Municipal Sewage Collection System

6.1 The Owner or a Prescribed Person may make the following Alterations to the Authorized System subject to conditions 6.4 through 6.7:

6.1.1 Adding, modifying, or replacing the following components of Sewage pumping stations, Separate Sewers, or Nominally Separate Sewers:

a) In-line and/or off-line storage to manage peak flow / inflow and infiltration that does not require pumping;

b) Off-line storage to manage peak flow / inflow and infiltration that only requires electricity to empty the structure;

c) Any associated Equipment for cleaning; and

d) All Appurtenances associated with in-line or off-line storage facilities, including odour, and corrosion control.

6.1.2 Modifying existing Sewage pumping stations and odour control units / Facilities, including adding, replacing, or modifying the following components:

a) Pumps, including replacement parts, in an existing pumping system;

b) Grinders and screens;

c) Aeration and/or mixing Equipment;

d) Chemicals and associated Equipment and tanks (including secondary containment);

e) Odour and corrosion control structures;

f) Instrumentation and controls;

g) Discharge and process piping;

h) Valves;

i) Wet-wells; and

j) Fat, oil, and grease separators (FOGs).

6.1.3 Adding new Sewage pumping stations, where they:

a) Are designed to transmit a Peak Hourly Flow of no greater than 30 L/s;

b) Include emergency stand-by power, Spill containment, and emergency alarms (SCADA, if applicable);

c) Include emergency storage designed to provide at minimum two (2) hours of response time at peak design flow;

d) Include odour and corrosion control, as applicable;

e) Would serve a new residential development (or new phased residential development), which may include existing residential development that has no Combined or Partially Separated Sewers;

f) Are designed to only collect sanitary Sewage and not Stormwater; and

g) Do not include an emergency sanitary overflow or piping to a municipal Stormwater management system or a natural receiver to prevent the discharge to the Natural Environment.

6.1.4 Adding, modifying, or replacing Equipment associated with Real-time Control Systems, where:

a) The Equipment is designed and implemented as part of the Owner's CSO reduction strategy or to optimize use of Sewage Works comprising the Authorized System;

b) The Real-Time Control System is designed and integrated with fail-safe procedures such that they are automatically activated when the requirements of the current mode of operation cannot be met;

c) Risk management procedures are in place or will be in place prior to use of the Real-time Control System; and

d) Station alarms to control center are in place or will be in place prior to use of the Real-time Control System.

6.1.5 Adding, modifying, replacing, or removing chemical storage tanks (including fuel storage tanks) with Spill containment and associated Equipment.

6.1.6 Adding, modifying, replacing, or removing Motor Control Centre (MCC) and/or associated electrical.

6.2 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or removing the following components subject to conditions 6.4 through 6.7:

6.2.1 Valves and their associated controls installed for maintenance purposes;

6.2.2 Instrumentation for monitoring and controls, including SCADA systems, and hardware associated with these monitoring devices;

6.2.3 Spill containment works for chemicals used within the Authorized System;

6.2.4 Chemical metering pumps and chemical handling pumps;

6.2.5 Measuring and monitoring devices that are not required by regulation, by a condition in this Approval, or by a condition otherwise imposed by the Ministry;

6.2.6 Process piping within a Sewage pumping station, storage tank, or other structures; and

6.2.7 Valve chambers or maintenance holes.

6.3 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, or replacing the following components subject to conditions 6.4 through 6.7:

6.3.1 Measuring and monitoring devices that are required by regulation, by a condition in this Approval, or by a condition otherwise imposed by the Ministry.

6.4 The design of the Alteration shall:

6.4.1 Be prepared by a Licensed Engineering Practitioner, where the Alteration falls within the practice of professional engineering as defined in the *Professional Engineers Act*, R.S.O. 1990;

6.4.2 Be consistent with or otherwise address the design objectives contained within the Design Guidelines for Sewage Works; and

6.4.3 Include design considerations to protect sources of drinking water, such as those included in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies.

6.5 The Alteration shall:

6.5.1 Not cause overflows or backups nor increase surcharging at any maintenance holes or privately owned infrastructure (e.g., service connections to basements) connected to the Authorized System or any Municipal Sewage Collection System connected to it;

6.5.2 Provide smooth flow transition to existing gravity Sewers;

6.5.3 Not increase the generation of sulfides and other odourous compounds in the Authorized System; and

6.5.4 Be wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent municipality respecting the Alteration and resulting Sewage Works.

6.6 Any Alteration of the Authorized System made under conditions 6.1, 6.2, or 6.3 shall not result in:

6.6.1 Exceedance of hydraulic capacity (including Uncommitted Reserve Hydraulic Capacity, as applicable) of the downstream:

a) Municipal Sewage Collection System; or

b) Receiving STPs.

6.6.2 Exceedance of any downstream Pumping Station Capacity as specified in Schedule B of this Approval.

6.6.3 An increase in the capacity of an existing Pumping Station Capacity of greater than 30%.

6.6.4 Any increase in Collection System Overflows that is not offset by measures taken elsewhere in the Authorized System.

6.6.5 Any increase in the frequency and/or volume of STP Bypasses or STP Overflows that is not offset by measures.

6.6.6 Deterioration of the normal operation of municipal STPs and/or the Authorized System.

6.6.7 A negative impact on the ability to undertake monitoring necessary for the operation of the Authorized System.

6.6.8 Adverse Effects.

6.7 The Alteration is subject to the following conditions:

6.7.1 The Owner consents in writing to the Alteration.

6.7.2 The person responsible for the design has verified in writing that the Alteration meets the requirements of conditions 6.4.1 and 6.4.2, as applicable.

6.7.3 The Owner has verified in writing that the Alteration meets the requirements of conditions 6.4.3, 6.7.1, and 6.7.2.

6.8 The Owner shall verify in writing that any Alteration of the Authorized System in accordance with conditions 6.1 or 6.2 has met the requirements of the conditions listed in conditions 6.5 and 6.6.

6.9 The consents, verifications and documentation required in conditions 6.7 and 6.8 shall be:

6.9.1 Recorded on Form SS2 prior to undertaking the Alteration; and

6.9.2 Retained for a period of at least ten (10) years by the Owner.

6.10 For greater certainty, the verification requirements set out in condition 6.9 do not apply to any Alteration in respect of the Authorized System which:

6.10.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or

6.10.2 Constitutes maintenance or repair of the Authorized System, including changes to software for an existing SCADA system resulting from Alterations authorized in condition 6.2.

6.11 The Owner shall update, within twelve (12) months of the Alteration of the Sewage Works being placed into service, any drawings maintained for the Municipal Sewage Collection System to reflect the Alterations of the Sewage Works, where applicable.

7.0 Authorizations of Future Alterations to Equipment with Emissions to the Air

7.1 The Owner and a Prescribed Person may alter the Authorized System by adding, modifying, or replacing the following Equipment in the Municipal Sewage Collection System:

7.1.1 Venting for odour control using solid scavenging or carbon adsorption units;

7.1.2 Venting for odour control by replacing existing biolfiltration or wet air scrubbing systems, including any components, with Equipment of the same or better performance characteristics; and

7.1.3 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.

7.2 Any Alteration of the Municipal Sewage Collection System made under condition 7.1 that may discharge or alter the rate or manner of a discharge of a Compound of Concern to the atmosphere is subject to the following conditions:

7.2.1 The Owner shall, at all times, take all reasonable measures to minimize odorous emissions and odour impacts from all potential sources at the Facility.

7.2.2 The Owner shall ensure that the noise emissions from the Facility comply with the limits set out in Publication NPC-300.

7.2.3 The Owner shall ensure that the vibration emissions from the Facility comply with the limits set out in Publication NPC-207.

7.3 The Owner shall not add, modify, or replace Equipment in the Municipal Sewage Collection System as set out in condition 7.1 unless the Equipment performs an activity that is directly related to municipal Sewage collection and transmission.

7.4 The emergency generators identified in condition 7.1.3 shall not be used for non-emergency purposes (excluding generator testing) including the generation of electricity for sale or for peak shaving purposes.

7.5 The Owner shall verify in writing that any addition, modification, or replacement of Equipment in accordance with condition 7.1 has met the requirements of the conditions listed in conditions 7.2, 7.3, and 7.4.

7.6 The verifications and documentation required in condition 7.5 shall be:

7.6.1 Recorded on Form A1 prior to the additional, modified or replacement Equipment being placed into service; and

7.6.2 Retained for a period of at least ten (10) years by the Owner.

7.7 For greater certainty, the verification and documentation requirements set out in condition 7.5 and 7.6 do not apply to any addition, modification, or replacement in respect of the Authorized System which:

7.7.1 Is exempt from the requirements of the EPA, or for Equipment that is exempt from s.9 of the EPA under O. Reg. 524/98; or

7.7.2 Constitutes maintenance or repair of the Authorized System.

8.0 Previously Approved Sewage Works

8.1 If approval for an Alteration to the Authorized System was issued under the EPA and is revoked by this Approval, the Owner may make the Alteration in accordance with:

8.1.1 The terms of this Approval; or

8.1.2 The terms and conditions of the revoked approval that were applicable as of the date this approval was issued, provided that the Alteration is commenced within five (5) years of the date that the revoked approval was issued.

9.0 Transition

9.1 An Alteration of the Authorized System is exempt from the requirements in clause (c) of condition 4.1.1 and clause (c) of condition 5.2.1 where:

9.1.1 Effort to undertake the Alteration, such as tendering or commencement of construction of the Sewage Works associated with the Alteration, begins on or before December 01, 2023.

9.1.2 The design of the Alteration conforms to the Design Guidelines for Sewage Works;

9.1.3 The design of the Alteration was completed on or before the issue date of this Approval or a Class Environmental Assessment was

completed for the Alteration and changes to the design result in significant cost increase or significant project delays; and

9.1.4 The Alteration would be otherwise authorized under this Approval.

Schedule E: Operating Conditions

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-W601**
System Name	**Corporation of the Township of Cramahe Sewage Collection System**
ECA Issue Date	**January 11th, 2023**

1.0 General Operations

1.1 The Owner shall ensure that, at all times, the Sewage Works comprising the Authorized System and the related Equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.

1.2 Prescribed Persons and Operating Authorities shall ensure that, at all times, the Sewage Works under their care and control and the related Equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.

1.3 In conditions 1.1 and 1.2 “properly operated and maintained” includes effective performance, adequate funding, adequate operator staffing and training, including training in applicable procedures and other requirements of this Approval and the EPA, OWRA, CWA, and regulations, adequate laboratory services, process controls and alarms and the use of process chemicals and other substances used in the Authorized System.

2.0 Duties of Owners and Operating Authorities

2.1 The Owner, Prescribed Persons and any Operating Authority shall ensure the following:

2.1.1 At all times that the Sewage Works within the Authorized System are in service the Sewage Works are:

a) Operated in accordance with the requirements under the EPA and OWRA, and

b) Maintained in a state of good repair.

2.1.2 The Authorized System is operated by persons having the training or expertise for their operating functions that is required by O. Reg. 129/04 (Licensing of Sewage Works Operators) under the OWRA and this Approval.

2.1.3 All sampling, testing, monitoring, and reporting requirements under the EPA and this Approval that relate to the Authorized System are complied with.

2.1.4 Any person who is operating the Sewage Works within the Authorized System is supervised by an operator-in-charge as described in O. Reg. 129/04 under the OWRA.

2.2 For clarity, the requirements outlined in the above conditions 2.1.1 through 2.1.4 for Prescribed Persons and any Operating Authority only apply to Sewage Works within the Authorized System where they are responsible for the operation.

2.3 The Owner, Prescribed Persons and Operating Authority shall take all reasonable steps 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 Authorized System, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

3.0 Operations and Maintenance

3.1 Inspection

3.1.1 The Owner shall ensure that all Sewage Works within the Authorized System are inspected at the frequency and in accordance with procedures set out in their O&M Manual.

3.1.2 The Owner shall ensure that:

a) Any pumping stations, combined Sewage storage tanks, and any Collection System Overflow within the Authorized System as of the date of issuance of this Approval are inspected at least once per calendar year starting the year after the O&M Manual is required to be prepared and implemented as per condition 3.2.1 in Schedule E of this Approval, and more frequently if required by the O&M Manual; and

b) Any pumping stations, combined Sewage storage tanks, and any Collection System Overflow established or replaced within the Authorized System after the date of issuance of this Approval are inspected within one year of being placed into service and thereafter once per calendar year and more frequently if required by the O&M Manual.

3.1.3 The inspection of the combined Sewage storage tanks required in condition 3.1.2 shall include physical inspection at the Point of

Entry, including looking for signs of unplanned discharges from Wet Weather Flow and Dry Weather Flow.

3.1.4 The Owner shall clean and maintain Sewage Works within the Authorized System to ensure the Sewage Works perform as designed.

3.1.5 The Owner shall maintain records of the results of the inspections required in condition 3.1.1, 3.1.2, and 3.1.3, monitoring (if applicable) and any cleaning and maintenance operations undertaken, and shall make available the records for inspection by the Ministry upon request. The records shall include the following:

a) Asset ID and name of the Sewage Works;

b) Date and results of each inspection, maintenance, or cleaning; and

c) Name of person who conducted the inspection, maintenance, or the name of the inspecting official, where applicable.

3.2 Operations & Maintenance (O&M) Manual

3.2.1 The Owner shall prepare and implement an operations and maintenance manual for Sewage Works within the Authorized System on or before December 01, 2023, that includes or references, but is not necessarily limited to, the following information:

a) Procedures for the routine operation of the Sewage Works;

b) Inspection programs, including the frequency of inspection, and the methods or tests employed to detect when maintenance is necessary;

c) Maintenance and repair programs, including:

i The frequency of maintenance and repair for the Sewage Works.

ii Clean out requirements for any storage or overflow tanks, if applicable.

d) Operational and maintenance requirements to protect sources of drinking water, such as those included in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies;

e) Procedures for routine physical inspection and checks of controlling systems (e.g., SCADA) to ensure the mechanical integrity of Equipment and its accuracy on the controlling system.

f) Procedures for preventing odours and odour impacts;

g) Procedures for calibration of monitoring Equipment (e.g., flow, level, pressure);

h) Emergency Response, Spill Reporting and Contingency Plans and Procedures for dealing with Equipment breakdowns, potential Spills and any other abnormal situations, including notification to the SAC, the Medical Officer of Health, and the District Manager, as applicable;

i) Procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken; and

j) As-built drawings or record drawings of the Sewage Works for Sewage Works constructed on or after January 1, 2010 and where available for Sewage Works constructed before January 1, 2010.

3.2.2 The Owner shall review and update the O&M Manual and ensure that operating staff have access, as per O. Reg 129/04 (Licensing of Sewage Works Operators) under the OWRA. Upon request, the Owner shall make the O&M Manual available to Ministry staff.

3.2.3 The Owner shall revise the O&M Manual to include procedures necessary for the operation and maintenance of any Sewage Works within the Authorized System that are established, altered, extended, replaced, or enlarged after the date of issuance of this approval prior to placing into service those Sewage Works.

3.2.4 For greater certainty, the O&M Manual may be a single document or a collection of documents that, when considered together, apply to all parts of the Authorized System.

3.3 Collection System Overflows

3.3.1 Any CSO at a point listed in Table B4 of Schedule B is considered a Class 1 approved discharge type Spill under O.Reg.675/98:

a) Where the CSO is as a result of wet weather events when the designed capacity of the Authorized System is exceeded;

b) Where the CSO is a direct and unavoidable result of a planned repair and/or maintenance procedure, the Owner has notified the Local Ministry Office fifteen at least (15) calendar days prior to the CSO and the Local Ministry Office has provided written consent of the CSO; or

c) Where the CSO is planned for research or training purposes, the Owner has notified the Local Ministry Office fifteen at least (15) calendar days prior to the CSO and the Local Ministry Office has provided written consent of the CSO.

3.3.2 Any SSO at a point listed in Table B5 of Schedule B is considered a Class 1 approved discharge type Spill under O.Reg. 675/98:

a) Where the SSO is a direct and unavoidable result of a planned repair or maintenance procedure and the Owner has notified the Local Ministry Office at least fifteen (15) calendar days prior to the SSO and the Director for the purposes of s.4 of O. Reg. 675/98 under the EPA has provided written consent of the SSO; or

b) Where the SSO is planned for research or training purposes, the Owner has notified the Local Ministry Office at least fifteen (15) calendar days prior to the SSO and the Director for the purposes of s.4 of O. Reg. 675/98 under the EPA has provided written consent of the SSO.

3.3.3 On or before December 01, 2025, the Owner shall establish signage to notify the public, at the nearest publicly accessible point(s) downstream of any CSO outfall location identified in Schedule B, Table B4, and any SSO when the overflow is piped to a specified outlet point. If the nearest publicly accessible point is more than 100m away, then signage shall be established at the CSO or SSO outfall location. The signage shall include the following minimum information:

a) Type of Collection System Overflow;

b) Identification of potential hazards and limitations of water use, as applicable;

c) ECA number and/or asset ID; and

d) The Owner’s contact information.

3.4 Monitoring

3.4.1 For a Collection System Overflow that occurs at a designated location, the following conditions apply:

a) For CSO storage tanks/facilities listed in Table B3, the Owner shall:

i On or before June 01, 2023 or within six (6) months of the date of the publication of the Ministry's monitoring guidance, whichever is later, collect a composite sample of the combined Sewage from the CSO tank whenever the tank(s) is(are) in operation. If there is more than one tank, the tank nearest to the discharge point shall be sampled. The composite sample shall consist, at a minimum, of one sample at the beginning of the Event, and one sample at approximately every 8-hours until the end of the Event. The composite sample shall be analyzed, at a minimum, for Biochemical Oxygen Demand (BOD) (or Chemical Oxygen Demand (COD) if agreed upon by the District Manager), total suspended solids, total phosphorus and total Kjeldahl nitrogen. If the CSO continues for more than one day, multiple composite samples are allowed.

ii If 3.4.1 a) i) cannot be achieved, then surrogate sampling may be used to determine the contamination concentrations of the discharge CSO tank overflow, at a minimum, for BOD (or COD), total suspended solids, total phosphorus and total Kjeldahl nitrogen. The methodology in determining, applying, and analyzing surrogate sampling shall be proposed by the Owner and subject to the written approval of the District Manager.

b) For CSO regulator structures listed in Table B2, and for any CSO or SSO locations listed under Table B4 or Table B5, the Owner shall:

i On or before June 01, 2023 or within six (6) months of the date of publication of the Ministry's monitoring guidance, whichever is later, take at least one (1) grab sample, for BOD (or COD, if agreed upon by the District Manager), total suspended solids, total phosphorus, total Kjeldahl nitrogen, and E. Coli, or

ii On or before June 01, 2023 or within six (6) months of the date of publication of the Ministry's monitoring guidance, whichever is later, use surrogate sampling to determine the Contaminant concentrations of the

discharged Collection System Overflow, at a minimum, for BOD (or COD), total suspended solids, total phosphorus, total Kjeldahl nitrogen, and E. Coli. The methodology in determining, applying, and analyzing surrogate sampling shall be proposed by the Owner and subject to the written approval of the District Manager.

c) The Owner shall use the Event discharged volume and the concentrations as determined in condition 3.4.1 to calculate the loading to the Natural Environment for each parameter.

3.4.2 For any Spill of Sewage that does not meet 3.4.1 a) or b):

a) Where practicable, take at least one (1) grab sample, for BOD (or COD, if agreed upon by the District Manager), total suspended solids, total phosphorus, total Kjeldahl nitrogen, and E. Coli

b) The Owner shall use the discharged volume, where possible, and the concentrations as determined in condition 3.4.2 a) to calculate the loading to the Natural Environment for each parameter.

3.4.3 If COD sampling was completed, the equivalent BOD values are required to be included with the data reported to the Ministry.

3.4.4 The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following documents and all analysis shall be conducted by a laboratory accredited to the ISO/IEC:17025 standard or as directed by the District Manager:

a) Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only)”, as amended from time to time.

b) The Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater Version 2.0" (January 2016), as amended from time to time.

c) The publication "Standard Methods for the Examination of Water and Wastewater", as amended from time to time.

4.0 Reporting

4.1 The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

4.2 Collection System Overflows

4.2.1 If the Collection System Overflow meets the criteria listed in condition 3.3.1 or 3.3.2:

a) The Owner shall report the Event as a Class 1 approved discharge type Spill as soon as practicable to the Ministry either by a verbal to SAC or in an electronic format if the Ministry makes a system available;

b) The Owner shall report the Event to the local Medical Officer of Health in a manner agreed upon with the local Medical Officer of Health;

c) The manner of notification to the Ministry shall be in two (2) stages and include, at a minimum, the following information:

i The Asset ID, infrastructure description as detailed in Table B5 in Schedule B, the outfall location, and the Point of Entry (as applicable), and the reason(s) for the Event.

ii First stage of reporting:

a. The date and time (start) of the Event.

iii Second stage of reporting (as soon as practicable and may be reported at same time as first stage):

a. The date, duration, and time (start and end) of the Event;

b. The estimated or measured volume of the Event, accurate to at least +/- 20% of the volume;

i. If the volume of the Event is not readily available at the time of the second stage of reporting, the estimated volume can be provided to the Ministry within seven (7) calendar days of the second stage of reporting;

c. If any, summary of complaints, observed adverse impacts, any additional sampling obtained, disinfection, and any corrective measures taken;

d) Upon request of the local office, the Owner shall within fifteen (15) calendar days of the occurrence of any Collection

System Overflow, the Owner shall submit a full written report of the occurrence to the District Manager describing the cause and discovery of the Collection System Overflow, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation, or an alternate report as agreed to in writing by the District Manager.

4.3 Spills

4.3.1 If the Collection System Overflow does not meet the criteria listed in condition 3.3.1 or 3.3.2, or is otherwise considered a Spill of Sewage:

a) The Owner shall report the Spill to SAC pursuant to O.Reg.675/98 and Part X of the EPA;

b) The Owner shall report the Event to the local Medical Officer of Health in a manner agreed upon with the local Medical Officer of Health;

c) In addition to the obligations under Part X of the Environmental Protection Act, the Owner shall, within fifteen (15) calendar days of the occurrence of any reportable Spill, submit a full written report of the occurrence to the District Manager describing the cause and discovery of the spill or loss, actual/estimated volume of the Spill, clean-up and recovery measures taken, preventative measures to be taken and schedule of implementation.

4.4 If the Owner is unable to determine the volume of a Collection System Overflow for the purpose of reporting, the Owner shall develop procedures that enable estimated or measured volumes to be included in the required reporting for any Collection System Overflow occurring on or after December 01, 2023.

4.5 The Owner shall follow the direction of the Ministry and the local Medical Officer of Health regarding any Collection System Overflows.

4.6 The Owner shall prepare an annual performance report for the Authorized System that:

4.6.1 Is submitted to the Director on or before March 31st of each year and covers the period from January 1st to December 31st of the preceding calendar year.

a) For clarity, the first report shall cover the period of January 1st, 2023 to December 31st, 2023 and be submitted to the Director on or before March 31st, 2024.

b) For the transitional period of January 1, 2022 to December 31, 2022, annual reporting requirements from previous ECAs pertaining to Spills only, where these occurred in the reporting period, and that have been revoked through issuance of this ECA shall apply.

i For the transitional period, condition 4.7.2 does not apply.

4.6.2 Is also submitted to the District Manager where a Collection System Overflow or Spill of Sewage has occurred in the reporting period.

4.6.3 If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.

4.6.4 Includes a summary of any operating problems encountered and corrective actions taken.

4.6.5 Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.

4.6.6 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.

4.6.7 Includes a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.

4.6.8 Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:

a) Dates;

b) Volumes and durations;

c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli;

d) Disinfection, if any; and

e) Any adverse impact(s) and any corrective actions, if applicable.

4.6.9 Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:

a) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.

b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.

c) An assessment of the effectiveness of each action taken.

d) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.

e) Public reporting approach including proactive efforts.

4.7 The report described in condition 4.6 shall be:

4.7.1 Made available, on request and without charge, to members of the public who are served by the Authorized System; and

4.7.2 Made available, by June 1st of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet.

5.0 Record Keeping

5.1 The Owner shall retain for a minimum of ten (10) years from the date of their creation:

5.1.1 All records, reports and information required by this Approval and related to or resulting Alterations to the Authorized System, and

5.1.2 All records, report and information related to the operation, maintenance and monitoring activities required by this Approval.

5.2 The Owner shall update, within twelve (12) months of any Alteration to the Authorized System being placed into service, any drawings maintained for the Municipal Sewage Collection System to reflect the Alteration of the Sewage Works, where applicable.

6.0 Review of this Approval

6.1 No later than the date specified in Condition 1 of Schedule A of this Approval, the Owner shall submit to the Director an application to have the Approval reviewed. The application shall, at minimum:

6.1.1 Include an updated description of the Sewage Works within the Authorized System, including any Alterations to the Sewage Works that were made since the Approval was last issued; and

6.1.2 Be submitted in the manner specified by Director and include any other information requested by the Director.

7.0 Source Water Protection

7.1 The Owner shall ensure that any Alteration in the Authorized System is designed, constructed, and operated in such a way as to be protective of sources of drinking water in Vulnerable Areas as identified in the Source Protection Plan, if available.

7.2 The Owner shall prepare a “Significant Drinking Water Threat Assessment Report for Proposed Alterations” for the Authorized System on or before December 01, 2023 that includes, but is not necessarily limited to:

7.2.1 An outline of the circumstances under which the proposed Alterations could pose a Significant Drinking Water Threat based on the Director’s Technical Rules established under the CWA.

7.2.2 An outline of how the Owner assesses the proposed Alterations to identify drinking water threats under the CWA.

7.2.3 For any proposed Alteration a list of components, Equipment, or Sewage Works that are being altered and have been identified as a Significant Drinking Water Threat.

7.2.4 A summary of design considerations and other measures that have been put into place to mitigate risks resulting from construction or operation of the components, Equipment or Sewage Works identified in condition 7.2.3, such as those included in the Standard Operating Policy for Sewage Works.

7.3 The Owner shall make any necessary updates to the report required in condition 7.2 at least once every twelve (12) months.

7.4 Any components, Equipment or Sewage Works added to the report required in condition 7.2 shall be included in the report for the operational life of the Sewage Works.

7.5 Upon request, the Owner shall make a copy of the report required in condition 7.2 available to the Ministry or Source Protection Authority staff.

8.0 Additional Studies

Assessment of Wet Weather Flows Compared to Dry Weather Flows

8.1 This condition and the following requirements apply where:

a) The Authorized System has no Combined Sewers or Partially Separated Sewers; and

b) There has been one or more of: an STP Overflow, STP Bypass, or Collection System Overflow within the ten (10) year period starting January 1, 2012 and ending December 31, 2021.

The following requirements do not apply if:

a) The Collection System Overflow is a result of emergency overflows at pumping stations during power outage or Equipment failure; and

b) There has been no STP Overflow or STP Bypass.

8.1.1 The Owner shall conduct an assessment of Wet Weather Flows compared to the Dry Weather Flows in the Authorized System and/or to the STP(s) described in Schedule A, as per the following conditions:

a) The assessment shall evaluate available data from the ten (10) year period starting January 1, 2012 and ending December 31, 2021.

b) The assessment shall be completed and submitted to the Director by June 01, 2024.

c) In the event that Wet Weather Flows in the ten (10) year period described above have created STP Bypasses or STP Overflows at the STP(s) specified in Schedule A or Collection System Overflows in an Average Year, then the study shall include:

i Actions and timelines to meeting the Procedure F-5-1 objectives;

ii Review of causes of STP Overflow, STP Bypass and/or Collection System Overflow Events, including inflow and infiltration, sewer use, and characteristics of rainfall events, as applicable;

iii Inspection of the Sewers and bypass structures; and

iv Identification of any near and/or long-term corrective actions with anticipated timelines.

Assessment of Conformance to Procedure F-5-1 and F-5-5

8.2 This condition and the following requirements apply where:

a) The Authorized System includes Combined Sewers or Partially Separated Sewers, and

b) The Authorized System experienced a Collection System Overflow, an STP Bypass, or STP Overflow within the ten (10) year period starting January 1, 2012 and ending December 31, 2021.

8.2.1 The Owner shall conduct an assessment to demonstrate conformance of the Authorized System to Procedure F-5-1 or Procedure F-5-5, as applicable, in accordance with the following conditions:

a) The assessment shall:

i Be prepared by a Licensed Engineering Practitioner and be submitted to the Director by June 01, 2024;

ii Be performed for each of the years 2012 through to 2021;

iii Include the number of Collection System Overflows as a result of storms that are not Significant Storm Events for each year;

iv Include the estimated length of Combined Sewers and Separate Sewers within the collection system;

v Include the date of the most recent PPCP;

vi Include the status of each action items specified in the PPCP, as applicable;

vii Include a summary of additional action items not specified in a PPCP which have been taken to prevent

Collection System Overflows in the ten (10) year period starting January 1, 2012 and ending December 31, 2021; and

viii Identify timelines for achieving conformance to Procedure F-5-1 or Procedure F-5-5 objectives, as applicable.

8.2.2 The Owner shall submit a new or updated PPCP to the Director, no later than December 01, 2027, if:

a) No PPCP exists for the Authorized System, or

b) The PPCP for the Authorized System is older than ten (10) years as of January 11th, 2023.

8.2.3 The PPCP shall include, at minimum:

a) Characterization of the Combined Sewer System (CSS) – Monitoring, modeling and other appropriate means shall be used to characterize the CSS and the response of the CSS to precipitation events. The characterization shall be based on the ten (10) year period starting January 1, 2012 and ending December 31, 2021 and include the determination of the location, frequency and volume of the CSOs, concentrations and mass pollutants resulting from CSOs, and identification and severity of suspected CSS deficiencies. Records shall be kept for CCS including the following:

i Location and physical description of CSO and SSO outfalls in the collection systems, emergency overflows at pumping stations, and bypass locations at STPs;

ii Location and identification of receiving water bodies, including sensitive receivers, for all Combined Sewer outfalls;

iii Combined Sewer system flow and STP treatment capacities, present and future (20-year timeframe) expected peak flow rates during dry weather and wet weather;

iv Capacity of all regulators;

v Location of cross connections between sanitary Sewage and Stormwater infrastructure; and

vi Location and identification of infrastructure in the CSS where monitoring Equipment is installed.

b) Operational procedures shall be developed including the following:

i Combined Sewer maintenance program; and

ii Regulator inspection and maintenance programs.

c) An examination of non-structural and structural CSO control alternatives that may include:

i Source control;

ii Inflow/Infiltration reduction;

iii Operation and maintenance improvements;

iv Control structure improvements;

v Collection system improvements;

vi Storage technologies;

vii Treatment technologies; and

viii Sewer separation.

d) An implementation plan with a schedule of all practical measures to eliminate dry weather overflows and minimize wet weather overflows, as well as an overflow percent reduction target.

i The implementation plan shall show how the minimum CSO prevention and control requirements and other criteria in Procedure F-5-5 are being achieved.

8.2.4 The Owner shall ensure that an updated PPCP for the Authorized System is prepared within ten (10) years of the date that the previous PPCP was finalized.

Sewer Model

8.3 The Owner shall prepare a new/updated Sewer model, within three (3) years of January 11th, 2023, if any of the following pertain to the Authorized System:

8.3.1 It includes Combined Sewers;

8.3.2 It services a population greater than 10,000; or

8.3.3 The Sewer model for the Authorized System was last updated prior to 2012 and 8.3.1 or 8.3.2 apply.

Schedule F: Residue Management

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-W601**
System Name	**Corporation of the Township of Cramahe Sewage Collection System**
ECA Issue Date	**January 11th, 2023**

1.0 Residue Management System

1.1 Not Applicable:

Ontario

ENVIRONMENTAL COMPLIANCE APPROVAL
For a Municipal Stormwater Management System

ECA Number: 138-S701
Issue Number: 1

Pursuant to the *Environmental Protection Act*, R.S.O 1990, c. E. 19 (EPA*),* and the regulations made thereunder and subject to the limitations thereof, this environmental compliance approval is issued under section 20.3 of Part II.1 of the EPA to:

Cramahe, The Corporation of the Township of

1 Toronto Rd P.O. Box 357
Colborne, ON K0K 1S0

For the following Sewage Works:

Township of Cramahe Stormwater Management System

This Environmental Compliance Approval (ECA) includes the following:

Schedule	Description
Schedule A	System Information
Schedule B	Municipal Stormwater Management System Description
Schedule C	List of Notices of Amendment to this ECA: Additional Approved Works
Schedule D	General
Schedule E	Operating Conditions
Schedule F	Residue Management
Appendix A	Stormwater Management Criteria

Except where specified otherwise, all prior ECAs, or portions thereof, issued by the Director for Sewage Works described in section 1 of Schedule B are revoked and replaced by this Approval.

DATED at TORONTO this 11th day of January, 2023

Signature

Aziz Ahmed, P.Eng.
Director, Part II.1, *Environmental Protection Act*

Schedule A: System Information

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-S701**
System Name	**Township of Cramahe Stormwater Management System**
ECA Issue Date	**January 11th, 2023**

1.0 ECA Information and Mandatory Review Date

ECA Issue Date	January 11th, 2023
Application for ECA Review Due Date	July 15, 2028

1.1 Pursuant to section 20.12 of the EPA, the Owner shall submit an application for review of the Approval no later than the Application for ECA Review Date indicated above.

2.0 Related Documents

2.1 Other Documents

Document Title	Version
Design Criteria for Sanitary Sewers, Storm Sewers, and Forcemains for Alterations Authorized under Environmental Compliance Approval	v.1.1 (Jul 28, 2022)

3.0 Stormwater Master Plan and Asset Management Plan

Document Title	Version
The 2017 Asset Management Plan for the Township of Cramahe	September 2017

4.0 Operating Authority

System	Operating Authority
Township of Cramahe Stormwater Management System	The Corporation of the Township of Cramahe

Schedule B: Municipal Stormwater Management System Description

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-S701**
System Name	**Township of Cramahe Stormwater Management System**
ECA Issue Date	**January 11th, 2023**

1.0 System Description

1.1 The following is a summary description of the Sewage Works comprising the Municipal Stormwater Management System:

Overview

The Municipal Stormwater Management (SWM) System serving the Township of Cramahe, is a separate system for stormwater (i.e. designed not to convey sanitary sewage, combined sewage) within the Lake Something and the Blank watersheds. The Municipal SWM System consists of storm sewers, culverts, ditches, Stormwater Management Facilities and outlets.

This Approval covers the entire Municipal SWM System owned and operated by the Township of Cramahe. This ECA does not cover municipally or privately owned sewage works on industrial or commercial land

Sewage Collection System

1.2 The Authorized System comprises:

1.2.1 The Sewage Works described and depicted in each document or file identified in column 1 of Table B1.

Table B1: Infrastructure Map	
Column 1 Document or File Name	Column 2 Date
Township of Cramahe – Colborne Storm System	Jan 28, 2022

1.2.2 Storm Sewers, Stormwater Management Facilities, stormwater pumping stations and Sewage Works associated with a Third Pipe Collection System that have been added, modified, replaced, or extended through authorization provided in a Schedule C Notice

respecting this Approval, where Completion occurs on or after the date identified in column 2 of Table B1 for each document or file identified in column 1.

1.2.3 Storm Sewers, Stormwater Management Facilities and Sewage Works associated with a Third Pipe Collection System that have been added, modified, replaced, or extended through authorization provided by Schedule D of this Approval, where Completion occurs on or after the date identified in column 2 of Table B1 for each document or file identified in column 1.

1.2.4 Any Sewage Works described in conditions 1.3 through 1.8 below.

Stormwater Collection System

1.3 Categorization of the Authorized System at the date of issue of this Approval is as follows:

Table B2. Stormwater Collection System by Diameter

System Type	Pipe Diameter (mm)	Length (km)	System Totals (km)
Storm Sewers	Up to 250	0.18295	--
Storm Sewers	> 250 - 500	5.15297	--
Storm Sewers	> 500 - 1050	0.62557	--
Storm Sewers	> 1050		--
Total Storm Sewers	--	5.96149	5.96149
Ditches / Swales	--	--	N/A
Total System Length (km)	--	5.96149	5.96149

Table B3. Summary of Stormwater Management Facilities by Type and Pumping Stations

Facility Type	Basic Treatment for Suspended Solids*	Normal Treatment for Suspended Solids *	Enhanced Treatment for Suspended Solids *	Other Treatment Level for Suspended Solids**	Total Quality Control	Total Quantity Control	Total Number of Facilities
LID Facilities - Retention (infiltration, evapotranspiration, harvest)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LID Facilities - Filtration	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stormwater Management Ponds – Wet (includes wetlands, hybrids)	3	3	0	0	3	3	3
Stormwater Management Ponds	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- Dry							
Super Pipe / Storage Facility	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Filtration MTD - Filter Unit	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sedimentation MTD - OGS	2	2	N/A	N/A	N/A		2
Pumping Stations							
Other	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Number of Facilities	5	5	N/A	N/A	N/A	N/A	5

* Basic, normal, and enhanced treatment correspond to 60%, 70% and 80% suspended solids removal on an annual average long-term basis, respectively.

** Treatment levels below 60% suspended solids removal on an annual average long-term basis.

Table B4. Third Pipe Collection System				
Description	Pipe Diameter (mm)	Length (km)	Quantity	System Totals
Third Pipe Sewer	Up to 250	0	N/A	0
Third Pipe Sewer	> 250 - 500	0	N/A	0
Third Pipe Sewer	> 500	0	N/A	0
Total	0	0	0	0Km
Other Infrastructure Components (e.g., storage tank)	N/A	N/A	0	0

Table B5. Sewage Works on Private Land that are part of the Municipal Stormwater Treatment Train*		
Description	Location	ECA # (if applicable)
N/A	N/A	N/A

* Identifies privately owned Sewage Works that are not part of the Authorized System, but are part of a Stormwater Treatment Train

Stormwater Management Facilities

1.4 The following are Stormwater Management Facilities in the Authorized System:

Asset ID# 333 - SWM Wet Pond Industrial Park

Location	Lat: 44.021936 / Long77.897246
Watershed/Subwatershed	Lower Trent Conservation
Receiver of discharge	No surface water discharge
Outlet location	e.g. Latitude and longitude. (UTM coordinates can be provided in addition)
Catchment Area	The pre-development drainage area consists of the western portion of the Industrial Drive development area of 14.99ha and a portion of drainage from the Highway 401 Right of Way of 0.26ha for a total of 15.25ha. This drainage area is confined in the north by the Highway 401, in the south by the existing Purdy Road boulevard, in the east by an existing ridge, and in the west by existing high points. Refer to drawing SD-1 for an illustration of the pre- development drainage boundary.
Level of Treatment for suspended solids	
Treatment for other Contaminants, as required	Long-term suspended solids removal,
Level of Volume control	Local water balance
Design Storm	Unknown
Reference ECA(s)	No ECA
Reference Sewage Works as part of treatment train	Unknown
Brief Description	151 M West to East X 15 M North to South
Receive Emergency Sanitary Overflows	No
Notes	Reference Cramahe Industrial Park H.D. Supply Storm Water Management Report D. G. Biddle and Associates Project # 108026 June 6 2008

Colborne Creek Retention Pond

Location	Lat: 44.000593 Long -77.889129 Located North on Arthur Street West behind house # 37.35.33
Watershed/Subwatershed	Lower Trent Conservation
Receiver of discharge	Surface discharge to Colborne Creek
Outlet location	Need to get GPS location
Catchment Area	No data currently
Level of Treatment for suspended solids	Long-term suspended solids removal,
Treatment for other Contaminants, as required	No other treatment
Level of Volume control	No records available
Design Storm	No records available
Reference ECA(s)	No ECA that the Township is aware of
Reference Sewage Works as part of treatment train	Unknown
Brief Description	74.45 m by 24 m
Receive Emergency Sanitary Overflows	No
Notes	

Keeler Center Pond

Location	Lat 43.59’52’N - Long -77.887034.
Watershed/Subwatershed	Lower Trent Conservation
Receiver of discharge	No surface water discharge point
Outlet location	e.g. Latitude and longitude. (UTM coordinates can be provided in addition)
Catchment Area	No information currently
Level of Treatment for suspended solids	Long-term suspended solids removal,
Treatment for other Contaminants, as required	No additional Treatment
Level of Volume control	Unknown
Design Storm	No information currently
Reference ECA(s)	No ECA that the township is aware of
Reference Sewage Works as part of treatment train	Not part of a treatment works
Brief Description	139 m X approx. 212 m Picks up run off from Keeler Center Parking lot and wqell as some minor local runoff
Receive Emergency Sanitary Overflows	No
Notes	

Stormwater Pumping Stations

1.5 The following are identified Stormwater pumping stations in the Authorized System:

N/A

Third Pipe Collection System

1.6 The following are identified third pipe systems in the Authorized System.

N/A

Other Works:

1.7 The following works are part of Authorized System:

Table B6: Other Works			
Column 1 Asset ID / Name	Column 2 Site Location (Latitude & Longitude)	Column 3 Component	Column 4 Description
N/A	N/A	N/A	N/A

Developer-Operated Facilities:

1.8 The following facilities are part of the Authorized System, have been constructed, and are being operated by the developer under the authority of an agreement entered into with the Owner of the system.

Table B7: Developer-Operated Facilities			
Asset ID	Type of Facility	Location	Developer Name
N/A	N/A	N/A	N/A

1.9 The Owner shall notify the Director, using the Director Notification Form, within thirty (30) days where the operation of any Facility identified in Table B7 has been:

1.9.1 Incorporated into the overall Stormwater Management System and assumed by an Operating Authority identified in Schedule B of this Approval.

1.9.2 Has been transferred from the developer identified in Table B7 to another party.

Transitional – Facilities with Individual ECAs

1.10 The following Facilities are connected to the Authorized System, but ownership has not been assumed by the Owner. These Sewage Works are not part of the Authorized System and will continue to have separate ECAs until the Facilities are assumed by the Owner.

Table B8: Facilities with Individual ECAs				
Asset ID	Type of Facility	Location	ECA Number	Developer Name
N/A	N/A	N/A	N/A	N/A

1.11 The Owner shall notify the Director, using the Director Notification Form, within thirty (30) days where the ownership of any Facility identified in Table B8 has been assumed by the Owner.

1.12 The Director Notification required in condition 1.11 shall include:

1.12.1 A request from the developer to revoke the ECA identified in Table B8; or

1.12.2 A copy of an agreement or other documentation that demonstrates that the municipality has assumed ownership of the Facility and that the ECA identified in Table B8 should be revoked.

Schedule C: List of Notices of Amendment to this ECA: Additional Approved Sewage Works

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-S701**
System Name	**Township of Cramahe Stormwater Management System**
ECA Issue Date	**January 11th, 2023**

1.0 General

1.1 Table C1 provides a list of all notices of amendment to this Approval that have been issued pursuant to clause 20.3(1) of the EPA that impose terms and conditions in respect of the Authorized System after consideration of an application by the Director (Schedule C Notices).

Table C1: Schedule C Notices

Column 1 Issue #	Column 2 Issue Date	Column 3 Description	Column 4 Status	Column 5 DN#
N/A	N/A	N/A	N/A	N/A

Schedule D: General

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-S701**
System Name	**Township of Cramahe Stormwater Management System**
ECA Issue Date	**January 11th, 2023**

1.0 Definitions

1.1 For the purpose of this Approval, the following definitions apply:

"Adverse Effect(s)" has the same meaning as defined in section 1 of the EPA.

"Alteration(s)" includes the following, in respect of the Authorized System, but does not include repairs to the system:

a) An extension of the system,

b) A replacement or retirement of part of the system, or

c) A modification of, addition to, or enlargement of the system.

"Appendix A" means Appendix A of this Approval.

"Approval" means this Environmental Compliance Approval including any Schedules attached to it.

"Appurtenance(s)" has the same meaning as defined in O. Reg. 525/98 (Approval Exemptions) made under the OWRA.

"Authorized System" means the Sewage Works comprising the Municipal Stormwater Management System authorized under this Approval".

"Class Environmental Assessment Project" means an Undertaking that does not require any further approval under the EAA if the proponent complies with the process set out in the Municipal Engineers Association Class Environmental Assessment document, (Municipal Class Environmental Assessment approved by the Lieutenant Governor in Council on October 4, 2000 under Order in Council 1923/2000), as amended from time to time.

"Combined Sewer(s)" means pipes that collect and transmit both sanitary Sewage and other Sewage from residential, commercial, institutional, and

industrial buildings and facilities and Stormwater through a single-pipe system, but does not include Nominally Separate Sewers.

“Completion” means substantial performance as described in s.2 (1) of the *Construction Act*, R.S.O. 1990, c. C.30.

“Compound of Concern” means a Contaminant that is discharged from the Facility in an amount that is not negligible.

“Contaminant” has the same meaning as defined in section 1 of the EPA.

“CSO” means a combined sewer overflow which is a discharge to the environment at designated location(s) from a Combined Sewer or Partially Separated Sewer that usually occurs as a result of precipitation when the capacity of the Sewer is exceeded. An intervening time of twelve hours or greater separating a CSO from the last prior CSO at the same location is considered to separate one overflow Event from another.

"CWA" means the *Clean Water Act*, R.S.O. 2006, c.22.

“Design Criteria” means the design criteria set out in the Ministry’s publication “Design Criteria for Sanitary Sewers, Storm Sewers and Forcemains for Alterations Authorized under Environmental Compliance Approval”, (as amended from time to time).

“Design Guidelines for Sewage Works” means the Ministry document titled “Design Guidelines for Sewage Works”, 2008 (as amended from time to time).

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of EPA (Environmental Compliance Approvals).

“Director Notification Form” means the most recent version of the Ministry form titled Director Notification – Alterations to a Municipal Stormwater Management System, as obtained directly from the Ministry or from the Ministry’s website.

"District Manager" means the district manager or a designated representative of the Local Ministry Office.

"EAA" means the *Environmental Assessment Act*, R.S.O. 1990, c. E.18.

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

“ESC” means erosion and sediment control.

“Facility” means the entire operation located on the property where the Sewage Works or equipment is located.

“Form SW1” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Storm Sewers/Ditches/Culverts as obtained directly from the Ministry or from the Ministry’s website.

“Form SW2” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Stormwater Management Facilities as obtained directly from the Ministry or from the Ministry’s website.

“Form SW3” means the most recent version of the Ministry form titled Record of Future Alteration Authorized for Third Pipe Collection Systems as obtained directly from the Ministry or from the Ministry’s website.

"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.

"LID" means “low impact development” a Stormwater management strategy that seeks to mitigate the impacts of increased runoff and Stormwater pollution by managing runoff as close to its source as possible. LID comprises a set of site design strategies that minimize runoff and distributed, small scale structural practices that mimic natural or predevelopment hydrology through the processes of infiltration, evapotranspiration, harvesting, filtration, and detention of Stormwater.

“Local Ministry Office” means the local office of the Ministry responsible for the geographic area where the Authorized System is located.

"Minister" means the Minister of the Ministry or such other member of the Executive Council as may be assigned the administration of the EPA and OWRA 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.

“Monitoring Plan” means the monitoring plan prepared and maintained by the Owner under condition 4.1 in Schedule E of this Approval.

“MTD” means manufactured treatment device.

“Municipal Drain” has the same meaning as drainage works as defined in section 1 of the *Drainage Act* R.S.O. 1990, c. D.17.

“Municipal Drainage Engineer’s Report” means a report signed by a drainage engineer employed or contracted by a municipality and approved in writing by municipal council or equivalent.

“Municipal Sewage Collection System” means all Sewage Works, located in the geographical area of a municipality, that collect and transmit sanitary Sewage and are owned, or may be owned pursuant to an agreement with a municipality entered into under the *Planning Act* or *Development Charges Act*, 1997, by:

a) A municipality, a municipal service board established under the *Municipal Act*, 2001 or a city board established under the *City of Toronto Act*, 2006; or

b) A corporation established under sections 9, 10, and 11 of the *Municipal Act*, 2001 in accordance with section 203 of that Act or under sections 7 and 8 of the *City of Toronto Act*, 2006 in accordance with sections 148 and 154 of that Act.

“**Municipal Stormwater Management System”** means all Sewage Works, located in the geographical area of a municipality, that collect, transmit, or treat Stormwater and are owned, or may be owned pursuant to an agreement entered into under the *Planning Act* or *Development Charges Act*, 1997, by:

a) A municipality, a municipal service board established under the *Municipal Act*, 2001 or a city board established under the *City of Toronto Act*, 2006; or

b) A corporation established under sections 9, 10, and 11 of the *Municipal Act*, 2001 in accordance with section 203 of that Act or under sections 7 and 8 of the *City of Toronto Act*, 2006 in accordance with sections 148 and 154 of that Act.

“Natural Environment” has the same meaning as defined in section 1 of the EPA.

"Nominally Separate Sewer(s)" mean Separate Sewers that also have connections from roof leaders and foundation drains, and are not considered to be Combined Sewers.

“OGS” means Oil and Grit Separator(s).

“Operating Authority” means, in respect of the Authorized System, the person, entity, or assignee that is given responsibility by the Owner for the operation, management, maintenance, or Alteration of the Authorized System, or a portion of the Authorized System.

"Owner" for the purposes of this Approval means The Corporation of the Township of Cramahe and includes its successors and assigns.

"OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40.

“O&M Manual” means the operation and maintenance manual prepared and maintained by the Owner under condition 3.2 in Schedule E of this Approval.

"Partially Separated Sewer(s)" means Combined Sewers that have been retrofitted to transmit sanitary Sewage but in which roof leaders or foundation drains still contribute Stormwater inflow to the Partially Separated Sewer.

“Pre-development” means the more stringent of a site’s:

a) Existing condition prior to proposed development or construction activities; or

b) Condition as defined by the local municipality.

"Prescribed Person” means a person prescribed in O. Reg. 208/19 (Environmental Compliance Approval in Respect of Sewage Works) for the purpose of ss. 20.6 (1) of the EPA, and where the alteration, extension, enlargement, or replacement is carried out under an agreement with the Owner.

“**Privately Owned Stormwater Works”** means Stormwater Sewage Works on private land that are privately owned and, while not part of the Authorized System, are considered part of a Stormwater Treatment Train.

“Qualified Person (QP)” means persons who have obtained the relevant education and training and have demonstrated experience and expertise in the areas relating to the work required to be carried out by this Approval.

“Schedule C Notice(s)” means notice(s) of amendment to this Approval issued pursuant to clause 20.3(1) of the EPA that imposes terms and conditions in respect of the Authorized System after consideration of an application by the Director.

“Separate Sewer(s)” means pipes that collect and transmit sanitary Sewage and other Sewage from residential, commercial, institutional, and industrial buildings.

“Sewage” has the same meaning as defined in section 1 of the OWRA.

“Sewage Works” has the same meaning as defined in section 1 of the OWRA.

“Sewer” has the same meaning as defined in section 1 of O. Reg. 525/98 under the OWRA.

"Significant Drinking Water Threat" has the same meaning as defined in section 2 of the CWA.

“Significant Snowmelt Event(s)” means the melting of snow at a rate which adversely affects the performance and function of the Authorized System and/or the Sewage Treatment Plant(s) identified in Schedule A of this Approval.

“Significant Storm Event(s)” means a minimum of 25 mm of rain in any 24 hours period.

“Source Protection Authority” has the same meaning as defined in section 2 of the CWA.

"Source Protection Plan" means a drinking water source protection plan prepared under the CWA.

“SSO” means a sanitary sewer overflow which is a discharge of Sewage from a Separate Sewer or Nominally Separate Sewer to the environment from designated location(s) in the Authorized System.

“Standard Operating Policy for Sewage Works” means the standard operating policy developed by the Ministry to assist in the implementation of Source Protection Plan policies related to Sewage Works and providing minimum design and operational standards and considerations to mitigate risks to sources of drinking water, as amended from time to time.

“Storm Sewer” means Sewers that collect and transmit, but not exfiltrate or lose by design, Stormwater resulting from precipitation and snowmelt.

“Stormwater” means rainwater runoff, water runoff from roofs, snowmelt, and surface runoff.

“Stormwater Management Facility(ies)” means a Facility for the treatment, retention, infiltration, or control of Stormwater.

“Stormwater Management Planning and Design Manual” means the Ministry document titled “Stormwater Management Planning and Design Manual”, 2003 (as amended from time to time).

“Stormwater Treatment Train” means a series of Stormwater Management Facilities designed to meet Stormwater management objectives (e.g., Appendix A) for a given area, and can consist of a combination of MTDs, LIDs and end-of-pipe controls.

“TRCA” means the Toronto Region Conservation Authority.

“Third Pipe Collection System” means Sewage Works designed to collect and transmit foundation drainage and/or groundwater to a receiving surface water or dry well;

"Undertaking" has the same meaning as in the EAA.

“Vulnerable Area(s)” has the same meaning as in the CWA.

2.0 General Conditions

2.1 The works comprising the Authorized System shall be constructed, installed, used, operated, maintained, replaced, or retired in accordance with the conditions of this Approval, which includes the following Schedules:

Schedule A – System Information

Schedule B – Municipal Stormwater Management System Description

Schedule C – List of Notices of Amendment to this ECA

Schedule D – General

Schedule E – Operating Conditions

Schedule F – Residue Management

Appendix A – Stormwater Management Criteria

2.2 The issuance of this Approval does not negate the requirements of other regulatory bodies, which includes but is not limited to, the Ministry of Northern Development, Mines, Natural Resources and Forestry and the local Conservation Authority.

2.3 Where there is a conflict between a provision of any document referred to in this Approval and the conditions of this Approval, the conditions in this Approval shall take precedence. Where there is a conflict between the information in a Schedule C Notice and another section of this Approval, the document bearing the most recent date shall prevail.

2.4 The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Authorized System is provided with a print or electronic copy of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

2.5 The conditions of this Approval are severable. If any condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

3.0 Alterations to the Municipal Stormwater Management System

3.1 For greater certainty, the Alterations authorized under this Approval are limited to Sewage Works comprising the Authorized System which does not include municipally or Privately Owned Stormwater Works:

3.1.1 On industrial, commercial, or institutional land;

3.1.2 Serving a single parcel of land, unless the stormwater management facility is located on a municipally owned park or community center;

3.1.3 That are operated as waste disposal sites defined under the EPA or snow dump / melt facilities; or,

3.1.4 That propose to collect, store, treat, or discharge stormwater containing substances or pollutants (other than Total Suspended Solids, or oil and grease) detrimental to the environment or human health.

3.2 Any Schedule C Notice shall provide authority to alter the Authorized System in accordance with the conditions of this Approval.

3.3 All Schedule C Notices issued by the Director for the Municipal Stormwater Management System shall form part of this Approval.

3.4 The Owner and a Prescribed Person shall ensure that the documentation required through conditions in this Approval and the documentation required in the Design Criteria are prepared for any Alteration of the Authorized System.

3.5 The Owner shall notify the Director within thirty (30) calendar days of placing into service or Completion of any Alteration of the Authorized System which had been authorized:

3.5.1 Under Schedule D to this Approval where the Alteration results in a change to Sewage Works specifically described in Schedule B of this Approval;

3.5.2 Through a Schedule C Notice respecting Sewage Works other than Storm Sewers; or

3.5.3 Through another approval that was issued under the EPA prior to the issue date of this Approval.

3.6 The notification requirements set out in condition 3.5 do not apply to any Alteration in respect of the Authorized System which:

3.6.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98;

3.6.2 Constitutes maintenance or repair of the Authorized System; or

3.6.3 Is a Storm Sewer, ditch, or culvert authorized by condition 4.1 of Schedule D of this Approval.

3.7 The Owner shall notify the Director within ninety (90) calendar days of:

3.7.1 The discovery of existing Sewage Works not described or depicted in Schedule B, or

3.7.2 Additional or revised information becoming available for any Sewage Works described in Schedule B of this Approval.

3.8 The notifications required in condition 3.5 and 3.7 shall be submitted to the Director using the Director Notification Form.

3.9 The Owner shall ensure that any chemicals, coagulants, or polymers used in the Authorized System have obtained written approval from the Director prior to use, unless required for spill control or spill clean-up.

3.10 The Owner shall ensure that an ESC plan is prepared, and temporary ESC measures are installed in advance of and maintained during any construction activity on the Authorized System, subject to the following conditions:

3.10.1 Inspections of ESC measures are to be conducted at a frequency specified per the ESC plan, for dry weather periods (active and inactive construction phases), after Significant Storm Events and Significant Snowmelt Events, and after any extreme weather events.

3.10.2 Any deficiencies shall be addressed, and any required maintenance actions(s) shall be undertaken as soon as practicable once they have been identified.

3.10.3 Inspections and maintenance of the temporary ESC measures shall continue until they are no longer required.

3.11 The Owner shall ensure that records of inspections required by this Approval during any construction activity, including those required under condition 3.10:

3.11.1 Include the name of the inspector, date of inspection, visual observations, and the remedial measures, if any, undertaken to maintain the temporary ESC measures.

3.11.2 Be retained with records relating to the Alteration that the construction relates to, such as the form required in conditions 4.4.1, 5.5.1, and 6.2.1 of Schedule D, or the Schedule C Notice.

3.11.3 Be retrievable and made available to the Ministry upon request.

3.12 The document(s) or file(s) referenced in Table B1 of Schedule B of this Approval shall:

3.12.1 Be retained by the Owner;

3.12.2 Include at a minimum:

a) Identification of Storm Sewers, which shall include the following information:

i Location relative to street names or easements; and

ii Sewer diameters.

b) Identification of existing municipally owned Stormwater Sewage Works, including but not limited to ditches, swales, culverts, outlets, Stormwater Management Facilities, sedimentation MTD (for example oil grit separators), filtration MTD, LID, end of pipe controls, Third Pipe Collection Systems, and pumping stations, including any applicable Asset IDs.

c) Identification of the main tributaries and receiving water bodies that the Sewage Works discharge to.

d) Delineation of municipal, watershed, and subwatershed boundaries, as available.

e) Identification of the storm sewersheds for each outlet.

f) Identification of any source protection Vulnerable Areas.

g) Identification of any Sewage Works that receive SSOs or CSOs.

3.12.3 Be updated to include:

a) Alterations authorized under Schedule D of this Approval or through a Schedule C Notice within twelve (12) months of the Alteration being placed into service.

b) Updates to information contained in the document(s) or files(s) not associated with an Alteration within twelve (12) months of becoming aware of the updated information.

3.13 An Alteration is not authorized under Schedule D of this Approval for projects that impact Indigenous treaty rights or asserted rights where:

3.13.1 The project is on Crown land or would alter access to Crown land;

3.13.2 The project is in an open or forested area where hunting, trapping or plant gathering occur;

3.13.3 The project involves the clearing of forested land unless the clearing has been authorized by relevant municipal, provincial, or federal authorities, where applicable;

3.13.4 The project alters access to a water body;

3.13.5 The proponent is aware of any concerns from Indigenous communities about the proposed project and these concerns have not been resolved; or,

3.13.6 Conditions respecting Indigenous consultation in relation to the project were placed in another permit or approval and have not been met.

3.14 No less than 60 days prior to construction associated with an Alteration the Director may notify the Owner in writing that a project is not authorized through Schedule D of this Approval where:

3.14.1 Concerns regarding treaty rights or asserted rights have been raised by one or more Indigenous communities that may be impacted by the Alteration; or

3.14.2 The Director believes that it is in the public interest due to site specific, system specific, or project specific considerations.

3.15 Where an Alteration is not authorized under condition 3.13 or 3.14 above:

3.15.1 An application respecting the Alteration shall be submitted to the Ministry; and,

3.15.2 The Alteration shall not proceed unless:

a) Approval for the Alteration is granted by the Ministry (i.e., a Schedule C Notice); or,

b) The Director provides written notice that the Alteration may proceed in accordance with conditions in Schedule D of this Approval.

4.0 Authorizations of Future Alterations to Storm Sewers, Ditches, or Culverts - Additions, Modifications, Replacements and Extensions

4.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending a Storm Sewer, ditch, or culvert within the Authorized System subject to the following conditions and conditions 4.2 and 4.3 below:

4.1.1 The design of the addition, modification, replacement, or extension:

a) Has been prepared by a Licensed Engineering Practitioner;

b) Has been designed only to collect and transmit Stormwater;

c) Has not been designed to collect or treat any sanitary Sewage;

d) Has not been designed to collect, store, treat, control, or manage groundwater, unless for the purpose of foundation drains, road subdrains, or LIDs;

e) Satisfies the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;

f) Satisfies the standards set out in Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD), as applicable to ditches and culverts;

g) Is consistent with or otherwise addresses the design objectives contained within the Design Guidelines for Sewage Works;

h) Is planned, designed, and built to be consistent with the Stormwater Management Planning and Design Guidance Manual. If there is a conflict with Appendix A of this Approval, then Appendix A shall prevail; and

i) Includes design considerations to protect sources of drinking water, including those set out in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies.

4.1.2 The addition, modification, replacement, or extension shall be designed so that it will:

a) Not adversely affect the ability to maintain a gravity flow in the Authorized System without overflowing or increase surcharging in any maintenance holes as per design; and

b) Provide smooth flow transition to existing gravity Storm Sewers.

4.1.3 The Alteration shall not result in:

a) Adverse Effects; or

b) A deterioration of the approved effluent quality or quantity of downstream Stormwater Management Facilities which results in not being able to achieve the overall Stormwater performance criteria per Appendix A.

4.1.4 The Storm Sewer, ditch or culvert addition, modification, replacement, or extension is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent property owner respecting the Alteration and resulting Sewage Works.

4.1.5 The Owner consents in writing to the addition, modification, replacement, or extension.

4.1.6 A Licensed Engineering Practitioner has verified in writing that the addition, modification, replacement, or extension meets the requirements of conditions 4.1.1 a) to h), 4.3.9, and 4.3.10.

4.1.7 The Owner has verified in writing that the addition, modification, replacement, or extension has complied with inspection and testing requirements in the Design Criteria.

4.1.8 The Owner has verified in writing that the addition, modification, replacement, or extension meets the requirements of conditions 4.1.1 i), 4.1.2 to 4.1.6, 4.3.7, and 7.2.

4.2 The addition of Storm Sewers or ditches can be constructed but not operated until the Stormwater Management Facilities required to service the new Storm Sewers or ditches are in operation.

4.3 The Owner or a Prescribed Person is not authorized to undertake an Alteration described above in condition 4.1 where the Alteration relates to the addition, modification, replacement, or extension of a Storm Sewer that:

4.3.1 Passes under or through a body of surface water, unless trenchless construction methods are used or the local Conservation Authority has authorized an alternative construction method.

4.3.2 Has a nominal diameter greater than 2,400 mm, or equivalent sizing.

4.3.3 Is a Combined Sewer.

4.3.4 Is a concrete channel.

4.3.5 Is designed to, at any time, transmit, store, or control sanitary Sewage.

4.3.6 Converts rural road cross section ditches to curb, gutter, and Storm Sewers if the Stormwater volume and/or peak flow is increased and no water quality treatment is planned or demonstrated to be achieved, in accordance with this Approval and Appendix A, to offset the increase in Stormwater.

4.3.7 Results in new discharges or increased discharges to a Municipal Drain without written approval by the Owner and a signed Municipal Drainage Engineer's Report in accordance with the *Drainage Act* R.S.O. 1990, c. D.17.

4.3.8 Establishes a new outlet with direct discharge into the Natural Environment without monitoring in accordance with this Approval and without achieving the requirements set in Appendix A.

4.3.9 Increases Stormwater flow of an existing Storm Sewer or ditch without achieving water quality criteria set in Appendix A in accordance with this Approval unless the existing downstream Municipal Stormwater Management System has sufficient residual transmission and treatment capacity to accommodate the additional Stormwater.

4.3.10 Increases local hydraulic capacity of an existing Storm Sewer or ditch to accommodate new Stormwater flows unless the existing downstream Municipal Stormwater Management System has sufficient residual hydraulic capacity to accommodate the additional Stormwater.

4.3.11 Connects to another Municipal Stormwater Management System, unless:

a) Prior to construction, the Owner of the Authorized System obtains written consent from the Owner or Owner's delegate of the Municipal Stormwater System being connected to; and

b) The Owner of the Authorized System retains a copy of the written consent from the Owner or Owner's delegate of the Municipal Stormwater Management System being connected

to as part of the record that is recorded and retained under condition 4.4.

4.3.12 Is part of an Undertaking in respect of which:

a) A request under s.16(6) of the EAA has been made, namely a request that the Minister make an order under s.16;

b) The Minister has made an order under s.16; or

c) The Director under that EAA has given notice under s.16.1 (2) that the Minister is considering making an order under s.16.

4.4 The consents and verifications required in conditions 4.1 and 4.3, if applicable, shall be:

4.4.1 Recorded on Form SW1, prior to the Storm Sewer, ditch, or culvert addition, modification, replacement, or extension being placed into service; and

4.4.2 Retained for a period of at least ten (10) years by the Owner.

4.5 For greater certainty, the verification requirements set out in condition 4.4 do not apply to any Alteration in respect of the Authorized System which:

4.5.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or

4.5.2 Constitutes maintenance or repair of the Authorized System.

5.0 Authorizations of Future Alterations to Stormwater Management Facilities - Additions, Modifications, Replacement, and Extensions

5.1 Subject to conditions 5.2 and 5.3, the Owner or a Prescribed Person may alter the Stormwater Management Facilities in the Authorized System by adding, modifying, replacing, or extending the following components:

5.1.1 Rooftop storage

5.1.2 Parking lot storage

5.1.3 Superpipe storage

5.1.4 Reduced lot grading

5.1.5 Roof leader to ponding area

5.1.6 Roof leader to soakaway pit

5.1.7 Infiltration trench

5.1.8 Engineered grassed swales / bioswale

5.1.9 Pervious pipes

5.1.10 Pervious catchbasins

5.1.11 Vegetated filter strips

5.1.12 Natural buffer strips

5.1.13 Green roofs/Rooftop gardens

5.1.14 Wet pond

5.1.15 Engineered wetland

5.1.16 Dry pond

5.1.17 Hybrid Facility

5.1.18 Infiltration basin

5.1.19 Filtration MTD

5.1.20 Sedimentation MTD - OGS

5.1.21 LID that relies on one or more of the following mechanisms to achieve treatment and control:

a) Evapotranspiration;

b) Infiltration into the ground; or

c) Filtration.

5.1.22 Any other Stormwater Management Facilities where the Director has provided authorization in writing to proceed with the Alteration.

5.2 Any Alteration to the Authorized System authorized under condition 5.1 is subject to the following conditions:

5.2.1 The design of the Alteration shall:

a) Be prepared by a Licensed Engineering Practitioner;

b) Be designed only to collect, receive, treat, or control only Stormwater and has not been designed to collect, receive, treat, or control sanitary Sewage;

c) Be planned, designed, and built to be consistent with the Stormwater Management Planning and Design Guidance Manual. If there is a conflict with Appendix A of this Approval, then Appendix A shall prevail;

d) Satisfy the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria;

e) Be part of a Stormwater Treatment Train approach that satisfies the requirements outlined in Appendix A, or transmits Stormwater to a Stormwater Management Facility that satisfies the requirements outlined in Appendix A;

f) Include an outlet or an emergency overflow for the Sewage Works, with the verification of the location, route, and capacity of the receiving major system to accommodate overflows; and

g) Include design considerations to protect sources of drinking water, including those set out in the Standard Operating Policy for Sewage Works and any applicable local Source Protection Plan policies.

5.2.2 The Alteration shall not result in:

a) Adverse Effects; or

b) A deterioration on the approved effluent quality or quantity of downstream Stormwater Management Facilities which results in not being able to achieve the overall Stormwater performance criteria per Appendix A.

5.2.3 The Alteration may incorporate co-benefits, but in doing so shall not diminish functionality or efficiency of any Stormwater Management Facility(ies) that may be impacted by the Alteration.

5.2.4 Any new sedimentation MTD that is part of the Alteration shall meet the following requirements:

a) Tested in accordance with the TRCA protocol Procedure for Laboratory Testing of OGSs and testing data verified in accordance with the ISO 14034 Environmental Technology Verification (ETV) protocol. The suspended solids removal claimed for the sedimentation MTD in achieving the water

quality criteria in Appendix A, and the sizing methodology used to determine the appropriate sedimentation MTD dimensions for the particular site, shall be based on the verified removal efficiency for all particle size fractions comprising the particle size distribution specified within the testing protocol or a particle size distribution approved by the Director.

b) Using the verified sediment removal efficiencies for the respective surface loading rates specified in the testing protocol, the sedimentation MTD sizing methodology shall use linear interpolation to calculate sediment removal efficiencies for surface loading rates that lie between the specified surface loading rates. For surface loading rates less than the lowest specified and tested surface loading rate, the sediment removal efficiency shall be assumed to be identical to the verified removal efficiency for the lowest specified and tested surface loading rate. Where available, 15 min rainfall stations shall be used for sizing the sedimentation MTD.

c) When two or more sedimentation MTD are installed in series, no additional sediment removal credit shall be applied beyond the sediment removal credit of the largest device in the series.

d) The sediment removal rate at the specified surface loading rates determined for the tested full scale, commercially available MTD may be applied to similar MTDs of smaller or larger size by proper scaling. Scaling the performance results of the tested MTD to other model sizes without completing additional testing is acceptable provided that:

    i The claimed sediment removal efficiencies for the similar MTD are the same or lower than the tested MTD at identical surface loading rates; and

    ii The similar MTD is scaled geometrically proportional to the tested unit in all inside dimensions of length and width and a minimum of 85% proportional in depth.

e) The units must be installed in an off-line configuration if the unit had an effluent concentration greater than 25 mg/L at any of the surface loading rates conducted during the sediment scour and resuspension test as part of the ISO 14034 verification.

f) The sedimentation MTD should be sized for the highest suspended solids percent removal physically and

economically practicable, and used as a pre-treatment device in a treatment train designed to achieve the water quality criteria in Appendix A.

5.2.5 Any new filtration MTD that is part of the Alteration shall meet the following requirements:

a) Field tested and verified in accordance with a minimum of one of the following protocols:

i Washington State Technology Assessment Protocol - Ecology (TAPE) General Use Level Designation (GULD); and

1. Has ISO 14034 ETV verification to satisfy ETV Canada requirements;

2. The field monitoring data set used to obtain GULD certification should include a minimum of three (3) events that exceed 75th percentile rainfall event with at least one hour with an intensity of 6 mm/h or greater.

ii Another testing and verification method, where the Director has communicated acceptability in writing.

b) Where available, 15 min rainfall stations shall be used for sizing the filtration MTD using the rainfall intensity corresponding to 90% of annual runoff volume;

c) The SS removal rate determined for the tested full scale, commercially available filtration MTD, or single full-scale commercially available cartridge or filtration module, may be applied to other model sizes of that filtration MTD provided that appropriate scaling principles are applied. Scaling the tested filtration MTD or single full-scale commercially available cartridge or filtration module, to determine other model sizes and performance without completing additional testing is acceptable provided that:

i Depth of media, composition of media, and gradation of media remain constant.

ii The ratio of the maximum treatment flow rate to effective filtration treatment area (filter surface area) is the same or less than the tested filtration MTD;

iii The ratio of effective sedimentation treatment area to effective filtration treatment area is the same or greater than the tested filtration MTD; and

iv The ratio of wet volume to effective filtration treatment area is the same or greater than the tested filtration MTD.

5.2.6 When it is necessary to use Privately Owned Stormwater Works in the Stormwater Treatment Train to achieve Appendix A criteria as part of or as a result of an Alteration, the following conditions apply:

a) The Owner shall, through legal instruments or binding agreements, obtain the right to access, operate, and maintain the Privately Owned Sewage Works;

b) The Owner shall ensure that the right to access, operate and maintain the Privately Owned Sewage Works described in condition 5.2.6 a) above is maintained at all times that the works are in service and used to achieve Appendix A criteria.

c) The Owner shall ensure on-going operation and maintenance of the Privately Owned Stormwater Works; and,

d) The Owner shall ensure that the Privately Owned Stormwater Works have obtained separate approval(s) under the EPA, as required.

5.2.7 The Alteration is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent municipality respecting the Alteration and resulting Sewage Works.

5.2.8 The Owner consents in writing to the Alteration authorized under condition 5.1.

5.2.9 A Licensed Engineering Practitioner has verified in writing that the Alteration authorized under condition 5.1 meets the design requirements of conditions 5.2.1 a) to f), 5.2.4 and 5.2.5.

5.2.10 The Owner has verified in writing that the Alteration authorized under condition 5.1 meets the requirements of conditions 5.2.1 g), 5.2.2, 5.2.6 to 5.2.9, 5.3, 5.4, and 7.2.

5.3 The authorization in condition 5.1 does not apply:

5.3.1 To the establishment of a regional end-of-pipe flood control Facility;

5.3.2 Where the Alteration will result in new or increased discharges to a Municipal Drain without written approval by the Owner and a signed Municipal Drainage Engineer's Report in accordance with the *Drainage Act* R.S.O. 1990, c. D.17;

5.3.3 To the establishment of a new outlet with direct discharge into the Natural Environment without treatment and monitoring in accordance with this Approval;

5.3.4 Where the Alteration will service a drainage area greater than 65 ha;

5.3.5 Where the Alteration will result in conversion of an existing Stormwater Management Facility into another type of Stormwater Management Facility;

5.4 Any Alteration to LID or end-of-pipe Stormwater Management Facilities shall be inspected before operation of the Alteration to confirm construction as per specifications (including depth, as applicable).

5.5 The consents and verifications required in conditions 5.2.8 to 5.2.10 if applicable, shall be:

5.5.1 Recorded on Form SW2, prior to undertaking the Alteration; and

5.5.2 Retained for a period of at least ten (10) years by the Owner.

5.6 For greater certainty, the verification requirements set out in condition 5.5 do not apply to any Alteration in respect of the Authorized System which:

5.6.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or

5.6.2 Constitutes maintenance or repair of the Authorized System.

6.0 Authorizations of Future Alterations for Third Pipe Collection System Additions, Modifications, Replacements and Extensions

6.1 The Owner or a Prescribed Person may alter the Authorized System by adding, modifying, replacing, or extending, and operating works comprising a municipal Third Pipe Collection System to collect foundation drainage and groundwater where:

6.1.1 The design of the Alteration:

a) Has been prepared by a Licensed Engineering Practitioner;

b) Is limited to collection, transmission, reuse and/or treatment of only foundation drainage and groundwater, and is not designed to collect or treat sanitary Sewage;

c) Satisfies the Design Criteria or any municipal criteria that have been established that exceed the minimum requirements set out in the Design Criteria; and

d) Is scoped so that the resulting Sewage Works are intended to:

i Primarily function for the non-potable reuse, as deemed acceptable by the Owner and the local health unit, of foundation drainage and/or groundwater, and no discharge to a Storm Sewer or Separate Sewer if there is excess volume that cannot be reused; and/or

ii Provide wetland recharge, in which case, collection of rooftop runoff will also be acceptable.

6.1.2 The Alteration is not located on a contaminated site, or where natural occurring conditions result in contaminated discharge, or where the site receives contaminated groundwater or foundation drainage from another site, unless the discharge being received has been remediated or treated prior to acceptance by the Third Pipe Collection System.

6.1.3 The Owner has undertaken a site assessment for water quantity, water quality, and hydrogeological site conditions regarding the Alteration.

6.1.4 The Alteration will not result in Adverse Effects.

6.1.5 The Alteration is wholly located within the municipal boundary over which the Owner has jurisdiction or there is a written agreement in place with the adjacent property owner respecting the Alteration and resulting Sewage Works.

6.1.6 The Owner consents in writing to the Alteration.

6.1.7 A Licensed Engineering Practitioner has verified in writing that the Alteration meets the requirements of condition 6.1.1.

6.1.8 The Owner has verified in writing that the Alteration meets the requirements of conditions 6.1.2 to 6.1.7.

6.2 The consents, verifications and documentation required in conditions 6.1.7 and 6.1.8 shall be:

6.2.1 Recorded on Form SW3 prior to undertaking the Alteration; and

6.2.2 Retained for a period of at least ten (10) years by the Owner.

6.3 For greater certainty, the verification requirements set out in condition 6.2 do not apply to any Alteration in respect of the Authorized System which:

6.3.1 Is exempt under section 53(6) of the OWRA or by O. Reg. 525/98; or

6.3.2 Constitutes maintenance or repair of the Authorized System, including changes to software for an existing SCADA system resulting from Alterations authorized in condition 6.1.

6.4 The Owner shall update, within twelve (12) months of the Alteration of the Sewage Works being placed into service, any drawings maintained for the Municipal Stormwater Management System to reflect the Alterations of the Sewage Works, where applicable.

7.0 Outlets

7.1 Any outlet established or altered as part of an Alteration authorized through conditions 4, 5, or 6 of Schedule D in this Approval shall have regard to the 2012 TRCA Stormwater Management Criteria document, Appendix E, for outlets.

7.2 Any outlet established as part of an Alteration authorized through conditions 4, 5, or 6 of Schedule D in this Approval shall not:

7.2.1 Increase discharge or create a new point source discharge to privately owned land unless there is express written consent of the owner(s) of such private land(s).

7.2.2 Result in Adverse Effects.

8.0 Previously Approved Sewage Works

8.1 If approval for an Alteration to the Authorized System was issued under the EPA and is revoked by this Approval, the Owner may make the Alteration in accordance with:

8.1.1 The terms of this Approval; or

8.1.2 The terms and conditions of the revoked approval as of the date this approval was issued, provided that the Alteration is commenced within five (5) years of the date that the revoked approval was issued.

9.0 Transition

9.1 An Alteration of the Authorized System is exempt from the requirements in clause (e) of condition 4.1.1, clause (d) of condition 5.2.1, and clause (c) of condition 6.1.1 where:

9.1.1 Effort to undertake the Alteration, such as tendering or commencement of construction of the Sewage Works associated with the Alteration, begins on or before December 01, 2023.

9.1.2 The design of the Alteration conforms to the Stormwater Management Planning and Design Manual, and where applicable, Design Guidelines for Sewage Works;

9.1.3 The design of the Alteration was completed on or before the issue date of this Approval or a Class Environmental Assessment was completed for the Alteration and changes to the design result in significant cost increase or significant project delays; and

9.1.4 The Alteration would be otherwise authorized under this Approval.

Schedule E: Operating Conditions

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-S701**
System Name	**Township of Cramahe Stormwater Management System**
ECA Issue Date	**January 11th, 2023**

1.0 General Operations

1.1 The Owner shall ensure that, at all times, the Sewage Works comprising the Authorized System and the related equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.

1.2 Prescribed Persons and Operating Authorities shall ensure that, at all times, the Sewage Works under their care and control and the related equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.

1.3 In conditions 1.1 and 1.2 “properly operated and maintained” includes effective performance, adequate funding, adequate operator staffing and training, including training in applicable procedures and other requirements of this Approval and the EPA, OWRA, CWA, and regulations, adequate laboratory services, process controls and alarms and the use of process chemicals and other substances used in the Authorized System.

1.4 The Owner shall ensure that Sewage Works are operated with the objective that the effluent from the Sewage Works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen, foam, or discoloration on the receiving waters, and shall evaluate the need for maintenance if the objective is not being met.

1.5 The Owner shall ensure that any Storm Sewers or ditches authorized under Schedule D of this approval are not placed into operation until the associated Stormwater Management Facilities to provide treatment are constructed and operated.

2.0 Duties of Owners and Operating Authorities

2.1 The Owner, Prescribed Persons, and any Operating Authority shall ensure the following:

2.1.1 At all times that the Sewage Works within the Authorized System are in service, the Sewage Works are:

a) Operated in accordance with the requirements under the EPA and OWRA, and

b) Maintained in a state of good repair.

2.1.2 The Authorized System is operated by persons that are familiar with the requirements of this Approval.

2.1.3 All sampling, testing, monitoring, and reporting requirements under the EPA and this Approval that relate to the Authorized System are complied with.

2.1.4 All necessary steps are taken to ensure that operations of the Sewage Works and any associated physical structures do not constitute a safety or health hazard to the general public.

2.1.5 Where a Stormwater Management Facility ceases to function as a Stormwater Management Facility, whether by intent, accident, or otherwise (e.g., a CSO or an SSO), a workplan shall be developed that includes local community notification, plans for rehabilitating the Stormwater Management Facility to proper function in a reasonable time, identification of actions that will be taken to prevent reoccurrences, and timelines for implementing the workplan.

2.1.6 That operations and maintenance activities are undertaken at the frequency and in conformance with the procedures set out in the O&M Manual.

a) A Prescribed Person or Operating Authority shall only undertake operations and maintenance activities where they have been delegated the authority to undertake such activities by the Owner or the Owner has expressly approved the activity(ies).

2.2 For clarity, the requirements outlined in the above conditions 2.1 for Prescribed Persons and any Operating Authority only apply to Sewage Works within the Authorized System where they are responsible for the operation.

2.3 The Owner, Prescribed Persons, and Operating Authority shall take all reasonable steps 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 Authorized System, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

3.0 Operations and Maintenance

3.1 Inspection

3.1.1 The Owner shall ensure that all Sewage Works within the Authorized System are inspected at the frequency and in accordance with procedures set out in their O&M Manual.

3.1.2 The owner shall ensure that:

a) Any Stormwater Management Facilities, pumping stations, and any outlets that discharge to a receiver, are inspected at least once before December 31, 2026, if these have not been inspected since January 1, 2018 and thereafter as required by the O&M Manual; and

b) Any Stormwater Management Facilities, pumping stations, and any outlets that discharge to a receiver, established, or replaced within the Authorized System after the date of issuance of this Approval, are inspected within one year of being placed into service and thereafter as required by the O&M Manual.

3.1.3 The Owner shall clean and maintain Sewage Works within the Authorized System to ensure the Sewage Works perform as designed.

3.1.4 The Owner shall inspect the Stormwater Management Facilities in the Authorized System after significant flooding events as defined in, and in accordance with procedures documented in, the O&M Manual.

3.1.5 The Owner shall maintain records of the results of the inspections required in condition 3.1.1, 3.1.2 and 3.1.4 and any cleaning and maintenance operations undertaken, and shall make available the records for inspection by the Ministry upon request. The records shall include the following:

a) Asset ID and name of the Sewage Works;

b) Date and results of each inspection, maintenance, or cleaning;

c) Name of person who conducted the inspection, maintenance, or the name of the inspecting official, where applicable, and

d) As applicable to the type of works, observations resulting from the inspection including, at a minimum:

i Hydraulic operation of the works (e.g., length of occurrence since the last rainfall event, evidence or occurrence of overflows).

ii Condition of vegetation in and around the works.

iii Occurrence of obstructions at the inlet and outlet of the works.

iv Evidence of spills and/or oil/grease contamination.

v Presence of trash build-up, and

vi Measurements of other parameters as required in the Monitoring Plan.

3.2 Operations & Maintenance (O&M) Manual

3.2.1 The Owner shall prepare and implement an operations and maintenance manual for Sewage Works within the Authorized System on or before December 01, 2023, that includes or references, but is not necessarily limited to, the following information:

a) Procedures for the routine operation of the Sewage Works;

b) Inspection programs, including the frequency of inspection, and the methods or tests employed to detect when maintenance is necessary, including:

i Presence of algae and/or invasive species impairing the Works (e.g., phragmites, goldfish);

ii Measurements of sediment depth, manual water levels (staff gauge) and/or visual observations, as appropriate to the Stormwater Management Facilities.

c) Maintenance and repair programs, including:

i The frequency of maintenance and repair for the Sewage Works;

ii Stormwater pond sediment cleanout, dewatering, and management;

iii Excavation, modification, replacement of LID soil/media/aggregate/geotextile, such as bioretention cells, green roof, permeable pavement; and

iv The frequency of maintenance for any other Stormwater Management Facilities identified in Schedule B that collect sediment.

d) Operational and maintenance requirements to protect sources of drinking water, such as those included in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies;

e) Procedures for routine physical inspection and calibration of monitoring equipment or components in accordance with the Monitoring Plan;

f) Emergency Response, Spill Reporting and Contingency Plans and Procedures for dealing with equipment breakdowns, potential spills, and any other abnormal situations, including notification to the Spills Action Centre, the Medical Officer of Health, and the District Manager, as applicable;

g) Procedures for receiving, responding, and recording public complaints, including recording any follow-up actions taken; and

h) As-built drawings or record drawings of the Sewage Works for stormwater works constructed on or after January 1, 2010 and where available for stormwater works constructed prior to January 1, 2010.

3.2.2 The Owner shall review and update the O&M Manual and ensure that access to a copy is readily available for each Stormwater Management Facility for the operational life of the works.

3.2.3 The Owner shall provide a copy of the O&M Manual to Ministry staff, upon request.

3.2.4 The Owner shall revise the O&M Manual to include procedures necessary for the operation and maintenance of any Sewage Works within the Authorized System that are established, altered, extended, replaced, or enlarged after the date of issuance of this approval prior to placing into service those Sewage Works.

3.2.5 For greater certainty, the O&M Manual may be a single document or a collection of documents that, when considered together, apply to all parts of the Authorized System.

3.3 On or before December 01, 2025, the Owner shall establish signage to notify the public at any Stormwater Management Facility identified in Schedule B that is a wet pond, dry pond, hybrid Facility, or engineered wetland. The signage shall include the following minimum information:

3.3.1 Identification that the site contains a Stormwater Management Facility;

3.3.2 Identification of potential hazards and limitations of water use, as applicable;

3.3.3 Identification of the purpose of the Facility;

3.3.4 ECA approval number and/or asset ID; and

3.3.5 Owner's contact information.

3.4 Prior to any maintenance of Sewage Works comprising the Authorized System, the Owner shall ensure that all applicable permits or authorizations have been obtained from Federal or Provincial agencies having legislative mandates relating to species at risk or water resources.

4.0 Monitoring Plan

4.1 On or before December 01, 2024 or within twenty-four (24) months of the date of the publication of the Ministry's monitoring guidance, whichever is later, the Owner shall develop and implement a monitoring plan for the Authorized System. The monitoring plan shall be:

4.1.1 Signed and approved by management with the authority delegated by the Owner to do so;

4.1.2 Peer-reviewed by a third-party Qualified Person (QP), external to the development of the Monitoring Plan, to verify the adequacy of the Monitoring Plan in complying with conditions 4.4 and 4.5 of Schedule E. The results of the peer review shall include:

a) Written confirmation from the QP that they have the experience and qualifications to carry out the work; and

b) Written confirmation from the QP of the adequacy of the Monitoring Plan.

4.2 The Owner, or a QP designated by the Owner, may jointly develop the Monitoring Plan in partnership with Owner(s) of other Municipal Stormwater Management Systems as long as the Municipal Stormwater Management Systems are within the same watershed.

4.3 The Owner shall ensure the Monitoring Plan is implemented and any resulting monitoring data is recorded in an electronic database.

4.4 The Monitoring Plan shall include:

4.4.1 Procedures to verify that the operational performance of the Authorized System is as designed/planned;

4.4.2 Procedures to assess the environmental impact of the Municipal Stormwater Management System; and

4.4.3 Procedures for any corrective action that may be required to address any performance deficiencies or environmental impacts identified from above conditions 4.4.1 or 4.4.2.

4.5 The Monitoring Plan shall also include, but not be limited to:

4.5.1 Identification of the Sewage Works to be monitored, including outlets and any works that provide quality and/or quantity control;

4.5.2 Identification of the key receivers to be monitored within the Owner's municipal boundaries and the monitoring locations;

4.5.3 Consideration of relevant municipal land use and environmental planning documents (e.g., Stormwater Management Master Plan, Class Environmental Assessment Project, asset management plan, subwatershed studies, and planned development);

4.5.4 Characterization of water quality and quantity conditions and identification of water users to be protected, based on conditions 4.5.2 and 4.5.3;

4.5.5 Identification of water quality and quantity goals, as it relates to Stormwater management, using the information collected in condition 4.5.4;

4.5.6 Identification of locations of rainfall gauges to be used;

4.5.7 Identification of inspections, measurements, sampling, analysis and/or other monitoring activities that were used as the basis for or will inform future updates to the procedures identified in condition 4.4.

4.5.8 Details respecting a monitoring program for the works and the receivers, that includes, at a minimum:

a) Hydrological, chemical, physical, and biological parameters, as appropriate, in alignment with the goals;

b) Ensures water level of the Stormwater Measurement Facilities, excluding MTDs, are measured at regular intervals with a water level gauge;

c) Monitoring methodology, including the frequency and protocols for sampling, analysis, and recording, with consideration of dry and wet weather events and timing of sampling during wet weather events.

d) Ensures that the time of all samples or measurements are recorded.

4.5.9 An implementation plan for the monitoring program that identifies timelines and, if the monitoring occurs on a rotational basis, provides a description of the rotational schedule and associated works.

4.5.10 Includes a summary of all monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations, and

4.5.11 Consideration of adaptive management practices (e.g., evidence-based decision making).

4.6 The Owner shall ensure that the Monitoring Plan is updated where necessary within twelve (12) months of any Alteration to the Authorized System, or more frequently as required by the Monitoring Plan.

4.7 The Owner shall, on request and without charge, provide a copy of the Monitoring Plan and any resulting monitoring data to members of the public.

5.0 Reporting

5.1 The Owner shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to Ministry staff.

5.2 The Owner shall prepare an annual performance report for the Authorized System that:

5.2.1 Is submitted to the Director on or before April 30th of each year and covers the period from January 1st to December 31st of the preceding calendar year.

a) For clarity, the first report shall cover the period of January 1, 2023 to December 31st, 2023 and be submitted to the Director on or before April 30th, 2024.

5.2.2 Includes a summary of all monitoring data along with an interpretation of the data and an overview of the condition and operational performance of the Authorized System and any Adverse Effects on the Natural Environment;

5.2.3 Includes a summary and interpretation of environmental trends based on all monitoring information and data for the previous five (5) years;

5.2.4 Includes a summary of any operating problems encountered and corrective actions taken;

5.2.5 Includes a summary of all inspections, maintenance, and repairs carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Authorized System;

5.2.6 Includes a summary of the calibration and maintenance carried out on all monitoring equipment;

5.2.7 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints;

5.2.8 Includes a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat;

5.2.9 Includes a summary of all spills or abnormal discharge events;

5.2.10 Includes a summary of actions taken, including timelines, to improve or correct performance of any aspect of the Authorized System; and

5.2.11 Includes a summary of the status of actions for the previous reporting year.

5.3 The report described in condition 5.2 shall be:

5.3.1 Made available, on request and without charge, to members of the public who are served by the Authorized System; and

5.3.2 Made available, by June 1st of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet.

6.0 Record Keeping

6.1 The Owner shall retain for a minimum of ten (10) years from the date of their creation:

6.1.1 All records, reports and information required by this Approval and related to or resulting from Alterations to the Authorized System, and

6.1.2 All records, report and information related to the operation, maintenance and monitoring activities required by this Approval.

6.2 The Owner shall update, within twelve (12) months of any Alteration to the Authorized System being placed into service, any drawings maintained for the Municipal Stormwater Management System to reflect the Alteration of the Sewage Works, where applicable.

7.0 Review of this Approval

7.1 No later than the date specified in Condition 1 of Schedule A of this Approval, the Owner shall submit to the Director an application to have the Approval reviewed. The application shall, at minimum:

7.1.1 Include an updated description of the Sewage Works within the Authorized System, including any Alterations to the Sewage Works that were made since the Approval was last issued; and

7.1.2 Be submitted in the manner specified by Director and include any other information requested by the Director.

8.0 Source Water Protection

8.1 The Owner shall ensure that any Alteration in the Authorized System is designed, constructed, and operated in such a way as to be protective of sources of drinking water in Vulnerable Areas as identified in the Source Protection Plan, if available.

8.2 The Owner shall prepare a “Significant Drinking Water Threat Assessment Report for Proposed Alterations” for the Authorized System on or before December 01, 2023 that includes, but is not necessarily limited to:

8.2.1 An outline of the circumstances under which proposed Alterations could pose a Significant Drinking Water Threat based on the Director’s Technical Rules established under the CWA.

8.2.2 An outline of how the Owner assesses the proposed Alterations to identify drinking water threats under the CWA.

8.2.3 For any proposed Alteration a list of components, equipment, or Sewage Works that are being altered and have been identified as a Significant Drinking Water Threat.

8.2.4 A summary of design considerations and other measures that have been put into place to mitigate risks resulting from construction or operation of the components, equipment, or Sewage Works identified in condition 8.2.3, such as those included in the Standard Operating Policy for Sewage Works.

8.3 The Owner shall make any necessary updates to the report required in condition 8.2 at least once every twelve (12) months.

8.4 Any components, equipment, or Sewage Works added to the report required in condition 8.2 shall be included in the report for the operational life of the Sewage Works.

8.5 Upon request, the Owner shall make a copy of the report required in condition 8.2 available to the Ministry or Source Protection Authority staff.

9.0 Storm Sewer Catchment Asset Inventory

9.1 The Owner shall prepare and submit to the Director an inventory of the storm sewersheds and classify in accordance with Tables E1 and E2, on or before December 01, 2025. Minimum classification of the level of Stormwater management is as follows:

9.1.1 Level A – Stormwater receives treatment for water quality and quantity prior to discharge to the environment;

9.1.2 Level B – Stormwater receives treatment for water quality but no water quantity prior to discharge to the environment; and

9.1.3 Level C – Stormwater receives no treatment for water quality prior to discharge to the environment.

Table E1. Storm Sewershed and Associated Treatment

Outlet Asset ID	Sewershed Catchment Area (ha)	Tributary or Receiver	Subwatershed/ Watershed	Stormwater Management Level (A, B or C)	Treatment provided by other municipality (if applicable)

Table E2. Summary of Storm Sewersheds

Stormwater Management Level	Total Number of Outlets to Environment	Total Sewershed Catchment Area (ha)

Level A		
Level B		
Level C		

9.2 Within 12 (twelve) months of the date that the inventory required in condition 9.1 is submitted to the Director, the document(s) or file(s) referenced in Table B1 of Schedule B of this Approval shall be updated to identify the storm sewersheds for each outlet and their level of Stormwater management.

Schedule F: Residue Management

System Owner	**Cramahe, The Corporation of the Township of**
ECA Number	**138-S701**
System Name	**Township of Cramahe Stormwater Management System**
ECA Issue Date	**January 11th, 2023**

1.0 Residue Management System

1.1 Not Applicable.

Note pages 47 through 53 do not apply

Appendix I

Sludge Removal

NO SLUDGE REMOVED IN 2023