BRUCE ENERGY CENTER WASTEWATER TREATMENT AND COLLECTION SYSTEM

Annual Performance Report 2025

Municipality of Kincardine, Environmental Services

THE MUNICIPALITY OF KINCARDINE

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Appendices

1.0 Introduction

The Bruce Energy Center (BEC) Wastewater Treatment System has an Environmental Compliance Approval (ECA) #2362-BXVTJS that was issued on February 26, 2021. Section 11 (4) of the ECA requires that an Annual Performance Report is prepared and outlines the information that must be contained within it.

The BEC Wastewater Collection system falls within the Municipal Sewage Collection System ECA 088-W601 issued on November 10, 2022. Schedule E Section 4.6 of the ECA required that an Annual Performance Report is prepared and outlines the information that must be contained within it.

This report covers the requirements of both the treatment system and the collection system ECA's. A copy of both ECA's are available in Appendix A.

The BEC Wastewater Treatment Plant is classified as a Wastewater Treatment II facility and is located at 1842 Concession 2 outside of Tiverton. The plant consists of an aerated four-cell lagoon system using a multi-stage centrifugal type blower system. Alum is added at Cell 3 to aid in phosphorus removal. The effluent is disinfected year-round by ultraviolet radiation before being discharged to Lake Huron. A schematic of the overall treatment system is available in Appendix B.

The Bruce Energy Center (BEC) sewage collection system is a class II Wastewater Collection system that services the villages of Tiverton, Inverhuron and also the Bruce Energy Center Industrial Park located on Concession 4. It consists of approximately 14 kilometers of gravity sewermains, 9 kilometers of pressurized sewermains, 4 sewage pumping stations (Maple St PS, King St PS, Inverhuron Park PS, Lake St PS) and services approximately 488 properties. The collection system leads to the Bruce Energy Center Lagoons located at 1842 Concession 2, Tiverton. A map of the collection system is available in Appendix B.

2.0 Monitoring Data

Operations staff collected biweekly grab samples of final effluent sewage as required by the ECA. Biweekly composite samples are taken from the influent. All samples were submitted to SGS Environmental Services for analysis. The analytical results of the biweekly sampling are tracked in monthly spreadsheets and then summarized in an annual spreadsheet. Below is a listing of any extra sampling or exceedances reported to the Ministry.

An exceedance of Total Ammonia was reported for January. The limit is 15.0mg/L during the freezing period and the Monthly average result was 15.1mg/L.

An exceedance of Total Ammonia was reported for February with the monthly average being 15.6mg/L.

An exceedance of Total Suspended Solids was reported for July. The Single sample result limit is 45mg/L and the July 11 sample result was 53mg/L.

The bi-weekly E. Coli sample was missed for the July 11 sample and was reported to the Ministry.

Weekly sampling was conducted in July and August for all monitoring parameters while the sludge removal project was being completed onsite.

An extra final effluent sample was taken on September 12 and tested for CBOD, TSS, Total Phosphorous, Total Ammonia and E. Coli following the completion of the sludge removal project.

Monitoring results are included in Appendix C along with the full monitoring schedule for 2025 and 2026.

2.1 Influent Data

The raw flows coming into the plant are recorded with an Influent Flow meter. The flows are suspected to be under the influence of inflow and infiltration which is discussed further in section 2.3 Design Objectives. Charts comparing Influent flows for the past 5 years as well as the 2025 Influent flows vs precipitation are available in Appendix D.

Table 1 summarizes the Influent flows at the lagoon as well as the contributing collection system flows.

Table 1 BEC Lagoon and Collection System Flows

	Average Flow (m^3/d)	**Maximum Flow (m^3/d)**	**Total Flow (m^3)**
Tiverton Collection System	397	1,683	174,709
Inverhuron Collection System (No meter)	--	--	--
Inverhuron Provincial Park	--	--	6,721
BEC Industrial Park	--	--	163,844
Hauled septage	--	--	1,057
Total metered sewage from collection system			346,331
BEC Influent Flow	673	2,681	245,768
BEC Effluent Flow	909	1,904	324,661

BEC Industrial Park flow data is a sum of the wastewater flows from two businesses within the park that are metered. Not all businesses are equipped with flow meters as they have low flows. The Inverhuron Collection system now only records pump hours and does not totalize flows. The Maple Street pumping station does not have a flow meter. The flows are measured using the liquid pumped with a reference to the material level on the milltronics units. Debris floating around may cause false reading levels. The milltronics units were verified for accuracy in June 2025 and the Maple and King Street Milltronics units were replaced in the fall of 2025. The Influent flow meter at the BEC Wastewater Treatment Plant was not calibrated by a third party in 2025 and could have varying accuracy ranging from 0.1% to 5% or higher.

2.2 Imported Sewage

347.40m3 of septage was accepted from the Bruce Power site from January to December 2025 as an ongoing event. This is considered an ongoing event as they dump septage on a daily basis during the week. The event started in 2024 and the last sample taken was on December 9, 2024.

709.14m3 of septage was accepted from Environmental 360 Solutions Ltd. (Formerly Bluewater Sanitation) from January to December 2025. Eighteen samples were taken through the event.

There was no Leachate hauled to the BEC Lagoons from the Kincardine Waste Management Center in 2025

Total septage accepted at the BEC lagoons was 1056.54m3.

A summary of sample results are included in Appendix E.

2.3 Design Objectives

The design capacity for the plant is 2200 m3/day. Table 2 shows precipitation and flow data monthly for 2025.

Table 2 Design Capacity

Month	Influent Flow Total m3	Precipitation mm	Design Capacity 2200 m3/day	Design exceedances (# of days)	Effluent Flow Total m3
January	11388	9.60	17%	0	31,777
February	13196	15.70	21%	0	22,926
March	15642	87.40	23%	0	46,619
April	15855	59.00	24%	0	39,739
May	40481	45.20	59%	2	22,375
June	26926	81.40	41%	0	17,988
July	12507	40.60	18%	0	14,875
August	12020	37.90	18%	0	21,548
September	13711	66.60	21%	0	19,830
October	22434	90.00	33%	0	31,368
November	29284	40.10	44%	0	21,701
December	32325	38.00	47%	0	33,915
Totals	245769	611.50	31%	2	324,661

Note: Effluent not discharging July 2 to July 11, 2025 for the Sludge removal project.

Table 3 compares the precipitation and flow data over the past 5 years. The lagoon system is at approximately 31% capacity and is under the influence of some inflow and infiltration.

Table 3 Flow vs Precipitation

	2021	2022	2023	2024	2025
Annual Influent Flow (m^3)	261,202	206,073	307,929	383,308	245,768
Overall Percentage of Influent Design Capacity	33%	26%	38%	48%	31%
Design Capacity Exceedances (days)	0	0	0	2	2
Annual Effluent Flow (m3)	262,283	255,056	277,051	272,447	324,661
Precipitation (mm)	375	582	765	663.04	611.50

Some Business Park residents as well as some Inverhuron residents are on private drinking water wells so we would not be able to estimate the extra water going into the sanitary sewer system.

Inflow and infiltration continue as evidenced through the increased flows at the Tiverton pump stations and, in the wastewater pumped to the BEC lagoon during times of heavy precipitation. Maple Street in Tiverton was reconstructed in 2021 and footing drain tie in connections to sanitary were removed. This has relieved some of the infiltration issues on the system, but it is suspected other areas of Tiverton also have footing drain connections to the sewers. Another area of concern for inflow and infiltration is from the trailer park located on the west side of Tiverton. In 2025 the Sewage forcemain from the trailer park was directly connected to the forcemain leading to the lagoons, redirecting the

sewage from going through the maple street pumping station. This assisted with heavy flows at the Maple Street Pumping station during major rainstorm events but did not fix the inflow and infiltration problem the trailer park is having. Table 4 compares the volume of water produced by the Tiverton Drinking Water System, the annual precipitation and the volume pumped from the Maple Street SPS.

Table 4 Tiverton Volume Comparisons

	2021	**2022**	**2023**	**2024**	**2025**
Tiverton Drinking Water Produced (m^3)	77,311	79,340	78,903	89,854	102,239
Tiverton Collection System Flow (m^3)	128,745	121,550	137,534	120,663	174,709
% Increase	40%	35%	43%	24%	42%
Annual Precipitation (mm)	375	582	765	663	612

2.4 Effluent Data

Tables 5 and 6 compare the 2025 Final Effluent average quality to the effluent criteria limits in the ECA.

Exceedances were reported to the Ministry in January and February for Total Ammonia and in July for Total Suspended Solids. See table below.

Table 5 Sample Results compared to Non-compliance Limits

	CBOD5 (mg/L)		Total Suspended Solids (mg/L)		Total Phosphor-ous (mg/L)		Total Ammonia (mg/L)			
							Freezing		Non-freezing	
	Monthly Average	Max Daily	Monthly Average	Max Daily	Monthly Average	Max Daily	Monthly Average	Max Daily	Monthly Average	Max Daily
Non-compliance Limits	**30**	**45**	**30**	**45**	**1.0**	**1.5**	**15**	**20**	**7.5**	**10**
January	4.00	4.00	4.50	5.00	0.50	0.54	15.10	15.30	--	--
February	4.00	4.00	3.00	4.00	0.27	0.30	15.60	15.80	--	--
March	4.67	6.00	8.67	12.00	0.40	0.58	12.23	15.00	--	--
April	14.50	17.00	24.50	30.00	0.42	0.43	--	--	4.00	6.30
May	11.00	14.00	17.50	18.00	0.25	0.31	--	--	0.25	0.30
June	8.00	9.00	17.50	22.00	0.35	0.47	--	--	1.15	1.50
July	12.25	32.00	25.75	53.00	0.40	0.48	--	--	3.38	9.00
August	6.00	8.00	21.75	24.00	0.38	0.44	--	--	0.85	1.70
September	7.75	9.00	30.25	39.00	0.20	0.16	--	--	0.23	0.10
October	4.00	4.00	20.00	20.00	0.43	0.48	--	--	1.10	1.80
November	4.00	4.00	16.00	20.00	0.50	0.52	--	--	5.85	7.50
December	4.00	4.00	3.00	4.00	0.52	0.58	12.90	14.60	--	--

Table 6 Final Effluent Monthly Average Loading

Monthly Average Loading kg/day					
	CBOD5	**TSS**	**TP**	**Ammonia freezing**	**Ammonia non-freezing**
Effluent Objective	**55**	**55**	**1.8**	**26.4**	**11**
January	4	5	0.5	15.48	--
February	3	3	0.2	12.77	--
March	7	13	0.6	18.4	--
April	19	33	0.6	--	5.3
May	8	13	0.2	--	0.18
June	5	11	0.2	--	0.69
July	6	12	0.2	--	1.62
August	4	15	0.3	--	0.59
September	5	20	0.1	--	0.15
October	4	20	0.4	--	1.11
November	3	12	0.4	--	4.23
December	4	3	0.6	14.11	--
Averages	6	13	0.4		

2.5 Effluent Quality Control Measures

The coarse bubble diffuser system and the addition of the coagulant aluminum sulphate, work together to meet the effluent objectives outlined in the ECA. Aluminum sulphate is added to the transfer pipe between Cell 2 and 3 to aid in coagulation and for phosphorous removal. A total of 24,992 Kg of alum was added in 2025 and the average dosage was 143mg/L per day. When comparing the influent and effluent sample results, we determined that there was an 88% removal of Total Suspended Solids and 84% removal of Total Phosphorous.

The ability of the BEC Lagoon system to treat and remove waste in 2025 was comparable to previous years. The effluent was essentially free of floating and settleable solids and did not contain oil or any other substance in amounts sufficient to create a visible film, sheen, foam or discolouration on the receiving waters.

Table 7 below, summarizes and compares the alum dosages and the percent removals achieved over the last 5 years.

Table 7 Comparison of Alum Dosage and Percent Removal

		2021	2022	2023	2024	2025
Alum Dosage (Average)	mg/L	36.64	45.35	32.16	145.31	143.25
	kg/day	15.60	16.96	25.52	77.45	69.04
Percent Removal	TSS	94%	91%	88%	84%	88%
	TP	93%	93%	89%	88%	84%

The UV system provides disinfection of the effluent year-round during normal operations in 2025 the average UV dosage was 170.99mj/cm2 with the range spanning from 0mj/cm2 to 4095.00mj/cm2. Zero's (0) were recorded on February 2 for a total of 25 minutes due to the probe icing up, a bypass was reported to the Spill's Action Center for the event.

March 11 a minimum UV dosage of 37.88 was recorded for 1 data point while changing the bulb.

April 8 a minimum UV dosage of 37.25 was recorded when the genset ran for monthly testing

May 10 a power blip caused a false minimum residual of 0 for 1 data point.

July 2 to 11 Zero's (0) were recorded because the effluent discharge was stopped and the UV units turned off for the sludge removal project.

August 20 a false minimum UV dosage of 0 was recorded when the generator was run for the month.

September 5 a power outage caused a false minimum UV dosage of 0.

September 12 a UV Major alarm and maintenance caused a 6 minute bypass of the UV system. The bypass was reported to the Spills Action Center.

October 1 staff performed Maintenance on the UV system which recorded zero's on the data. There was no effluent flow during the maintenance.

October 7 the Monthly generator run caused a false minimum UV dosage of 0 to be recorded.

October 31 a power outage caused a false minimum UV dosage of 0 to be recorded.

November 5 the Monthly Generator run caused a false minimum UV dosage of 0 to be recorded.

December 2 the Monthly Generator run caused a false minimum UV dosage of 0 to be recorded.

December 9 a power outage caused a false minimum UV dosage of 0 to be recorded

December 27 Power flickers caused a false minimum UV dosage of 0 to be recorded.

The effluent pH ranged from 7.10 to 9.10 which exceeds the objectives but is within the compliance limits.

The E. coli annual geometric mean density of 7 organisms per 100ml with most samples being blow the method detection limit of the lab. The effluent objective is 150 organisms per 100ml.

3.0 Operating Issues and Corrective Actions

Two exceedances of Total Ammonia were reported to the Ministry for January and February. The limit is 15.0mg/L during the freezing period. The January monthly average was 15.1mg/L and the February monthly average was 15.6mg/L.

An exceedance of Total Suspended Solids was reported for July. The Single sample result limit is 45mg/L and the July 11 sample result was 53mg/L.

There were 15 UV alarms in 2025. One of the alarms was due to extreme cold temperatures and UV equipment freezing, multiple alarms were due to power flickers or maintenance, 2 of the alarms resulted in a bypass that was reported to the Spills Action center under section 6.0 below.

The Maple Street pump station had 5 High level alarms due to heavy rainfall events. There was one overflow to the environment as a result of a high-level alarm as noted in section 6.0.

4.0 Maintenance and Calibration Summaries

The BEC Wastewater system follows a preventative maintenance schedule set out by the Environmental Services Staff. This schedule includes inspections and maintenance for BEC blowers, alum pumps, aeration system cleaning, UV system maintenance, pump station inspections, bar screen cleaning, monthly generator maintenance, as well as sewermain flushing and inspections. All maintenance and repairs are recorded in the corresponding site logbook.

Other planned maintenance included:

-Alum line flushing

-Influent chamber cleaning

-UV Bank B rebuilt

-blower greased

-Sludge Removal Cell's #3 and 4

-Wet well cleaning at Maple St SPS, King Street, Lake Street

-Annual pump station inspections for all site components were completed at the Maple Street, King Street, Lake Street and Inverhuron Park pumping stations

Emergency repairs and maintenance in 2025 included:

-UV equipment bulbs replaced

-Effluent Generator battery replaced

-Inverhuron Park Pump #1 issue

-Inverhuron Park PS Electrical Issue repaired

-2 Sanitary Cleanout repairs

-1 sanitary forcemain repair (spill reported)

A copy of the preventative maintenance schedules are available in Appendix F.

4.1 Sludge Depths

A lagoon sludge survey was performed in June 2024 by Hydrasurvey using a Single Beam Echosounder, or Infrared Sludge Interface Detector and verified using manual checks. The survey report provided heat maps which indicated areas of sludge buildup.

Sludge removal was performed from June 26 to July 31, 2025 for Cell's 3 and 4. A total volume of 19,826.58m3 of sludge was dredged/pumped from the cells and placed into Geotubes onsite with the liquids draining back into the East Cells. A total of 623.77 BDMT of solids was captured in the geotubes. Sludge depths were not taken by staff in 2025. More information on the sludge removal project is available in section 6.2 Conformance with Procedure F-5-1.

In previous years, sludge depths were taken using a sludge judge. The average volume of sludge in each cell was estimated and is shown in table 8.

Table 8 Estimated Sludge Volumes

	2020	**2021**	**2022**	**2023**	**2024**	**Cell Capacity Used**
Cell #1	4,501	4,620	3,435	6,396	5,098	18%
Cell #2	2,822	4,294	2,822	4,907	2,488	9%
Cell #3	3,481	4,580	4,214	5,130	7,672	37%
Cell #4	3,121	3,478	2,675	2,853	4,552	22%

From 2020-2023 average sludge depths were calculated by adding up all the depths (ft) in a cell and dividing it by the number of readings then converting ft to metres.

4.2 Calibrations

Routine calibration and maintenance procedures are conducted on all the monitoring equipment used on the Wastewater Treatment System. The Alum metering pumps discharge volumes are measured minimally once/day to ensure proper dosage rates. Monitoring equipment for pH, dissolved oxygen, phosphorous and conductivity measurements are calibrated according to the manufacture's instruction prior to use.

Effluent flow milltronics equipment is calibrated yearly to check that accuracy is within +/- 5% of full scale. The Influent flow meter failed the calibration in previous years and was not calibrated in 2025. The flow meter is scheduled for replacement in 2026. The milltronics units at all of the pumping stations were verified for accuracy by an outside contractor in June 2025. The milltronics units were replaced due to age in the fall of 2025 at the Maple Street and King Street Pumping Stations. Refer to Appendix G to review the 2025 Calibration Certificates.

5.0 Complaints

There were no complaints related to the Bruce Energy Center Wastewater Treatment System in 2025.

There were multiple odour complaints related to the wastewater collection system in Tiverton in 2025. Four households on Maple Street north of the pumping station complained of sewage odours in the neighbourhood. The odours have been ongoing since 2024. Staff investigated multiple items to pinpoint the source of the odour issue. It was believed the forcemain from the trailer park west of the area that dumped its sewage into the gravity sewermain on Maple Street was the source of the odours. A project took place in 2025 to re-route the trailer park sewage from the gravity main and tie it directly into the forcemain. This action seems to have eliminated the odours in the area.

One complaint for a sewer backup in Tiverton was received and video footage revealed the issue to be on private property.

A full listing of the complaints is available in Appendix H.

6.0 Bypasses, Overflows and Spills

The Bruce Energy Center Wastewater Treatment and Collection System had two bypasses, One Overflow and one sewage spill reported to the Spills Action Center, the Ministry of Health and the local Ministry office in 2025. Details for these events are available in Appendix I.

A spill also occurred at the BEC Lagoon site during the sludge removal project under the control of Bishop Water and their ECA# 1426-8ADGZH. The spill occurred on July

16, 2025, at 12:15pm. A geotube suffered a structural failure resulting in approximately 3m3 of treated sludge released to the environment. The spill was contained at the site and cleaned up by the contractor. The contractor reported the incident to the Spills Action Center as required.

6.1 Efforts to Reduce Bypasses, Overflows and Spills

Treatment System

There was no capital work completed to reduce bypasses, overflows or spills on the treatment system in 2025.

Collection System

Engineering commenced in 2025 for upgrades to the Maple Street Pumping Station. The upgrades will include larger pumps to assist with eliminating the possibility of overflows during wet weather events. A total of $25,825.26 was spent on the Engineering in 2025.

6.2 Conformance with Procedure F-5-1

All of the projects listed in section 6.1 above assist in achieving conformance with procedure F-5-1 by reducing the likelihood of a bypass, overflow or spill occurring.

Engineering commenced in 2025 for upgrades to the Lagoon influent chamber, valving and alum system which will allow for better optimization in the treatment process. The influent meter is scheduled to be replaced during this work and will assist in more accurate alum dosing. Total spent on engineering in 2025 was $30,497.62

A Sludge removal project at the lagoons was undertaken in 2025. Sludge was removed from cells 3 and 4. Removing the sludge from the cells will assist in conforming to procedure F-5-1 by providing optimal treatment at the site and ensuring that the effluent design objectives are met. The project was awarded to Bishop Water of Arnprior Ontario. The ministry was notified of the project works and the work commenced under Bishop’s ECA # 1426-8ADGZH. The cost of the project for the Bruce Energy Center Lagoon site was $330,000.

7.0 Modifications to Sewage Works

There were no alterations to the treatment works that required a Notice of Modification to Sewage Works in 2025.

There were no alterations to the system in 2025 that posed a significant drinking water threat as noted in the report provided by B. M. Ross and Associates.

8.0 Completion of Construction Works

There were no major projects in 2025 requiring a notice of completion.

APPENDIX A

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 2362-BXVTJS
Issue Date: February 26, 2021

The Corporation of the Municipality of Kincardine
1475 Concession 5
Rural Route 5
Kincardine, Ontario
N2Z 2X6

Site Location: Bruce Energy Centre Sewage Treatment Plant
Part 5, Plan 3R-7015
Lot Lake Range, 11 and 12, Concession 3
Municipality of Kincardine, County of Bruce

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:

upgrade, usage and operation of existing municipal sewage works, for the treatment of sanitary sewage and disposal of effluent through the cooling water channel of Bruce "B" Nuclear Power Generation Station to Lake Huron via a continuous discharge lagoon (Bruce Energy Centre Lagoon 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	2,200 m^3/d

Influent and Imported Sewage

Receiving Location	Types
In Collection System	Sanitary Sewage
At Sewage Treatment Plant	Septage/Leachate

Proposed Works:

Bruce Energy Centre Lagoon Treatment Plant

Disinfection System

- one (1) open channel equipped with UV disinfection system consisting of two (2) banks of UV lamps (one duty, one standby) arranged in series, each with a Peak Hourly Flow Rate of 256.67 m^3 /h;

Decommissioning and Removal

- decommissioning and removal of the existing disinfection system identified in the Existing Works;

Existing Works:

Bruce Energy Centre Lagoon Treatment Plant

Influent Chamber

- one (1) reinforced concrete inlet chamber with approximate dimensions of 3 m x 2 m x 2.85 SWD;
- emergency overflow pipe with Parshall flume discharging to the effluent outfall manhole;

Imported Sewage Receiving Facilities

- one (1) landfill leachate and septage receiving station (MH2A) to receive a maximum of 46 m^3/d of landfill leachate and a maximum of 200 m^3/d of septage, consisting of the following:
    - one (1) 3.0 m wide x 4.0 m long spill containment pad consisting of a compacted-clay liner with 2% horizontal slope towards a collection sump discharging through one (1) 100 mm diameter pipe to an existing manhole (MH2A);
    - one (1) leachate and septage unloading and transferring system consisting of one (1) 100 mm diameter HDPE pipe equipped with a waste haul tanker quick connect/disconnect hook-up system to unload leachate and septage into the sewer manhole for treatment;

- one (1) perimeter security fence equipped with standard access gate;
- controls and associated appurtenances;

Influent Flow Sampling Point

- automatic composite sampler at the inlet chamber;

Aerated Lagoon

- one (1) aerated lagoon with a minimum total liquid retention capacity of forty-five (45) days at the Rated Capacity of 2,200 m^3/d having the following minimum basin volume and depth:
  - Cell No. 1 with a minimum retention volume of 28,600 m^3 and a liquid depth of 3 m;
  - Cell No. 2 with a minimum retention volume of 28,600 m^3 and a liquid depth of 3 m;
  - Cell No 3 with a minimum retention volume of 21,900 m^3 and a liquid depth of 3 m;
  - Cell No 4 with a minimum retention volume of 21,900 m^3 and a liquid depth of 3 m;
- interconnecting piping to allow the operation of the lagoons is series or parallel mode of operation;

Aeration System

- Two (2) multi-stage centrifugal blowers (one duty, one standby), each rated at 802 L/s at 100 kPa (1,700 scfm at 14.7 psia) and driven by 75 kW (100 hp) motors;
- blower accessories and air piping;
- coarse bubble diffuser system;

Supplementary Treatment Systems

- Phosphorus Removal
  - two (2) alum metering pumps (one duty, one standby), each rated at 167 L/d;
  - one (1) 9,000 L heavy duty polyethylene tank for storage of liquid alum;

Disinfection System

- two (2) sodium hypochlorite metering pumps (one duty, one standby), each rated at 167 L/d;

- one (1) 450 L polyethylene tank for the storage of sodium hypochlorite;

Final Effluent Flow Measurement and Sampling Point

- one (1) reinforced concrete outlet chamber with approximately dimensions of 3 m x 2.5 m x 3.1 SWD;

- V-notch weir plate and flow monitoring equipment;

Control Building

- one (1) control building to house blowers, chemical storage tanks, metering pumps and portable water tank, including all controls and associated appurtenance;

Final Effluent Disposal Facilities

- one (1) effluent outfall trunk sewer discharging through the condenser cooling water channel of Bruce "B" Nuclear Power Generation Station to Lake Huron;

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 Daily Influent Flow" means the cumulative total sewage flow of Influent to the Sewage Treatment Plant during a calendar year divided by the number of days during which sewage was flowing to the Sewage Treatment Plant that year;

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

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

4. "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;

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

6. "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;

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

8. "*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);

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

10. "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;

11. "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;

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

13. "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);

14. "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;

15. "Influent" means flows to the Sewage Treatment Plant from the collection system and Imported Sewage;

16. "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;

17. "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;

18. "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;

19. "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;

20. "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;

21. "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;

22. "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;

23. "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;

24. "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;

25. "Owner" means The Corporation of the Municipality of Kincardine and its successors and assignees;

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

27. "Peak Hourly Flow Rate" (also referred to as maximum hourly flow or maximum hour flow) means the largest volume of flow to be received during a one-hour period for which the sewage treatment process unit or equipment is designed to handle;

28. "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;

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

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

31. "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;

32. "Separate Sewer Systems" means wastewater collection systems that comprised of Sanitary Sewers while

runoff from precipitation and snowmelt are separately collected in Storm Sewers;

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

34. "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;

35. "Storm Sewers" means pipes that collect and convey runoff resulting from precipitation and snowmelt (including infiltration and inflow);

36. "Works" means the approved sewage works, and includes Proposed Works, 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. CONSTRUCTION OF PROPOSED WORKS

1. All Proposed Works in this Approval shall be constructed and installed and must commence operation within five (5) years of issuance of this Approval, after which time the Approval ceases to apply in respect of any portions of the Works not in operation. In the event that the construction, installation and/or operation of any portion of the Proposed Works is anticipated to be delayed beyond the time period stipulated, the Owner shall submit to the Director an application to amend the Approval to extend this time period, at least six (6) months prior to the end of the period. The amendment application shall include the reason(s) for the delay and whether there is any design change(s).

2. Within thirty (30) days of commencement of construction, the Owner shall prepare and submit to the District Manager a schedule for the completion of construction and commissioning operation of the Proposed Works. The Owner shall notify the District Manager within thirty (30) days of the commissioning operation of any Proposed Works. Upon completion of construction of the Proposed Works, the Owner shall prepare and submit a statement to the District Manager, certified by a Professional Engineer, that the Proposed Works is constructed in accordance with this Approval.

3. Within one (1) year of completion of construction of the Proposed Works, a set of record drawings of the Works shall be prepared or updated. These drawings 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, nitrate as N, nitrite as N, 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.

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. 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.

2. The Owner shall operate and maintain the Sewage Treatment Plant such that the Final Effluent is disinfected continuously year-round.

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 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. Bi-weekly means once every two weeks.

    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.

4. 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. Influent flow to the Sewage Treatment Plant by continuous flow measuring devices and instrumentations, or in lieu of an actual installation of equipment, adopt the flow measurements of the Final Effluent for the purpose of estimating Influent flows if the Influent and Final Effluent streams are considered not significantly different in flow rates and quantities;

b. Final Effluent discharged from the Sewage Treatment Plant by continuous flow measuring devices and instrumentations, 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;

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

5. 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 measured volume of sludge accumulated in the lagoon cells in five year intervals and the estimated volume in the interim years and when sludge was disposed of during the reporting period, a summary of disposal locations and volumes of sludge disposed at each location;

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.

l. 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.

m. any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es) / equipment groups in the Proposed Works.

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

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 regarding general provisions is imposed to ensure that the Works are constructed and operated in the manner in which they were described and upon which approval was granted.

2. Condition 2 regarding change of Owner and Operating Agency is included to ensure that the Ministry records are kept accurate and current with respect to ownership and Operating Agency of the Works and to ensure that subsequent owners of the Works are made aware of the Approval and continue to operate the Works in compliance with it.

3. Condition 3 regarding construction of Proposed Works is included to ensure that the Works are constructed in a timely manner so that standards applicable at the time of Approval of the Works are still applicable at the time of construction to ensure the ongoing protection of the environment, and also ensure that the Works are constructed in accordance with the Approval and that record drawings of the Works "as constructed" are updated and maintained for future references.

4. Condition 4 regarding Bypasses is included to indicate that Bypass is prohibited, except in circumstances where the failure to Bypass could result in greater damage to the environment than the Bypass itself. The notification and documentation requirements allow the Ministry to take action in an informed manner and will ensure the Owner is aware of the extent and frequency of Bypass Events.

5. Condition 5 regarding Overflows is included to indicate that Overflow of untreated or partially treated sewage to the receiver is prohibited, except in circumstances where the failure to Overflow could result in greater damage to the environment than the Overflow itself. The notification and documentation requirements allow the Ministry to take action in an informed manner and will ensure the Owner is aware of the extent and frequency of Overflow Events.

6. Condition 6 regarding design objectives is imposed to establish non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

7. Condition 7 regarding compliance limits is imposed to ensure that the Final Effluent discharged from the Works to the environment meets the Ministry's effluent quality requirements.

8. Condition 8 regarding operation and maintenance is included to require that the Works be properly operated, maintained, funded, staffed and equipped such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented. As well, the inclusion of a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the Owner. Such a manual is an integral part of the operation of the Works. Its compilation and use should assist the Owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the Owner's operation of the Works.

9. Condition 9 regarding monitoring and recording is included to enable the Owner to evaluate and

demonstrate the performance of the Works, on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives and compliance limits.

10. Condition 10 regarding Limited Operational Flexibility is included to ensure that the Works are constructed, maintained and operated in accordance with the Approval, and that any pre-approved modification will not negatively impact on the performance of the Works.

11. Condition 11 regarding reporting is included to provide a performance record for future references, to ensure that the Ministry is made aware of problems as they arise, and to provide a compliance record for this Approval.

Schedule A

1. Application for Environmental Compliance Approval submitted by The Corporation of the Municipality of Kincardine received on July 3, 2020 for the proposed UV disinfection system upgrade, including design notes and calculations, plans and specifications prepared by B.M. Ross & Associates Limited.

Schedule B

Final Effluent Design Objectives

Concentration Objectives prior to completion of construction of all Proposed Works

Final Effluent Parameter	**Averaging Calculator**	**Objective** (milligrams per litre 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	0.8 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	5 mg/L (Non-Freezing Period: T ≥ 5°C - April 15 - December 15) 12 mg/L (Freezing Period: T < 5 °C)
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

Concentration Objectives upon completion of construction of all Proposed Works

Final Effluent Parameter	**Averaging Calculator**	**Objective**
CBOD5	Monthly Average Effluent Concentration	25 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	25 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	0.8 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	5 mg/L (Non-Freezing Period: T ≥ 5°C - April 15 - December 15) 12 mg/L (Freezing Period: T < 5 °C)
E. coli	Monthly Geometric Mean Density	*150 CFU/100 mL
pH	Single Sample Result	6.5 - 8.5 inclusive

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

Loading Objectives

Final Effluent Parameter	**Averaging Calculator**	**Objective** (maximum unless otherwise indicated)
CBOD5	Monthly Average Daily Effluent Loading	55 kg/d
Total Suspended Solids	Monthly Average Daily Effluent Loading	55 kg/d
Total Phosphorus	Monthly Average Daily Effluent Loading	1.8 kg/d
Total Ammonia Nitrogen	Monthly Average Daily Effluent Loading	11 kg/d (Non-Freezing Period: T ≥ 5°C - April 15 - December 15) 26.4 kg/d (Freezing Period: T < 5 °C)

Schedule C

Final Effluent Compliance Limits prior to completion of construction of all Proposed Works

Concentration Limits - Monthly Average

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Monthly Average Effluent Concentration	30 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	30 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	1.0 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	7.5 mg/L (Non-Freezing Period: T ≥ 5°C - April 15 - December 15) 15 mg/L (Freezing Period: T < 5 °C)
E. coli	Monthly Geometric Mean Density	*200 CFU/100 mL

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

Concentration Limits - Single Sample Result

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Single Sample Result	45 mg/L
Total Suspended Solids	Single Sample Result	45 mg/L
Total Phosphorus	Single Sample Result	1.5 mg/L
Total Ammonia Nitrogen	Single Sample Result	10 mg/L (Non-Freezing Period: T ≥ 5°C - April 15 - December 15) 20 mg/L (Freezing Period: T < 5 °C)
pH	Single Sample Result	between 6.0 - 9.5 inclusive
Total Residual Chlorine	Single Sample Result	0.02 mg/L**

**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

Final Effluent Compliance Limits upon completion of construction of all Proposed Works

Concentration Limits - Monthly Average

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Monthly Average Effluent Concentration	30 mg/L
Total Suspended Solids	Monthly Average Effluent Concentration	30 mg/L
Total Phosphorus	Monthly Average Effluent Concentration	1.0 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	7.5 mg/L (Non-Freezing Period: T $\geq$ 5°C - April 15 - December 15) 15 mg/L (Freezing Period: T < 5 °C)
E. coli	Monthly Geometric Mean Density	*200 CFU/100 mL
pH	Single Sample Result	between 6.0 - 9.5 inclusive

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

Concentration Limits - Single Sample Result

Final Effluent Parameter	Averaging Calculator	Limit (maximum unless otherwise indicated)
CBOD5	Single Sample Result	45 mg/L
Total Suspended Solids	Single Sample Result	45 mg/L
Total Phosphorus	Single Sample Result	1.5 mg/L
Total Ammonia Nitrogen	Single Sample Result	10 mg/L (Non-Freezing Period: T $\geq$ 5°C - April 15 - December 15) 20 mg/L (Freezing Period: T < 5 °C)
E. coli	Monthly Geometric Mean Density	*200 CFU/100 mL
pH	Single Sample Result	between 6.0 - 9.5 inclusive

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

Schedule D

Monitoring Program

Influent - Influent sampling point

Parameters	Sample Type	Minimum Frequency
BOD5	24 hour composite	Bi-Weekly
Total Suspended Solids	24 hour composite	Bi-Weekly
Total Phosphorus	24 hour composite	Bi-Weekly
Total Kjeldahl Nitrogen	24 hour composite	Bi-Weekly

Septage - when Septage is being off-loaded into the Imported Sewage Receiving Station (MH2A)

Parameters	Sample Type	Minimum Frequency
BOD5	Grab	during each event
Total Suspended Solids	Grab	during each event
Total Phosphorus	Grab	during each event
Total Kjeldahl Nitrogen	Grab	during each event
pH	Grab	during each event
Temperature	Grab	during each event
Oil and Grease	Grab	during each event

Landfill Leachate - when Landfill Leachate is being off-loaded into the Imported Sewage Receiving Station (MH2A)

Parameters	Sample Type	Minimum Frequency
BOD5	Grab	Bi-Weekly
Total Suspended Solids	Grab	Bi-Weekly
Total Phosphorus	Grab	Bi-Weekly
Total Kjeldahl Nitrogen	Grab	Bi-Weekly
pH	Grab	Bi-Weekly
Temperature	Grab	Bi-Weekly
Boron	Grab	Bi-Weekly
Iron (Total)	Grab	Bi-Weekly
Zinc (Total)	Grab	Bi-Weekly

Final Effluent - Final Effluent sampling point (**prior to completion of construction of all the Proposed Works)**

Parameters	Sample Type	Minimum Frequency
CBOD5	Grab	Bi-Weekly
Total Suspended Solids	Grab	Bi-Weekly
Total Phosphorus	Grab	Bi-Weekly
Total Ammonia Nitrogen	Grab	Bi-Weekly
Total Kjeldahl Nitrogen	Grab	Bi-Weekly
Nitrate as Nitrogen	Grab	Bi-Weekly
Nitrite as Nitrogen	Grab	Bi-Weekly
Alkalinity	Grab	Bi-Weekly
E. coli	Grab	Bi-Weekly
Total Residual Chlorine	Grab/Analyzer	Bi-Weekly
pH*	Grab/Probe/Analyzer	Bi-Weekly
Temperature*	Grab/Probe/Analyzer	Bi-Weekly
Un-ionized Ammonia**	As Calculated	Bi-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.

Final Effluent - Final Effluent sampling point (**upon completion of construction of all the Proposed Works)**

Parameters	Sample Type	Minimum Frequency
CBOD5	Grab	Bi-Weekly
Total Suspended Solids	Grab	Bi-Weekly
Total Phosphorus	Grab	Bi-Weekly
Total Ammonia Nitrogen	Grab	Bi-Weekly
Total Kjeldahl Nitrogen	Grab	Bi-Weekly
Nitrate as Nitrogen	Grab	Bi-Weekly
Nitrite as Nitrogen	Grab	Bi-Weekly
Alkalinity	Grab	Bi-Weekly
E. coli	Grab	Bi-Weekly
pH*	Grab/Probe/Analyzer	Bi-Weekly
Temperature*	Grab/Probe/Analyzer	Bi-Weekly
Un-ionized Ammonia**	As Calculated	Bi-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 pipings 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 blowers 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 free-board;

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.)

Ontario

Ministry of the Environment, Conservation and Parks

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: waterforms@ontario.ca
For any questions call 1-866-793-2588.

[A] SYSTEM PROFILE INFORMATION

Wastewater System Number *(if assigned)*

☐ New Profile
☐ Update Existing Profile

Name of System

Name of Municipality or Local Services Board

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):

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

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

PO Box	City/Town	Postal Code

☐ Dr ☐ Miss ☐ Mr ☐ Mrs ☐ Ms	Owner Contact First Name	Owner Contact Last Name	Owner Contact Job Title

Tel. No. ( ) - ext.	Fax Number ( ) -	Email address

[C] OPERATING AUTHORITY ☐ Check if same as owner

Legal Name of Operator

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

PO Box	City/Town	Postal Code

☐ Dr ☐ Miss ☐ Mr ☐ Mrs ☐ Ms	Operator Contact First Name	Operator Contact Last Name	Operator Contact Job Title

Tel. No. ( ) - ext.	Fax Number ( ) -	Email address

[D] 24/7 CONTACT

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

Tel. No. ( ) - ext.	Fax Number ( ) -	Email address

[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)

PO Box	City/Town	Postal Code

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 ☐ Chemical
☐ Grit Removal	☐ Polymer Addition	☐ Membrane Bioreactor (MBR)	☐ Anaerobic Lagoon	☐ Intermittent Sand Filter (after lagoons)	If chemical is used, specify:
☐ Other(specify):	☐ Other(specify):	☐ Sequencing Batch Reactor (SBR)	☐ Aerobic Lagoon	☐ Polishing Wetlands	☐ Nitrification
		☐ Rotating Biological Contactor (RBC)	☐ Other(specify):	☐ Polishing Lagoons	☐ Denitrification
		☐ Trickling Filter (TF)		☐ Other(specify):	☐ Other(specify):
		☐ Biological Aerated Filter (BAF)			
		☐ 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):

[I] EFFLUENT	
Effluent Disposal Method	Effluent Discharge Frequency
☐ Surface Water Receiving Water Body Name:	☐ 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):
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).

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 8894-9QDPS7 issued on November 25, 2014.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of the Environmental Protection Act
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 26th day of February, 2021

Aziz Ahmed, P.Eng.
Director
appointed for the purposes of Part II.1 of the

LW/

c: District Manager, DWECD, MECP Owen Sound
Andrew Garland, P.Eng., B.M. Ross & Associates Limited

Ontario

ENVIRONMENTAL COMPLIANCE APPROVAL
For a Municipal Sewage Collection System

ECA Number: 088-W601
Issue Number: 2

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:

Kincardine, The Corporation of the Municipality of

1475 Concession #5 Conc R.R. 5
Kincardine, ON N2Z 2X6

For the following Sewage Works:

Kincardine and BEC Wastewater 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 15th day of May, 2025

Signature

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

Schedule A: System Information

System Owner	**Kincardine, The Corporation of the Municipality of**
ECA Number	**088-W601**
System Name	**Kincardine and BEC Wastewater Collection System**
ECA Issue Date	**May 15th, 2025**

1.0 ECA Information and Mandatory Review Date

ECA Issue Date	May 15th, 2025
Application for ECA Review Due Date	June 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
Kincardine Wastewater Treatment Facility	110000864	520 Bruce Avenue, Kincardine	A-500-1121679176	February 11, 2022
Kincardine Wastewater Treatment -Effluent Station	110000864	169 Mahood-Johnston Drive	A-500-1121679176	February 11, 2022
Bruce Energy Center Wastewater Treatment Facility	110002700	1842 Concession 2, Tiverton	2362-BXVTJS	February 26, 2021

2.2 Other Documents

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

3.0 Asset Management Plan

Document Title	Version
The 2022 Asset Management Plan for the Municipality of Kincardine	June 2022

4.0 Pollution Prevention and Control Plan (if applicable)

Document Title	Version
N/A	

5.0 Operating Authority

System	Operating Authority
Kincardine and BEC Wastewater Collection System	The Municipality of Kincardine

Schedule B: Municipal Sewage Collection System Description

System Owner	**Kincardine, The Corporation of the Municipality of**
ECA Number	**088-W601**
System Name	**Kincardine and BEC Wastewater Collection System**
ECA Issue Date	**May 15th, 2025**

1.0 System Description

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

Overview

The Kincardine and BEC Wastewater Collection System consists of works for the collection and transmission of sewage.

The Kincardine Wastewater Collection System consists of trunk sewers, separate sewers, 0 Kms of combined sewers, 11 sewage pumping stations, and forcemains, with discharge into the Kincardine Wastewater Treatment Plant. Treated wastewater then flows over to the Kincardine Wastewater Treatment Effluent Station before discharging to Lake Huron

The Bruce Energy Center (BEC) Wastewater Collection System consists of trunk sewers, separate sewers, 0 KM of combined sewers, 4 sewage pumping stations, and forcemains, with discharge into the Bruce Energy Center Wastewater Treatment Plant. Treated wastewater flows from the BEC Wastewater Treatment Plant to Lake Huron.

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
Kincardine Wastewater Collection System	2022-02-07
BEC Wastewater Collection System	2022-02-04

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:

[Kincardine Wastewater Collection-Connaught Park Sewage Pumping Station]

Asset ID and Name	S-CPPS Kincardine Wastewater Collection-Connaught Park Sewage Pumping Station
Site Location	141 Broadway Street, Kincardine
Latitude and Longitude	Lat: 44.18412 Lon: 81.63664
Coordinates (optional)	N 4892519.0259 E449116.1074 NAD1983 Zone 17N
Description	A wet well sewage pumping station located in Connaught Park, adjacent to the southeast portion of the former horse racing track, consisting of a two (2) cell wet well having a dimension of 8m by 4m with associated building
Pumping Station Capacity	88.5L/s
Equipment	Three (3) variable speed submersible pumps, two (2) duty, one (1) standby, having a firm design capacity of 88.5L/s at 25.2m Total Dynamic Head (TDH), one (1) space for future pump, complete with electrical and electronic control systems, a radar level transmitter with back-up float switches for each cell, discharge piping, ventilation system, air release valves and flow meter
Emergency Storage	
Equipment: Associated controls and appurtenances	Equipped with an automated rake bar screen; complete with electrical and electronic control systems, a radar level transmitter with back-up float switches for each cell, discharge piping, ventilation system, air release valves and flow meter, and all other appurtenances necessary to have a complete and operable pumping station
Sewage Pumping Station – Collection System Overflow	A 375mm overflow pipe discharges to Lake Huron via the stormwater system on Broadway Street. The emergency storage volume is 284.8m^3, the response time prior to overflow at peak flow is 53.6 minutes.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	A 150 kW standby diesel generator set with a 1265L fuel tank.
Notes	Pumps sewage via a 250mm forcemain to Broadway and Huron Terrace, sewage then flows through the gravity sewers over to the Huron Terrace Pumping Station.

[Kincardine Wastewater Collection-Durham Street Sewage Pumping Station]

Asset ID and Name	DS-DSPS Kincardine Wastewater Collection-Durham Street Sewage Pumping Station
Site Location	867 Olde Victoria Street, Kincardine
Latitude and Longitude	Lat: 44.17738 Lon: 81.63061
Coordinates (optional)	N 4891766.5085 E 449594.5897 NAD83 Zone 17N
Description	A 2.7 m diameter submersible sewage pumping station with building located on part of Lot “A” south of Durham Street, east of Olde Victoria Street, in the town of Kincardine
Pumping Station Capacity	83 L/s
Equipment	Two (2) Flygt NP-3202.095-0702 70 HP submersible centrifugal non-clog sewage pumps, each rated for 83 L/s at 37 m TDH (one (1) duty and one (1) standby) complete with VFDs. The 2.7 m diameter wet well has 26.7 m3 capacity. Note, only one pump can operate at a time. The station is connected to a 150 mm forcemain discharging to the gravity sewer on Durham St. at Princes St.
Emergency Storage	None
Equipment: Associated controls and appurtenances	PLC with HMI communicating with Municipality’s SCADA system. Magnetic flowmeter, radar level transducer and float switches for, monitoring, controlling and alarming. Other ancillary alarm and control systems.
Sewage Pumping Station – Collection System Overflow	250 mm diameter overflow with gate valve from the wet well to the adjacent storm sewer catch basin on Olde Victoria St. Emergency storage volume is approximately 17 m³, and response time prior to overflow at peak flow is 3.5 minutes.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	One (1) Sommers DGPSW100STT3 100 kW 600V 3 Ph outdoor diesel emergency standby generator with a 910 L fuel tank.
Notes	Discharges to a 150 mm forcemain on Durham Street which leads to the gravity sewer system on Princes Street. Ultimately the sewage is conveyed to the Huron Terrace Sewage Pumping Station.

[Kincardine Wastewater Collection-Goderich Street Sewage Pumping Station]

Asset ID and Name	S-GSPS Kincardine Wastewater Collection-Goderich Street Sewage Pumping Station
Site Location	7 Goderich Street, Kincardine
Latitude and Longitude	Lat: 44.16045 Lon: 81.65676
Coordinates (optional)	N 4889900.1874 E 447486.4265 NAD1983 Zone 17N
Description	A wet well-dry well type sewage pumping station with building located on Goderich approximately 290 meters west of Bruce Avenue
Pumping Station Capacity	38.7 L/s
Equipment	Two (2) raw sewage pumps each capable of 38.7 L/s against a total dynamic head of 30.1m, one (1) bar screen, 4.9m by 3.2m wet well of 38.1 m^3 capacity. The station is connected to one 250mm diameter forcemain on Goderich Street discharging to the Kincardine Lagoon system.
Emergency Storage	
Equipment: Associated controls and appurtenances	Interconnecting piping between the wet well and dry well, associated valves, appurtenances and electrical controls, high level alarm system
Sewage Pumping Station – Collection System Overflow	One 375mm valved overflow pipe discharging to Lake Huron The emergency storage volume is 37.2 m^3, the response time prior to overflow at peak flow is 10.7 minutes.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	One 75 kW Diesel generator set with a 910L fuel tank
Notes	Discharging to the Wastewater Treatment Plant located at 520 Bruce Avenue via a 250mm forcemain.

[Kincardine Wastewater Collection-Harbour Lift Sewage Pumping Station]

Asset ID and Name	S-HLPS Kincardine Wastewater Collection-Harbour Lift Sewage Pumping Station
Site Location	249 Station Beach Road, Kincardine
Latitude and Longitude	Lat: 44.17618 Lon: 81.63871
Coordinates (optional)	N 4891638.9009 E 448945.3474 NAD1983 Zone 17N
Description	A sewage pumping station serving the Kincardine Marina Area, located on the west side of Huron Terrace in the Municipality of Kincardine; consisting of a 1.8m diameter wetwell with above ground weatherproof pump control panel (no building)
Pumping Station Capacity	5.7L/s
Equipment	Consisting of a 1.8m diameter wetwell with two (2) submersible pumps (one standby), each rated at approx. 5.7L/s at 6.4 Total Dynamic Head, complete with an air vent pipe and approx. 5m of 100mm diameter forcemain to connect to existing 100mm forcemain discharging to the Huron Terrace Sewage Pumping Station
Emergency Storage	
Equipment: Associated controls and appurtenances	
Sewage Pumping Station – Collection System Overflow	No overflow location. Sewage would backup into gravity sewer system on Station Beach Road.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	None
Notes	Discharging to the Huron Terrace Pumping Station via a 100mm diameter forcemain.

[Kincardine Wastewater Collection-Hunter's Ridge Sewage Pumping Station]

Asset ID and Name	S-HRPS Kincardine Wastewater Collection-Hunter's Ridge Sewage Pumping Station
Site Location	540 Hunter Street, Kincardine
Latitude and Longitude	Lat: 44.16621 Lon: 81.62666
Coordinates (optional)	N 4890522.6538 E 449898.9295 NAD1983 Zone 17N
Description	A Sanitary sewage pumping station construction in the centre of Hunter Street Cul-de-Sac consisting of an inground wet well, adjacent above ground weatherproof pump control panel, with adjacent inground chamber housing piping and valves and gravity drain pipe back to sewage pumping station wet well.
Pumping Station Capacity	3.53 L/s
Equipment	Two (2) submersible sewage pumps, each with a rated capacity of 3.53 L/s at a Total Dynamic Head of 12.2m, the 3.0m diameter wet well has approximately 12.7 m^3 of capacity. The station is connected to a 75mm diameter forcemain discharging to the gravity sewers on Hunter Street located approximately 45m south of Palmateer Drive.
Emergency Storage	
Equipment: Associated controls and appurtenances	Above ground weatherproof pump control panel with connection for portable generator; liquid level and alarm level float control system
Sewage Pumping Station – Collection System Overflow	Valved gravity overflow pipe connected to storm piping that discharges to the Penetengore River with the final receiving body being Lake Huron. The emergency storage volume is approximately 25m^3, the response time prior to overflow at peak flow is approximately 145.5 minutes.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	None
Notes	Discharges via a 75mm forcemain on Hunter Street to the gravity sewers approx. 45m south of Palmateer, sewage flows to the Park Street Pumping Station.

[Kincardine Wastewater Collection-Huron Terrace Sewage Pumping Station]

Asset ID and Name	S-HTPS Kincardine Wastewater Collection-Huron Terrace Sewage Pumping Station
Site Location	733 Huron Terrace, Kincardine
Latitude and Longitude	Lat: 44.17616 Lon: 81.63819
Coordinates (optional)	N 4891635.7805 E 448984.051 NAD1983 Zone 17N
Description	The main sewage pumping station consisting of a wet well and screen building; valve chamber and electrical building located on Huron Terrace
Pumping Station Capacity	300L/s
Equipment	A submersible type sewage pumping station equipped with three (3) submersible pumps (two (2) duty + one (1) standby) with variable frequency drives, each rated at 150 L/s at a total Dynamic Head of 45.6m, 1 automated bar screen, the 2 cell (5.2m by 3.25m and 5.5m by 3.6m) wet well of 155.6 m^3 capacity. The station is connected to a 450mm forcemain discharging to the Kincardine Wastewater Treatment Facility.
Emergency Storage	
Equipment: Associated controls and appurtenances	All mechanical, electrical, instrumentation and control systems, standby power, piping, pumps, valves, automated bar screen and appurtenances essential for the proper, safe and reliable operation of the works.
Sewage Pumping Station – Collection System Overflow	A 400mm emergency overflow pipe from the wet well to the Penetangore River, with the final received being Lake Huron. The emergency storage volume is 47.4m^3, the response time prior to overflow at peak flow is 2.6 minutes.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	One 450 kW Diesel generator set with a 3218 L fuel tank
Notes	Discharging to a 450mm diameter forcemain on Huron Terrace, sewage flows through approx. 2.6km of forcemain over to the Kincardine Wastewater Treatment Plant. New pumping station under ECA 2627-BRRGZQ to be constructed in 2022 Former C of A 3-1077-80-006

[Kincardine Wastewater Collection-Kincardine Avenue Pumping Station]

Asset ID and Name	S-KAPS Kincardine Wastewater Collection-Kincardine Avenue Pumping Station
Site Location	570 Kincardine Avenue, Kincardine
Latitude and Longitude	Lat: 44.16191 Lon: 81.63509
Coordinates (optional)	N 4890051.3422 E 449223.6042 NAD1983 Zone 17N
Description	A wet well-dry well type sewage pumping station with building located on Kincardine Avenue approximately 220m east of Park Street.
Pumping Station Capacity	39.3L/s
Equipment	A wet well/dry well with two (2) sewage pumps each capable of 39.3 L/s against a total dynamic head of 19.9m, one(1) bar screen, 4.9m by 2.7m wet well of 30.9 m^3 capacity. The station is connected to a 250mm diameter forcemain discharging to Kincardine Avenue then over to the Kincardine Wastewater Treatment Facility
Emergency Storage	
Equipment: Associated controls and appurtenances	Interconnecting piping between the wet well and dry well, associated valves, appurtenances and electrical controls, high level alarm system
Sewage Pumping Station – Collection System Overflow	One 375mm overflow pipe located approximately 95m west of the pumping station flowing to the Stewart Drain, then over to the Penetangore River which flows to Lake Huron. The emergency storage volume is approx. 1.32m^3, the response time prior to overflow at peak flow is 34 secs.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	One 40kW diesel generator set with a 910L fuel tank
Notes	Discharges to a 250mm diameter forcemain which connects to the Kincardine Wastewater Treatment Plant.

[Kincardine Wastewater Collection-Park Street Sewage Pumping Station]

Asset ID and Name	S-PSPS Kincardine Wastewater Collection-Park Street Sewage Pumping Station
Site Location	494 Scott Street, Kincardine
Latitude and Longitude	Lat: 44.16852 Lon: 81.63334
Coordinates (optional)	N 4890783.5448 E 449368.6488 NAD1983 Zone 17N
Description	Sewage Pumping Station with building located on the unopened Park Street Road allowance approximately 40m south of Scott Street.
Pumping Station Capacity	99.2 L/s
Equipment	Three (3) 66.3 L/s sewage pumps (two of which having a capacity of pumping 99.2 L/s when operated in parallel, one pump as standby, one bar screen, 2.44m by 6.3 wet well of 38.4 m^3 capacity. The station is connected to a 300mm diameter forcemain discharging to the Kincardine Wastewater Treatment Plant.
Emergency Storage	
Equipment: Associated controls and appurtenances	
Sewage Pumping Station – Collection System Overflow	A 300mm diameter emergency overflow pipe from the wet well discharges to the Stewart Drain which flows into the Penetangore River with the final receiving body being Lake Huron. The emergency storage volume is 55.5m^3, the response time prior to overflow at peak flow is 17.2 minutes.
Receiving Stations (if applicable)	Septage receiving station for hauled sewage, deposited directly into wet well via a manhole.
Odour Control Units	None
Standby Power	One 75 kW Diesel Generator set with a 910L fuel tank
Notes	Discharging via a 300mm diameter forcemain to the Kincardine Wastewater Treatment Facility.

[Kincardine Wastewater Collection-Queen Street Sewage Pumping Station]

Asset ID and Name	S-QSPS Kincardine Wastewater Collection-Queen Street Sewage Pumping Station
Site Location	601 Queen Street, Kincardine
Latitude and Longitude	Lat: 44.17221 Lon: 81.63831
Coordinates (optional)	N 4891192.4408 E 448976.9324 NAD1983 Zone 17N
Description	A sewage pumping station consisting of a 1.2 m diameter wet well located on the unopened road allowance north of 601 Queen Street with an aboveground weatherproof pump control panel (no building). Station is a prefabricated Environment One (E/One) W-Series Quadplex Fiberglass Grinder Pump Station model #WF48X150QDL-078 FRP.
Pumping Station Capacity	1.4 L/s with two (2) pumps in operation, in an emergency all four (4) pumps would operate at 2.8 L/s
Equipment	Four (4) 1 HP submersible grinder pumps with an estimated pump capacity of 0.70 L/s each and a 1.2 m wet well of approximately 2.5 m^3 capacity. The station is connected to a 38 mm diameter low pressure forcemain discharging to the Queen Street gravity sewer and ultimately to the Kincardine Wastewater Treatment Plant.
Emergency Storage	
Equipment: Associated controls and appurtenances	Aboveground pump control panel with alarm system.
Sewage Pumping Station – Collection System Overflow	No overflow.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	None
Notes	Discharges to a 38 mm diameter forcemain on Queen Street which leads to the Gravity sewer system on Queen Street. Ultimately the sewage is conveyed to the Huron Terrace Sewage Pumping Station.

[Kincardine Wastewater Collection-Groundwater Pumping Station]

Asset ID and Name	S-GWPS Kincardine Wastewater Collection-Groundwater Pumping Station
Site Location	139 Valentine Avenue, Kincardine
Latitude and Longitude	Lat: 44.15435 Lon: 81.64148
Coordinates (optional)	N 4889214.6691 E 448704.1416 NAD1983 Zone 17N
Description	A 1.5m diameter precast concrete pumping station with aboveground pump control panel (no building), located at 139 Valentine Avenue, the former landfill site.
Pumping Station Capacity	3.0 L/s
Equipment	One (1) 3.0 L/s submersible pump. The Station is connected to a 75mm forcemain discharging to the Kincardine Wastewater Treatment Plant Aeration Pond.
Emergency Storage	
Equipment: Associated controls and appurtenances	Above ground pump control panel with valve chamber, piping, and electrical
Sewage Pumping Station – Collection System Overflow	No Overflow chamber or piping.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	None
Notes	Discharges to a 75mm forcemain into the aeration pond at the Kincardine Wastewater Treatment Plant.

[Kincardine Wastewater Collection-Leachate Pumping Station]

Asset ID and Name	S-LPS Kincardine Wastewater Collection-Leachate Pumping Station
Site Location	139 Valentine Avenue, Kincardine
Latitude and Longitude	Lat: 44.15369 Lon: 81.63914
Coordinates (optional)	N 4889141.2421 E 448889.7012 NAD1983 Zone 17N
Description	A 1.5m diameter precast concrete pumping station with aboveground pump control panel (no building), located at 139 Valentine Avenue, the former landfill site.
Pumping Station Capacity	2.8 L/s
Equipment	One (1) 2.8 L/s submersible pump, 1.5m diameter wet well of 2.8m^3 capacity. The Station is connected to a 75mm forcemain discharging to the Kincardine Wastewater Treatment Plant Aeration Pond. Emergency storage tank/pipe volume is approx. 6.6m^3
Emergency Storage	
Equipment: Associated controls and appurtenances	Above ground pump control panel with valve chamber, piping, and electrical
Sewage Pumping Station – Collection System Overflow	No Overflow chamber or piping
Receiving Stations (if applicable)	Leachate collection receiving station from Kincardine Waste Management Center. Maximum allowable leachate received 33m3/day.
Odour Control Units	None
Standby Power	None
Notes	Discharges to a 75mm forcemain into the aeration pond at the Kincardine Wastewater Treatment Plant.

[BEC Wastewater Collection-Inverhuron Park Sewage Pumping Station]

Asset ID and Name	S-IPPS BEC Wastewater Collection-Inverhuron Park Sewage Pumping Station
Site Location	19 Jordan Road, Inverhuron
Latitude and Longitude	Lat: 44.29975 Lon: 81.58761
Coordinates (optional)	N 4905333.0978 E 453127.6209 NAD1983 Zone 17N
Description	A Sewage Pumping Station consisting of an in-ground pre-manufactured fiberglass reinforced plastic wet well 1.8m in diameter with an aboveground weatherproof pump control panel (no building) located near the gatehouse inside the boundary of the Inverhuron Provincial Park
Pumping Station Capacity	9.8 L/s
Equipment	Two (2) 18 HP submersible pumps (one duty and one standby), 1.8m wet well of 3.5 m^3 capacity. The station is connected to a 100mm forcemain discharging to Albert Road then over to the Bruce Energy Center Treatment Plant.
Emergency Storage	
Equipment: Associated controls and appurtenances	Aboveground Pump control Panel, electrical equipment, instrumentation, piping, pumps, valves, and appurtenances essential for the proper operation of the sewage works.
Sewage Pumping Station – Collection System Overflow	A 1.5m diameter precast bypass chamber located on the forcemain immediately downstream of the pumping station. There is no overflow from the SPS. In event of an emergency, sewage flow to the SPS halts. The Inverhuron Provincial Park has installed emergency overflow tanks at their major SPS within the Park, this allows for 75m^3 of upstream emergency storage. Note: there is also about 2.5m^3 of emergency storage at the SPS.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	None
Notes	Discharges to a 100mm forcemain that connects to the 200mm forcemain on Albert Street then goes to the Bruce Energy Center Treatment Facility.

[BEC Wastewater Collection-King Street Sewage Pumping Station]

Asset ID and Name	S-KSPS BEC Wastewater Collection-King Street Sewage Pumping Station
Site Location	41 King Street, Tiverton
Latitude and Longitude	Lat: 44.27242 Lon: 8154054
Coordinates (optional)	N 4902270.3353 E 456860.5855 NAD1983 Zone 17N
Description	Submersible type sewage pumping station located on Lot 36 west of King Street in Tiverton approximately 244m south of Lois Street with concrete block control building structure with yard piping, bypass chamber and overflow pipe.
Pumping Station Capacity	13.8 L/s
Equipment	Two (2) submersible pumps (1 duty and 1 standby) each rated at 13.8 L/s at 22.2m Total Dynamic Head, one bar screen, 2438mm diameter wet well of 6.4 m^3 capacity. The station is connected to a 100mm forcemain on King Street that connects to the gravity sewage system approximately 244m south and then flows to the Maple Street pumping station.
Emergency Storage	
Equipment: Associated controls and appurtenances	
Sewage Pumping Station – Collection System Overflow	A 200mm overflow pipe discharges from the bypass chamber to a stream which flows west to Little Sauble River then to Lake Huron. The emergency storage volume is 14.4m^3, the response time prior to overflow at peak flow is 46.2 minutes.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	A 10 kW diesel generator with a 454L fuel tank
Notes	Discharges via a 100mm forcemain on King Street to the gravity sanitary system approximately 244m south then flows over to maple street pumping station.

[BEC Wastewater Collection-Lake Street Sewage Pumping Station]

Asset ID and Name	S-LSPS BEC Wastewater Collection-Lake Street Sewage Pumping Station
Site Location	125 Lake Street
Latitude and Longitude	Lat: 44.28502 Lon: 81.59308
Coordinates (optional)	N 4903699.6602 E 452679.8117 NAD1983 Zone 17N
Description	Sewage pumping station consisting of approximately 3.5m diameter wet well, with aboveground weatherproof pump control panel (no building)
Pumping Station Capacity	5.6L/s
Equipment	Two (2) submersible centrifugal sewage pumps (one to act as standby), each rated at 5.6 L/s at 27.5m total dynamic head, 3.0m diameter wet well of 8.1m^3 capacity. The station is connected to a 75mm forcemain discharging to the Bruce Energy Center Treatment Facility.
Emergency Storage	
Equipment: Associated controls and appurtenances	Above ground pump control panel, emergency overflow, temporary bypass connection and surge relief valve;
Sewage Pumping Station – Collection System Overflow	Overflow to valve/Bypass chamber with 200mm overflow pipe to Lake Huron. The emergency storage volume is 9.2m^3, the response time prior to overflow at peak flow is 47.8 minutes.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	None
Notes	Discharges via a 75mm forcemain to the Bruce Energy Center Wastewater Treatment Facility.

[BEC Wastewater Collection-Maple Street Sewage Pumping Station]

Asset ID and Name	S-MSPS BEC Wastewater Collection-Maple Street Sewage Pumping Station
Site Location	21 Maple Street, Tiverton
Latitude and Longitude	Lat: 44.26788 Lon: 81.54953
Coordinates (optional)	N 4901771.2456 E 456144.0079 NAD1983 Zone 17N
Description	Submersible type sewage pumping station located at 21 Maple Street with a concrete block control building structure, yard piping, bypass chamber, and overflow pipe
Pumping Station Capacity	29.6 L/s
Equipment	Two (2) submersible pumps (1 duty and 1 standby) each rated at 29.6 L/s at 10.0 Total dynamic head. one bar screen, 2438mm diameter wet well of 9.2 m^3 capacity. The Station is connected to a 200mm forcemain discharging to the Bruce Energy Center Wastewater Treatment Facility.
Emergency Storage	
Equipment: Associated controls and appurtenances	
Sewage Pumping Station – Collection System Overflow	The 300mm overflow pipe discharges into a creek that flows into Tiverton Creek then west to Lake Huron. The emergency storage volume is 19.2m^3, the response time prior to overflow at peak flow is 7.2 minutes.
Receiving Stations (if applicable)	None
Odour Control Units	None
Standby Power	A 10 kW Diesel Generator with a 454 L fuel tank
Notes	Discharges via a 200mm forcemain to the Bruce Energy Center Wastewater Treatment Facility.

[Combined Sewage Pumping Stations] Not Applicable

Asset ID and Name	N/A
Site Location	
Latitude and Longitude	
Coordinates (optional)	
Description	
Pumping Station Capacity	
Equipment	
Emergency Storage	
Equipment: Associated controls and Appurtenances	
Sewage Pumping Station – Collection System Overflow	
Receiving Stations (if applicable)	
Odor Control Units	
Standby Power	
Notes	

Real-Time Control

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

	Description
Process Equipment/System Elements	Radar Level Measurement for pump control Ultrasonic level measurement for pump control
Flow Measurement Locations	Where present at SPS's, flow meters are used for monitoring purposes but do not provide operational control
Level Measurement Locations	Radar level measurement for control of pumps at: Connaught Park SPS Huron Terrace SPS Durham Street SPS Ultrasonic level measurement for control of pumps at: Durham Street SPS Goderich Street SPS Harbour Lift SPS Hunter's Ridge SPS Kincardine Ave SPS Park Street SPS Queen Street SPS Groundwater Leachate King Street SPS Inverhuron Park SPS Lake Street SPS Maple Street SPS
Other Instrumentation and Controls	Float switches are provided for pump control (primary control for stations without ultrasonic or radar level measurement, backup control for stations with ultrasonic or radar level measurement)

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			

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			

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)
STM-2358/ Connaught Park SPS Overflow		Lat: 44.18372 Lon: 81.63853	Lat: 44.18372 Lon: 81.63853
STM-1436/ Hunter's Ridge SPS Overflow		Lat: 44.16708 Lon: 81.62560	Lat: 44.17686 Lon: 81.63834
SM-850/ Park Street SPS Overflow		Lat: 44.16810 Lon: 81.63360	Lat: 44.17686 Lon: 81.63834

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)
SM-851	Sanitary Main-Kincardine WWC Durham Street SPS Overflow Pipe	Lat: 44.17710 Lon: 81.63025	Lat: 44.17686 Lon: 81.63834
SM-947	Sanitary Main-Kincardine WWC Goderich Street SPS Overflow Pipe	Lat: 44.16057 Lon: 81.65708	Lat: 44.16057 Lon: 81.65708
SM-1000	Sanitary Main-Kincardine WWC Huron Terrace SPS Overflow Pipe	Lat: 44.17659 Lon: 81.63801	Lat: 44.17686 Lon: 81.63834
SM-17	Sanitary Main-Kincardine WWC Kincardine Avenue SPS Overflow Pipe	Lat: 44.16240 Lon: 81.63623	Lat: 44.17686 Lon: 81.63834
SM-255	Sanitary Main- BEC WWC King Street SPS Overflow Pipe	Lat: 44.27198 Lon: 81.54066	Lat: 44.29102 Lon: 81.59161
SM-1133	Sanitary Main-BEC WWC Maple Street SPS Overflow Pipe	Lat: 44.26794 Lon: 81.54933	Lat: 44.27230 Lon: 81.60427
SM-1134	Sanitary Main-BEC WWC Lake Street SPS Overflow Pipe	Lat: 44.28514 Lon: 81.59328	Lat: 44.28514 Lon: 81.59328
STM-2422	Sanitary Main-Kincardine WWC Durham Street SPS Overflow Pipe	Lat: 44.17743 Lon: 81.63072	Lat: 44.17758 Lon: -81.63037

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			

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

System Owner	**Kincardine, The Corporation of the Municipality of**
ECA Number	**088-W601**
System Name	**Kincardine and BEC Wastewater Collection System**
ECA Issue Date	**May 15th, 2025**

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#
1	May 15, 2025	Upgrades to Durham Street Sewage Pumping Station	Archived	2

Schedule D: General

System Owner	**Kincardine, The Corporation of the Municipality of**
ECA Number	**088-W601**
System Name	**Kincardine and BEC Wastewater Collection System**
ECA Issue Date	**May 15th, 2025**

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 The Corporation of the Municipality of Kincardine, 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 ECA 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 ECA 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 ECA.

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 4.1.4 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 Modify or replace 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 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 Add 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 e) 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 f) 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 storage 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%, where prior to the increase the pumping station was designed to transmit a Peak Hourly Flow of greater than 30 L/s.

6.6.4 An increase in the capacity of an existing Pumping Station Capacity that results in a Peak Hourly Flow of greater than 40 L/s, where prior to the increase the pumping station was designed to transmit a Peak Hourly Flow of less than 30 L/s.

a) Notwithstanding 6.6.3 and 6.6.4, upgrades to the Durham Street SPS from 27 L/s to 83 L/s are permitted.

6.6.5 Any increase in Collection System Overflows that is not offset by measures taken elsewhere in the Authorized System.

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

6.6.7 Deterioration of the normal operation of municipal STPs and/or the Authorized System.

6.6.8 A negative impact on the ability to undertake monitoring necessary for the operation of the Authorized System.

6.6.9 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 Alterations 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 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 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 June 14, 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	**Kincardine, The Corporation of the Municipality of**
ECA Number	**088-W601**
System Name	**Kincardine and BEC Wastewater Collection System**
ECA Issue Date	**May 15th, 2025**

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 frequency 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 June 14, 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, including:

i In event of a spill or overflow to a stormwater management system, the Owner is responsible to immediately start cleanup measures for the spill (or overflow) and the stormwater management system. The Owner shall notify the District Manager on the spill and SWM system cleanup efforts.

ii The Owner shall prepare a spill prevention/contingency plan, that clearly outlines the procedures/response plan for a sanitary overflow event into a SWM pond including notification procedures, contingency measures to prevent spill, sampling plan for the spill or overflow, and clean up procedures that will be carried out for the spill, backflow or overflow, which will include cleaning the contaminated stormwater management system.

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.

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 June 14, 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 December 14, 2022 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 December 14, 2022 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 December 14, 2022 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 a 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 June 14, 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 June 14, 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 include 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 December 14, 2023.

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 December 14, 2023;

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 June 14, 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 November 10th, 2022.

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 of that the previous PPCP was finalized.

Sewer Model

8.3 The Owner shall prepare a new/updated Sewer model, within three (3) years of November 10th, 2022, 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

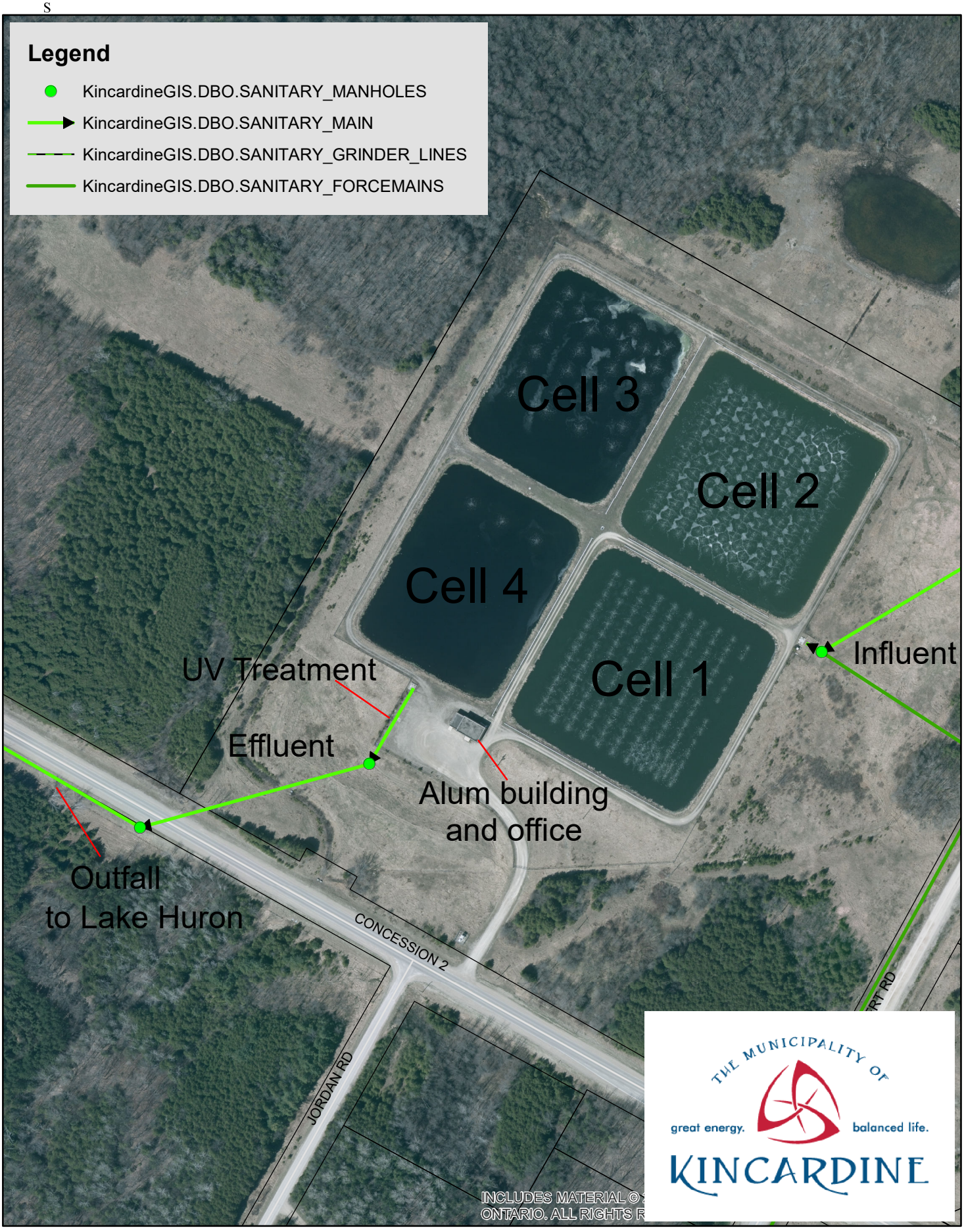
System Owner	**Kincardine, The Corporation of the Municipality of**
ECA Number	**088-W601**
System Name	**Kincardine and BEC Wastewater Collection System**
ECA Issue Date	**May 15th, 2025**

1.0 Residue Management System

1.1 Not Applicable:

APPENDIX B

Bruce Energy Center Lagoons



October 31, 2022

BEC Wastewater Collection System

Lake Huron

Inverhuron

Tiverton

BEC
Industrial Park

INVERHURON PARK
PUMP STATION
(S-IPPS)

EFFLUENT PIPE TO
LAKE HURON

BEC WW
TREATMENT
(S-BEC)

CELL 4
(LA-07)

CELL 3
(LA-06)

CELL 1
(LA-04)

CELL 2
(LA-05)

SM-1134

LAKE ST PUMP
STATION
(S-LSPS)

MAPLE ST
PUMP STATION
(S-MSPS)

SM-1133

KING ST PUMP
STATION
(S-KSPS)

SM-35S

LAKE ST
VICTORIA ST
PINE ST
WELLINGTON ST
WOOD ST
CAYLEY ST
VICTORIA ST
ROBBIE LN
JORDAN RD
ALMA ST
ALBERT RD
CEDARWOOD DR (PVT)
CHERRYWOOD BLVD (PVT)
MAPLEWOOD BLVD
(PVT)
APPLEWOOD BLVD (PVT)
RICHARDS DR
WHISPERING WOODS
SHADY LN (PVT)
WHISPER LN
(PVT)
DANIEL
ST
JOHN ST
RUFF RD (PVT)
ARCHIE ST (PVT)
CEDAR DR (PVT)
BRUCE ROAD 15
CONCESSION 2
TIE RD
BRUCE ROAD 20
FAWCETT DR
BRUCE ROAD 23
SIDEROAD E/F
SIDEROAD 1/1
FERNANDO RD (PVT)
PLAIN VIEW
RD (PVT)
SQUIRREL
ST (PVT)
MEMORY
LN (PVT)
KAYDAN DR
MAPLE ST
SMITH ST
ISAAC
ST
MAIN ST
ARGYLE ST
CHURCH ST
CAMERON ST
PATERSON ST
MAGIE ST
WEBSTER ST
HILL ST
EDGE CT
LN
ROSS ST
STANLEY ST
RAE ST
WICKHAM ST
MCKAY ST
MEMORIAL PARK DR
NYAH CT
MCLAREN ST
HIGHWAY 21
KING ST
CONQUERGOOD AVE
LOIS ST
HERBERT
PL
LINDSAY ST
Teeswater Creek
Little Saugeen River

Sources:
Parcel Fabric, Road Centerlines: Bruce County, 2022.

Intake Protection Zones delineated by Stantec and DWSP staff.

Wellhead Protection Areas delineated by Schlumberger Canada Ltd. and DWSP Staff.

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Date Saved: 2022-02-04

0 120 240 480 Meters

Scale: 1:3,600

APPENDIX C

AVERAGE MONTHLY ANALYTICAL RESULTS

Bruce Energy Centre Lagoons

2025	INFLUENT FLOWS			RAW INFLUENT Monthly Average				FINAL EFFLUENT Monthly Average											
Month	Total Flow m3	Max Flow m3/day	Avg. Flows m3/Day	BOD5 mg/L	TSS mg/L	TKN mg/L	Total P mg/L	CBOD5 mg/L	TSS mg/L	TKN mg/L	Total P mg/L	Alkalinity CaCO3 mg/L	Nitrite NO2 mg/L	Nitrate NO3 mg/L	Ammonia+ Ammonium NH3+NH4 mg/L	E-Coli /100 mL (Geomean)	pH	Temper-ature C	Unionized Ammonia mg/L
January	11388	693	367	489	1170	44.2	9.35	4.0	4.5	16.6	0.50	200	0.05	2.54	15.1	0	8.00	5.1	0.190
February	13196	912	471	324	112	11.8	1.86	4.0	3.0	16.2	0.27	215	0.04	1.99	15.6	0	8.10	9.7	0.407
March	15642	1088	505	80	68	8.5	1.15	4.7	8.7	13.0	0.40	197	0.05	1.28	12.2	**0**	8.07	8.6	0.242
April	15855	878	528	246	81	12.2	1.90	14.5	24.5	5.1	0.42	175	0.20	0.81	4.0	0	8.50	14.6	0.255
May	40481	2681	1306	501	161	11.7	1.64	11.0	17.5	1.6	0.25	166	0.14	0.46	0.3	0	8.75	17.8	0.038
June	26926	1444	898	144	126	21.0	9.17	8.0	17.5	2.8	0.35	168	0.11	0.22	1.2	0	7.83	23.9	0.035
July	12507	708	403	288	143	22.3	4.01	12.3	25.8	4.9	0.40	188	0.44	0.40	3.4	1	8.13	25.3	0.222
August	12020	783	388	231	198	42.2	5.87	6.0	21.8	2.2	0.38	203	0.33	0.72	0.9	1	8.13	24.1	0.082
September	13711	780	457	220	156	34.9	3.37	7.8	30.3	1.6	0.20	162	0.04	0.14	0.2	22	8.10	20.4	0.009
October	22434	1170	724	107	109	36.6	5.81	4.0	20.0	2.8	0.43	163	0.28	2.19	1.1	0	8.25	11.3	0.045
November	29284	1616	976	110	236	14.0	1.08	4.0	16.0	7.0	0.50	175	0.36	3.29	5.9	0	8.35	8.6	0.220
December	32325	2136	1043	122	131	6.8	2.05	4.0	3.0	13.9	0.52	209	1.68	3.27	12.9	139	8.10	5.1	0.251
Annual	245768	2681	672	238	224	22.2	3.94	7.0	16.0	7.3	0.38	185	0.31	1.44	6.1	7	8.19	14.5	1.994

refers to <

Exceedance Reported

SAMPLING SCHEDULE 2025

JANUARY

S	M	T	W	T	F	S
			1	2	3	4
5 WW LQ	6 Raw HDS 319	7	8	9	10	11
12	13 Q As	14	15	16	17	18
19 WW	20 319	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY

S	M	T	W	T	F	S
						1
2 WW	3 Raw HDS 319	4	5	6	7	8
9	10 As	11	12	13	14	15
16 WW	17	18 319	19	20	21	22
23	24	25	26	27	28	

MARCH

S	M	T	W	T	F	S
						1
2 WW	3 Raw HDS 319	4	5	6	7	8
9	10 As	11	12	13	14	15
16 WW	17 319	18	19	20	21	22
23	24 pH/Alk	25	26	27	28	29
30 WW	31 319					

APRIL

S	M	T	W	T	F	S
		1	2	3	4	5
6	7 Raw HDS	8	9	10	11	12
13 WW SA LTF	14 319 Q As	15	16	17	18	19
20	21	22	23	24	25	26
27 WW	28 319	29	30			

MAY

S	M	T	W	T	F	S
				1	2	3
4	5 Raw HDS	6	7	8	9	10
11 WW	12 319 As	13	14	15	16	17
18	19	20	21	22	23	24
25 WW	26 319 THM	27	28	29	30	31

JUNE

S	M	T	W	T	F	S
1	2 Raw HDS	3	4	5	6	7
8 WW	9 319 As	10	11	12	13	14
15	16 THM M	17	18	19	20	21
22 WW	23 319	24	25	26	27	28
29	30					

JULY

S	M	T	W	T	F	S
		1	2	3	4	5
6 WW LQ	7 Raw HDS 319	8	9	10	11	12
13	14 Q As THM NA	15	16	17	18	19
20 WW	21 319 M	22	23	24	25	26
27	28	29	30	31		

AUGUST

S	M	T	W	T	F	S
					1	2
3 WW	4	5 Raw HDS 319	6	7	8	9
10	11 pH/Alk As	12	13	14	15	16
17 WW	18 319 THM M	19	20	21	22	23
24	25	26	27	28	29	30
31	Aug 31 biweekly sample to be collected on September 2					

SEPTEMBER

S	M	T	W	T	F	S
	1	2 Raw HDS 319 WW	3	4	5	6
7	8 As	9	10	11	12	13
14 WW	15 319 M	16	17	18	19	20
21	22 THM	23	24	25	26	27
28 WW	29 319	30				

OCTOBER

S	M	T	W	T	F	S
			1	2	3	4
5	6 Raw IO HDS Q A	7	8	9	10	11
12 WW SA	13	14 319 THM As	15	16	17	18
19	20 M	21	22	23	24	25
26 WW	27 319	28	29	30	31	

NOVEMBER

S	M	T	W	T	F	S
						1
2	3 Raw HDS	4	5	6	7	8
9 WW	10 319 As AL	11	12	13	14	15
16	17	18	19	20	21	22
23 WW	24 319	25	26	27	28	29
30						

DECEMBER

S	M	T	W	T	F	S
	1 Raw HDS	2	3	4	5	6
7 WW	8 319 As	9	10	11	12	13
14	15	16	17	18	19	20
21 WW	22 319	23	24	25	26	27
28	29	30	31			

Municipality of Kincardine Environmental Services

Revision 2025-01 December 2024

Holiday

Weekly bacti sampling
All DWS

Tuesdays: Wells - Raw NTU; Well Depths

Raw — Raw Well Sample (Scott Point)

HDS — Huronville Distribution System

319 — Biweekly Bacti Sampling (MAC, Airport, Brucedale)

pH/Alk — pH/Alkalinity - All DWS

THM — Treated Water during Zebra Mussel Prechlorination

Q — 3 month Sampling - KDWS, SPDWS, UDWS, TDWS, ADWS

A — Annual Sampling - KDWS

As — Armow Arsenic

NA — North Annual Sampling Tiv- Briar #2 Well

M — Microsystin-KWTP (June to October)

IO — Armow Inorganics and Organics, Sodium and Fluoride (5 year)-Oct

WW — Biweekly Wastewater Sampling KWWTP / BEC / LTF

SA — KWWTP Semiannual Effluent Sampling

LQ — Leachate Quarterly Sampling (Valentine Ave site)

LTF — Annual Sampling Leachate Treatment Facility

AL — KWWTP Acute Lethality Testing

Note: WW and Leachate samples including ph and temp can be collected on Sundays and shipped the following business day as long as they can be refrigerated. The exception is the WW Bacti sample which will need to be taken the day the samples are shipped to ensure it is received at the lab before the holding time expires

Note: Purolator observes Holiday on Sept 30, cannot ship samples

2026 Sampling Schedule

Date: week of	Wastewater	Water	Notes
January 4, 2026	Wastewater *leachate Quarterly	Bactis - Raw well sample- Scotts point Huronville Distribution - 319 (Biweekly, MAC, Airport, Brucedale)	
January 11, 2026		Bactis - Armow Arsenic *Quarterlies (KDWS, SPDWS, UDWS, TDWS, ADWS) HAA UDWS, ADWS, SDWS	
January 18, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
January 25, 2026		Bactis	
March 1, 2026	Wastewater	Bactis - Raw well sample- Scotts point Huronville Distribution - 319 (Biweekly, MAC, Airport, Brucedale)	
March 8, 2026		Bactis Armow Arsenic	
March 15, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
March 22, 2026		Bactis *pH/ Alk- ALL DWS	
March 29, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
May 3, 2026		Bactis Raw well sample- Scotts point - Huronville Distribution	
May 10, 2026	Wastewater	Bactis - Armow Arsenic 319 (Biweekly, MAC, Airport, Brucedale)	
May 17, 2026		Bactis	May 18 Stat- grab samples on May 19th
May 24, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
May 31, 2026		Bactis - *THMS	
July 5, 2026	Wastewater *Leachate Quarterly Sampling	Bactis - 319 (Biweekly, MAC, Airport, Brucedale) Raw well Scotts point - Huronville Distribution - Armow Arsenic	
July 12, 2026		Bactis - *THM *North Annual Sampling- Tiv- Briar #2 well *Quarterlies (KDWS, SPDWS, UDWS, TDWS, ADWS) HAA -UDWS, ADWS, SDWS *Dent #2 Schedule 23/24- inorganics and organics	
July 19, 2026	Wastewater	Bactis - 319 (Biweekly, MAC, Airport, Brucedale) *Microsystin KWTP	
July 26, 2026		Bactis	
September 8, 2026		Bactis - Raw well sample- Scotts point Huronville distribution	Sept 7th STAT Grab samples on 8th
September 13, 2026	Wastewater	Bactis - Armow Arsenic 319 (Biweekly, MAC, Airport, Brucedale) *Microsystin-KWTP	
September 20, 2026		Bactis *THM	
September 27, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
November 1, 2026		Bactis Raw well sample- scotts point - Huronville Distribution	
November 8, 2026	Wastewater *Acute Lethality- KWWTP	Bactis - Armow Arsenic 319 (Biweekly, MAC, Airport, Brucedale)	
November 15, 2026		Bactis	
November 22, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
November 29, 2026		Bactis	

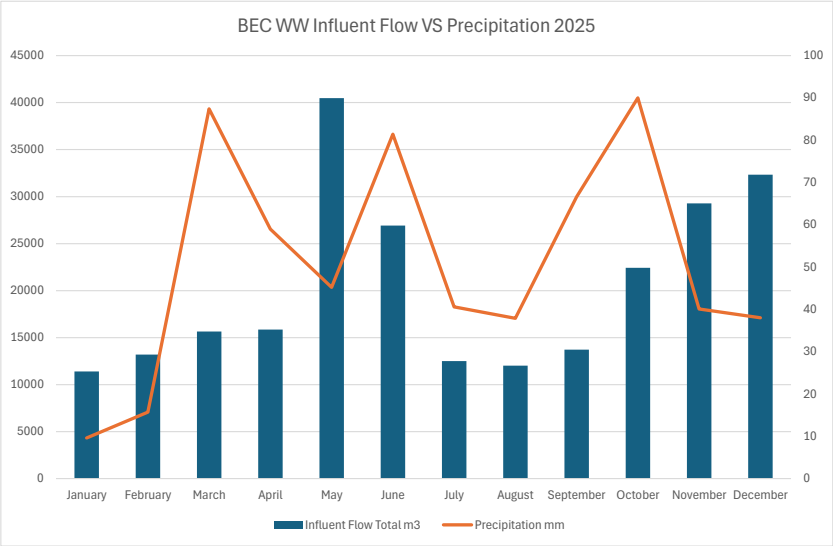
Date: week of	Wastewater	Water	Notes
February 1, 2026	Wastewater	Bactis - Raw well sample- Scotts point Huronville Distribution - 319 (Biweekly, MAC, Airport, Brucedale)	
February 8, 2026		Bactis Armow Arsenic	
February 15, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	Feb 16th family day samples gathered on Feb 17th
February 22, 2026		Bactis	
April 5, 2026		Bactis - Raw well sample- Scotts point Huronville Distribution	Easter Monday April 6- grab samples on April 7th
April 12, 2026	Wastewater *KWWTP Semi Annual Effluent Sampling *Leachate Treatment Facility- Annual Sampling	Bactis - Armow Arsenic 319 (Biweekly, MAC, Airport, Brucedale) *Quarterlies- (KDWS, ADWS, SDWS, TDWS, UDWS) HAA-UDWS, ADWS, SDWS	
April 19, 2026		Bactis	
April 26, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
June 7, 2026	Wastewater	Bactis - 319 (Biweekly, MAC, Airport, Brucedale) Raw well sample-Scotts point - Huronville Distribution	
June 14, 2026		Bactis *THM - *Micorsystin- KWTP	
June 21, 2026	Wastewater	Bactis - Armow Arsenic 319 (Biweekly, MAC, Airport, Brucedale)	
June 28, 2026		Bactis	
August 2, 2026	Wastewater	Bactis - 319 (Biweekly, MAC, Airport, Brucedale) Raw Sample scotts point - Huronville Distribution	Aug 3rd STAT- grab samples Aug 4th
August 9, 2026		Bactis - Armow Arsenic *pH/ Alk- All DWS	
August 16, 2026	Wastewater	Bactis - 319 (Biweekly, MAC, Airport, Brucedale) *THM *Microsystin- KWTP	
August 23, 2026		Bactis	
August 30, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
October 4, 2026		Bactis - Raw well sample- scotts point - Huronville Distribution *Quarterlies (KDWS, SPDWS, UDWS, ADWS, TDWS) HAA-UDWS, ADWS, SDWS *Annual Sampling KDWS(sch23/24)	Confirm Pails are ordered and fish are scheduled for Acute Lethality sample in November
October 11, 2026	Wastewater *KWWTP Semiannual Effluent Sampling *Leachate Quarterlies	Bactis - Armow Arsenic 319 (Biweekly, MAC, Airport, Brucedale)	STAT Oct 12- grab samples Oct 13th
October 18, 2026		Bactis *Microsystin-KWTP - *THM	
October 25, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
December 6, 2026	Wastewater	Bactis - 319 (Biweekly, MAC, Airport, Brucedale) Raw well sample- scotts point - Huronville Distribution	
December 13, 2026		Bactis - Armow Arsenic	
December 20, 2026	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	
December 27, 2026		Bactis	Boxing day stat observed Mon Dec 28th- send sample the 29th
January 3, 2027	Wastewater	Bactis 319 (Biweekly, MAC, Airport, Brucedale)	

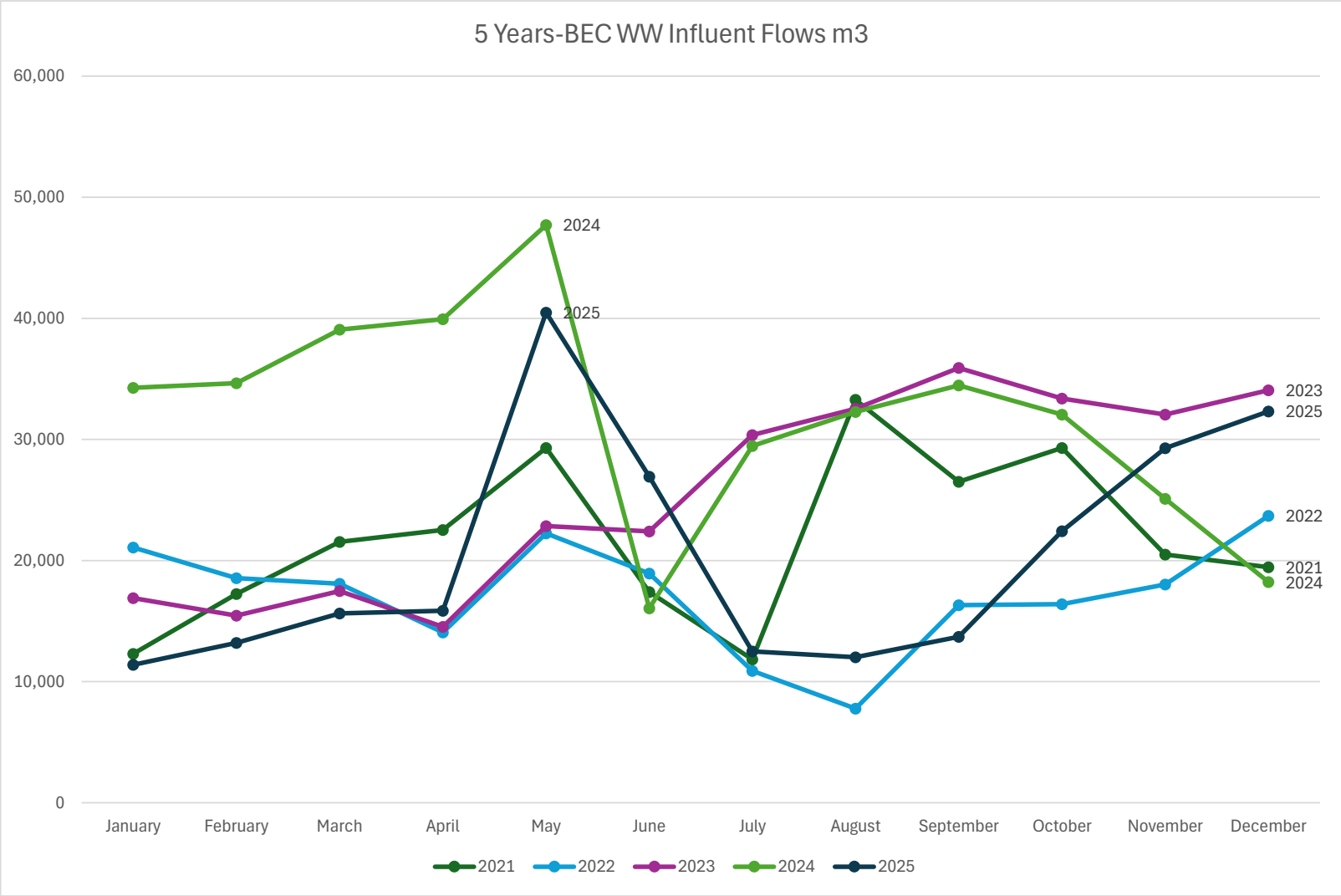
Wastewater Sampling Requirements 2025

		Bi-weekly	Monthly	Quarterly	Semi-annual	Annual
Kincardine WWTP	Raw	**Grab Samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen Alkalinity				
	Final Effluent	**Grab Samples:** **4 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Ammonia Nitrogen as N Total Kjeldahl Nitrogen NO2/NO3 Alkalinity Provincial Unionized Ammonia **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature			As per ECA Chloride COD DOC Hardness Phenols ICP 24 metal scan US EPA 624 parameters VOC **Field Tests:** pH Conductivity Temperature (April and October)	Acute Lethality Testing (WSER) November
Bruce Energy Centre Lagoons	Raw	**24-hour composite samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen				
	Final Effluent	**Grab samples:** **4 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen Total Ammonia Nitrogen NO2/NO3 Alkalinity **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature **Calculate:** Provincial Un-ionized Ammonia				
	Septage	BOD5 Total Phosphorous Total Suspended Solids TKN Oil and Grease Field Tests: pH Temperature **(During Each event-Grab sample)**				
	Leachate Hauled to BEC	BOD5 Total Phosphorous Total Suspended Solids TKN Boron Zinc Iron Field Tests: pH Temperature **(Only as required if LTF is out of service)**				
Valentine Ave. Landfill	Groundwater Collection System				**Sampling As per GWCS C of A:** BOD5 Suspended Solids Total Phosphorous TKN Ammonia Heavy metals **(GHD Samples)**	
	Leachate Collection System			**As per LCS C of A:** BOD5 Total Phosphorous Suspended Solids NO2/NO3 Ammonia TKN VOCs COD DOC Alkalinity Chloride Hardness Phenols Metals **Field Tests:** pH Conductivity Temperature **(GHD samples May and November)**	**As per WWTP ECA:** Alkalinity BOD5 Chloride COD DOC Hardness NO2/NO3 TKN Ammonia ICP 24 metal scan US EPA 624 parameters VOC **Field Tests:** pH Conductivity Temperature (January and July-covers quarterly samples for this time frame too) **MOK Samples**	
Kincardine Waste Management Centre Leachate Treatment Facility	Influent		**Grab Samples:** **3 - 500 mL chemical bottles** BOD5 Total Suspended Solids Total Phosphorous Total Kjeldahl Nitrogen			
	Effluent (Clarifier Discharge)	**Grab samples:** **4 - 500 mL chemical bottles** CBOD5 Total Suspended Solids Total Phosphorous Total Ammonia Nitrogen Nitrate Nitrogen **1 - bacti bottle for:** E. coli **Field Tests:** pH Temperature **Calculate:** Provincial Un-ionized Ammonia				**Spring sampling:** **Grab samples** BOD5 COD DOC Phenol VOCs Inorganics (Table 6 of ECA) (Due April)
	SW4 (Surface Water 4)	Grab samples: 1-500mL chemical bottles Nitrate Nitrogen				

APPENDIX D

	Influent Flow Total m3	Precipitation mm
January	11388	10
February	13196	16
March	15642	87
April	15855	59
May	40481	45
June	26926	81
July	12507	41
August	12020	38
September	13711	67
October	22434	90
November	29284	40
December	32325	38
	245769	612





Note: Effluent not discharging May 28 to June 10, 2024 causing sewage backup by influent meter. Influent Meter not reading correctly during this time

Note: Sludge Removal project took place from July to September 2025

APPENDIX E

BEC Lagoons 2025
Environmental 360 Solutions Ltd.Septage Lab Results

	pH	BOD5	TSS	Total Phosphorous	TKN	Oil and Grease	comments
Sewer Use Bylaw limits	**6.5 - 9.0**	**300 mg/L**	**300 mg/L**	**10 mg/L**	**50 mg/L**	**150 mg/L(Animal and Vegetable)**	
Date							
07-Jan	7.8	3250	1070	61.4	1520	41	Environmental 360 collects septage from Huron Kinloss, Kincardine, Port Elgin, Southampton, Sauble Beach, Owen Sound, Chesley, Lucknow, Stratford and Goderich Areas. The septage is added to the holding tank in their yard and then brought to BEC to dump when tank is getting full. They are bringing on average 2-3 loads per week and we have called this one (1 event) starting in 2024. We are sampling biweekly to monitor the parameters exceeding the bylaw
03-Feb	8.5	1960	700	30.9	1110	48	
17-Mar	9.3	3110	1260	85.4	1970	292	
31-Mar	8.6	3550	1340	93.8	2240	134	
14-Apr	8.4	4880	10600	93.2	1520	216	
12-May	8.2	4610	1190	89.1	2020	206	
26-May	7.8	6790	6700	166	2330	181	
23-Jun	7.9	4880	775	94.8	1970	100	
07-Jul	8.1	5600	457	119	2260	92	
28-Jul	8.1	6050	600	105	2320	174	
11-Aug	7.7	8930	14500	376	2930	1560	
25-Aug	7.3	5840	550	84.6	1860	94	
08-Sep	8	6930	1360	142	2210	144	
22-Sep	8.4	4970	6180	86.2	1600	254	
14-Oct	7.9	5110	373	78	2020	208	
27-Oct		4850	669	100	1760	176	
24-Nov	8.1	5470	1550	99.5	1800	156	
08-Dec	7.9	15900	53300	1700	3520	6130	
Min	**7.30**	**1960**	**373**	**30.9**	**1110**	**41**	
Max	**9.30**	**15900**	**53300**	**1700.0**	**3520**	**6130**	
Ave	**8.14**	**5704**	**5732**	**200.3**	**2053**	**567**	

Exceedance

APPENDIX F

	Maintenance Schedule	WW Collection	
Frequency	**Equipment**	**Activity**	**Performed By**
	Pump Stations		
2 wks	Bar Screens	Raked and inspected	Staff
As needed	Bar Screens; **Connaught** and **Huron Terrace** - have automatic bars screens	Change & Empty bins they dump into	Staff
Annually	Automatic Bar Screens	Inspected	Staff
Monthly	Gensets	Ran for Inspection	Staff
Annually	Pumps	Greased	Staff
Annually	Pumps	Inspection	Staff
Annually	Valves	Operated	Staff
Annually	Gensets	Inspected	3rd Party
Annually	Dialer Channel and SCADA	Tested and Batteries replaced	Staff
Annually	Overflow Pipe	Inspected	Staff
Annually	Overflow Signage	Inspected	Staff
Biennial	Flow meters (pump stations)	Calibration (on a rotating 2 year schedule)	3rd Party
Annually	Wet Well	Cleaned out (on a rotating 3 year schedule)	3rd Party
5 years	UPS Backup units	Replaced	Staff
	Groundwater Collection System		
Annually or as needed	Discharge piping and forcemain	Removal of sediment when flow rate is 1.58 L/s or lower	Staff
	Leachate Collection System		
Annually or as needed	Discharge piping and forcemain	Removal of sediment when flow rate is 1.58 L/s or lower	Staff
	Collection Systems		
Annually	Air Relief Valves	Inspected (on a rotating 3 year schedule)	Staff
Annually	Forcemain Chambers	Inspected (on a rotating 3 year schedule)	Staff
Annually	Sewermain	Flush mains (on a rotating 5 year schedule)	staff or 3rd party
Annually	Sewermain	Inspect with CCTV (on a rotaing 5 year schedule)	staff or 3rd party
Annually	Manholes	Inspected (on a rotating 5 year schedule)	Staff
Annually	Manholes	Flushed (on a rotating 5 year schedule)	staff or 3rd party
Annually	Sanitary Valves	Operated (on a rotating 3 year schedule)	Staff

*ECA requirement is to have any pumping station and collection system overflow inspected at least once per calendar year

Updated November 29, 2023

	Maintenance Schedule	BEC WW Treatment	
Frequency	**Equipment**	**Activity**	**Performed By**
	BEC		
Daily	Duty Blowers	Inspection	Staff
Daily	Aeration	Inspection	Staff
Daily	UV System	Inspection	Staff
As needed	Vegetation & Debris	Cleaned	Staff
As needed	UV Sensors	Maintenance	Staff
Weekly	UV Channel Mounted Equipment	Inspect and remove debris	Staff
Monthly	Duty Blowers	Greased	Staff
Monthly	Duty Blowers	Switched	Staff
Monthly	Genset	Tested	Staff
Monthly	Alum Line	Flushed	Staff
Quarterly	UV Sensors	Racks pulled & cleaned	Staff
Quarterly	UV Automatic Cleaning System	Inspect and Maintain	Staff
Quarterly	UV Power Distribution Center	Inspect and Maintain	Staff
Quarterly	UV System Control Center	Inspect and Maintain	Staff
Twice yearly or, as needed (whichever comes 1st)	Influent Chamber	Sucked out w/ Vactor	3rd party
Twice yearly	Alum Pumps	Cleaned/Tested for Accuracy	Staff
Twice Yearly	Blowers	Oil change	Staff
Annually	Flow Meters (Influent and Effluent)	Calibration	3rd Party
Annually	Lagoon Sludge Depths	Inspection	Staff
Annually	Alum Pumps	Rebuilt	Staff
Annually	Dialer Channel	Tested and Batteries replaced	Staff
Annually	SCADA Alarms/Win911	Tested	Staff
Annually	Genset	Inspected	3rd Party
after 12,000 hrs	UV Lamps	Replaced	Staff
5 years	UPS Backup units	Replaced	Staff
15 years or as required	Lagoon	Sludge Removal	3rd Party
Updated November 15, 2024			

APPENDIX G

IndusControl Inc
3170 Ridgeway Drive, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT - OCM III
OPEN CHANNEL MEASUREMENT

Customer Name:	Municipality of Kincardine
Plant Name:	Bruce Energy Centre
Site/Plant Address:	Bruce Energy Lagoon System
	Tiverton , ON

Device Information	
Make:	Vega
Model:	Vegamet841
Order Code:	N/A
Serial No.:	59019786
Tag:	BEC Lagoon-Effluent
Asset ID:	0000071766

Service Information	
Date:	June 2, 2025
Report No:	CO1627_2506-40
Job No:	CO1627_2506

Flow Details	
Unit:	L/S
Flow Range:	0 - 60 L/S
Current Output:	4-20 mA
4 mA Set Point	0
20 mA Set Point	60

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	496638	496640
FLOW (L/S)	7.41	7.43

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Input (%)	Calculated Flow (L/S)	Calculated O/P (mA)	UUT Display (L/S)	UUT Measured Output (mA)	Deviation (L/S)
0	0.00	4.00	0.01	4.02	-0.01
25	15.00	8.00	14.98	8.00	0.02
50	30.00	12.00	29.99	11.99	0.01
75	45.00	16.00	45.01	16.00	-0.01
100	60.00	20.00	59.97	19.98	0.03

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Multifunction process calibrator	Electrical Multimeter	N/A
Manufacturer:	Extech	Fluke	N/A
Model No:	PRC30	179	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement works within specification. Limited Verification Performed, Sensor in well.

Service Technician :	Parth Panchal	Stamp/Signature	
Printed Date:	June 2, 2025		

End of Report

Version: 19-12

APPENDIX H

Date Initiated	Description	Address	Comments	WO Comments
2025-07-11	Wastewater Odour	24 Maple St	Bad Odour all day	The resident sent a private email to the ES Manager. The email was replied to, informing the resident that we are aware of the situation and currently working on it.
2025-04-28	Wastewater Odour	19 Maple Street	Sewage Smell in Tiverton	Staff are aware of the odours and are investigating
2025-05-07	Wastewater Odour	19 Maple Street	Ongoing sewer smell issue	Staff are aware of the odours and are investigating
2025-07-11	Wastewater Odour	Maple Street	Resident called and left a voicemail reporting strong sewage odor at 19 and 17 Maple Street	Attempted to call back, but the contact number has no voicemail set up. An email was sent to follow up.
10-Oct-25	Wastewater Odour	3 Maple Street	Resident called and said they could smell sewage	We informed him that staff would attend to inspect the issue. He did not call back again
11-Sep-25	Wastewater Backup/Blockage	10 Argyle Street	Plumber called requesting the lateral to be cameraed	Video reveals blockage before town's clean out. The issue is unknown but being so close to a tree we speculate roots might be the reason of the blockage.

APPENDIX I

Municipality of Kincardine
Quarterly Report of Wastewater Bypasses and Overflows
Bruce Energy Centre Lagoon System
2025 Q1 to Q4

Date	Start Time	End Time	Location	Bypass/ Overflow/ Spill	Planned/ Emergency	Reason	Duration (minutes)	Quantity (m3)	Estimated or Measured Volume	Treatment Processes Gone Through	Efforts Made to Maximize Flow through Treatment Process	Samples Collected	Grab or Composite	CBOD mg/L	BOD mg/L	TSS mg/L	TP mg/L	TKN mg/L	Total Ammonia N mg/L	pH	E. coli per 100 mL
February 2, 2025	01:11pm	02:51 pm	BEC WW Effluent	Bypass	Emergency	Equipment issue/Ice	25	15.61	Measured	Primary Treament	None	None	--	--	--	--	--	--	--	--	--
June 27, 2025	2025	2340	Maple Street Pumping Station	Overflow	Emergency	Major Rainfall	195	55.6	Measured	None	None	Yes	Grab	--	69	150	1.21	10.9	--	--	--
September 12, 2025	2020	2026	BEC WW Effluent	Bypass	Emergency	Equipment Issue	6	2.5	Measured	Primary Treament	None	Yes	Grab	8	--	30	0.16	--	<0.1	8.1	<100
November 6, 2025	1600	2330	Albert Road and Concession 2	Forcemain Leak	Emergency	Contractor Drilled through Forcemain	450	50	Estimated	None	Sewage Pumped by Contractor	Yes	Grab	--	97	152	3.14	35.9	--	8.2	>242000