Ontario

ENVIRONMENTAL COMPLIANCE APPROVAL
For a Municipal Sewage Collection System

ECA Number: 019-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:

Kitchener, The Corporation of the City of

200 King St P.O. Box 1118
Kitchener, ON N2G 4G7

For the following Sewage Works:

Kitchener's Sewage Collection System

This Environmental Compliance Approval (ECA) includes the following:

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

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

DATED at TORONTO this 29th day of January, 2023

Signature

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

Schedule A: System Information

System Owner	**Kitchener, The Corporation of the City of**
ECA Number	**019-W601**
System Name	**Kitchener's Sewage Collection System**
ECA Issue Date	**January 29th, 2023**

1.0 ECA Information and Mandatory Review Date

ECA Issue Date	**January 29th, 2023**
Application for ECA Review Due Date	April 15, 2026

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
Region of Waterloo/Kitchener WWTP	N/A	368 Mill Park Dr	6215-B5UL4E	October 26, 2018
Region of Waterloo/Springvalley SPS	N/A	365 Riverbend Dr	Unknown	Unknown
Region of Waterloo/Carisbrook SPS	N/A	21 Carsibrook Drive	9787-BF9JY6	September 12, 2019

2.2 Other Documents

Document Title	Version
Design Criteria for Sanitary Sewers, Storm Sewers, and Forcemains for Alterations Authorized under Environmental Compliance Approval	v.1.2 (Jan 23, 2023)

3.0 Asset Management Plan

Document Title	Version
Sanitary System Asset Management Plan	v.1 (April 2018)

4.0 Pollution Prevention and Control Plan (if applicable)

Document Title	Version
N/A	

5.0 Operating Authority

System	Operating Authority
Kitchener's Sewage Collection system	The Corporation of the City of Kitchener

Schedule B: Municipal Sewage Collection System Description

System Owner	**Kitchener, The Corporation of the City of**
ECA Number	**019-W601**
System Name	**Kitchener's Sewage Collection System**
ECA Issue Date	**January 29th, 2023**

1.0 System Description

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

Overview

The City of Kitchener Sanitary Sewage Collection System consists of works for the collection and transmission of sewage, consisting of trunk sewers, separate sewers, sewage pumping stations, and forcemains, with discharge into Waterloo's sanitary system, Cambridge's sanitary system and Region of Waterloo/Kitchener Sewage Treatment Plant.

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
03 - Sanitary_Infrastructure_Map_Jan 2022.pdf	December 17, 2021

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:

KING PUMPING STATION

Asset ID and Name	10672 - KING PUMPING STATION
Site Location	3563 KING ST EAST
Latitude and Longitude	43.42407, -80.41325
Coordinates (optional)	
Description	Wastewater enters the King SPS via 600mm diameter sanitary sewer which conveys wastewater from the 150 ha catchment area to the inlet chamber. 2 duty pumps have the capacity to discharge 290 L/s via twin 400mm forcemains to a manhole and gravity sewer at the intersection of Wabanaki and Goodrich Drive (2.7km).
Pumping Station Capacity	290L/s.
Equipment	3 dry pit submersible sewage pumps (2 duty, 1 standby), with rated capacities of 18403.2 m3/d (213 L/s) at a TDH of 42.6m 1 grinder inlet pump, wet well total volume 336.3 m3. The station is connected to 2 – 400 mm forcemains, discharging to MHID 2128282 at the intersection of Wabanaki Drive, Goodrich Drive and Hidden Valley Road. 2 dry pit submersible transfer pumps, with rated capacities at 8812.8 m3/d (102 L/s) at a TDH of 3.52m, located in the dry well that transfer wastewater from the emergency storage tank to the wet well via a 200mm diameter forcemain.
Emergency Storage	1980.06 m^3 (1.86hr)
Equipment: Associated controls and Appurtenances	3 Sewage Pumps, 2 Transfer Pumps, 2 Valves, 2 Level Sensors, Generator, Power Supply, Grinder with Sluice Gates, Float Control System.
Sewage Pumping Station – Collection System Overflow	From emergency Storage Tank to small tributary that feeds into the Grand River.
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	500 kW diesel generator, and 1500L fuel tank
Notes	Reference ECA: 3650-9CRGSP

HOMER WATSON PUMPING STATION

Asset ID and Name	2249 - HOMER WATSON PUMPING STATION
Site Location	2200 HOMER WATSON BLVD
Latitude and Longitude	43.38970, -80.42327
Coordinates (optional)	
Description	Wastewater enters the Homer Watson SPS via 600mm diameter sanitary sewer which conveys wastewater from catchment area to the wet well. 2 duty pumps have the capacity to discharge 310 L/s via twin 400mm forcemains to a manhole and gravity sewer adjacent to Pioneer Park on Homer Watson Boulevard. (0.7km).
Pumping Station Capacity	310 L/s
Equipment	3 sewage pumps (2 duty, 1 standby), with rated capacities of 18230.4 m3/d (211 L/s) at a TDH of 24.4 m wet well total volume 111.6 m3. The station is connected to 2 – 400mm forcemains, discharging to MH ID 303237 located on Homer Watson Boulevard adjacent to Pioneer Park.
Emergency Storage	2709.36 m^3 (2.4hr)
Equipment: Associated controls and Appurtenances	3 Sewage Pumps, 2 Transfer Pumps, 2 Valves, 1 Flowmeter, 4 Level Sensors, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	Incoming line will overflow to environment from MH 303238
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	275 kW diesel generator, and 1000L fuel tank
Notes	Reference ECA: 8182-89JQ4G

PIONEER TOWER PUMPING STATION

Asset ID and Name	1864 - PIONEER TOWER PUMPING STATION
Site Location	625 PIONEER TOWER RD
Latitude and Longitude	43.40254, -80.42361
Coordinates (optional)	
Description	Wastewater enters the Pioneer Tower SPS via 450 mm diameter sanitary sewer conveys wastewater from 132.8 ha catchment area to the wet well. 1 duty pump has the capacity to discharge 41.7 L/s via 250 mm diameter forcemain which crosses the Grand River and into the Kitchener Wastewater Treatment Plant. (0.55 km)
Pumping Station Capacity	41.7 L/s
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacities of 3602.88 m3/d (41.7 L/s) and 23.1m TDH, wet well total volume 144.13 m3. The station is connected to 1 – 250mm forcemain, discharging to Kitchener Wastewater Treatment Plant.
Emergency Storage	No Emergency Storage Available
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	No overflow ability, system will surcharge into upstream infrastructure. Available Storage Volume 13.5 m^3 (0.10 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	62.5 kW diesel generator and 620 L fuel tank size.
Notes	Reference ECA: 3-0106-77-006

STOKE PUMPING STATION

Asset ID and Name	1866 - STOKE PUMPING STATION
Site Location	166 STOKE DR
Latitude and Longitude	43.43762, -80.53936
Coordinates (optional)	
Description	Wastewater enters the Stoke SPS via a 600 mm diameter sanitary sewer which conveys wastewater from 146.64 ha catchment area to inlet chamber. 2 duty pumps have the capacity to discharge 164 L/s via 500mm forcemain to manhole on Stoke Drive between the entrances of Wexford Crescent. (0.5 km)
Pumping Station Capacity	164 L/s – initial 473 L/s – future
Equipment	3 sewage pumps (2 duty, 1 standby), with rated capacity of 14169.6 m^3/d (164 L/s) – initial and 40867.2 m^3/d (473 L/s) - final, 9.4 m TDH, wet well total volume 209.06 m^3. The station is connected to 1 – 500mm diameter forcemain, discharging to MH ID 309915 located on Stoke Drive between the entrances for Wexford Crescent.
Emergency Storage	No emergency storage available
Equipment: Associated controls and Appurtenances	3 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	The overflow is located in the incoming MH 100A and connects to storm sewer MH 100 that discharges to the Henry Sturm Greenway. Available Storage Volume 65.72 m3 (0.25 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	125 kW diesel generator and 620L fuel tank size.
Notes	Reference ECA: 965-6421

NEW DUNDEE PUMPING STATION

Asset ID and Name	7372 - NEW DUNDEE PUMPING STATION
Site Location	640 NEW DUNDEE RD
Latitude and Longitude	43.37304, -80.42489
Coordinates (optional)	
Description	Wastewater enters the New Dundee SPS via a 600 mm diameter sanitary sewer which conveys wastewater from 277 ha catchment area. 1 duty pimp has the capacity to discharge 56 L/s via 200 mm foremain to a manhole at the intersection of Robert Ferrie Drive and Thomas Slee Drive. (0.6km)
Pumping Station Capacity	56 L/s
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacity of 4838.4 m^3/d and 36 m TDH, 1 grinder in inlet channel, wet well total volume 328.32 m^3. The station is connected to 1 – 200mm forcemain, discharging to MH ID 2083763 located at the intersection of Robert Ferrie Drive and Thomas Slee Drive
Emergency Storage	2 - Emergency storage tank (345 m^3), Total of 690 m^3 (3.42 hr)
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 2 Valves, 4 Level Sensors, Generator, Power Supply, Grinder, Float Control System, Alarm System
Sewage Pumping Station – Collection System Overflow	Overflow will back up into incoming line and overflow to the environment through MH2117291. Sewage will travel the ditch-line and through a culvert that discharge on Reichert Dr.
Receiving Stations (if applicable)	N/A
Odour Control Units	The station contains 1 on-site odour control unit.
Standby Power	200 kW diesel generator and 1514 L fuel tank size.
Notes	Reference ECA: 3818-9T8KYJ

CONESTOGA COLLEGE PUMPING STATION

Asset ID and Name	1861 - CONESTOGA COLLEGE PUMPING STATION
Site Location	43 CONESTOGA COLLEGE BLVD
Latitude and Longitude	43.38439, -80.40823
Coordinates (optional)	
Description	Wastewater enters the Conestoga College SPS via a 250 mm diameter sanitary sewer which conveys wastewater from the catchment area to the inlet chamber. 1 duty pump has the capacity to discharge 50 L/s via 200mm forcemain to a manhole at the intersection of Conestoga College Blvd and Homer Watson Blvd (0.6km).
Pumping Station Capacity	50 L/s
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacity of 4320 m^3/d (50 L/s) and 14.5 m TDH, wet well total volume 69.7 m^3. The station is connected to 1 – 200mm forcemain, discharging to MH ID 303265 located at the intersection of Conestoga College Blvd and Homer Watson Blvd.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	No overflow ability, system will surcharge into upstream infrastructure. Available Storage Volume 7.91 m^3 (0.383 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	35 kW diesel generator and 620 L fuel tank size.
Notes	Reference ECA: 3-1667-87-006

BANCROFT PUMPING STATION

Asset ID and Name	1842 - BANCROFT PUMPING STATION
Site Location	30 BANCROFT ST
Latitude and Longitude	43.43927, -80.43077
Coordinates (optional)	
Description	Wastewater enters the Bancroft SPS via a 200 mm diameter sanitary sewer which conveys wastewater from the catchment area to the wet well. 1 duty pump has the capacity to discharge 7.73 L/s via 100 mm forcemain to a manhole and gravity sewer at the intersection of Old Chicopee Drive and Daimler Drive. (0.5km).
Pumping Station Capacity	7.73 L/s.
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacity of 667.87 m^3/d (7.73 L/s) and 13.09 m TDH, wet well total volume 29.95 m^3. The station is connected to 1 – 100 mm forcemain, discharging to MHID 302463 at intersection of Old Chicopee Drive and Daimler Drive.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows from station to stormwater management area southeast of the site. Available storage volume 4.39 m^3 (0.2275 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	The station contains 1 on-site odour control unit.
Standby Power	35 kw diesel generator, and 424 L fuel tank
Notes	Reference ECA: 3-0862-99-006

FALCONRIDGE PUMPING STATION

Asset ID and Name	1859 - FALCONRIDGE PUMPING STATION
Site Location	97 FALCONRIDGE DR
Latitude and Longitude	43.49374, -80.47613
Coordinates (optional)	
Description	Wastewater enters the Falconbridge SPS via 350 mm diameter sanitary sewer which conveys wastewater from the catchment area to the inlet chamber. 1 duty pump has the capacity to discharge 39 L/s via 300mm forcemain to a manhole located at the intersection of Auburn Drive and University Avenue in Waterloo. (2.5km). Forcemain crosses the boundary form the City of Kitchener and into the City of Waterloo at Woolwich Street, approximately 1.3 km from the station.
Pumping Station Capacity	39 L/s
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacity of 3369.6 m^3/d (39 L/s) and 53 m TDH, wet well total volume 223.86 m^3. The station is connected to 1 – 300 mm forcemain, discharging to MH ID 5A. (Corner of Auburn Dr. And University Ave.)
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Flow Meter, 2 Level Sensors, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows from station to Falconridge Drive Natural Area and Stormwater Pond. Available storage volume 90 m^3 (1.25 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	The station contains 2 on-site odour control units.
Standby Power	230 kW diesel generator and 1100 L fuel tank size.
Notes	Reference ECA: 4261-4JYKAC

SPRINGMOUNT PUMPING STATION

Asset ID and Name	1856 - SPRINGMOUNT PUMPING STATION
Site Location	227 SPRINGMOUNT PL
Latitude and Longitude	43.44609, -80.42631
Coordinates (optional)	
Description	Wastewater enters the Springmount SPS via a 525 mm diameter sanitary sewer which conveys wastewater from 144.6 ha catchment area as well as the Apple Tree SPS which is pumped into the gravity sewer system. 2 duty pumps have the capacity to discharge 67 L/s via 400mm forcemain to manhole and gravity sewer located at Old Chicopee Dr and Holborn Dr. (1.7km).
Pumping Station Capacity	67 L/s
Equipment	3 sewage pumps (2 duty, 1 standby), with rated capacity of 5788.8 m3/d (67 L/s) and 39.5 m TDH, wet well total volume 175.38 m3. The station is connected to 1 – 400 mm forcemain, discharging to a maintenance hole located at Old Chicopee Dr and Holborn Dr.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	3 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System
Sewage Pumping Station – Collection System Overflow	System overflows from station to stormwater outlet area eventually draining to Idlewood Creek. Available storage volume 113.13 m^3 (0.335hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	The station contains 1 on-site odour control unit.
Standby Power	155 kW diesel generator and 1000 L fuel tank size.
Notes	Reference ECA: 3-0834-85-006

RIVER BIRCH PUMPING STATION

Asset ID and Name	3193 - RIVER BIRCH PUMPING STATION
Site Location	900 RIVER BIRCH DR
Latitude and Longitude	43.41244, -80.42730
Coordinates (optional)	
Description	Wastewater enters the River Birch SPS via a 200 mm diameter sanitary sewer which conveys wastewater from 41.78 ha catchment area which includes the surrounding residential area. 1 duty pump has the capacity to discharge 17.3 L/s via 150 mm forcemain to manhole and gravity sewer located on Wabanaki Drive. (0.635km).
Pumping Station Capacity	17.3 L/s
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacity of 1494.72 m3/d (17.3 L/s) and 35.9 m TDH, wet well total volume 34.38 m3. The station is connected to 1 – 150 mm forcemain, discharging to MH16A on Wabanaki Drive.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows from station to stormwater MH3 which drains to the stormwater management pond to the west of the station. Available storage volume 23.3 m^3 (3.7 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	The station contains 1 on-site odour control unit.
Standby Power	60 kW diesel generator and 400 L fuel tank size.
Notes	Reference ECA: 3-0834-85-006

MANCHESTER PUMPING STATION

Asset ID and Name	1858 - MANCHESTER PUMPING STATION
Site Location	451 MANCHESTER RD
Latitude and Longitude	43.45819, -80.45453
Coordinates (optional)	
Description	Wastewater enters the Manchester SPS via a 750 mm diameter sanitary sewer which conveys wastewater from 114.32 ha catchment area to the inlet chamber. 1 duty pump has the capacity to lift 240 L/s from an influent gravity sewer into downstream gravity sewer. (0.003km).
Pumping Station Capacity	240 L/s
Equipment	2 screw sewage pumps, (1 duty, 1 standby), with rated capacity of 20736 m3/d (240 L/s), wet well total volume 190.06 m3. The station lifts the wastewater approximately 3.1m into a maintenance hole on the outlet side of the station.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Corkscrew Pumps, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	Available storage volume 6.53 m3 (0.012hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	50 kW diesel generator and 620 L fuel tank size.
Notes	Reference ECA: 3-0406-72-006

SHIRLEY PUMPING STATION

Asset ID and Name	2700 - SHIRLEY PUMPING STATION
Site Location	2500 SHIRLEY DR
Latitude and Longitude	43.47900, -80.42497
Coordinates (optional)	
Description	*Shirley Pumping Station* Wastewater enters the Shirley SPS via a 525 mm diameter sanitary sewer from the Victoria Street catchment area as well as via two 250 mm diameter ductile iron forcemains from the Breslau sewage pumping station located onsite, both of which convey wastewater from catchment areas to the wet well. 2 duty pumps have the capacity to discharge 328 L/s via 600 mm forecemain to a manhole and gravity sewer located in Shantz Park near the outlet of the Manchester SPS. (4.1km). *On-site Transfer Station* Onsite SPS receives incoming flow from the catchment area east of the facility via 650 mm diameter concrete sanitary sewer. 1 duty pump has the capacity to discharge 96 L/s via two 250 mm diameter ductile iron forcemains to the Shirley WWPS.
Pumping Station Capacity	378 L/s
Equipment	*Shirley Pumping Station* 3 sewage pumps (2 duty, 1 standby), with rated capacity of 28339.20 m^3/d (328 L/s) and 44.5 m TDH, wet well total volume 158.39 m^3. The station is connected to 1 – 600 mm forcemain, discharging to MHID 2001762 located in Shantz Park (part of Stanley Park Conservation Area) where the wastewater discharges from the Manchester WWPS. *On-site Transfer Station* 2 sewage pumps (1 duty, 1 standby), with rated capacity of 8294.4 m^3/d (96 L/s) and 11.6m TDH, wet well total volume 90.9 m^3. The station is connected to 2 – 250 mm forcemains, discharging to wet well of Shirley SPS (Victoria).
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	*Shirley Pumping Station* 3 Sewage Pumps, 2 Level Sensors, Generator, Power Supply, Float Control System. *On-site Transfer Station* 2 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	*Shirley Pumping Station* System overflows from station to stormwater management pond north of the Victoria SPS building. Available storage volume 86.44 m^3 (0.48 hr).

	On-site Transfer Station System overflows from station to overflow pipe and discharges into the Shirley SPS (Victoria).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	Station shares the same power supply. 400 kW diesel generator and 2500 L fuel tank size.
Notes	Reference ECA: 6965-5K5JLM

OTTERBEIN PUMPING STATION

Asset ID and Name	1854 - OTTERBEIN PUMPING STATION
Site Location	501 OTTERBEIN RD
Latitude and Longitude	43.46283, -80.42349
Coordinates (optional)	
Description	Wastewater enters the Otterbein SPS via a 525 mm diameter sanitary sewer which conveys wastewater from 168.09 ha catchment area. 2 duty pumps have the capacity to discharge 88.7 L/s via 400mm forcemain to a manhole and gravity sewer located at the intersection of Ottawa Street North and Old Chicopee Drive. (1.93km).
Pumping Station Capacity	88.7 L/s
Equipment	3 sewage pumps (2 duty, 1 standby), with rated capacity of 7663.68 m^3/d (88.7 L/s) and 53.6 m TDH, 1 grinder, wet well total capacity 51.72 m^3. The station is connected to 1 – 400 mm forcemain, discharging to MH ID 301625 near the intersection of Ottawa Street North and Old Chicopee Dr.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	3 Sewage Pumps, 1 Flow Meter, 2 Level Sensors, Generator, Power Supply, Grinder, Float Control System, Pressure Sensors.
Sewage Pumping Station – Collection System Overflow	Available storage volume 14.27 m^3 (0.0785 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	250 kW diesel generator and 1000 L fuel tank size.
Notes	Reference ECA: 3-1193-87-006

OXFORD PUMPING STATION

Asset ID and Name	1862 - OXFORD PUMPING STATION
Site Location	219 OXFORD ST
Latitude and Longitude	43.47263, -80.48768
Coordinates (optional)	
Description	Wastewater enters the Oxford SPS via a 400 mm diameter sanitary sewer which conveys wastewater from 36.38 ha catchment area to the inlet chamber. 1 duty pump has the capacity to discharge 35.7 L/s via 200mm forcemain to a manhole and gravity sewer at the intersection of Union St. And Lancaster St. (0.47 km).
Pumping Station Capacity	35.7 L/s
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacity of 3084.48 m^3/d (35.7 L/s) and 13.0 m TDH, wet well total volume 23.23 m^3. The station is connected to 1 – 200 mm forcemain, discharging to MH305384 located at the corner of Lancaster St.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows to environment through manhole on Oxford St. Available storage volume 1.34 m^3 (0.033 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	80kW diesel generator and 620 L fuel tank size.
Notes	Reference ECA: 67-A-1129

PATRICIA PUMPING STATION

Asset ID and Name	1863 - PATRICIA PUMPING STATION
Site Location	164 PATRICIA AVE
Latitude and Longitude	43.44194, -80.50620
Coordinates (optional)	
Description	Wastewater enters the Patricia SPS via two 200 mm diameter sanitary sewers which convey wastewater from the catchment area in the inlet chamber. 1 duty pump has the capacity to discharge 9.4 L/s via 150mm forcemain to cross the Sandrock Creek and Henry Sturm Greenway into a manhole and gravity sewer on Patricia Ave. (0.02km).
Pumping Station Capacity	9.4 L/s
Equipment	2 sewage pumps (1 duty,1 standby), with rated capacity of 812.16 m^3/d (9.4 L/s) and m TDH, wet well total volume 30.03 m^3. The station is connected to 1 – 150 mm forcemain, discharging to MH ID 304766 located across the channel on Patricia Ave.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Level Sensor, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows and drains to the channel adjacent to the station (Sandrock Creek). Available storage volume 11.03 m^3 (0.817 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	N/A
Notes	N/A

WOOLNER TRAIL PUMPING STATION

Asset ID and Name	2699 - WOOLNER TRAIL PUMPING STATION
Site Location	154 WOOLNER TRAIL
Latitude and Longitude	43.44459, -80.40168
Coordinates (optional)	
Description	Wastewater enters the Woolner SPS via a 375 mm diameter sanitary sewer which conveys wastewater from the 112.21 ha catchment area to the inlet chamber. 2 duty pumps have the capacity to discharge 115.2 L/s via 400mm forcemain to the manhole and gravity sewer located at intersection of Ottawa Street N and Old Chicopee Drive (4.4km).
Pumping Station Capacity	115.2 L/s
Equipment	3 sewage pumps (2 duty, 1 standby), with rated capacity of 9953.28 m^3/d (115.2 L/s) and 78.8 m TDH, wet well total capacity 211.73 m^3. The station is connected to 1 – 400 mm forcemain, discharging to MH ID 2000577 located near the intersection of Ottawa Street N and Old Chicopee Drive.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	3 Sewage Pumps, 2 Level Sensors, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows from station to overflow pipe and drains from MH ID 3 to CBMH 3 (catch basin manhole). Available Storage Volume 163.13 m^3 (0.89 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	The station contains 1 on-site odour control units.
Standby Power	600 kW diesel generator and 3500 L fuel tank size.
Notes	Reference ECA: 6124-5VPT2N

CHANDOS PUMPING STATION

Asset ID and Name	1853 - CHANDOS PUMPING STATION
Site Location	155 CHANDOS DR
Latitude and Longitude	43.42863, -80.40735
Coordinates (optional)	
Description	Wastewater enters the Chandos SPS via a two separate 200 mm diameter sanitary sewer pipes which convey wastewater from 8.92 ha catchment area into the inlet chamber. 1 duty pump has the capacity to discharge 30 L/s via twin 150mm forcemains to a manhole and gravity sewer located at the intersection of Grand River Boulevard and Chandos Drive. (0.334km).
Pumping Station Capacity	30 L/s
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacity of 2592 m^3/d (30 L/s) and 25 m TDH, wet well total volume 51.12 m^3. The station is connected to 2 – 150 mm forcemains, discharging to Maintenance hole located at intersection of Grand River Boulevard and Chandos Drive.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	Available storage volume 3.12 m^3 (0.166 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	60kW diesel generator and 620 L fuel tank size.
Notes	Reference ECA: 3-0199-89-006

APPLE TREE PUMPING STATION

Asset ID and Name	1857 - APPLE TREE PUMPING STATION
Site Location	95 APPLE TREE CRT
Latitude and Longitude	43.44338, -80.41698
Coordinates (optional)	
Description	Wastewater enters the Apple Tree SPS via a 375 mm diameter sanitary sewer which conveys wastewater from 80.2 ha catchment area to the wet well. 2 duty pumps have the capacity to discharge 50 L/s via 300mm forcemain to a manhole located behind the cul-de-sac on Springmount Place near the Daimler Driver Walkway. (0.77km).
Pumping Station Capacity	50 L/s
Equipment	3 sewage pumps (2 duty, 1 standby), with rated capacity of 4320 m^3/d (50 L/s) and 17 m TDH, wet well total volume 86.52 m^3. The station is connected to 1 – 300 mm forcemain, discharging to MHID 302437 located behind the cul-de-sac on Springmount Place near the Daimler Drive Walkway.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	3 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows from station to stormwater retention pond southeast of the station. Available storage volume 2.01 m^3 (0.146 hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	75 kW diesel generator and 620L fuel tank size.
Notes	Reference ECA: 3-0855-87-006

OLD MILL PUMPING STATION

Asset ID and Name	1810 - OLD MILL PUMPING STATION
Site Location	1810 OLD MILL RD
Latitude and Longitude	43.39362, -80.41445
Coordinates (optional)	
Description	Wastewater enters the Old Mill SPS via a 375 mm diameter sanitary sewer which conveys wastewater from catchment area to the wet well. 2 duty pumps have the capacity to discharge 31.5 L/s via 350 mm forcemain to Kitchener Wastewater Treatment Plant (0.925km).
Pumping Station Capacity	31.5L/s
Equipment	sewage pumps (1 duty, 1 standby), with rated capacity of 2721 m3/d (31.5 L/s) and 27 m TDH, wet well total volume 68.4 m3. The station is connected to 1 – 350 mm forcemain, discharging to and existing forcemain which continues to the Kitchener Wastewater Treatment Plant.
Emergency Storage	
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows from station to Grand River. Available storage volume after high level 53.6 m3 (0.467hr).
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	100 kW diesel generator and 620 L fuel tank size.
Notes	Discharging directly to Kitchener Wastewater Treatment Plant.

NATHALIE PUMPING STATION

Asset ID and Name	11212 - NATHALIE PUMPING STATION
Site Location	20 NATHALIE ST
Latitude and Longitude	43.40278, -80.53985
Coordinates (optional)	
Description	
Pumping Station Capacity	98 L/s
Equipment	3 sewage pumps (2 duty, 1 standby), with rated capacity of 6393.6 m^3/d (74L/s) and 37.5 m TDH, 1 grinder in inlet channel, wet well total volume 113.12 m^3. The station is connected to 1 – mm forcemain, discharging to maintenance hole near the intercession of Ottawa Street South and David Bergey Drive.
Emergency Storage	Emergency storage tank (508 m^3) Emergency storage volume 526.77m^3 (1 hr).
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Flowmeters, 2 Level Sensors, Generator, Power Supply, Grinder, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows and discharges to an emergency overflow pipe connected to the stormwater management system at manhole 39 that discharges to the Mannheim Village Estates Block 71 Strom Water Management Facility.
Receiving Stations (if applicable)	N/A
Odour Control Units	The station contains 1 on-site odour control units.
Standby Power	200 kW diesel generator and 1330 L fuel tank size.
Notes	Reference ECA: 2296-B7BUEU

MOORE AVE PUMPING STATION

Asset ID and Name	2730 - MOORE AVE PUMPING STATION
Site Location	195 MOORE AVE
Latitude and Longitude	43.46039, -80.50803
Coordinates (optional)	
Description	Wastewater enters the Moore SPS via a 225 mm diameter sanitary sewer which conveys wastewater from 211.09 ha catchment area to the wet well. 1 duty pump has the capacity to discharge 12.3 L/s via 150mm forcemain to a manhole located east of the station at Moore Avenue. (0.365km).
Pumping Station Capacity	12.3 L/s
Equipment	2 sewage pumps (1 duty, 1 standby), with rated capacity of 1062.72 m^3/d (12.3 L/s) and 8.6 m TDH, wet well total volume 4.95 m^3. The station is connected to 1 – 150 mm forcemain, discharging to MHID 2091738 at 138 Moore Avenue.
Emergency Storage	No emergency storage available.
Equipment: Associated controls and Appurtenances	2 Sewage Pumps, 1 Level Sensor, Generator, Power Supply, Float Control System.
Sewage Pumping Station – Collection System Overflow	System overflows from station to overflow pipe and discharges into a sewer pipe on Herbert Street.
Receiving Stations (if applicable)	N/A
Odour Control Units	N/A
Standby Power	N/A
Notes	N/A

Real-Time Control

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

	Description
Process Equipment/System Elements	2 valves, 1 inlet grinder pump with sluice gates, 3 sewage pumps, 2 transfer pumps,
Flow Measurement Locations	N/A
Level Measurement Locations	two (2) level measuring devices at 43.42407, -80.41325, Asset ID 10672
Other Instrumentation and Controls	Generator, Power Supply, Grinder, Float Control System, Communication, UPS

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)
N/A			

Table B5: Identified Sanitary Sewer Overflow Points including Pumping Stations			
Column 1 Asset ID	Column 2 Asset Name	Column 3 Overflow Location (Latitude & Longitude)	Column 4 Point of Entry to Receiver (Latitude and Longitude)
10672	King Pumping	43.42388, -80.41334	43.42375, -80.41342

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	**Kitchener, The Corporation of the City of**
ECA Number	**019-W601**
System Name	**Kitchener's Sewage Collection System**
ECA Issue Date	**January 29th, 2023**

1.0 General

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

Table C1: Schedule C Notices

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

Schedule D: General

System Owner	**Kitchener, The Corporation of the City of**
ECA Number	**019-W601**
System Name	**Kitchener's Sewage Collection System**
ECA Issue Date	**January 29th, 2023**

1.0 Definitions

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

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

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

a) An extension of the system,

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

c) Adverse Effect to the Natural Environment; or

d) Spill.

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

"ESC" means erosion and sediment control.

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

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

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

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

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

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

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

"Licensed Engineering Practitioner” means a person who holds a licence, limited licence, or temporary licence under the *Ontario Professional Engineers Act* R.S.O. 1990, c. P.28.

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

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

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

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

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

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

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

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

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

"Owner" for the purposes of this Approval means the City of Kitchener 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%.

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

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

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

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

6.6.8 Adverse Effects.

6.7 The Alteration is subject to the following conditions:

6.7.1 The Owner consents in writing to the Alteration.

6.7.2 The person responsible for the design has verified in writing that the 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 biolfiltration or wet air scrubbing systems, including any components, with Equipment of the same or better performance characteristics; and

7.1.3 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline, or biofuel, and that are used for emergency duty only with periodic testing.

7.2 Any Alteration of the Municipal Sewage Collection System made under condition 7.1 that may discharge or alter the rate or manner of a discharge of a Compound of Concern to the atmosphere is subject to the following conditions:

7.2.1 The Owner shall, at all times, take all reasonable measures to minimize odorous emissions and odour impacts from all potential sources at the Facility.

7.2.2 The Owner shall ensure that the noise emissions from the Facility comply with the limits set out in Publication NPC-300.

7.2.3 The Owner shall ensure that the vibration emissions from the Facility comply with the limits set out in Publication NPC-207.

7.3 The Owner shall not add, modify, or replace Equipment in the Municipal Sewage Collection System as set out in condition 7.1 unless the Equipment performs an activity that is directly related to municipal Sewage collection and transmission.

7.4 The emergency generators identified in condition 7.1.3 shall not be used for non-emergency purposes (excluding generator testing) including the generation of electricity for sale or for peak shaving purposes.

7.5 The Owner shall verify in writing that any addition, modification, or replacement of Equipment in accordance with condition 7.1 has met the requirements of the conditions listed in conditions 7.2, 7.3, and 7.4.

7.6 The verifications and documentation required in condition 7.5 shall be:

7.6.1 Recorded on Form A1 prior to the additional, modified or replacement Equipment being placed into service; and

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

7.7 For greater certainty, the verification and documentation requirements set out in condition 7.5 and 7.6 do not apply to any addition, modification, or replacement in respect of the Authorized System which:

7.7.1 Is exempt from the requirements of the EPA, or for Equipment that is exempt from s.9 of the EPA under O. Reg. 524/98; or

7.7.2 Constitutes maintenance or repair of the Authorized System.

8.0 Previously Approved Sewage Works

8.1 If approval for an Alteration to the Authorized System was issued under the EPA and is revoked by this Approval, the Owner may make the Alteration in accordance with:

8.1.1 The terms of this Approval; or

8.1.2 The terms and conditions of the revoked approval 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, condition 4.1.7, clause (c) of condition 5.2.1, and condition 5.2.9 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 January 31, 2024.

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	**Kitchener, The Corporation of the City of**
ECA Number	**019-W601**
System Name	**Kitchener's Sewage Collection System**
ECA Issue Date	**January 29th, 2023**

1.0 General Operations

1.1 The Owner shall ensure that, at all times, the Sewage Works comprising the Authorized System and the related Equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.

1.2 Prescribed Persons and Operating Authorities shall ensure that, at all times, the Sewage Works under their care and control and the related Equipment and Appurtenances used to achieve compliance with this Approval are properly operated and maintained.

1.3 In conditions 1.1 and 1.2 “properly operated and maintained” includes effective performance, adequate funding, adequate operator staffing and training, including training in applicable procedures and other requirements of this Approval and the EPA, OWRA, CWA, and regulations, adequate laboratory services, process controls and alarms and the use of process chemicals and other substances used in the Authorized System.

2.0 Duties of Owners and Operating Authorities

2.1 The Owner, Prescribed Persons and any Operating Authority shall ensure the following:

2.1.1 At all times that the Sewage Works within the Authorized System are in service the Sewage Works are:

a) Operated in accordance with the requirements under the EPA and OWRA, and

b) Maintained in a state of good repair.

2.1.2 The Authorized System is operated by persons having the training or expertise for their operating functions that is required by O. Reg. 129/04 (Licensing of Sewage Works Operators) under the OWRA and this Approval.

2.1.3 All sampling, testing, monitoring, and reporting requirements under the EPA and this Approval that relate to the Authorized System are complied with.

2.1.4 Any person who is operating the Sewage Works within the Authorized System is supervised by an operator-in-charge as described in O. Reg. 129/04 under the OWRA.

2.2 For clarity, the requirements outlined in the above conditions 2.1.1 through 2.1.4 for Prescribed Persons and any Operating Authority only apply to Sewage Works within the Authorized System where they are responsible for the operation.

2.3 The Owner, Prescribed Persons and Operating Authority shall take all reasonable steps to minimize and ameliorate any Adverse Effect on the Natural Environment or impairment of the quality of water of any waters resulting from the operation of the Authorized System, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.

3.0 Operations and Maintenance

3.1 Inspection

3.1.1 The Owner shall ensure that all Sewage Works within the Authorized System are inspected at the frequency and in accordance with procedures set out in their O&M Manual.

3.1.2 The Owner shall ensure that:

a) Any pumping stations, combined Sewage storage tanks, and any Collection System Overflow within the Authorized System as of the date of issuance of this Approval are inspected at least once per calendar year starting the year after the O&M Manual is required to be prepared and implemented as per condition 3.2.1 in Schedule E of this Approval, and more frequently if required by the O&M Manual; and

b) Any pumping stations, combined Sewage storage tanks, and any Collection System Overflow established or replaced within the Authorized System after the date of issuance of this Approval are inspected within one year of being placed into service and thereafter once per calendar year and more 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 May 20, 2024, that includes or references, but is not necessarily limited to, the following information:

a) Procedures for the routine operation of the Sewage Works;

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

c) Maintenance and repair programs, including:

i The frequency of maintenance and repair for the Sewage Works.

ii Clean out requirements for any storage or overflow tanks, if applicable.

d) Operational and maintenance requirements to protect sources of drinking water, such as those included in the Standard Operating Policy for Sewage Works, and any applicable local Source Protection Plan policies;

e) Procedures for routine physical inspection and checks of controlling systems (e.g., SCADA) to ensure the mechanical integrity of Equipment and its accuracy on the controlling system.

f) Procedures for preventing odours and odour impacts;

g) Procedures for calibration of monitoring Equipment (e.g., flow, level, pressure);

h) Emergency Response, Spill Reporting and Contingency Plans and Procedures for dealing with Equipment breakdowns, potential Spills and any other abnormal situations, including notification to the SAC, the Medical Officer of Health, and the District Manager, as applicable;

i) Procedures for receiving, responding and recording public complaints, including recording any follow-up actions taken; and

j) As-built drawings or record drawings of the Sewage Works.

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 May 20, 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 November 20, 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 November 20, 2022, 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 November 20, 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 May 20, 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 November 20, 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 Partiality 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 November 20, 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 Partiality 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 November 20, 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 May 20, 2027, if:

a) No PPCP exists for the Authorized System, or

b) The PPCP for the Authorized System is older than ten (10) years as of January 29th, 2023.

8.2.3 The PPCP shall include, at minimum:

a) Characterization of the Combined Sewer System (CSS) – Monitoring, modeling and other appropriate means shall be used to characterize the CSS and the response of the CSS to precipitation events. The characterization shall be based on the ten (10) year period starting January 1, 2012 and ending December 31, 2021 and include the determination of the location, frequency and volume of the CSOs, concentrations and mass pollutants resulting from CSOs, and identification and severity of suspected CSS deficiencies. Records shall be kept for CCS including the following:

i Location and physical description of CSO and SSO outfalls in the collection systems, emergency overflows at pumping stations, and bypass locations at STPs;

ii Location and identification of receiving water bodies, including sensitive receivers, for all Combined Sewer outfalls;

iii Combined Sewer system flow and STP treatment capacities, present and future (20-year timeframe) expected peak flow rates during dry weather and wet weather;

iv Capacity of all regulators;

v Location of cross connections between sanitary Sewage and Stormwater infrastructure; and

vi Location and identification of infrastructure in the CSS where monitoring Equipment is installed.

b) Operational procedures shall be developed including the following:

i Combined Sewer maintenance program; and

ii Regulator inspection and maintenance programs.

c) An examination of non-structural and structural CSO control alternatives that may include:

i Source control;

ii Inflow/Infiltration reduction;

iii Operation and maintenance improvements;

iv Control structure improvements;

v Collection system improvements;

vi Storage technologies;

vii Treatment technologies; and

viii Sewer separation.

d) An implementation plan with a schedule of all practical measures to eliminate dry weather overflows and minimize wet weather overflows, as well as an overflow percent reduction target.

i The implementation plan shall show how the minimum CSO prevention and control requirements and other criteria in Procedure F-5-5 are being achieved.

8.2.4 The Owner shall ensure that an updated PPCP for the Authorized System is prepared within ten (10) years of the date 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 January 29th, 2023, if any of the following pertain to the Authorized System:

8.3.1 It includes Combined Sewers;

8.3.2 It services a population greater than 10,000; or

8.3.3 The Sewer model for the Authorized System was last updated prior to 2012 and 8.3.1 or 8.3.2 apply.

Schedule F: Residue Management

System Owner	**Kitchener, The Corporation of the City of**
ECA Number	**019-W601**
System Name	**Kitchener's Sewage Collection System**
ECA Issue Date	**January 29th, 2023**

1.0 Residue Management System

1.1 Not Applicable: