Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Director
Ministry of the Environment, Conservation and Parks
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Toronto, ON M4V 1M2
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March 28, 2025

Re: 2024 Annual Performance Report for the County of Brant Sewage Collection System

Attached is the 2024 Annual Performance Report for the County of Brant Sewage Collection System. This report has been completed in accordance with:

Issue Number 2 – County of Brant Sewage Collection System CLI-ECA # 062-W601 dated September 19, 2023This report was prepared by the Ontario Clean Water Agency on behalf of the County of Brant based on the information we have in our records. The report covers the period from January 1, 2024 to December 31, 2024.

Sincerely,

Meagan Lowden
Process and Compliance Technician
Ontario Clean Water Agency

Cc.
Andrea Bazzard – Director of Environmental Services, County of Brant
Matthew D'Hondt – Solid Waste/Wastewater Operations Manager, County of Brant
Maegan Garber – Safety, Process and Compliance Manager, OCWA
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2024 ANNUAL PERFORMANCE REPORT

COUNTY OF BRANT SEWAGE COLLECTION SYSTEM

CONSOLIDATED LINEAR INFRASTRUCTURE-ENVIRONMENTAL COMPLIANCE APPROVAL # 062-W601

(ISSUE #2, DATED SEPTEMBER 19, 2023)

PREPARED BY: ONTARIO CLEAN WATER AGENCY

PREPARED FOR: THE MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

ON BEHALF OF: THE COUNTY OF BRANT

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INTRODUCTION

The following report is presented such that it corresponds with CLI-ECA# 062-W601, issue #2, dated September 19, 2023, Schedule E, Section 4.6 and 4.7.

The County of Brant Sewage Collection System consists of four individual sewage collection systems:

The Airport Municipal Sewage Collections System services the majority of the Brantford Airport property and the adjacent industrial subdivision, which consists of 1.7 km of gravity sewers that discharge into the Airport Sewage Treatment System.

The Cainsville Municipal Sewage Collection System services the majority of the geographical area of Cainsville, which consists of 5.2 km of gravity sewers that discharge into the Cainsville Lagoons.

The St. George Municipal Sewage Collection System services a portion of the village of St. George, which consists of 16 km of gravity sewers that discharge into the St. George Water Pollution Control Plant.

The Paris Municipal Sewage Collection System services the majority of the town of Paris, which consists of: 72 km of gravity sewers and forcemains, eight (8) sewage pumping stations and two (2) siphons that discharge into the Paris Water Pollution Control Plant and, three (3) chemically assisted odour control injections systems.

Details of the eight (8) sewage pumping stations (SPS) are as follows;

Grandville SPS

The Grandville SPS is located at 44 Cobblestone Drive in the community of Paris and services the Grandville subdivision. The Design Peak Flow of the SPS is 54 L/sec (1 duty and 1 standby).

The Grandville SPS is equipped with an inlet sewer and manhole, two (2) VFD submersible pumps for duty and one (1) for standby with provisions to install an additional pump. Each pump has a rated capacity of 54 L/s at a total dynamic head of 31.5 m. A 5.0 m x 5.0 m single-storey building equipped with a 100 kW diesel generator set and one (1) 1,137 L capacity fuel tank and a 300 mm diameter emergency overflow from the inlet manhole to the sediment forebay of an existing stormwater management facility adjacent to the station property.

There is one (1) calcium nitrate injection system installed to limit the formation of hydrogen sulfide in the downstream forcemain consisting of two (2) outdoor double walled XLPE tanks providing a storage volume of 2000 L each, one (1) SCADA controlled chemical feed pump with a max flow rate of 42 L/hr complete with associated process piping, valves.

There is a 250 mm diameter sanitary sewage forcemain that runs from the pumping station along Cobblestone Drive to Rest Acres Road. At Rest Acres Road the flow can be directed to a 250 mm diameter forcemain which discharges to a sanitary manhole at Hanlon Place or the flow can be directed to a 250 mm diameter forcemain which discharges to a sanitary manhole 620 m south of Cobblestone Drive on Rest Acres Road.

Brant 403 Business Park SPS

The Brant 403 Business Park Sewage Pumping Station (Brant 403 Business Park SPS) is located at 99 Bethel Road in the County of Brant and services the Brant 403 Business Park. The Rated Design Capacity of the SPS is 43 L/sec (1 duty and 1 standby).

It is equipped with one (1) 2.95 m by 3.888 m wet well having one inlet pipe, one (1) duty pump, one (1) standby pump each rated at 43 L/s for a total dynamic head of 30 m, and the provision for one (1) future pump rated at 105 L/s for a total dynamic head of 85 m. It has a float control assembly for high/low pump control and alarms, one (1) control building, one (1) 300 kW pad mounted diesel stand-by generator. The 403 Business Park SPS has an alarmed bypass overflow to automatically close two (2) actuated gate valves on the discharge from the stormwater management pond. Brant 403 Business Park SPS connects to a 250 mm diameter forcemain between Bethel Road and Powerline Road.

Grand River St. N SPS

The Grand River St N. Sewage Pumping Station (Grand River St. N SPS) is located at 269 Grand River Street North in the community of Paris. The Design Peak Flow Capacity of the SPS is 207 L/sec (2 duty and 1 standby).

It is equipped with the following: three (3) submersible pumps, located in the old dry well portion of the station. Pump #1 and #3 are each rated at 73.1 L/s at a total dynamic head of 6.95 m, and Pump #2 is rated for 67 L/s at a total dynamic head of 6 m. Additionally, there is ultrasonic level monitoring equipment with a float switch system as a backup, discharge piping and valves; a 450 millimeter diameter opening between the dry well and wet well, to form a single pumping well, equipped with a sluice gate, one (1) 40 kilowatt standby generator set, located in a generator/control building; - one (1) 350 millimeter diameter forcemain along Grand River Street North (Highway 24A), extending from the sewage pumping station to the existing 450 millimeter diameter sewer at Silver Street.

Willow St. SPS

The Willow St. Sewage Pumping Station is located at 2 Willow St. in the County of Brant. The Design Peak Flow of the SPS is 295 L/sec (3 duty and 1 standby).

It is equipped with a two-celled wet well, a drywell/pump room equipped with four (4) dry pit centrifugal pumps (one standby) with variable frequency drives, each rated at approx. 98.33 L/s at 32.4 m TDH, discharge pipe and flowmeter, a building structure to house one (1) 350 kW diesel generator set, an external steel double wall fuel tank, control, instrumentation system and SCADA.

There are two forcemains (400 mm diameter – one duty and one standby) with bypass connections that run from the station along Willow Street and Dundas Street (High Level Bridge) to an existing sanitary sewer at the intersection of Ball Street and Dundas Street West

Fairview Heights SPS

Fairview Heights Sewage Pumping Station is located at 22 MacPherson Drive in the County of Brant. The design Peak Flow of the SPS is 25.35 L/sec (1 duty and 1 standby).

It is equipped with a wet well, 2 submersible pumps (1 duty and 1 standby) rated at approximately 25.3 L/s with a TDH of 14.22 m and a 30 kw 600 V natural gas generator.
There is a 150 mm diameter forcemain that runs from the Fairview Heights SPS along MacPherson Drive, Whitlaw Way and Armstrong Street. The outlet is at a manhole at the intersection of Armstrong Street and Oak Ave.

Pinehurst SPS

The Pinehurst Sewage Pumping Station (SPS) is located at 2 Hartley Avenue, the County of Brant in the County of Brant. The Design Peak Flow of the SPS is 30.7 L/sec .

It consists of a single underground wet well facility equipped with two (2) submersible pumps each rated at approximately 30.7 L/s with a TDH of 6.77 m and a 30 kw 600 V natural gas generator. The SPS pumps sewage via a 150 mm diameter forcemain to an existing 300 mm diameter sanitary sewer located at the intersection of Pinehurst Road and Woodslee Avenue. *This site was decommissioned in 2024 and is no longer in service.*

Paris Meadows SPS

The Paris Meadows Sewage Pumping Station (SPS) is located at 201 Markel Drive in the County of Brant. The Design Peak Flow of the SPS is 56 L/sec.

The SPS collects the sanitary sewage from 53.59 ha area which consist and residential and Industrial properties. The SPS is designed with an initial firm capacity of 39 L/s and ultimate period firm capacity of 56 L/s, consisting of a precast concrete 3 m wet well equipped with two (2) centrifugal type submersible pumps each having a minimum capacity of approximately 56 L/s and a totally dynamic height of 32 m, designed with VFD in order to operate the pumping station at seven (7) different operating duty points; discharging through a 200 mm forcemain, complete with following:

A concrete valve chamber houses a forcemain gate and check valves, a bypass tee to bypass from wet well to forcemain , and a flow meter assembly for monitoring the flows;

An offline underground concrete storage tank with a storage volume of 114 m^3, designed to store surcharge volumes from the wet well, connected with the wet well through a reversed slope 250 mm diameter pipe, installed at an invert in the wet well and in the storage tank; the tank is designed to provide approximately 2.2 hours of emergency storage volume.

One forcemain, 200 mm in diameter, 878 m long, from the valve chamber located at the pump station to the existing 525 mm trunk sewer north along Mile Hill Road.

Paris Grand SPS

The Paris Grand Sewage Pumping Station (SPS) is located at 43 Gilham Way in the County of Brant. The Ultimate Period Peak Flow of the SPS is 61.72 L/sec.

It is designed for an initial period peak flow of 31.02 L/sec and an ultimate period peak flow of 61.72 L/sec, consisting of a rectangle wet well having 5.49 meters by 2.74 meters size , with a depth of 5.68 meter equipped with initially two (2), and ultimately three (3) submersible pumps (1 standby), with variable frequency drives, each rated at 31.5 L/sec at a Total Dynamic Head (TDH) of 58.15 meters, receiving sanitary sewage from residential subdivisions totaling approximately 76.10 hectares of total catchment area.

A 375 mm emergency overflow pipe from wet well inlet pipe (from MH SAN10009032), that discharges to the outlet pipe of stormwater management pond (at MH SAN10009010), ultimately to the Grand River.

The SPS pumps sewage via a 200 mm diameter forcemain 1270 m long, from the valve chamber located at the SPS to the existing 600 mm sewer north on Grand River Street North at manhole PRS01113.

Section 1: Monitoring Data

As specified in CLI-ECA #062-W601, Schedule E - 4.6.3 requires a summary of all required monitoring data and any conclusions drawn from the data about the need for future modifications to the system.

(A) Airport Collection System

. There is no monitoring data required by ECA# 062-W601 for the Airport Collection System. The County initiated in 2020 a sampling program in the Airport Collection System. The program monitors chlorides, metals and hydrocarbons. The program was undertaken due to significant increase in chlorides observed at the Airport Sewage Treatment System (STS) since late 2019. The chlorides typically spike in the summer/warmer months which has resulted in increased chlorides observed in the monitoring wells in the area. In 2022 the MECP directed the County to complete an Impact Assessment Report for the Airport STS to review if the system is causing any impacts to offsite locations. The Impact Assessment included monitoring new groundwater wells and surface water locations offsite. The Assessment report was submitted to the MECP in October 2024 and no response from the MECP has yet been received. Chlorides can impact the Airport STS process, at levels around 1500mg/L the biological phosphorous removal is inhibited. The sampling study will continue into 2025.

A high flow event occurred in September 2024. To avert a bypass, 145 m^3 raw sewage was diverted to Paris WPCP from the Airport Sewage Treatment System. An investigation into the origin of the high flow event was completed. The County is currently in discussions with the property owner of the property suspect of discharging the high flows.

(B) Cainsville Collection System

There is no monitoring data required by ECA# 062-W601 for the Cainsville Collection System.

The County completes a sampling program in the Cainsville Collection System that monitors BOD_5 and pH in 2 manholes upstream of the Cainsville Lagoons. This monitoring program has been undertaken for due diligence to monitor for potential changes and /or users connected to the system. The 2024 data was similar to the 2023 results. The due diligence monitoring program will continue into 2025.

(C) Paris Collection System

There is no monitoring data required by ECA# 062-W601 for the gravity components of the Paris Collection System. See Section i. for a discussion of the monitoring data available for the Paris Collection System Sewage Pumping Stations.

The Paris Collection System has an industrial overstrength agreement with an industry connected to the system. The sampling study includes routine monitoring of BOD, TSS, Oil and Grease and pH. As of March 31st 2024, the industry associated with this monitoring agreement

ended their operation and subsequently the sampling has stopped. The monitoring data can be found in the below table:

TABLE 1 – PARIS COLLECTIONS MONITORING DATA

Date	BOD (mg/L)	Total Suspended Solids (mg/L)	pH	Temp (C)	Total Oil & Grease (mg/L)	Animal/Veg Oil & Grease (mg/L)	Mineral & Synthetic Oil & Grease (mg/L)
Sewer By Law Limits	300	350	6.0-9.5	60	100		
Overstrength Limits	900	1350			700		
Jan 5	284	294	7.08	3	21	16	5
Jan 9	475	430	7.29	9	118	118	<4
Jan 17	513	996	7.08	6	-	-	-
Jan 25	385	402	6.55	7	41	41	<8
Jan 31	336	215	7.03	8	10	8	<4
Feb 13	229	120	7.34	5	<4	<4	<4
Feb 15	555	264	7.27	7	10	10	<8
Feb 21	204	133	7.87	11	<4	<4	<4
Feb 29	302	242	7.12	8	15	15	<4
Average	365	344	7.18	7	36	35	5

i. Flow Data for Paris Collection System Sewage Pumping Stations

Flow data for Sewage Pumping Stations, presented below, has been obtained through the e.RIS SCADA data system. There are no flow measuring capabilities at the Pinehurst Pump Station within the Paris Collections System, therefore no data is available. This station has been decommissioned.

Table 2 to 8 below summarizes the flow data from the Paris Collections System Sewage Pumping Stations in 2024.

TABLE 2 – FLOW DATA FOR GRANDVILLE SEWAGE PUMPING STATION*

Month	Total (m^3)	Average (m^3)	Maximum (m^3)
January	12 456	401	454
February	11 714	403	476
March	12 201	393	452
April	12 075	402	451
May	12 807	413	464
June	12 288	409	452
July	12 831	413	533
August	12 479	403	436
September	12 264	409	453
October	12 621	407	474
November	11 875	395	445
December	12 997	419	478

Total	**148 609**	**--**	**--**
Average	**--**	**406**	**--**

*Design Peak Flow 54 L/sec (1 duty and 1 standby)

TABLE 3 – FLOW DATA FOR BRANT 403 BUSINESS PARK SEWAGE PUMPING STATION*

Month	Total (m^3)	Average (m^3)	Maximum (m^3)
January	1 316	42	87
February	1 039	35	62
March	1 340	43	99
April	1 022	34	63
May	1 094	35	75
June	1 058	35	73
July	1 211	39	100
August	1 225	40	87
September	1 064	35	60
October	1 335	43	76
November	1 757	58	97
December	1 438	46	86
Total	**14 899**	**--**	**--**
Average	**--**	**40**	**--**

*Rated Design Capacity 43 L/sec (1 duty and 1 standby)

TABLE 4 – FLOW DATA FOR GRAND RIVER ST N SEWAGE PUMPING STATION*

Month	Total (m^3)	Average (m^3)	Maximum (m^3)
January	23 169	747	951
February	20 426	704	856
March	14 280	460	784
April	13 109	436	485
May	13 639	439	512
June	13 129	437	486
July	13 443	433	692
August	13 563	438	462
September	12 711	424	459
October	13 065	459	406
November	13 140	438	485
December	14 048	453	532
Total	**177 722**	**--**	**--**
Average	**--**	**489**	**--**

*Design Peak Flow Capacity 207 L/sec (2 duty and 1 standby)

TABLE 5 – FLOW DATA FOR WILLOW ST SEWAGE PUMPING STATION*

Month	Total (m^3)	Average (m^3)	Maximum (m^3)
January	88 745	2 862	5 045
February	86 538	2 984	3 948
March	97 923	3 158	3 831
April	101 076	3 369	4 783
May	90 108	2 906	3 612
June	77 233	2 574	2 997
July	104 708	3 377	6 892
August	85 220	2 749	3 162
September	73 800	2 460	2 601
October	72 809	2 348	2 598
November	67 885	2 262	2 465
December	72 018	2 323	2 829
Total	**1 018 063**	**--**	**--**
Average	**--**	**2 781**	**--**

*Design Peak Flow Capacity 295 L/sec (3 duty and 1 standby)

TABLE 6 – FLOW DATA FOR FAIRVIEW HEIGHTS SEWAGE PUMPING STATION*

Month	Total (m^3)	Average (m^3)	Maximum (m^3)
January	5 629	182	188
February	5 180	179	188
March	5 397	174	185
April	5 291	176	189
May	5 364	173	179
June	5 020	167	207
July	5 091	164	194
August	4 879	157	187
September	4 928	164	193
October	5 387	173	224
November	5 509	184	212
December	5 970	192	225
Total	**63 645**	**--**	**--**
Average	**--**	**174**	**--**

*Design Peak Flow Capacity 25.35L/sec (1 duty and 1 standby)

TABLE 7– FLOW DATA FOR PARIS MEADOWS SEWAGE PUMPING STATION*

Month	Total (m^3)	Average (m^3)	Maximum (m^3)
January	3 459	111.6	170.8
February	2 904	100.1	121.3
March	3 749	120.9	162.7
April	3 618	120.6	169.3
May	4 027	129.9	157.1
June	3 735	124.5	147.2
July	4 620	149.0	296.9
August	4 372	141.1	157.8
September	4 334	144.5	173.5
October	4 332	139.7	163.0
November	4 091	136.4	157.9
December	4 637	149.6	175.7
Total	**47 878**	**--**	**--**
Average	**--**	**130.7**	**--**

*Design Peak Flow Capacity 56 L/sec (1 duty and 1 standby)

TABLE 8– FLOW DATA FOR PARIS GRAND SEWAGE PUMPING STATION*

Month	Total (m^3)	Average (m^3)	Maximum (m^3)
January	3 859.0	124.5	152.8
February	4 239.0	146.2	176.6
March	4 272.2	137.8	190.0
April	4 330.9	144.4	177.3
May	4 728.9	152.6	186.0
June	4 868.9	162.3	181.0
July	6 227.0	200.9	356.5
August	6 342.4	204.6	229.6
September	6 208.2	206.9	225.2
October	5 915.4	190.8	222.6
November	5 563.1	185.4	219.3
December	6 245.7	201.5	252.0
Total	**62 801**	**--**	**--**
Average	**--**	**171.5**	**--**

*Ultimate Period Peak Flow 61.72 L/sec (1 duty and 1 standby)

Based on the information above, there is no need for future modifications to the Authorized System or systems operations at this time.

(D) St. George Collection System

There is no monitoring data required by ECA# 062-W601 for the St. George Collection System.

Section 2: Operating Problems & Corrective Actions

In accordance with CLI ECA Schedule E - 4.6.4 below is a summary of the operation problems encountered during the reporting period and corrective actions taken.

There were no operating problems to report in the Airport, Cainsville, and St. George Collection Systems in 2024. However, there were minor operating problems in the Paris Collection system at two (2) of the pump stations which are discussed below. These issues did not affect the operations of the pumping stations during the reporting period.

The Willow Street Pumping Station had Pump #1 fail in February due to issues with the impeller. Pump 1 was taken out of service for repairs which included adjustments to the impeller to fit the wear plate. The repaired pump was re-installed and put back into service in November.

At the end of June, Fairview Pumping Station had Pump #1 fail which required it to be taken out of service for rebuild. During that time a temporary pump was installed as a contingency in case Pump #2 failed, as well as ensuring peak flows could be handled, if required. On October 21st, the rebuilt pump was re-installed and placed back into service.

Section 3: Maintenance, Repairs and Calibrations

In accordance with CLI ECA Schedule E - 4.6.5, below is a summary of all calibration, maintenance and repairs carried out during the reporting period.

(A) Airport Collection System

Table 9 shows the maintenance and repairs performed on the Airport Collections system in 2024:

TABLE 9 – MAINTENANCE AND REPAIRS OF THE AIRPORT COLLECTION SYSTEM

Date	Work Performed
Sept 4	Routine maintenance including flushing and CCTV inspections of sanitary lines along the easement to the Airport Sewage Treatment System.

There is no equipment in the Airport Collection System that requires calibration.

(B) Cainsville Collection System

There were no calibrations, maintenance or repairs performed in the Cainsville Collections System in 2024.

(C) St. George Collection System

Table 19 details the maintenance and repairs that were completed in the St. George Collection System in 2024.

TABLE 10 –MAINTENANCE AND REPAIRS OF THE ST. GEORGE COLLECTION SYSTEM

Date	Work Performed
April 9	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Beverly Street East, High Street, Lorimer Street, Main Street North, Main Street South, South Street, Mayfair Court, Thompson Street, and Victor Boulevard.
April 10	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Beverly Street East, High Street, Lorimer Street, Main Street North, Main Street South, South Street, Mayfair Court, Thompson Street, and Victor Boulevard.
April 15	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Main Street North Main Street South, Victor Boulevard

(D) Paris Collection System

Table 11 details the calibrations, maintenance and repairs that were completed in the Paris Collections System in 2024.

TABLE 11 –MAINTENANCE AND REPAIRS OF THE PARIS COLLECTIONS SYSTEM

Date	Work Performed
April 10	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Acres Street, Chapel Street, Court Drive, Daugaard Avenue, Edith Street, Long Lane, Weston Street, Dundas Street West
April 11	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Acres Street, Chapel Street, Court Drive, Daugaard Avenue, Edith Street, Long Lane, Weston Street, Dundas Street West
April 12	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Acres Street, Chapel Street, Court Drive, Daugaard Avenue, Edith Street, Long Lane, Weston Street, Dundas Street West
April 15	Routine Maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Church Street, King Edward Street, Ball Street, Burwell Street, Church Street, Creeden Street, Dumfries Street, Grand River Street South, Main Street, Queen Street, Washington Street.
April 16	Routine Maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Church Street, King Edward Street, Ball Street, Burwell Street, Church Street, Creeden Street, Dumfries Street, Grand River Street South, Main Street, Queen Street, Washington Street

April 17	Routine Maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Church Street, King Edward Street, Ball Street, Burwell Street, Church Street, Creeden Street, Dumfries Street, Grand River Street South, Main Street, Queen Street, Washington Street, Acres street, Amelia Street, Catherine Street, Cross Street, Monk Street, Charles Street, Evans Street, McCosh Street, Patterson Street.
April 18	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Catherine Street, Charles Street, Creeden Street, Evans Street, McCosh Street, Monk Street, Patterson Street, Queen Street, Acres Street, Amelia Street, Ball Street Cross Street, Dumfries Street, Washington Street.
April 19	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Catherine Street, Charles Street, Creeden Street, Evans Street, McCosh Street, Monk Street, Patterson Street, Queen Street, Acres Street, Amelia Street, Ball Street Cross Street, Dumfries Street, Washington Street.
April 22	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Amelia Street, Ann Street, Ball Street, Charles Street, Patterson Street, Race Street, Spencer Street, Washington Street, Hillside Street, Old Mill Street, Gilston Parkway.
April 23	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Amelia Street, Ann Street, Ball Street, Charles Street, Patterson Street, Race Street, Spencer Street, Washington Street, Hillside Street, Old Mill Street, Gilston Parkway.
April 24	Routine maintenance including flushing and CCTV inspections of sanitary lines along the noted streets: Amelia Street, Ann Street, Ball Street, Charles Street, Patterson Street, Race Street, Spencer Street, Washington Street, Hillside Street, Old Mill Street, Gilston Parkway.
May 23	Sanitary main line flushing and CCTV at the noted locations: Chapel street, Court Drive, Church street, King Edward Street, Main street, Queen street, Washington street, Catherine street, Dumfries street, Monk street, Queen street, Washington street, McCosh street, Patterson street, Amelia street, Spencer street, Old Mill Street, Gilston Parkway.
May 24	Sanitary main line flushing and CCTV at the noted locations: Chapel street, Court Drive, Church street, King Edward Street, Main street, Queen street, Washington street, Catherine street, Dumfries street, Monk street, Queen street, Washington street, McCosh street, Patterson street, Amelia street, Spencer street, Old Mill Street, Gilston Parkway
June 21	Exercised valves for Nith River Siphon

July 22	Flushing and CCTV work on the noted streets: Chapel Street, Acres Street, Main Street, Dumfries Street, Amelia Street, Washington Street, Old Mill Street, Hillside Ave, and Gilston Parkway.
July 22	Laurel St Chamber inspection completed
July 24	Flushing and CCTV of the Nith River Siphon. Included operation of south siphon pump along Mechanic Street. Removal of debris
July 30	Swabbed forcemain from pump station to end of forcemain between Arlington Parkway and Lydia Lane
August 13	Nith River Siphon: flushing and CCTV of the north siphon. South siphon was used along with the pump located on the east side of the Nith River. Vacuum truck decanted into the east MH
September 16	Flushing and CCTV night work along King Edward Street and Dundas Street West
September 17	Flushing and CCTV night work along Kind Edward Street and Dundas Street West.
September 18	Flushing and CCTV work along King Edward Street and Dundas Street West.
September 26	Flushing and CCTV work along Dundas Street West, Chapel Street, Main Street, Dumfries Street, Hillside Ave, Old Mill Street.
September 27	Flushing and CCTV work along Dundas Street West, Chapel Street, Main Street, Dumfries Street, Hillside Ave, Old Mill Street
November 14	Inspected air relief valve on north side of 403 – no issues Inspected air relief valve on south side of 403 – not working properly. Vac truck cleaned out chamber of sewage. Found float pin broken and seal in poor condition. Isolated valve until repairs can be completed.

i. Sewage Pumping Station Calibration, Maintenance and Repairs

Tables 11-18 detail the calibrations, maintenance and repairs that were completed at the Sewage Pumping Stations within the Paris Collection System in 2024.

TABLE 12–MAINTENANCE AND REPAIRS FOR GRANDVILLE PUMPING STATION

Date	Work Performed
March 21	Third party contractor completing generator inspections for fuel system compliance
May 2	ESA annual Inspection completed – no issues were found
May 9	Eramosa completed scheduled SCADA system maintenance
May 30	HMI for the ATS failed, had to manually switch the transfer switch to have generator run. New HMI installed on August 24
June 26	Third party on site to replace fuel lines on generator
July 9	Third party contractor cleaned out wet well
July 16	Third party contactor calibrating flow meter
July 24	TSSA upgrades completed on generator fuel system
July 25	Replaced plugged bioxide line from tank to pump

July 30	Swabbed forcemain from pump station to end of forcemain between Arlington Parkway and Lydia Lane
October 3	Third party contractor performing lifting device inspections
November 19	Third party contractor on site performing annual maintenance of generator – no issues found
December 9	Third party contractor completed backflow preventer annual inspection – found check valve not in working order. Shut water off until repair could be completed. Backflow preventer check valve repaired on December 27

TABLE 13 –MAINTENANCE AND REPAIRS FOR BRANT 403 BUSINESS PARK PUMPING STATION

Date	Work Performed
March 21	Third party contractor completing generator inspections for fuel system compliance
May 2	ESA annual inspection completed. Light switch mounting bracket was found broken and was fixed by third party contactor on May 22
May 9	Eramosa completing scheduled SCADA maintenance
June 25	TSSA upgrades completed on generator fuel system
July 16	Third party contactor calibrating flow meter
November 18	Third party contractor on site completing annual generator inspection – no issues were found
November 20-22	Pump station stuck in high level alarm and back up mode, pump interlock with Granville SPS is causing the issue preventing pumps to run. Eramosa changed tag in PLC which resolved the issue
December 9	Third party contractor completed backflow preventer annual inspection – no issues found

TABLE 14 –MAINTENANCE AND REPAIRS FOR GRAND RIVER ST N PUMPING STATION

Date	Work Performed
March 21	Third party contractor completing generator inspections for fuel system compliance
May 2	ESA annual Inspection completed – no issues were found
May 9	Eramosa completing scheduled SCADA maintenance
July 16	Third party contactor calibrating flow meter
July 26	Pump #1 not running at capacity, taken out of service. Pump was inspected on August 14 and found to have debris inside preventing it from working. Debris removed and put back into service on August 14.
October 3	Third party contractor performing lifting device inspections – no issues found
November 19	Third party contractor on site completing annual generator inspections – no issues found
December 9	Third party contractor completed backflow preventer annual inspection – no issues found

TABLE 15 –MAINTENANCE AND REPAIRS FOR WILLOW ST PUMPING STATION

Date	Work Performed
February 15	Third party contractor replaced all fluorescent lights to LED and installed a protective panel in breaker panel as per ESA inspection deficiencies. Pumps 1 & 2 were inspected as routine maintenance – no issues found
February 23	Pump 1 found not working, Pump sent out for repair on May 13 (see details below)
March 21	Third party contractor completing generator inspections for fuel system compliance
May 2	ESA annual Inspection completed – no issues were found
May 8	Alliance technician on site fixing signal issue going to SCADA
May 9	Eramosa completing scheduled SCADA maintenance
May 13	Pump 1 send out for repairs of volute casing and wear ring . reinstalled on November 25 (see below)
May 30	Station keeps going into high level and backup mode. Electrician and Eramosa found breaker tripped from PLC program. Reset it and no further issues.
July 9	Third party contractor cleaned out cell 1 & 2 of the wet well
July 16	Third party contactor calibrating flow meter
July 18	Pressure Transmitter failed in cell 2 of the wet well. Replaced on August 23
August 26	Pump 3 inspected as routine maintenance– no issues found
September 13	PLC UPS found not working, replaced with new one
October 3	Third party contractor performing lifting device inspections
November 19	Third party contractor on site completing annual generator inspections – no issues found
November 25	Pump 1 back from repairs, installed, was not able to put back into service until Dec 9 (see below) due to incorrect size wear plate for the impeller
December 2	Alarm system upgraded by Alliance Security
December 9	Third party contactor adjusted impeller on pump 1, put back into service after electrician wired pump back up Third party contractor on site connecting generator fuel tank alarm wire to the generator and connect damper motor. Required so that generator does not run out of fuel and has time to be refueled if running low Third party contractor completed backflow preventer annual inspection – no issues were found

TABLE 16 –MAINTENANCE AND REPAIRS FOR FAIRVIEW HEIGHTS PUMPING STATION

Date	Work Performed
February 22	Pressure Transducer reading inaccurately, cleaned it and put back, still having issues, so transducer is faulty . Put system on level transmitter for time being. Replaced on May 13.
March 21	Third party contractor completing generator inspections for fuel system compliance
May 9	Eramosa completing scheduled SCADA maintenance
May 29	County IT replaced modem and configure IP address for SCADA connection
June 29	Pump 1 not working, pulled for rebuild
July 16	Third party contactor calibrating flow meter
September 3	Third party contractor set up temporary pump on site as back up for pump 1 being out of service
October 21	Pump 1 back from rebuild and put back into service
November 19	Third party contractor on site completing annual generator inspections – no issues found

TABLE 17 –MAINTENANCE AND REPAIRS FOR PINEHURST PUMPING STATION

Date	Work Performed
May 9	Eramosa completing schedule SCADA maintenance
September	Site decommissioned

TABLE 18 –MAINTENANCE AND REPAIRS FOR PARIS MEADOWS PUMPING STATION

Date	Work Performed
May 9	Eramosa completing scheduled SCADA maintenance
May 29	Third party contractor on site checking over generator due to coolant leak found. Coolant leak due to temperature changes but nothing of concerns, technician topped up liquid levels
July 16	Third party contactor calibrating flow meter
October 3	Third party contractor performing lifting device inspections
November 18	Third party contractor on site completing annual generator inspections- no issues found
December 9	Third party contractor completed backflow preventer inspection – no issues found

TABLE 19 –MAINTENANCE AND REPAIRS FOR PARIS GRAND PUMPING STATION

Date	Work Performed
Feb 2	Back up pump on site because pump 2 was found seized
March 18	Pump 2 put back into service from repairs
March 19	Back up pump removed from site
May 2	ESA annual inspection completed – no issues
May 9	Eramosa completing schedule SCADA maintenance
May 30	Third party contractor on site to replace generator block heater
June 18	Third party contactor on site reprogramming pump relays and settings
July 3	Third party contractor looking into bioxide pump issue, discovered the back pressure from forcemain and pumps are causing faults with bioxide pumps
July 29	Installation of pressure transducer with third party contractors. Third party contactor replacing generator batteries
August 13	Yard hydrant leaking turned it off at curb stop for time being. Hydrant required new plug and was repairs on August 21
November 19	Third party contractor on site completing annual generator inspections- no issues found
December 9	Third party contractor completed backflow preventer annual inspection – no issues found

Annual calibrations were preformed on July 16, 2024 on the discharge flow meters of the Paris Collections System Sewage Pumping Stations. The flow meters are operating within the allotted +/- margin of error. The 2024 Calibrations Reports for the Paris Collections Sewage Pumping Stations can be found in *Appendix A*.

Section 4: Community Complaints & Concerns

There were no community complaints to report for the Airport, Cainsville, and St. George Sanitary Collections System in 2024.

The below Table indicates the following complaints received for the Paris Collections system in 2024:

TABLE 20- COMPLAINTS AND CONCERNS FOR THE PARIS COLLECTION SYSTEM

Date	Complaint/Response
05-Jul-24	Resident came home from vacation and house smelled of sewage. Resident stated it seemed to come from one of the sewers in front of the house, located on Hillside Ave, and other neighbors have noticed as well. Odour unit which is connected to the collection system along Race Street/Hillside Ave was off at the time for replacement of the media filter. No other issues were noted at the plant or with plant processes.
18-Sep-24	Resident noted a definite sewer odour on Hillside Ave on the area where there was construction from Mile Hill to Hillside Ave last year. Resident has been in touch with Matt F. from the County of Brant and Sam S. from OCWA. Upon investigation, Paris WPCP data indicated that it was operating normally and odour control units were functioning properly.

Section 5: Alterations to the Systems

There were no alterations to the Airport, Cainsville and St. George Collection Systems in 2024.

The alterations to the Paris Collection System in 2024 are listed in Table 20 below.

In accordance with CLI-ECA# 062-W601 Schedule E - 4.6.7 below is a summary of all alterations to the Paris Collection System that were authorized by the Approval and indicating Alterations that pose a Significant Drinking Water Threat. In accordance with CLI-ECA# 062-W601 Schedule E - 7.3 of the CLI-ECA an update to the "Significant Drinking Water Threat Assessment Report for Proposed Alterations" was prepared by Cambium Inc. (Risk Management Official for the County) which was finalized on December 18, 2024. The "Significant Drinking Water Threat Assessment Report for Proposed Alterations" includes "Threat Circumstances" screening criteria to be utilized in reviewing projects for significant drinking waste threats.

The below alterations noted as a potential significant drinking water threat were selected using the "Threat Circumstances" screening criteria. The alterations were constructed in accordance with the Ministry of Environment, Conservation and Parks (MECP) Design Criteria for Sanitary Sewers, Storm Sewers and Forcemains for Alterations Authorized under an Environmental Compliance Approval which includes measures required when infrastructure is constructed which could pose a Potential Significant Drinking Water Threat.

TABLE 21 – SUMMARY OF SEPARATE SEWERS/NOMINALLY SEPARATE SEWERS/FORCEMAIN ALTERATIONS (FORM SS1)

Description	CLI ECA Form SS1 – Part 5 Completion Date	Comment	Potential SDWT
Pinehurst Subdivision – Phase 2 – Assumption of Sanitary Sewers	NA	Sanitary Sewers previously approved under ECA ECA 2883-BMVLN7 – Assumed on January 25, 2024	No
Paris Meadows Subdivision – Phase 1 – Assumption of Sanitary Sewers	NA	Storm Sewers previously approved under ECA 7815-BRGRRM– Assumed on October 21, 2024	IPZ2-9
Arlington Meadows Subdivision Phase 7A	2024/31/10		No

TABLE 22 – SUMMARY OF COMPONENTS OF MUNICIPAL SEWAGE SYSTEM ALTERATIONS (FORM SS2)

Description	CLI ECA Form Director Notification (DN) Issued Date	Comment	Potential SDWT
None in 2024			

TABLE 23 – SUMMARY OF EQUIPMENT DISCHARGING A CONTAINMENT OF CONCERN TO THE ATMOSPHERE FROM A MUNICIPAL SEWAGE COLLECTION SYSTEM ALTERATION (FORM A1)

Description	CLI ECA Form Director Notification (DN) Issued Date	Comment	Potential SDWT
None in 2024			

TABLE 24– SUMMARY OF SANITARY INFRASTRUCTURE CHANGES TO SYSTEM INVENTORY (TRANSITION TO CLI-ECA)

Description	CLI ECA Form Director Notification (DN) Issue Date	Comment
Pinehurst (Brookfield) Sanitary Pumping Station - Decommission	2024/02/26	Pumping station decommissioned, sanitary sewers connected to downstream Grand River Street North to gravity sewers Approved under ECA 9395-AW9RFX

Section 6: Overflows and Spills of Sewage

There were no overflows or spills of sewage to report for the Airport, Cainsville, Paris and St. George Collection Systems in 2024.

Section 7: Summary of Efforts Made to Reduce Collection System Overflows, Spills, STP Overflows and/or STP Bypasses

Below is a summary of the efforts made to achieve conformance within the Collection System with procedure F-5-1. This is including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall bypass/overflow elimination including expenditures and proposed projects to eliminate bypass/overflows with estimated budget forecast for the year following that for which the report is submitted.

(A) Airport Collection System

The County of Brant completes the following:

- CCTV flushing and camera inspections with 50% of the system completed ever three (3) years, and the entire system completed at the end of the sixth (6) year .The cost of CCTV inspections, the years it is completed, is approximately $3,500.
- Manhole inspections are completed on a six (6) year rotation similar to the CCTV inspections.

The data collected is utilized to determine areas requiring maintenance/repair or additional investigation.

(B) . Cainsville Collection System

The County of Brant completes the following:

- CCTV flushing and camera inspections with 33 % of the system completed every other year, and the entire system completed at end of the sixth (6) years. The cost of CCTV inspections, the years it is completed, is approximately $8,000
- Manhole inspections are completed on a six (6) year rotation similar to the CCTV inspections.

The data collected is utilized to determine areas requiring maintenance/repair or additional investigation.

Additionally, the County of Brant has installed 2 SmartCovers™ liquid level manhole monitors in the Cainsville Sanitary Collection System in December of 2023. These smart covers are located in strategic manholes that essentially section the collection system of Cainsville into two (2) monitoring zones.

- CNV1020 (North)
- CNV1025 (South)

These Smart Covers are capable of measuring liquid levels in the collection system, trending data, and allow for further interpretation and analysis to better quantify Inflow & Infiltration (I&I) issues after rain events along with pin pointing locations where I&I is more pronounced. The information gathered will allow for interpretation of results and applying this knowledge in the field to correct issues with Manholes or address drainage inconsistencies. The initial costs for these monitors were approximately $25,000 and $2,500 annually thereafter.

(C) Paris Collection System

The County of Brant completes the following each year:

- CCTV flushing and camera inspections with 16.7% of the system completed each year, with the entire system completed at the end of the sixth (6) year. e The annual cost of CCTV inspections is approximately $80,000.
- Manhole inspections are completed on a six (6) year rotation similar to the CCTV inspections.
- Flow monitoring and trending at all pump stations.

The data collected is utilized to determine areas requiring maintenance/repair or additional investigation.

(D) St. George Collection System

The County of Brant completes the following each year:

- CCTV flushing and camera inspections with 16.7% of system completed each year, with the entire system completed at the end of the sixth (6) year. The annual cost of CCTV inspections is approximately $18,000.
- Manhole inspections are completed on a six (6) year rotation similar to the CCTV inspections.

The data collected is utilized to determine areas requiring maintenance/repair or additional investigation.

The County of Brant has installed 4 SmartCovers™ liquid level manhole monitors in the St. George Sanitary Collection System in 2020. These smart covers are located in strategic manholes that essentially section the town of St. George into 4 monitoring zones.

- STG01063 (North East Area)
- STG01030 (West Side)
- STG00126 (Central Corridor)
- STG01106 (Combination of the 3 above)

These Smart Covers are capable of measuring liquid levels in the collection system, trending data, and allow for further interpretation and analysis to better quantify Inflow & Infiltration (I&I) after rain events along with pin pointing locations where I&I is more pronounced. The information gathered will allow for interpretation of results and applying this knowledge in the field to correct issues with Manholes or address drainage inconsistencies. The initial costs for these monitors were approximately $25,000 and $2,500 annually thereafter.

APPENDIX A

CALIBRATION REPORTS

SCG FLOWMETRIX

Endress Hauser
ProMag Series
Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL

CUSTOMER Ontario Clean Water Agency Southwest
CONTACT Sam Sianas
Senior Operations Manager
Paris, ON
t: 519:319:2233
e: ssianis@ocwa.com

VER. BY - FM *Daniel Kettlewell*

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Endress + Hauser
MODEL	Promag 53
CONVERTER S/N:	K2026319000
PLANT ID	Granville PS
METER ID	Discharge Volumes
FIT ID	N/A
CLIENT TAG	N/A
OTHER	OCWA # 312873
GPS COORDINATES	N43°10.761 W080°23.370
VERIFICATION DATE	July 16th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	July 2025

PROGRAMMING PARAMETERS

DIAMETER (DN)	mm	150
F.S. FLOW - MAG	M3/D	15267.690
F.S. RANGE - O/P	M3/D	8640.000
TUBE k-FACTOR		1.07220
TUBE zero		5.00000

FORWARD TOTALIZER INFORMATION

AS FOUND	794983.9	M3
AS LEFT	795002	M3
DIFFERENCE	18.1	M3

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	15

COMPONENTS TESTED

CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	no

ERROR DOCUMENTED IN THIS REPORT; BASED ON % F.S.

FLOW TUBE SIMULATION

				0.0	2160.0	4320.0	6480.0	8640.0	M3/D
				0.0	14.1	28.3	42.4	56.6	% F.S. Flow
				0.0	25.0	50.0	75.0	100.0	% F.S. Range
REF. FLOW RATE				0.000	2160.000	4320.000	6480.000	8640.000	M3/D
MUT [Reading]				0.000	2159.200	4318.400	6479.300	8636.900	M3/D
MUT [Difference]				0.000	-0.800	-1.600	-0.700	-3.100	M3/D
MUT [% Error]				n/a	-0.01	-0.02	-0.01	-0.04	%
mA OUTPUT				4.000	8.000	12.000	16.000	20.000	0
MUT [Reading]	min.	4	mA	3.999	7.995	11.991	15.991	19.987	0.00
MUT [Difference]	max.	20	mA	-0.001	-0.005	-0.009	-0.009	-0.013	0.00
MUT [% Error]				0.00	-0.02	-0.05	-0.05	-0.07	%

TOTALIZER		
REF. FLOW RATE	8640.000	M3/D
TOTALIZER [MUT]	6.0	M3
TEST TIME	60.46	SECONDS
TOTALIZER [REF]	6.046	M3
ERROR	-0.77	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	E&HFC	1
PROCESS METER	PM	0
ANALOG METER	AM	N/A
STOP WATCH	SW	N/A

RESULTS

TEST	AVG %FS	PASS FAIL
DISPLAY	-0.02	PASS
mA OUTPUT	-0.04	PASS
TOTALIZER	-0.77	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

SCG FLOWMETRIX

Endress Hauser
ProMag Series
Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL		EQUIPMENT DETAIL	
CUSTOMER	Ontario Clean Water Agency Southwest	[MUT] MANUFACTURER	Endress + Hauser
CONTACT	Sam Sianas Senior Operations Manager Paris, ON t: 519:319:2233 e: ssianis@ocwa.com	MODEL	Promag 53
		CONVERTER S/N:	JA1BBE19000
		PLANT ID	Fairview McPherson PS
		METER ID	Discharge Volumes
		FIT ID	N/A
		CLIENT TAG	N/A
		OTHER	N/A
VER. BY - FM	*Daniel Kettlewell*	GPS COORDINATES	N43°12.554 W 080°24.432
Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was		VERIFICATION DATE	July 16th 2024
		CAL. FREQUENCY	Annual
		CAL. DUE DATE	July 2025

PROGRAMMING PARAMETERS		
DIAMETER (DN)	mm	150
F.S. FLOW - MAG	M3/D	15267.690
F.S. RANGE - O/P	M3/D	3271.000
TUBE k-FACTOR		1.07040
TUBE zero		0.00000

FORWARD TOTALIZER INFORMATION		
AS FOUND	558585.5	M3
AS LEFT	558593	M3
DIFFERENCE	7.5	M3

TEST CRITERIA	
AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	15

COMPONENTS TESTED	
CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	no

ERROR DOCUMENTED IN THIS REPORT; BASED ON % F.S.

FLOW TUBE SIMULATION

				0.0	817.8	1635.5	2453.3	3271.0	M3/D
				0.0	5.4	10.7	16.1	21.4	% F.S. Flow
				0.0	25.0	50.0	75.0	100.0	% F.S. Range
REF. FLOW RATE				0.000	817.750	1635.500	2453.250	3271.000	M3/D
MUT [Reading]				0.000	817.770	1635.600	2454.700	3271.500	M3/D
MUT [Difference]				0.000	0.020	0.100	1.450	0.500	M3/D
MUT [% Error]				n/a	0.00	0.00	0.04	0.02	%
mA OUTPUT				4.000	8.000	12.000	16.000	20.000	0
MUT [Reading]	min.	4	mA	3.999	8.001	12.000	16.003	19.997	0.00
MUT [Difference]	max.	20	mA	-0.001	0.001	0.000	0.003	-0.003	0.00
MUT [% Error]				0.00	0.00	0.00	0.02	-0.02	%

TOTALIZER		
REF. FLOW RATE	3271.000	M3/D
TOTALIZER [MUT]	2.5	M3
TEST TIME	66.08	SECONDS
TOTALIZER [REF]	2.502	M3
ERROR	-0.07	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.		
[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	E&HFC	1
PROCESS METER	PM	0
ANALOG METER	AM	N/A
STOP WATCH	SW	N/A

RESULTS		
TEST	AVG %FS	PASS FAIL
DISPLAY	0.02	PASS
mA OUTPUT	0.00	PASS
TOTALIZER	-0.07	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

SCG FLOWMETRIX

Endress Hauser ProMag Series
Verification Report

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL	
CUSTOMER	Ontario Clean Water Agency Southwest
CONTACT	Sam Sianas Senior Operations Manager Paris, ON t: 519:319:2233 e: ssianis@ocwa.com
VER. BY - FM	*Daniel Kettlewell*

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was

EQUIPMENT DETAIL	
[MUT] MANUFACTURER	Endress + Hauser
MODEL	Promag 53
CONVERTER S/N:	JB084F16000
PLANT ID	Grand River PS
METER ID	Discharge Volumes
FIT ID	N/A
CLIENT TAG	N/A
POWER DISCONNECT	FU4
GPS COORDINATES	N43°12.513 W 080°23.264
VERIFICATION DATE	July 16th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	July 2025

PROGRAMMING PARAMETERS		
DIAMETER (DN)	mm	350
F.S. FLOW - MAG	M3/D	83124.090
F.S. RANGE - O/P	M3/D	19624.000
TUBE k-FACTOR		1.00210
TUBE zero		0.00000

FORWARD TOTALIZER INFORMATION		
AS FOUND	2895502	M3
AS LEFT	2895536	M3
DIFFERENCE	34	M3

TEST CRITERIA	
AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	15

COMPONENTS TESTED	
CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	no

ERROR DOCUMENTED IN THIS REPORT; BASED ON % F.S.

FLOW TUBE SIMULATION

				0.0	4906.0	9812.0	14718.0	19624.0	M3/D
				0.0	5.9	11.8	17.7	23.6	% F.S. Flow
				0.0	25.0	50.0	75.0	100.0	% F.S. Range
REF. FLOW RATE				0.000	4906.000	9812.000	14718.000	19624.000	M3/D
MUT [Reading]				0.000	4907.000	9815.100	14721.000	19638.000	M3/D
MUT [Difference]				0.000	1.000	3.100	3.000	14.000	M3/D
MUT [% Error]				n/a	0.01	0.02	0.02	0.07	%
mA OUTPUT				4.000	8.000	12.000	16.000	20.000	0
MUT [Reading]	min.	4	mA	4.000	7.993	11.999	15.998	20.001	0.00
MUT [Difference]	max.	20	mA	0.000	-0.007	-0.001	-0.002	0.001	0.00
MUT [% Error]				0.00	-0.03	0.00	-0.01	0.01	%

TOTALIZER		
REF. FLOW RATE	19624.000	M3/D
TOTALIZER [MUT]	15.0	M3
TEST TIME	66.51	SECONDS
TOTALIZER [REF]	15.106	M3
ERROR	-0.71	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.		
[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	E&HFC	1
PROCESS METER	PM	0
ANALOG METER	AM	N/A
STOP WATCH	SW	N/A

RESULTS		
TEST	AVG %FS	PASS FAIL
DISPLAY	0.03	PASS
mA OUTPUT	-0.01	PASS
TOTALIZER	-0.71	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

Rectangular Weir
Verification/Calibration Report

SCG FLOWMETRIX

AS FOUND CERTIFICATION

PASS

CLIENT DETAIL	
CUSTOMER	Ontario Clean Water Agency Southwest
CONTACT	Sam Sianas Senior Operations Manager Paris, ON t: 519:319:2233 e: ssianis@oowa.com
VER. BY - FM	Daniel Kettlewell

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was

EQUIPMENT DETAIL	
[MUT] MANUFACTURER	Milltronics
MODEL	OCM-III
CONVERTER SERIAL NUMBER	NA
PLANT ID	Willows PS
METER ID	Bypass Flow
FIT ID	NA
CLIENT TAG	NA
OTHER	NA
GPS COORDINATES	N43°11.443 W080°22.465
VERIFICATION DATE	July 16th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	July 2025

PROGRAMMING PARAMETERS		
THROAT WIDTH, (exp 1.5)	m	1.5
EMPTY DISTANCE, TX to notch	m	1.947
TRANSDUCER (TX), to sump flc	m	1.947
MAX. HEAD	m	0.250
BLANKING DISTANCE	m	0.305
MAX. FLOW	LPS	344.6
F.S. RANGE - O/P	LPS	344.6

Ultrasonic Sensor is not installed high enough, to ensure full scale flow conditions

TOTALIZER		
AS FOUND	1642	M3
AS LEFT	1862	M3
DIFFERENCE	220	M3

TEST CRITERIA	
AS FOUND CERTIFICATION TEST	Yes
ALLOWABLE [%] ERROR	15

COMPONENTS TESTED	
CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	no

ERROR DOCUMENTED IN THIS REPORT; BASED ON % F.S.

AS FOUND TEST RESULTS

				0.0	25.3	46.5	71.6	94.1	% F.S. Range
				0.000	0.100	0.150	0.200	0.240	m
REF. FLOW RATE				0.0	87.2	160.2	246.6	324.2	LPS
MUT [Reading]				0.0	88.6	162.1	246.4	326.9	LPS
MUT [Difference]				0.0	1.4	1.9	-0.2	2.8	LPS
MUT [% Error]				0.0	0.4	0.6	0.0	0.8	%
mA OUTPUT				4.000	8.048	11.437	15.449	19.051	LPS
MUT [Reading]	min.	4	mA	3.999	8.282	11.766	15.824	19.704	M3
MUT [Difference]	max.	20	mA	-0.001	0.234	0.329	0.375	0.653	SECONDS
MUT [% Error]				-0.02	2.91	2.88	2.42	3.43	M3

TOTALIZER			
REF. FLOW RATE	326.930	LPS
TOTALIZER [MUT]	30.0	M3
TEST TIME	92.21	SECONDS
TOTALIZER [REF]	30.146	M3
ERROR	-0.49	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.		
[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] LEVEL	Sim. BOARD	n/a
PROCESS METER	PM	0
STOP WATCH	SW	n/a

RESULTS		
TEST	AVG %FS	PASS FAIL
DISPLAY	0.43	PASS
mA OUTPUT	2.32	PASS
TOTALIZER	-0.49	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

Flow Rate Comparison
Verification Report

FLOWMETRIX

VERIFICATION RESULTS

AS FOUND **PASS**

AS LEFT **PASS**

CLIENT DETAIL

CUSTOMER Ontario Clean Water Agency Southwest
CONTACT Sam Sianas
Senior Operations Manager
Paris, ON
t: 519:319:2233
e: ssianis@ocwa.com

VER. BY - FM Daniel Kettlewell

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Khrone
MODEL	UFC300
CONVERTER SERIAL NUMBER	A07 67327
PLANT ID	Willows PS
METER ID	Discharge Flow
FIT ID	NA
CLIENT TAG	NA
OTHER	NA
GPS COORDINATES	N43°11.443 W080°22.465
VERIFICATION DATE	July 16th 2024
CAL. FREQUENCY	Annual
CAL. DUE DATE	July 2025

[MUT] PROGRAMMING PARAMETERS

DIAMETER (DN-mm)	400
FLOW RATE UNITS	LPS
TUBE CAL. FACTOR [AF]	n/a
TUBE CAL. FACTOR [AL]	n/a

REFERENCE METER

MANUFACTURER	Endress + Hauser
MODEL	Prosonic 93
SERIAL NUMBER	EA08CC16000

INSTALLATION DETAIL

PIPE TYPE		Stainless Steel
PIPE CIRCUMFERENCI	mm	1386.9
PIPE OD	mm	441.46
PIPE ID	mm	400
WALL THICKNESS	mm	18.02
# TRAVERSES		2
SEP. DISTANCE	mm	490.89
ZERO FLOW RATE	lps	0
SIGNAL STRENGTH		66.8

FLOW RATE COMPARISON

TEST #	BEFORE REF VALUE LPS	BEFORE MUT VALUE LPS	BEFORE DIFF VALUE LPS	BEFORE ERROR % o.r.	TEST #	AFTER REF VALUE LPS	AFTER MUT VALUE LPS	AFTER DIFF VALUE LPS	AFTER ERROR % o.r.
1	34.23	35.40	1.17	3.42	1	34.23	35.40	1.17	3.42
2	33.86	36.19	2.33	6.88	2	33.86	36.19	2.33	6.88
3	33.96	35.74	1.78	5.24	3	33.96	35.74	1.78	5.24
4	34.21	35.38	1.17	3.42	4	34.21	35.38	1.17	3.42
5	34.10	35.61	1.51	4.43	5	34.10	35.61	1.51	4.43
6	34.37	35.71	1.34	3.90	6	34.37	35.71	1.34	3.90
7	33.91	36.84	2.93	8.64	7	33.91	36.84	2.93	8.64
8	34.28	37.23	2.95	8.61	8	34.28	37.23	2.95	8.61
9	35.36	38.07	2.71	7.66	9	35.36	38.07	2.71	7.66
10	34.44	36.32	1.88	5.46	10	34.44	36.32	1.88	5.46
AVG	34.3	36.2	2.0	5.77	AVG	34.3	36.2	2.0	5.77
STD (+/-)	0.136	0.280	0.223	0.65	STD (+/-)	0.136	0.280	0.223	0.65

FORWARD TOTALIZER INFORMATION

AS FOUND	N/A	L
AS LEFT	N/A	L
DIFFERENCE	n/a	L

TEST CRITERIA

AS FOUND CERTIFICATION TEST	Yes
FORWARD FLOW DIRECTION	Yes
ALLOWABLE [%] ERROR	15

COMPONENTS TESTED

CONVERTER DISPLAY	Yes

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] METER	TRANSIT TIME	1
PROCESS METER	PM	n/a

This report reflects the comparison test results at a constant test flow rate. This report reflects the "AS FOUND" and AS LEFT" results based on the test results observed.

SCG FLOWMETRIX

ABB

VeriMaster - Flow Meter Verification Report

Customer Information	
Customer	OCWA Park
Verification Download	Tue, Jul 16, 2024

Meter Information	
Meter Owner	Bethel SPS
Meter Type	WaterMaster
Sensor Size	DN200
Pipe Status	Fluid Present
Sensor Type	Fullbore
Sensor Serial No	3K620000374379
Transmitter SerialNo	3K620000374379
Tag	FIT-01 Bethel Flow
Location	Bethel PS

Overall Status: Pass

The flowmeter has passed its internal continuous verification and automatic self calibration. It is working within +/-1% of its original factory calibration

Summary of Results	
Coil Group	Passed
Electrode Group	Passed
Sensor Group	Passed
Transmitter Signal	Passed
Transmitter Driver	Passed
Output Group	Passed
Configuration	Passed

Verification History	
OIML Accuracy Alarms	0

Totaliser Information	
Forward	33412.00 m3
Reverse	233.00 m3
Net	33178.00 m3

Sensor Information	
Q3	277.78 l/s
Calibration Accuracy	OIML Class 1
Sensor Calibration Factors	119.1% ; -0.81 mm/s; 11
Date of Manufacture	16 Jan 2021
Run Hours	565days 12hrs 29268m/s

Sensor Data	
Coil Current	179.9 mA
Coil Inductance	287.3 mH
Coil Inductance Shift	0.0%
Coil / Loop Resistance	32.1 ohm

Transmitter Information	
Application Version	V01.07.00 03/02/17
MSP Version	01.00.00
Date of Manufacture	16 Jan 2021
Run Hours	1132days 9hrs 12288m/s

Transmitter Data	
Tx Gain - Adjustment	0.1%

VeriMaster Information	
Version	01.00.01
Limit Version	01.00.01

Current Output	
4mA Value	Pass : 3.999 mA ; 0.02%
12mA Value	Pass : 11.983 mA ; 0.14%
20mA Value	Pass : 19.997 mA ; 0.02%

Pulse Output	
Output 1: 1200.0Hz	Not tested
Output 1: 600.0Hz	Not tested
Output 2: 1200.0Hz	Not tested
Output 2: 600.0Hz	Not tested

Installation Comments / Equipment used:
DMM-0used for mA output check

Configuration Settings	
Mains Frequency	60Hz
Qmax	100.00 l/s
Pulses/Unit	1.000000
Pulses Limit Frequency	1200.0Hz
Sensor User Span/Zero	100.0% ; 0.00 mm/s
User Flow Cutoff/Hysterisis	1.00% ; 20%
Meter Mode	Normal operation

Date Tue, Jul 16, 2024 Operator Signature Print Name

Verification report Promag 400

Endress+Hauser
People for Process Automation

SCG FLOWMETRIX

Heartbeat Technology

Plant operator: Paris Meadow Sanitary PS

Device information

Location	Paris Meadows Flowmeter
Device tag	PMSPS-WWL01-EFF01-FIT
Module name	K323-00
Nominal diameter	DN200 / 8"
Device name	Promag 400
Order code	5W4C2H-17PP2/0
Serial number	RCD6EC16000
Firmware version	02.01.00

Calibration

Calibration factor	1.1507
Zero point	-3.8

Verification information

Operating time (counter)	733d01h32m55s
Date/time (manually recorded)	18.07.23 11:22
Verification ID	2
Verification mode	Standard verification

Overall verification result*

☑ Passed	Details see next page

*Result of the complete device functionality test via Heartbeat Technology

Confirmation

Heartbeat Verification verifies the function of the flowmeter within the specified measuring tolerance, over the useful lifetime of the device, with a total test coverage > 94 %, and complies with the requirements for traceable verification according to DIN EN ISO 9001:2008 – Section 7.6 a. (attested by TÜV-SÜD Industrieservices GmbH)

Notes

Date	Operator's signature	Inspector's signature

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Calibration CertificateCalibration Certificate

Verification report Promag 400

Endress+Hauser
People for Process Automation

Plant operator: Paris Meadow Sanitary PS

Device identification and verification identification	
Serial number	RCD6EC16000
Device tag	PMSPS-WWLO1-EFF01-FIT
Verification ID	2

Heartbeat Technology

Sensor	**Passed**
Shot time symmetry	Passed
Hold voltage symmetry	Passed
Coil current loss	Passed
Coil current stability	Passed
Coil resistance	Passed
E1 electrode cable	Passed
E2 electrode cable	Passed
EPD electrode cable	Passed
Sensor electronic module (ISEM)	**Passed**
Supply voltage	Passed
Internal voltages	Passed
Linearity and reference voltage	Passed
Offset of electrode measuring circuit	Passed
Hold voltage feedback	Passed
Shot voltage feedback	Passed
Electronic current loss	Passed
Coil circuit measurement	Passed
Shot control circuit	Passed
Electrode signal integrity	Passed
System status	**Passed**
I/O module	**Passed**
Input/output 1	Passed
Input/output 2	Not done
Input/output 3	Not done

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Verification report Promag 400

Endress+Hauser
People for Process Automation

Plant operator: Paris Meadow Sanitary PS

Device identification and verification identification

Serial number	RC06EC16000
Device tag	PMSPS-WWL01-EFF01-FIT
Verification ID	2

Heartbeat Technology

Test item with value	Unit	Actual	Min.	Max.	Visualization
Sensor					
Shot time symmetry deviation		1.0000	0.9000	1.1000	
Hold voltage symmetry deviation		1.0000	0.9000	1.1000	
Coil current loss deviation	%	0.1242	-10.0000	10.0000	
Coil current offset	%	0.0000	-0.1000	0.1000	
Coil current deviation	%	0.008123	-0.1000	0.1000	
Coil resistance value	Ohm	69.8	50.0	240.0	
E1 electrode impedance	Ohm	157.31			
E2 electrode impedance	Ohm	159.52			
EPD electrode impedance	Ohm	210.17			
E1/E2 electrode impedance on E1	Ohm	158.01			
E1/E2 electrode impedance on E2	Ohm	160.20			
Sensor electronic module (ISEM)					
Supply voltage 30.0V	V	31.21	27.000	35.000	
Linearity and reference voltage 1		0.9996	0.9900	1.0100	
Linearity and reference voltage 2		0.9996	0.9900	1.0100	
Measuring point offset		-7.4034	-100.0000	100.0000	
Hold voltage feedback value	%	2.09	-10.0	10.0	
Shot voltage feedback value	%	-0.31	-20.0	20.0	
Electronic current loss deviation	%	-0.16	-10.0000	10.0000	
Coil circuit value	%	0.00	-1.0	1.0	
Shot control circuit value	%	-0.071	-10.0	10.0	
Electrode signal integrity deviation	%	1.66	-40.0	40.0	

Verification report Promag 400

Endress+Hauser
People for Process Automation

Test item with value	Unit	Actual	Min.	Max.	Visualization
I/O module					
Output 1 value 1	mA	4.0123	3.8600	4.1400	
Output 1 value 2		0.0000	0.0000	0.0000	
Output 2 value 1		0.0000	0.0000	0.0000	
Output 3 value 1		0.0000	0.0000	0.0000	

Verification report Promag 400

Endress+Hauser
People for Process Automation

Plant operator: Paris Meadow Sanitary PS

Device identification and verification identification

Serial number	RCD6EC16000
Device tag	PMSPS-WWL01-EFF01-FIT
Verification ID	2

Heartbeat Technology

Test item with value	Unit	Actual
Process conditions		
Volume flow value verification	l/s	0.0000
Conductivity value verification	µS/cm	-nan
Electronic temperature	°F	97.7
Current difference potential	V	-0.004813
Current potential electrode 1	V	0.2085
Current potential electrode 2	V	0.2121
Current potential electrode Pipe GND	V	-0.004771

Verification report Promag 400

Endress+Hauser
People for Process Automation

SCG FLOWMETRIX

Plant operator: SCG Flowmetrix

Device information

Location	RAS Flow Paris WWTP
Device tag	RAS00-FIT
Module name	Promag L
Nominal diameter	DN150 / 6"
Device name	Promag 400
Order code	5L4C1F-KV76/0
Serial number	P9027A16000
Firmware version	02.00.01

Heartbeat Technology

Calibration

Calibration factor	1.0668
Zero point	-1

Verification information

Operating time (counter)	1477d23h57m29s
Date/time (manually recorded)	16.07.24 09:42
Verification ID	4

Overall verification result

☑ Passed	Details see next page

*Result of the complete device functionality test via Heartbeat Technology

Confirmation

Heartbeat Verification verifies the function of the flowmeter within the specified measuring tolerance, over the useful lifetime of the device, with a total test coverage > 94 %, and complies with the requirements for traceable verification according to DIN EN ISO 9001:2008 Section 7.6 a.

Notes

Date | Operator's signature | Inspector's signature

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Verification report Promag 400

Endress+Hauser
People for Process Automation

Plant operator: SCG Flowmetrix

Device identification and verification identification	
Serial number	P9027A16000
Device tag	RA500-FIT
Verification ID	4

Heartbeat Technology

Sensor	☑ Passed
Shot time symmetry	☑ Passed
Hold voltage symmetry	☑ Passed
Coil current loss	☑ Passed
Coil current stability	☑ Passed
Coil resistance	☑ Passed
Cable defect	☑ Passed
Cable defect	☑ Passed
Cable defect	☑ Passed
Sensor electronic module (ISEM)	☑ Passed
External reference voltage	☑ Passed
Linearity of electrode measuring circuit	☑ Passed
Offset of electrode measuring circuit	☑ Passed
System status	☑ Passed
I/O module	☑ Passed
Input/output 1	☑ Passed
Input/output 2	? Not done
Input/output 3	? Not done

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Verification report Promag 400

Endress+Hauser
People for Process Automation

SCG FLOWMETRIX

Plant operator: SCG Flowmetrix

Device information

Location	WAS Flow Parts WWTP
Device tag	TA500-FIT
Module name	Promag W
Nominal diameter	DN150 / 6"
Device name	Promag 400
Order code	5W4C1F-QE80/0
Serial number	P810CD19000
Firmware version	02.00.01

Heartbeat Technology

Calibration

Calibration factor	1.1354
Zero point	-1

Verification information

Operating time (counter)	1477d23h49m35s
Date/time (manually recorded)	16.07.24 09:30
Verification ID	7

Overall verification result

☑ Passed	Details see next page

*Result of the complete device functionality test via Heartbeat Technology

Confirmation

Heartbeat Verification verifies the function of the flowmeter within the specified measuring tolerance, over the useful lifetime of the device, with a total test coverage > 94 %, and complies with the requirements for traceable verification according to DIN EN ISO 9001:2008 Section 7.6 a.

Notes

Date | Operator's signature | Inspector's signature

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Verification report Promag 400

Endress+Hauser
People for Process Automation

Plant operator: SCG Flowmetrix

Device identification and verification identification

Serial number	PB1DCD19000
Device tag	TAS00-FIT
Verification ID	7

Heartbeat Technology

Sensor	☑ Passed
Shot time symmetry	☑ Passed
Hold voltage symmetry	☑ Passed
Coil current loss	☑ Passed
Coil current stability	☑ Passed
Coil resistance	☑ Passed
Cable defect	☑ Passed
Cable defect	☑ Passed
Cable defect	☑ Passed
Sensor electronic module (ISEM)	☑ Passed
External reference voltage	☑ Passed
Linearity of electrode measuring circuit	☑ Passed
Offset of electrode measuring circuit	☑ Passed
System status	☑ Passed
I/O module	☑ Passed
Input/output 1	☑ Passed
Input/output 2	? Not done
Input/output 3	? Not done

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