

2024

2024 Sanitary Collection System Performance Report

TWP
EC
ca

**EDWARDSBURGH
CARDINAL**

Prepared by: Eric Wemerman
For: CAO and Council
1/21/2025

Introduction

Under the Environmental Compliance Approval Linear (ECA) # 155-W601 issued by the Ministry of Environment, Conservation and Parks (MECP), the Township of Edwardsburgh/Cardinal is required to prepare and submit an annual performance report for the Sanitary Collection System by March 31st of the following year. This performance report covers the timeframe from January 1st to December 31st, 2024, and is submitted to both Municipal Council and the MECP. Additionally, the report will be accessible for public viewing on the Township's website.

The Cardinal Sanitary Collection System consists of four sanitary lift stations, four force mains, and piping that varies in diameter from 200 mm to 450 mm, constructed from clay, PVC, and CIPP lined materials. The flow is directed to the Cardinal Water Control Pollution Plant for treatment.

The Spencerville Sanitary Collection System was constructed in 1989 and comprises roughly 4,000 meters of PVC piping, with diameters varying from 100 mm to 250 mm. This system utilizes two remote pumping stations in addition to one main pumping station, which transports sewage through a 125 mm force main to one of two facultative stabilization ponds for treatment.

The Sanitary Collection System of the Edwardsburgh/Cardinal Industrial Park is composed of gravity pipework with diameters varying from 300 mm to 914.4 mm, constructed from reinforced concrete and PVC materials. The collected flow is directed to Prescott's Water Control Pollution Plant for treatment.

Executive Summary

The yearly performance report provides a comprehensive overview of monitoring data, operational challenges, inspections, maintenance, calibration activities, and overflow incidents related to the Edwardsburgh-Cardinal Sanitary Collection System. This report also summarizes efforts made to mitigate overflows within the collection system.

Table Of Contents

<u>Title</u>	<u>Page</u>
Introduction	2
Executive Summary	3
Table of Contents	3
System Approvals	4
Monitoring Data Summary	4-6
Summary of Inspection, Maintenance, Repair and Operating Problems/Corrective Actions	6-9
Summary of Calibration and Maintenance	9
Summary of Complaints	9-10
Summary of Alterations to Authorized System including a list of Alterations that pose a Significant Drinking Water threat	10
Summary of Collection System Overflow(s) and leaks.	10
Efforts made to reduce Collection System Overflows, Spills, STP Overflows and/or STP Bypasses	10-11

System Approvals

<u>System</u>	<u>Linear ECA</u>	<u>Renewal Date</u>
Edwardsburgh/Cardinal Sewage Collection System	155-W601	June 15, 2026

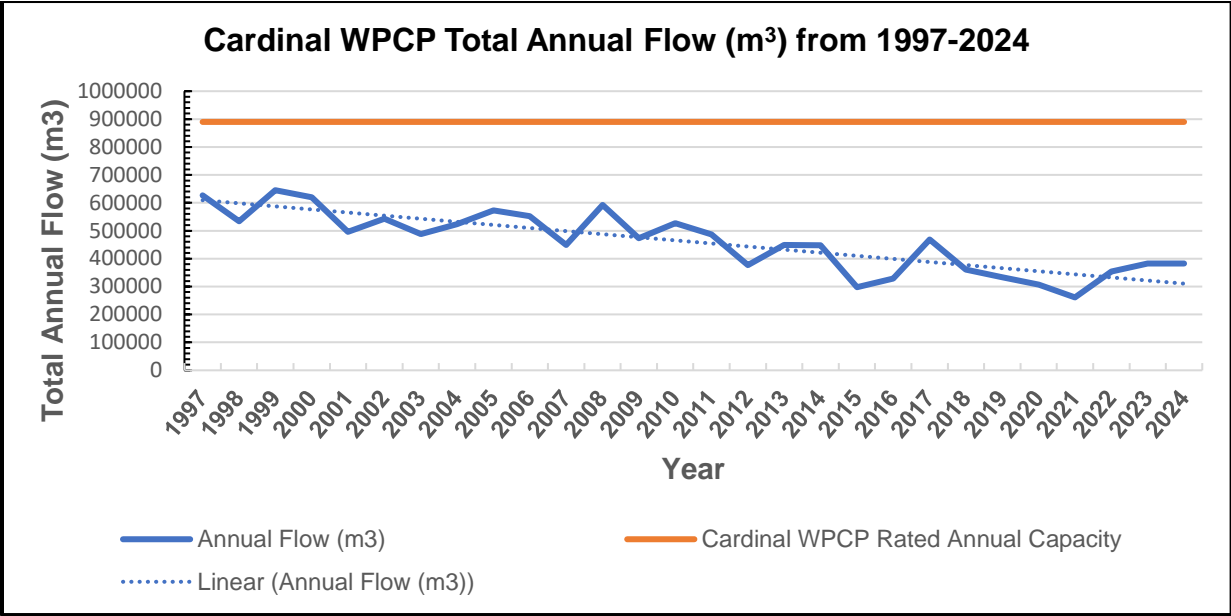
Sanitary Collection System Monitoring Data

2024	<u>Cardinal North Station (m³)</u>	<u>Cardinal South (m³)</u>	<u>Spencerville (m³)</u>	<u>Industrial Park Prescott WPCP (m³)</u>
January	13,876	18,460	5,882	8,536
February	13,803	16,943	6,196	9,182
March	19,146	25,455	6,452	12,029
April	18,972	28,851	5,709	11,493
May	9,929	18,071	3,922	6,225
June	8,628	15,774	4,414	7,090
July	9,826	21,186	4,462	5,837
August	18,793	35,252	3,873	10,679
September	8,693	23,360	2,819	4,967
October	5,892	10,917	2,526	5,596
November	6,281	8,892	2,740	5,033
December	10,489	14,670	3,077	6,233
Summary (m³)				
Minimum	5,892	8,892	2,526	4,967
Maximum	19,146	35,252	6,452	12,029
Average	12,027	19,819	4,339	7,742
Total	144,328	237,831	52,072	92,900
Measurement	Daily Readings collected off ABB Totalizer for all flow on north side of Cardinal.	Calculation. Totalized flow at Cardinal WPCP minus Adelaide Stn Flow.	Readings collected off ABB Totalizer for all Collection System flow.	Prescott WPCP calculates Industrial Park usage by taking the difference from Station 6 and 5 flow meter readings.

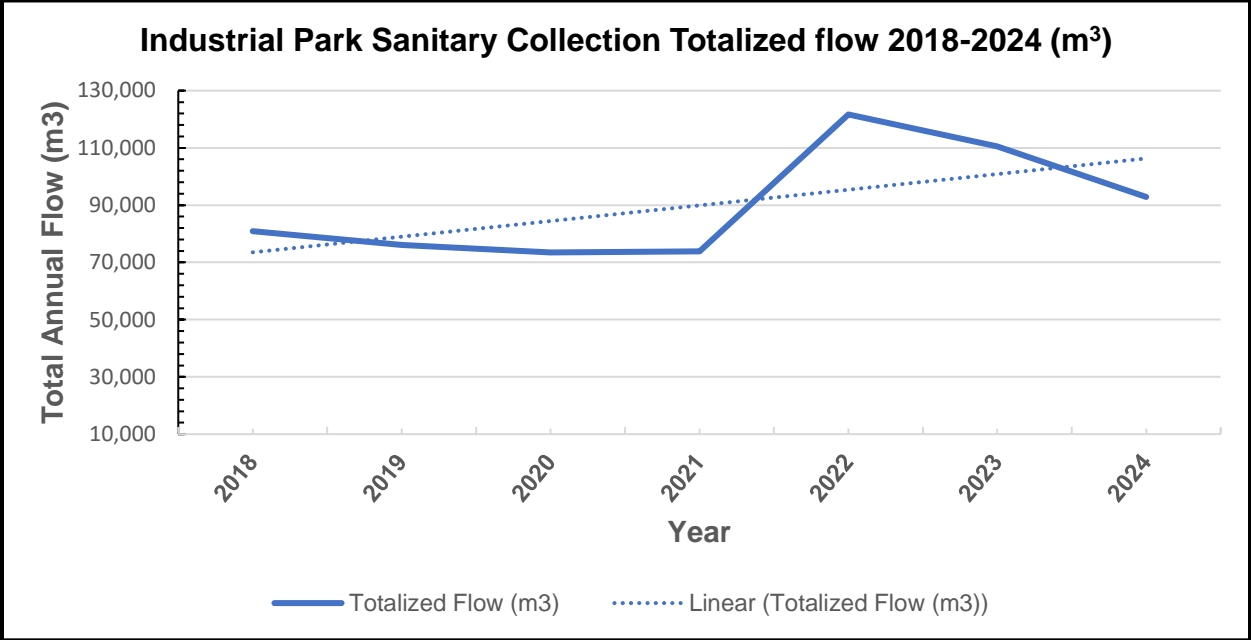
Monitoring Data Trending Review/ 5-year review

Totalized sanitary flow into the Cardinal WPCP has been steadily declining since 1997. This can be attributed to sanitary main replacement, CIPP lining and a potable water metering program.

Cardinal WPCP Totalized Flow

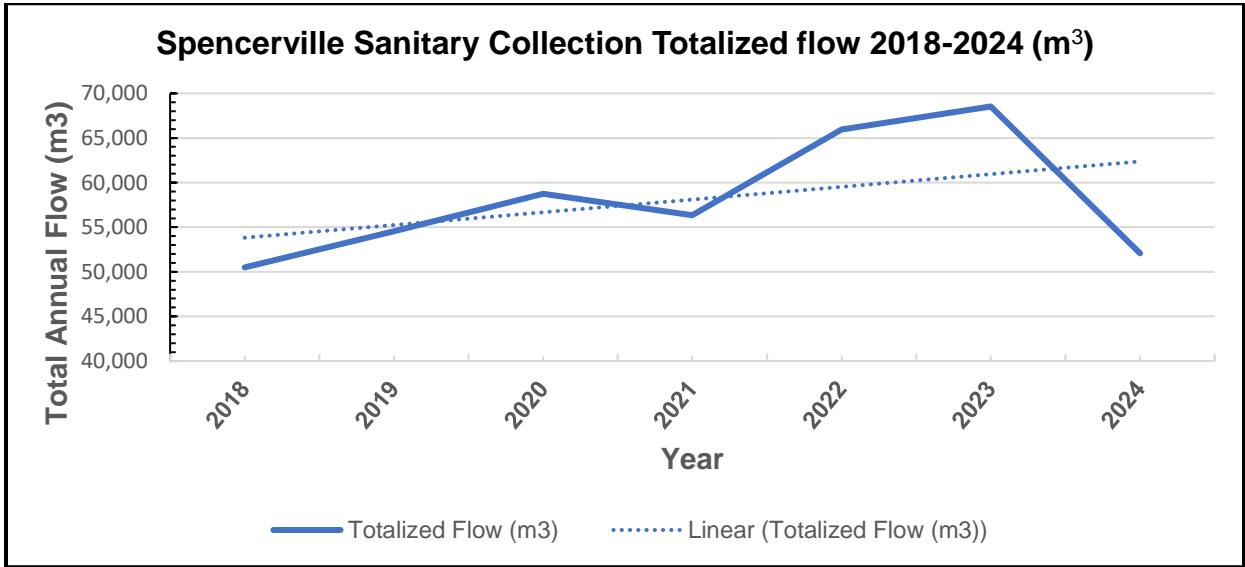


Industrial Park Sanitary Collection Consumption



Totalized flow into the Prescott WPCP steadily declined from 2018 through 2021. Flow increased between 2021 to 2023 due to increased industrial usage and above average precipitation. Totalized flow in 2024 decreased by approximately 16% compared to 2023.

Spencerville Sanitary Collection Annual Consumption Review



Totalized flow into the Spencerville lagoons decreased by approximately 24% from 2023. Sanitary manhole lining was completed in 2024 to address infiltration and reduce extraneous flows.

Inspection, Maintenance, Repair and Operational Problems

The following is a summary of inspection, maintenance, repair and operational problems for the sanitary collection systems.

2024 Inspection, Repairs and Maintenance Summary

CARDINAL SANITARY COLLECTION SYSTEM			
Date	System	Asset ID	Inspection/Corrective Action
January 3, 2024	Adelaide Stn.	604	Heater fan motor replaced.
January 30, 2024	Adelaide Stn Henry Stn.	604 603	High pressure cleaned stations.
February 13, 2024	Adelaide Stn.	604	Semi-annual generator servicing.
February 26, 2024	Adelaide Station	604	Pump # 1 starter relay replaced.
April 25, 2024	Sanitary laterals	1227	CCTV inspected sanitary lateral on Reid Street. No issue identified.
April 29, 2024	Adelaide Stn.	604	Replaced starter-alternative and stop relays for pump # 1.
May 15, 2024	Henry Stn.	603	Replaced pump panel (Capital).
May 16, 2024	Henry Stn.	603	Pump starters replaced.
May 21, 2204	Henry Stn.	603	Greyline pressure board replaced.
May 21, 2024	Perry St	1175	Replaced sanitary lateral.
May 22, 2024	Adelaide Stn.	604	Voltage alarm on generator. Loose wire repaired.
May 23, 2024	Henry Stn.	603	Replaced pump due to seal leak.
May 29, 2024	Adelaide Stn.	604	Replaced start-stop-alternate relays for pump # 2.
June 3, 2024	Henry Stn.	603	Purchased spare 10 HP pump.
June 3, 2024	Sanitary manholes	N/A	Inspected sanitary manholes.
June 4, 2024	Adelaide Stn.	604	Serviced primary DCS communicator.
July 2, 2024	Adelaide Stn.	604	Upgraded DCS communicator.
August 13, 2024	Sanitary manholes	1236	James Street sanitary manholes inspected.
August 27, 2024	Flett Stn.	2608	Clean and inspect floats.
August 28, 2024	Sanitary manholes	1172	Repaired cement benching around pipework in manhole on Walker Street.
September 3, 2024	Sanitary manhole	1222	Removed calcite build up in manhole on Reid Street.
November 12, 2024	Henry Stn.	603	Hosed out station and removed grease.
November 26, 2024	Henry Stn	603	Visual inspection of overflow pipe. Removed weeds.
December 12, 2024	Middle Street	1293	Replaced section of no-corrode lateral pipework.
December 18, 2024	Walker St south.	1178	Flushed sanitary manholes.
SPENCERVILLE SANITARY COLLECTION SYSTEM			
Date	System	Asset ID	Inspection/Corrective Action
January 2-3, 2024	Station 1	2605	Overload relays replaced.
January 5, 2024	Station 1	2605	Replaced faulty overload relay.
January 19, 2024	Station 1	2605	Pull north pump and unplug.
January 28, 2024	Station 1	2605	Pull north pump and unplug.

<u>Date</u>	<u>System</u>	<u>Asset ID</u>	<u>Inspection/Corrective Action</u>
January 30, 2024	All stations.	2605-2607	High pressure cleaned.
February 1, 2024	Station 1	2605	Serviced north pump impellor.
February 13, 2024	Station 1	2605	Semi-annual generator service.
February 19, 2024	Station 1	2605	Removed blockage from pump.
February 26, 2024	Station 1	2605	Removed blockage from pump.
February 29, 2024	Station 1	2605	Replaced north pump.
March 11-15, 2024	Sanitary manholes	N/A	Five sanitary manholes sealed to address infiltration. (Capital)
March 15, 2024	Station 1	2605	Removed blockage from pump.
March 21, 2024	Station 1	2605	Serviced pump impellor.
April 12, 2024	Station 1	2605	Removed blockage from pump.
April 16, 2024	Station 1	2605	Pulled north pump- inspect impellor.
April 18, 2024	Social media	N/A	Social media posting on what shouldn't be flushed.
April 18, 2024	Station 1	2605	Replaced north pump base plate. Starter relays and capacitors replaced.
April 25, 2024	Station 1	2605	Serviced pump panel.
May 1, 2024	Station 1	2605	Service north pump seal and replaced capacitor.
May 2, 2024	Station 1	2605	Ordered new face plate assembly for north pump.
June 19, 2024	Station 1	2605	Replaced capacitors and unplugged pump.
June 26, 2024	Station 1	2605	Pump starter relay replaced.
July 2, 2024	Station 1	2605	Serviced pump panel.
July 15, 2024	Station 1	2605	Semi-annual generator servicing
July 19, 2024	Station 1	2605	IECBL adjusted pump relay settings as per manufacturer's directions.
July 25, 2024	Station 1	2605	Engineering meeting for pump/panel replacement project.
August 1, 2024	Station 1	2605	5-year generator servicing maintenance completed.
August 14, 2024	Spencerville	N/A	15 sanitary manholes inspected.
August 21, 2024	Lagoon Building	590	Replaced collection system mag meter.
August 27, 2024	Spencerville	N/A	16 sanitary manholes inspected.
September 18, 2024	Station 1	2605	Fuel system inspections completed.
September 18, 2024	Station 1	2605	Removed blockage from pump.
October 9, 2024	Station 1	2605	Replaced stop float.
October 21, 2024	Station 1	2605	Replaced north pump starter relay.
October 29, 2024	Station 1	2605	Fuel delivery received.
November 4, 2024	Station 1	2605	IECBL serviced pump starters.
November 26, 2024	Station 1	2605	Visual inspection of overflow. No issues identified.
INDUSTRIAL PARK SANITARY COLLECTION SYSTEM			
<u>Date</u>	<u>System</u>	<u>Asset ID</u>	<u>Inspection/Corrective Action</u>
August 29, 2024	Sanitary service	N/A	Contractor installed a new sanitary lateral service at Alantra.

Cardinal Sanitary Collection Rehabilitation Program

Ongoing efforts are occurring to reduce extraneous flow into the collection and treatment systems. Below is a summary of capital maintenance activities since 2011.

Year	Street	Project
2011	Joseph Street	CIPP lined.
2011	George Street	CIPP lined.
2012	East Street	CIPP lined.
2012	Victoria Street	CIPP lined.
2012	Middle Street	CIPP lined.
2012	Dundas Street	CIPP lined.
2012	Gill Street	Sanitary main and manholes replaced.
2013	Hoy Street	CIPP lined.
2013	Adelaide Street	CIPP lined.
2013	County Road 2	CIPP lined.
2016	James Street	Sanitary main and manholes replaced.
2017	Walter St Easement	CIPP lined
2018	William-Henry Easement	CIPP Lined
2018	Walker Street	Sanitary main and manholes replaced.
2019	Marjorie Street	CIPP lined.
2022	Helen/Walker to Helen/Shanly Road.	CIPP lined.
2023	County Road 2/St Lawrence to 740 County Road 2.	Sanitary main and manholes replaced.
2024	Sanitary manholes	Spin casted three sanitary manholes for ensure structural stability and address infiltration.

Sanitary Main flushing and CCTV Inspection Program

Edwardsburgh Cardinal routinely high pressure cleans sanitary mains to reduce the likelihood of backups. CCTV inspections are completed to assess and identify structural defects and prioritize mains for CIPP work or replacement.

CARDINAL SANITARY COLLECTION SYSTEM			
Year	Street	Cleaning	CCTV Inspection
2018	Walker-Adelaide-Marjorie	High Pressure cleaning.	Walker Street
2019	Dishaw-Canal-West	High Pressure cleaning.	N/A
2020	County Road 2	High Pressure cleaning.	N/A
2021	George-Benson-Helen, William-Flett-Loyalist	High Pressure cleaning.	William and Helen Street
2022	East-Middle- Victoria- Dundas	High Pressure cleaning.	N/A
2023	Dundas West easement	High Pressure cleaning.	Dundas St
2023	New- Adelaide West	High Pressure cleaning.	New Street.
2024	County Road 2	High Pressure cleaning.	N/A
2024	Reid	High Pressure cleaning.	Reid Street
2024	Walker South	High Pressure cleaning.	N/A
2024	Walker St South-Canal and West	High Pressure cleaning.	CCTV inspected
2024	Meadowlands- Maple- St Lawrence	High Pressure cleaning.	N/A
2024	James-New-Middle	High pressure cleaning.	CCTV inspected

SPENCERVILLE SANITARY COLLECTION SYSTEM			
Year	Street	Cleaning	CCTV Inspection
2012	Goodin-Bennett-South, Spencer-David-Cedar- Irving Water Streets	High Pressure Cleaning	CCTV inspected
2020	Center- Ryan-David, Cedar-Charles-Irving, South- Station 3 force main.	High Pressure cleaning	CCTV Inspected
2022	Charles-David-Cedar, Irving	High Pressure cleaning	CCTV Inspected
2023	County Road 44/Sloan to Pumping Station # 1.	High Pressure cleaning	N/A
INDUSTRIAL PARK SANITARY COLLECTION SYSTEM			
Year	Street	Cleaning	CCTV Inspection
2016	Giant Tiger Blvd.	High Pressure Cleaning	CCTV Inspected
2016	County Road 2	High Pressure Cleaning	CCTV Inspected
2020	Commerce Drive	High Pressure Cleaning	

Summary of Calibration and Equipment Maintenance

Capital Controls is sub-contracted to complete annual calibrations and repairs to process equipment. The following work was completed during the 2024 review period.

<u>Date</u>	<u>System</u>	<u>Activity</u>	<u>Corrective Action (if applicable)</u>
August 23, 2024	Spencerville	Calibration	Calibration passed.
June 18, 2024	Adelaide Station	Calibration	Calibration passed.
December 27, 2024	Spencerville	Flow rate error message	Capital control troubleshooted, flow meter totalizing normal. Alarm reset. No cause identified. Flow meter calibrated and passed verification.

Summary of Complaints

The following complaints were received during the reporting year.

<u>Date</u>	<u>System</u>	<u>Complaint</u>	<u>Corrective Action(s)</u>
January 3, 2024	Cardinal	Sewer lateral blockage due to stones.	Cavanaugh Construction high pressure cleaned County Road 2 sanitary main and laterals.
April 6, 2024	Cardinal	Sanitary main stoppage (Walker St South)	High pressured cleaned. No complaints from residents.
May 1, 2024	Cardinal	Lateral stoppage	Perry Street lateral augured and CCTV inspected. Section of lateral replaced from curb to main with PVC.
May 29 & June 13, 2024	Cardinal	Sanitary main stoppage	Routine inspection identified a blockage on Walker Street South. Aqua Drain contracted to high pressure clean and CCTV inspect.
August 8, 2024	Cardinal	Sanitary lateral stoppage	No corrode pipework on private property. Homeowner replaced.
August 16, 2024	Cardinal	Lateral Stoppage	Gill Street lateral augured and CCTV inspected. Private property issue (no corrode piping).
September 12, 2024	Cardinal	Lateral Stoppage	Lateral augured and CCTV inspected. No corrode pipework on private property. Homeowner replaced.

Date	System	Complaint	Corrective Action(s)
October 25, 2024	Cardinal	Lateral Stoppage	Plumber augured and CCTV inspected lateral on New Street. Issue identified on private property.
December 10, 2024	Cardinal	Lateral stoppage	Plumber augured but was unable to clear obstruction. Replaced section of no corrode pipework on December 11 th .
December 14, 2024	Cardinal	Lateral stoppage	Lateral stoppage on Middle Street). Issue identified on private property.

Alterations to Authorized System

There were no alterations completed in 2024.

Collection System Overflows and Leaks

Date	Start Time	End Time	Volume (m³)	Loading Concentration	Disinfection
-	--	-	-	-	-

Efforts made to reduce Collection System Overflows, Spills, STP Overflows and/or STP Bypasses.

Edwardsburgh/Cardinal proactively works to reduce infiltration and collection system overflows through preventative maintenance, repairs and capital replacement projects.

Cardinal Collection System

- Three sanitary manholes were repaired to address infiltration and reduce extraneous flows.
- Pump start/stop and alternative relays were replaced in the Adelaide Street pump panel.
- Henry St pump panel and pump were replaced.
- Purchased spare pump for Henry Street Station for added redundancy.
- Sanitary mains high pressure cleaned and CCTV inspected.
- Routine inspection of sanitary manholes to confirm structural integrity are ongoing.
- High pressure cleaned sanitary pumping stations.

Spencerville Collection System

- Replaced north pump at Spencerville Station # 1.
- Five sanitary manholes were sealed and repaired to address infiltration.
- Replaced starter relays and capacitors at Spencerville Station # 1.
- Replaced stop float at Spencerville Station # 1.
- Engineering ongoing for pump/panel and rail system replacements for Spencerville Station # 1. (2025 project)
- Ongoing routine inspection of sanitary manholes to confirm structural integrity.
- High pressure cleaned sanitary pumping stations.

Monitoring

Sanitary pumping stations in Cardinal, equipped with Greyline level transmitters, are also fitted with a secondary pressure sensor to mitigate the impact of signal losses. This feature enhances redundancy and minimizes the likelihood of overflows or bypass events.

Routine inspections are conducted three times weekly at all sanitary pumping stations. Pump amperages are monitored to confirm proper performance. Pumps exhibiting elevated amperage levels are removed for cleaning and inspection. Additionally, high-level and power loss alarms are tested on a weekly basis to ensure the effective transmission of alarm signals.