



— Township of —

SEVERN

Wastewater Treatment and Collection System

Coldwater

2025 Annual Report



Table of Contents

Introduction	3
Summary of Monitoring Requirements	3
Raw Sewage Quality	3
Effluent Quality	4
Influent Flows	7
Charts	8
Sludge Analysis	9
Operational Issues and Corrective Actions	10
Maintenance Summary	10
Water Pollution Control Plant	10
Efforts and Results in Meeting Effluent Objectives of Certificate of Approval	13
Sludge Volume and Disposal	14
Summary of Complaints	14
Summary of Calibration and Maintenance on Effluent Monitoring Equipment	14
Summary of By-Pass, Spills or Abnormal Discharge Events	14

Introduction

Township of Severn prepared the 2025 annual summary report for the Coldwater Water Pollution Control Plant (WPCP).

This report summarizes notable operating events, repairs and maintenance, non-compliance issues, effluent quality, sludge quantity, and flow data for 2025. This report is based on operating data collected and compiled by the Township of Severn.

Summary of Monitoring Requirements

Table 6 lists the parameters that must be monitored, and the monitoring frequency as stated in Amended Certificate of Approval (C of A) No. 3832-6S2QCH, issued by the Ministry of the Environment, Conservation and Parks (MECP) on March 6, 2009.

Raw Sewage Quality

Table 1 illustrates the monthly and annual average raw sewage quality results.

Table 1: 2025 Monthly Raw Influent Quality

Month	CBOD5 (mg/L)	TSS (mg/L)	Total Phosphorus (mg/L)	TKN (mg/L)
January	138	160	3.71	34.6
February	119	169	4.54	44.4
March	84	98	2.40	22.5
April	87	100	2.52	24.0
May	188	241	5.47	45.8
June	120	142	4.46	42.0
July	212	246	7.06	61.5
August	227	286	7.07	55.3
September	135	91	4.32	38.0
October	135	130	4.41	43.3
November	78	106	2.81	29.8

December	159	170	4.81	44.7
140Average	140	164	4.46	40.5

Effluent Quality

Tables 2 and 3 illustrate the monthly and annual average effluent quality results.

Table 2: 2025 Monthly Average Effluent Quality

Month	TKN (as Nitrogen) (mg/L)	Alkalinity (as CaCO ₃) (mg/L)	Temperature (°C)	Unionized Ammonia (as Nitrogen) (mg/L)	Nitrite (as Nitrogen) (mg/L)	Nitrate (as Nitrogen) (mg/L)
January	1.1	169	7.8	0.009	0.79	19.30
February	1.7	140	7.3	0.005	1.86	16.93
March	4.5	209	9.0	0.017	0.76	10.59
April	6.2	236	10.4	0.032	0.48	5.43
May	0.6	169	14.0	0.001	0.15	20.43
June	0.6	157	17.0	0.001	0.15	22.55
July	0.6	110	20.6	0.001	0.04	25.00
August	0.5	51	20.3	0.001	0.06	35.48
September	0.5	63	17.8	0.001	0.06	34.12
October	0.7	41	15.4	0.001	0.09	32.33
November	0.5	107	12.0	0.001	0.23	22.73
December	0.9	114	8.8	0.004	0.52	19.96
Average	4.7	130	13.4	0.006	0.43	22.07

Table 3: 2025 Monthly Average Effluent Quality

Month	Effluent ADF <i>m³/day</i>	CBOD		TSS		Total Phosphorus	
		<i>mg/L</i>	<i>kg/d</i>	<i>mg/L</i>	<i>kg/d</i>	<i>mg/L</i>	<i>kg/d</i>
Effluent Objective		10	9.21	10	9.21	0.3	0.28
Effluent Limit		15	13.8	15	13.8	0.5	0.46
January	681	4	2.72	3.3	2.25	0.05	0.03
February	474	5.5	2.61	6.0	2.84	0.10	0.05
March	1472	4.5	6.62	9.0	13.25	0.10	0.15
April	1117	8	8.94	11.4	12.73	0.12	0.13
May	674	4	2.70	5.3	3.57	0.07	0.05
June	504	5	2.52	5.3	2.67	0.06	0.03
July	416	4	1.66	3.4	1.41	0.05	0.02
August	382	4	1.53	3.8	1.45	0.04	0.02
September	423	4	1.69	5.0	2.12	0.06	0.03
October	425	4	2.83	3.8	1.62	0.05	0.02
November	708	4	2.83	4.5	3.19	0.05	0.04
December	788	4.8	3.78	7.4	5.83	0.06	0.05

Table 3: 2025 Monthly Average Effluent Quality (continued)

Month	Total Ammonia (Nitrogen)				pH	E. Coli
	mg/L	kg/d	mg/L	kg/d		
	May 15 - Oct 15		Oct 16 - May 14			
Effluent Objective	1.00	0.92	3.00	2.76		
January			0.3	0.20	7.88	9
February			0.6	0.28	7.63	5
March			4.0	5.89	7.48	622
April			5.7	6.37	7.44	583
May	0.2	0.13			7.33	2
June	0.1	0.05			7.50	42
July	0.1	0.04			7.52	313
August	0.1	0.04			7.40	6
September	0.1	0.04			7.38	0
October	0.1	0.04			7.50	1
November			0.1	0.07	7.55	0
December			0.6	0.47	7.70	1

Influent Flows

The rated capacity of the Coldwater WPCP is 921 m³/day (average daily flow) with a peak flow rate of 3,420 m³/day, as listed in the Certificate of Authorization (C of A).

Table 4: Summary of Influent Flows

Month	Total Monthly Flow (m ³)	Average Daily Flow (m ³ /day)	Average Daily Flow (% of Rated Capacity)	Peak Daily Flow (m ³ /day)	Peak Daily Flow (% of Rated Capacity)	Peak Daily Flow (% of Rated Peak Flow)
January	19773	638	69%	1450	157%	45%
February	12097	432	47%	647	70%	19%
March	44463	1434	156%	3155	343%	92%
April	31806	1060	115%	2338	254%	68%
May	19022	614	67%	975	106%	29%
June	13251	442	48%	585	64%	17%
July	10446	337	37%	463	50%	14%
August	10241	330	36%	451	49%	13%
September	9851	328	36%	403	44%	12%
October	10237	330	36%	485	53%	14%
November	16423	547	59%	955	104%	28%
December	18562	599	65%	887	96%	26%
Average	18014	591		1066		
Max	44463	1434		3155		
Total	216173					

Note: All yellow highlights above 75% capacity.

Charts

Figure 1: Coldwater WPCP 2025 total monthly flow total values in cubic metres (m³).

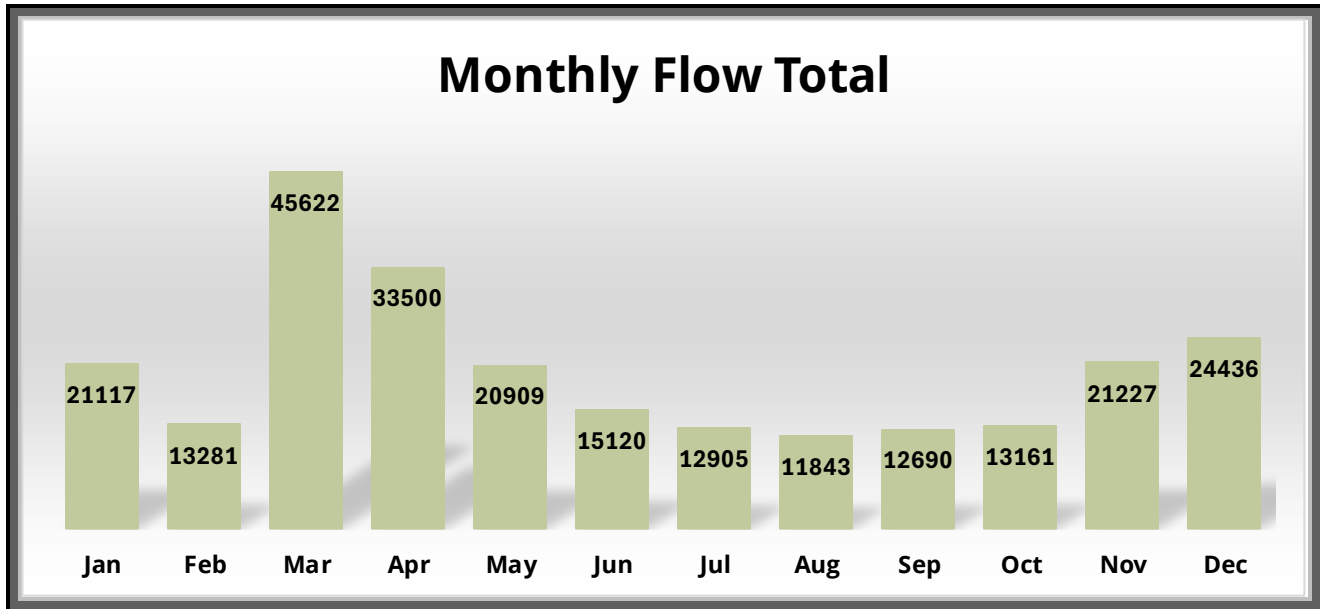
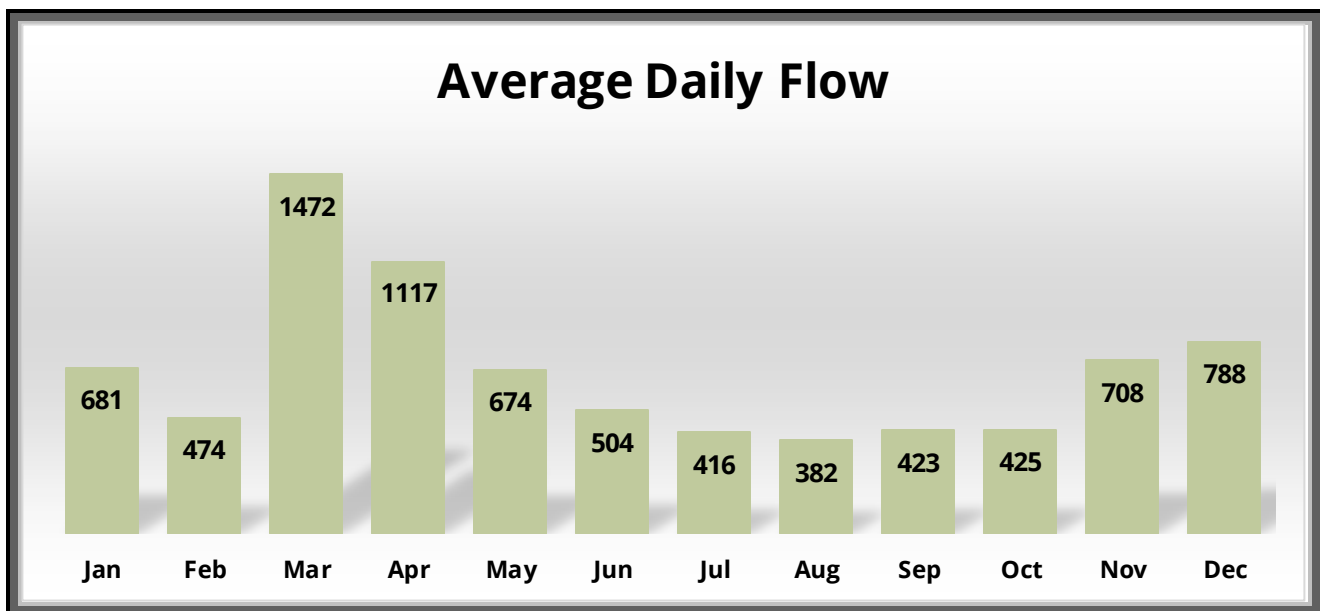


Figure 2: Coldwater WPCP 2025 average daily flow total values in cubic metres (m³).



Sludge Analysis

The results of the sludge analysis are summarized in Table 6.

Table 5: Sludge Analysis

Parameter	Limits	Annual Average	
Units	Concentration (mg/kg)	Sludge Concentration (mg/L)	Concentration (mg/kg)
Total Solids	--	15505	
Ammonia +	--	4.57	
TKN	--	577	
Nitrate + Nitrite	--	33.82	
Phosphorus	--	443	
Arsenic	170	0.10	7.60
Cadmium	34	0.01	0.62
Cobalt	340	0.03	1.93
Chromium	2,800	0.31	21.42
Copper	1,700	4.85	314
Mercury	11	0.01	0.76
Potassium	--	50.42	3151
Molybdenum	94	0.08	5.61
Nickel	420	0.27	18.55
Lead	1,100	0.22	14.24
Selenium	34	0.93	54.48
Zinc	4,200	8.27	483
E. Coli (cfu/1g)	< 2,000,000	153174	

1- Limits for metal concentration in sludge are listed in MECP publication "Guideline for the Utilization of Bio solids and other wastes on Agricultural Lands" as referenced in the Certificate of Approval No. 7383-4LAHXD.

Operational Issues and Corrective Actions

There were six operational issues in 2025. All issues are outlined in Efforts and Results in Meeting Effluent Objectives of Certificate of Approval.

Maintenance Summary

All maintenance that was completed in 2025 on major structures, apparatus and/or mechanical equipment is summarized below.

Water Pollution Control Plant

The following is a list of preventative and emergency maintenance completed at the WPCP in 2025:

- all critical alarms were tested monthly
- all floats were inspected and cleaned monthly
- the backup generator was tested monthly under load
- the blowers and air compressors were serviced yearly to check belts, alignment, motor function and lubrication
- replaced U.V bulbs and sleeves
- inspection performed on the sludge storage tank
- pumps were replaced as needed
- Environmental Assessment underway for plant expansion

Summary of Effluent Quality Assurance or Control Measures

Tables 6 and 7 summarize which parameters are analyzed by the accredited laboratory, SGS Lakefield Research, Aquatic Laboratories or Caduceon Laboratories, and which parameters are analyzed in-house.

Table 6: Summary of Monitoring Requirements

Source	Parameter	Required	Method
Raw Influent	CBOD ₅	Monthly	SGS Lakefield or Caduceon
	Total Suspended Solids	Monthly	SGS Lakefield or Caduceon
	Total Phosphorus	Monthly	SGS Lakefield or Caduceon
	Total Kjeldahl	Monthly	SGS Lakefield or Caduceon

Note: SGS Lakefield and Caduceon are both MECP-approved accredited laboratories

Table 7: Summary of Monitoring Requirements

Source	Parameter	Required	Method
Final Effluent	Flow	Daily	SGS Lakefield or Caduceon
	CBOD ₅	Weekly	SGS Lakefield or Caduceon
	Total Suspended Solids	Weekly	SGS Lakefield or Caduceon
	Total Phosphorus	Weekly	SGS Lakefield or Caduceon
	Total Ammonia	Weekly	SGS Lakefield or Caduceon
	Nitrate	Weekly	SGS Lakefield or Caduceon
	E. Coli	Weekly	SGS Lakefield or Caduceon,
	Total Chlorine Residual	Weekly	N/A (UV disinfection)
	pH	Weekly	In House Grab Sample
	Temperature	Weekly	In House Grab Sample
	Unionized Ammonia	Weekly	SGS Lakefield or Caduceon

Note: SGS Lakefield and Caduceon are both MECP-approved accredited laboratories

In-house tests are conducted by licensed operators for monitoring purposes. Standard Methods are used by the operators, and the test results are utilized for process control.

All in-house monitoring equipment is calibrated based on the manufacturer's recommendations.

Efforts and Results in Meeting Effluent Objectives of Certificate of Approval

The WPCP is operated and maintained such that all effluent quality objectives are strived for. Objectives and limits are based on a monthly average.

There were 5 effluent objective exceedances in 2025:

- March 2025 Ammonia exceeded the objective limit of 1mg/L. March average was 4mg/L.
- March 2025 E. Coli exceeded the limit of <200. March average was 622.
- April 2025 Ammonia exceeded the objective of 1mg/L. April average was 5.7mg/L.
- April 2025 TSS exceeded the objective of 10mg/L. April average was 11.4mg/L
- April 2025 E Coli exceeded the limit of <200. April average was 583.
- April 4, 2025, the main pump station bypassed due to a major ice storm and rainfall event.
- All exceedances were corrected through operational changes.

Sludge Volume and Disposal

Table 8 below summarizes the sludge volume generated in 2025, the anticipated volume to be generated next year, and the sludge disposal location.

Table 8: Sludge Generated and Disposal

Sludge Generated in 2025 (m3)	Anticipated Volume for 2026 (m3)	Sludge Disposal Location
504		n 62626. Lesperance Farm, Con.11 Lot 15 Springwater
210		NASM Plan 62623. Lesperance Farm Con. 10 Lot 15 Springwater
697.20		March 17, 2025, to August 11, 2025. Rohes Lagoon
Total- 1411.20	1600	

Summary of Complaints

There was one complaint for sewer odour in 2025.

Summary of Calibration and Maintenance on Effluent Monitoring Equipment

Magnetic flow meters were calibrated by a qualified contractor on February 26, 2025.

All in-house monitoring equipment is calibrated based on the manufacturer's recommendations.

Summary of By-Pass, Spills or Abnormal Discharge Events

There was one bypass event in 2025 on April 4. Bypass occurred during a major ice storm and extended rainfall and snow melt.