March 28, 2025

Town of Goderich
c/o Sean Thomas – Director of Operations
57 West St
Goderich, ON
N7A 2K5

RE: Goderich WWTP Works # 120000943
Annual Report for Reporting Year 2024

Veolia Water Canada is pleased to submit the 2024 annual report for the Goderich WWTP as per requirement of Condition 10, Reporting, Sub-section (6) of Amended Certificate of Approval *0749-7KEJHK* issued October 16th, 2008.

If you have any questions or concerns, please do not hesitate to call.

Respectfully yours,

Steve Johnston
Veolia Water - Goderich

Annual Report

2024 Operating Year
Goderich Water Pollution Control Plant
Works # 120000943

PREPARED BY

Veolia Water

211 Sunset Drive
Goderich, ON
N7A 4C5

FOR

The Town of Goderich

Sean Thomas - Director of Operations

57 West St
Goderich, ON
N7A 2K5

Resourcing the world

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1.0 INTRODUCTION

The Town of Goderich Water Pollution Control Plant, Works #120000943 is located at 211 Sunset Drive and is a Class III Wastewater Treatment Facility.

The wastewater treatment system was originally constructed in 1967. Throughout the years the plant has undergone many expansions with the last being completed in 2009 with the installation of Ultraviolet Light (UV) disinfection in place of Chlorine gas as a disinfectant.

The system is operated under Amended Certificate of Approval (ECA) No. 0749-7KEJHK, dated October 16, 2008.

The works consist of the following components:

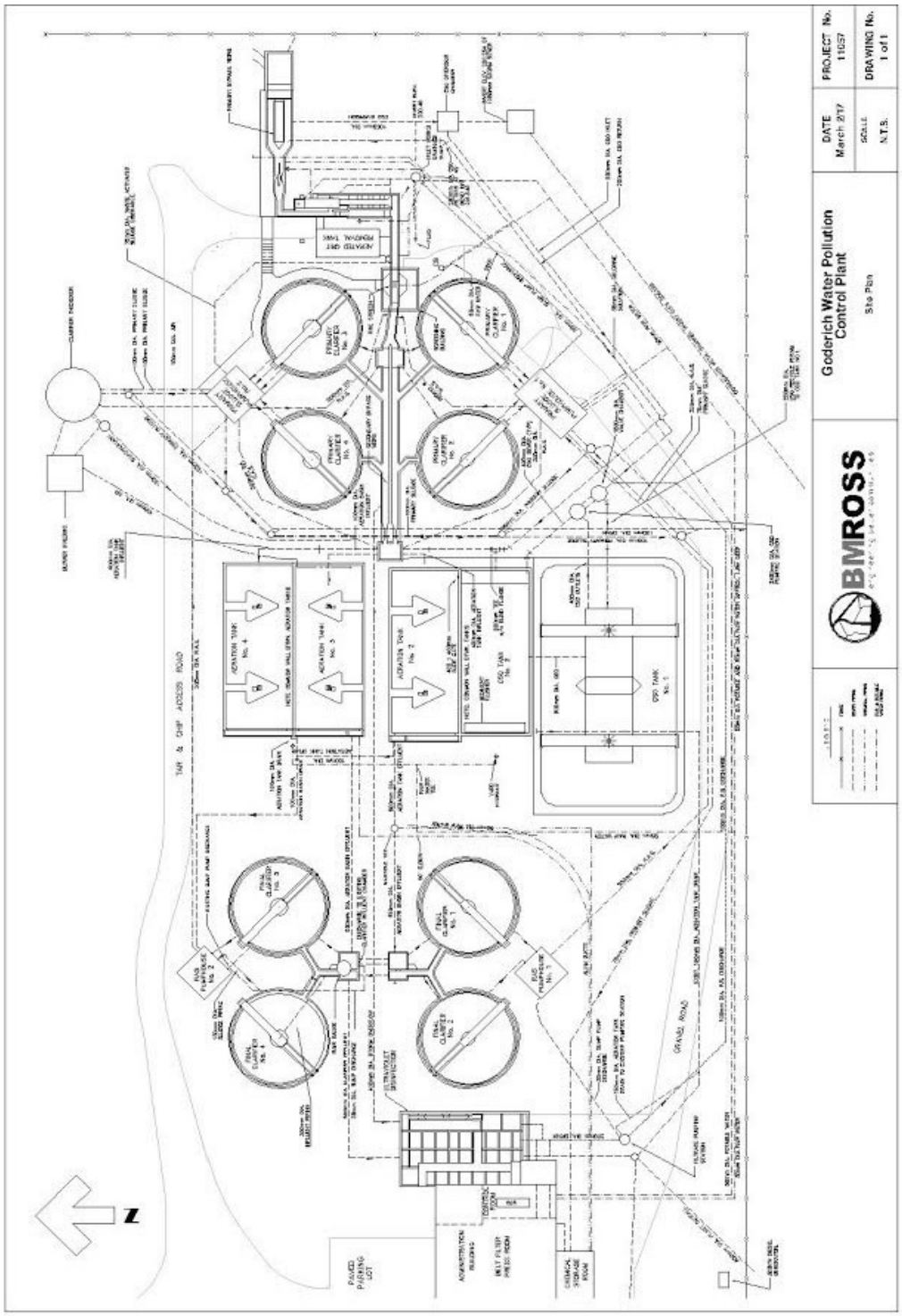
- Course fixed Bar Screen.
- Aerated Grit Tank and Grit removal system.
- Inclined Mechanical Fine Screen and Compactor
- 4 Primary Clarifiers.
- 2 Raw Sludge Pumps
- 1 Waste Return Pump
- 3 Aeration Tanks with two (2) mechanical aerators in each.
- 4 Secondary Clarifiers.
- 6 Return Activated Sludge Pumps
- UV Disinfection System
- Belt Filter Press
- By-pass Diversion Chamber
- 2 Combined Sewer Overflow (CSO) Tanks

A schematic of the treatment facility is shown as **Figure 1.1**. The Water Pollution Control plant is operated by Veolia Water Canada.

Veolia is also responsible for the following Pumping Stations:

- Station A – Outside of Salt Mine on North Harbour Rd.
- Station B – North end of the Harbour.
- Gloucester Terrace – North end of Cambria Rd
- Main Beach – North side of road just before Washrooms and Concessions building
- South Cove – East side of Bethune Crescent by Community Clubhouse
- Essex Street – West side of Essex Street. North East corner of Park (end of Picton Street)
- Anglesea St – 173 Anglesea St. North Side of Rd near Anglesea and Albert Intersection

Figure 1.1


Goderich Water Pollution Control Plant
Site Plan
BMROSS
PROJECT No. 11057
DRAWING No. 1 of 1
DATE March 2017
SCALE N.T.S.
GRAND ROAD
TAR & CHIP ACCESS ROAD
PAVED PARKING LOT
CONTROL ROOM
ADMINISTRATION BUILDING
BELT PRESS ROOM
STORAGE ROOM
N

2.0 SUMMARY AND INTERPRETATION OF MONITORING DATA

2.1 Flows

Flow data for the reporting period is obtained from the SCADA system and records maintained by Veolia, the operator of the works. **(See Appendix A)** The flows are recorded from an open channel flow meter located at the south end of the UV disinfection channel.

Table 2.1 is a summary of the 2024 monthly flows at the WPCP and monthly recorded rainfall amounts. The annual average daily flow for 2024 was 4,890 m^3/day, which is 54% of the rated plant flow capacity of 9,050m^3/day.

Table 2.1 | 2024 Monthly Flow / Rainfall Amounts

Month	Total Flow (m^3)	Average Day (m^3)	Maximum Day (m^3)	Rainfall (mm)
January	252,516	8,146	12,481	59.20
February	166,474	5,740	8,713	6.40
March	178,105	5,745	8,564	61.70
April	188,132	6,271	9,370	112.80
May	162,674	5,248	6,701	58.40
June	124,662	4,155	5,268	28.30
July	127,960	4,128	7,844	24.10
August	108,650	3,505	4,398	11.10
September	104,883	3,496	6,951	43.30
October	93,179	3,006	3,599	26.80
November	93,270	3,109	3,810	37.80
December	190,044	6,130	13,766	39.20
Total	**1,790,549**			**509.10**
Average		**4,890**		**42.43**
Maximum			**13,766**	

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Table 2.1.2 is a monthly comparison of the Water Treatment plant flows (Treated Water) versus the Water Pollution Control plant effluent flows. The Treated Water enters the Distribution System for use and then is returned via the Collection System for treatment at the Wastewater Treatment Plant.

Table 2.1.2 | Water Treatment Plant vs. Water Pollution Control Plant 2024 Monthly Flows.

Month	Water Treatment Plant		Water Pollution Control Plant		Water Flows as a % of Wastewater
	Monthly Flows (m^3)	Daily Avg. (m^3)	Monthly Flows (m^3)	Daily Avg. (m^3)	
January	84,133	2,714	252,516	8,146	33 %
February	78,403	2,691	166,474	5,740	47 %
March	84,452	2,724	178,105	5,745	47 %
April	88,765	2,959	188,132	6,271	47 %
May	103,618	3,343	162,674	5,248	64 %
June	134,616	4,487	124,662	4,155	108 %
July	151,643	4,892	127,960	4,128	118 %
August	146,192	4,716	108,650	3,505	135 %
September	119,515	3,984	104,883	3,496	114 %
October	102,211	3,297	93,179	3,006	110 %
November	83,704	2,790	93,270	3,109	90 %
December	86,576	2,793	190,044	6,130	46 %
Total	**1,263,468**		**1,790,549**		
Average	**105,289**	**3,452**	**149,205**	**4,890**	**80 %**

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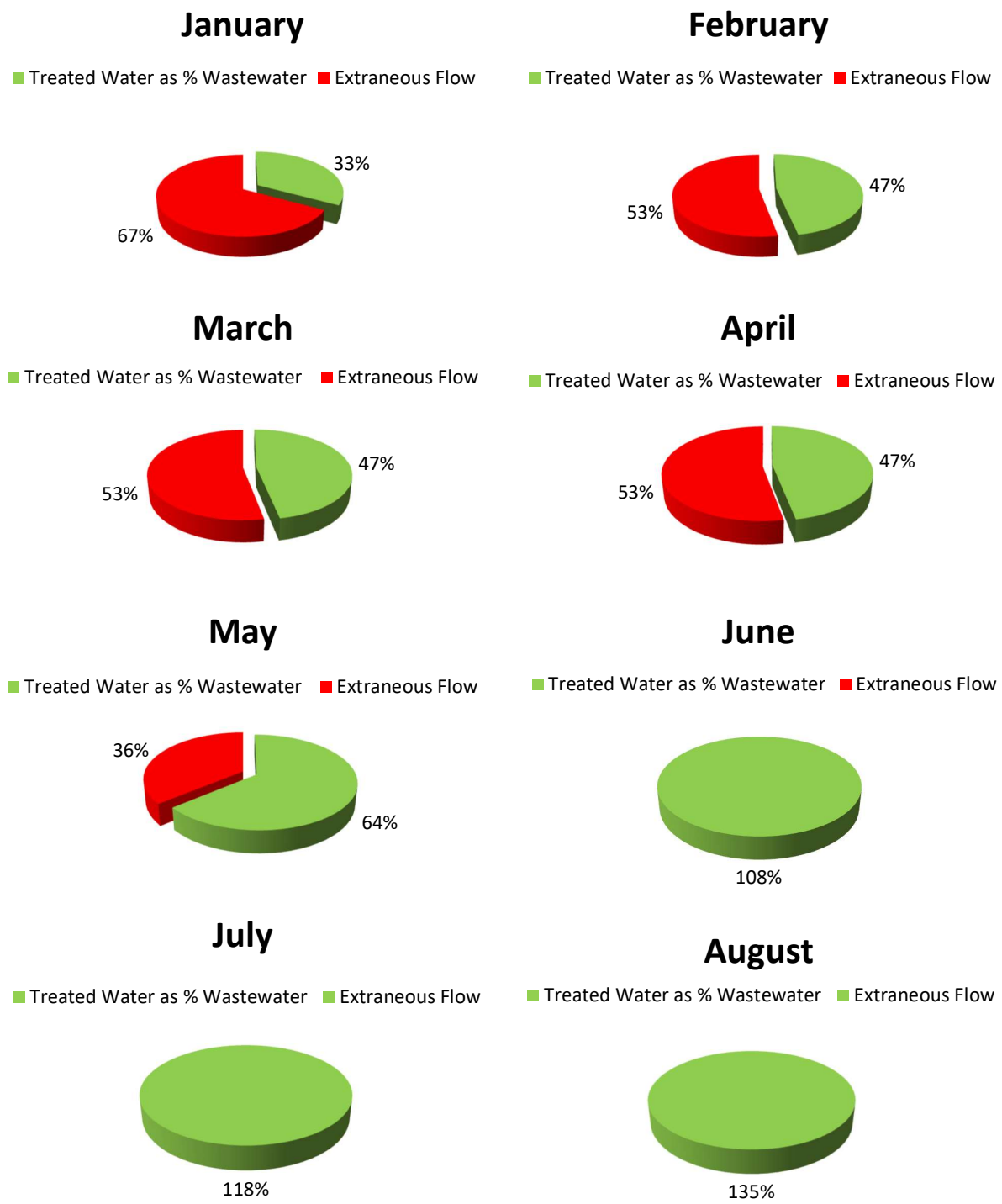
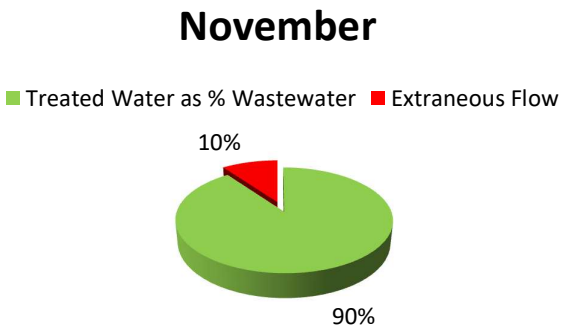
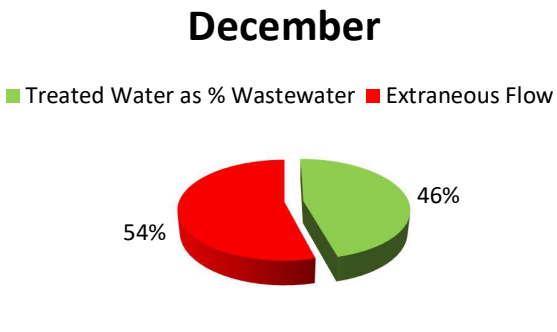
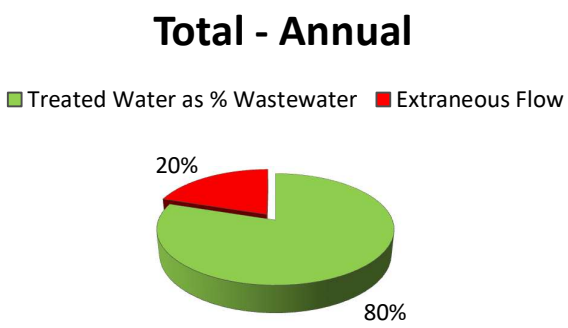
Table 2.1.3 is a visual representation of the flows produced and entering the distribution system from the Water Treatment Plant and the flows entering and treated at the Wastewater Treatment Plant. The differences are listed as extraneous flows.

Table 2.1.3 | Visual Representation of Flows Produced at WTP vs Flows Treated at WWTP









The Distribution and Collection systems are essentially a closed system. What enters the Distribution system, treated water, should be the bulk of what is returned via the Collection system to the Wastewater Treatment Facility.

As can be seen in the above table and subsequent charts, there are significant flows most months of the year that are referred to as “extraneous” flows. These amounts cannot be accounted for from the treated water numbers entering the Distribution system. As everything that enters the Wastewater Treatment Plant must enter from the Collection system, these “extraneous” flows are picked up in the Collection System and returned to the Wastewater Treatment Plant for Treatment.

Treated Water flows for June, July, August, and September, and October are 108%, 118%, 135%, 114%, and 110% of Wastewater Flows respectively. This is normal as treated water from the Distribution System is used for lawn watering, car washing etc. and is not returned via the Collection System. There is more treated water being produced than is being returned for Wastewater Treatment during these periods.

Note: The Wastewater Treatment Plant receives Leachate from the Mid-Huron Landfill site via the Parsons Court transfer station. In 2024 the WWTP received 8,865 m^3 representing 0.495% of the Plants annual flow.

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2.2 2024 Raw Sewage Sample Results

The Certificate of Approval (ECA) specifies raw sewage monitoring on a quarterly basis (minimum) for BOD_5, Total Suspended Solids (TSS), and Total Phosphorus (TP). Veolia monitors these parameters along with $CBOD_5$ on a monthly basis. These samples are sent to an accredited laboratory for analysis. The Goderich WWTP used SGS Labs for its analyses.

Table 2.2 provides a summary of the 2024 Raw Sewage sample results.

Table 2.2 | 2024 Raw Sewage Concentrations – Plant Influent

Month	BOD_5 (mg/L)	Suspended Solids (mg/L)	Total Phosphorus (mg/L)	$CBOD_5$ (mg/L)
January	27	22	0.74	34
February	114	91	1.68	109
March	44	40	1.30	49
April	47	53	1.16	57
May	75	103	2.91	75
June	140	138	2.26	109
July	77	74	1.73	78
August	84	79	2.60	96
September	130	188	3.18	115
October	185	164	4.14	134
November	116	121	2.86	173
December	41	58	1.20	56
Average	**88**	**89**	**2.02**	**88**

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2.3 Final Effluent ECA Objectives and ECA Compliance Limits

Table 2.3 provides the final effluent design objectives contained in the ECA.

Table 2.3 | Final Effluent ECA Design Objectives

Parameter	Concentration Objectives
$CBOD_5$	≤ 10.0 mg/L
Suspended Solids	≤ 12.0 mg/L
Total Phosphorus	≤ 0.7 mg/L

Table 2.3.2 provides the Final Effluent limits contained in the ECA.

Table 2.3.2 | ECA Final Effluent Limits

Parameter	Non-Compliance Limits Average Monthly Concentrations
$CBOD_5$	15.0 mg/L
Suspended Solids	15.0 mg/L
Total Phosphorus	1.0 mg/L
pH	Maintained between 6.0 to 9.5
E. Coli	200 cfu/ 100 ml (Geometric Mean Density)

2.4 2024 Final Effluent

The ECA requires Final Effluent monitoring on a weekly basis for $CBOD_5$, TSS, TP, E. Coli, pH, Temperature, and Unionized Ammonia (calculated). Analysis and results for weekly Final Effluent samples are provided by an accredited laboratory. The Goderich WWTP used SGS Labs for its analyses.

Table 2.4 provides a summary of the 2024 monthly average final effluent samples results.

Table 2.4 | 2024 Final Effluent Monthly Sample Average Results (See Appendix A)

Month	$CBOD_5$ (mg/L)	Suspended Solids (mg/L)	Total Phosphorus (mg/L)	NH3-N (mg/L)	E. Coli (cfu/100mL)	Minimum pH (units)	Maximum pH (units)	Unionized Ammonia (mg/L)
Jan	2.00	4.00	0.27	0.12	9	7.68	7.99	0.001
Feb	2.25	3.00	0.19	0.12	2	7.86	8.22	0.001
Mar	2.00	2.80	0.24	0.65	1	7.88	8.06	0.002
Apr	2.00	3.50	0.28	0.10	2	7.84	7.94	0.001
May	2.00	2.40	0.29	0.14	2	7.80	8.38	0.001
Jun	2.00	4.30	0.49	0.10	3	7.07	7.91	0.001
Jul	2.00	2.60	0.48	0.10	5	7.77	8.11	0.001
Aug	2.00	2.00	0.54	0.10	3	7.78	7.92	0.001
Sept	2.00	2.80	0.57	0.10	2	7.38	7.87	0.001
Oct	2.00	3.20	0.56	0.10	8	7.24	7.94	0.001
Nov	2.00	2.00	0.47	0.10	1	7.57	7.78	0.001
Dec	2.20	2.80	0.35	0.10	2	7.83	8.17	0.001
Annual Average	**2.04**	**2.90**	**0.39**	**0.15**	**3**	**7.64**	**8.02**	**0.001**
MECP Limits Avg. Monthly	**15.00**	**15.00**	**1.0**	***2.0**	**200**	**>6.00**	**<9.5**	

***Note - Final Effluent Unionized Ammonia minimum analysis reported from SGS is 0.001 mg/L**
***Note - Final Effluent NH3-N minimum analysis reported from SGS is 0.10 mg/L**
***E. Coli Average expressed as Geometric Mean**
***Final Effluent NH3-N is a Contractual Limit**

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Table 2.4.2 provides the weekly sample results for Final Effluent in 2024

Table 2.4.2 | 2024 Final Effluent Weekly Sample Results

Date (Weekly Samples)	$CBOD_5$ (mg/L)	Suspended Solids (mg/L)	NH3-N (mg/L)	Total Phosphorus (mg/L)	pH	Unionized Ammonia (mg/L)	E. Coli (cfu/100mL) Geo. Mean
01/02/24	2.00	5.00	0.10	0.29	7.99	.001	12
01/09/24	2.00	4.00	0.20	0.30	7.84	.001	32
01/16/24	2.00	4.00	0.10	0.24	7.94	.001	25
01/24/24	2.00	3.00	0.10	0.25	7.68	.001	6
01/30/24	2.00	4.00	0.10	0.25	7.85	.001	0
Jan Average	***2.00***	***4.00***	***0.12***	***0.27***	***7.86***	***.001***	***9***
02/06/24	2.00	5.00	0.10	0.20	7.88	.001	1
02/13/24	2.00	2.00	0.10	0.19	7.86	.001	3
02/20/24	2.00	3.00	0.18	0.16	8.22	.001	0
02/27/24	3.00	2.00	0.10	0.21	8.17	.001	8
Feb Average	***2.25***	***3.00***	***0.12***	***0.19***	***8.03***	***.001***	***2***
03/05/24	2.00	2.00	0.20	0.24	8.06	.001	0
03/12/24	2.00	2.00	2.20	0.26	7.89	.003	0
03/19/24	2.00	2.00	0.10	0.22	7.88	.001	1
03/26/24	2.00	5.00	0.10	0.22	7.88	.001	3
Mar Average	***2.00***	***2.80***	***0.65***	***0.24***	***7.93***	***.002***	***1***
04/02/24	2.00	5.00	0.10	0.26	7.94	.001	9
04/09/24	2.00	4.00	0.10	0.31	7.84	.001	0
04/16/24	2.00	2.00	0.10	0.27	7.92	.001	0
04/23/24	2.00	3.00	0.10	0.26	7.91	.001	2
Apr Average	***2.00***	***3.50***	***0.10***	***0.28***	***7.90***	***.001***	***2***
05/01/24	2.00	2.00	0.10	0.23	8.38	.001	1
05/07/24	2.00	2.00	0.10	0.26	7.80	.001	0
05/14/24	2.00	3.00	0.30	0.31	7.88	.001	2
05/21/24	2.00	3.00	0.10	0.31	8.01	.001	2
05/28/24	2.00	2.00	0.10	0.34	7.88	.001	2
May Average	***2.00***	***2.40***	***0.14***	***0.29***	***7.99***	***.001***	***2***
06/04/24	2.00	2.00	0.10	0.42	7.91	.001	1
06/11/24	2.00	5.00	0.10	0.53	7.82	.001	2
06/18/24	2.00	4.00	0.10	0.46	7.76	.001	8
06/25/24	2.00	6.00	0.10	0.55	7.07	.001	5
June Average	***2.00***	***4.30***	***0.10***	***0.49***	***7.64***	***.001***	***3***

Date (Weekly Samples)	$CBOD_5$ (mg/L)	Total Suspended Solids (mg/L)	NH3-N (mg/L)	Total Phosphorus (mg/L)	pH	Unionized Ammonia (mg/L)	E. Coli (cfu/100mL)
07/02/24	2.00	2.00	0.10	0.49	7.88	.001	10
07/09/24	2.00	4.00	0.10	0.51	7.77	.001	15
07/16/24	2.00	2.00	0.10	0.43	8.04	.001	3
07/23/24	2.00	3.00	0.10	0.46	7.79	.001	5
07/30/24	2.00	2.00	0.10	0.51	8.11	.001	0
July Average	***2.00***	***2.60***	***0.10***	***0.48***	***7.92***	***.001***	***5***
08/06/24	2.00	2.00	0.10	0.59	7.91	.001	3
08/13/24	2.00	2.00	0.10	0.52	7.78	.001	0
08/20/24	2.00	2.00	0.10	0.45	7.92	.001	13
08/27/24	2.00	2.00	0.10	0.58	7.84	.001	3
Aug Average	***2.00***	***2.00***	***0.10***	***0.54***	***7.72***	***.001***	***3***
09/03/24	2.00	5.00	0.10	0.70	7.69	.001	2
09/10/24	2.00	2.00	0.10	0.48	7.87	.001	0
09/17/24	2.00	2.00	0.10	0.53	7.58	.001	0
09/24/24	2.00	2.00	0.10	0.56	7.38	.001	6
Sept Average	***2.0***	***2.80***	***0.10***	***0.57***	***7.63***	***.001***	***2***
10/01/24	2.00	2.00	0.10	0.52	7.56	.001	2
10/08/24	2.00	2.00	0.10	0.43	7.69	.001	32
10/15/24	2.00	2.00	0.10	0.45	7.24	.001	12
10/22/24	2.00	7.00	0.10	0.92	7.39	.001	9
10/29/24	2.00	3.00	0.10	0.49	7.94	.001	5
Oct Average	***2.20***	***3.20***	***0.10***	***0.56***	***7.56***	***.001***	***8***
11/05/24	2.00	2.00	0.10	0.48	7.78	.001	0
11/12/24	2.00	2.00	0.10	0.54	7.57	.001	2
11/19/24	2.00	2.00	0.10	0.48	7.61	.001	0
11/26/24	2.00	2.00	0.10	0.36	7.72	.001	2
Nov Average	***2.00***	***2.00***	***0.10***	***0.47***	***7.67***	***.001***	***1***
12/03/24	2.00	2.00	0.10	0.30	7.99	.001	0
12/10/24	2.00	2.00	0.10	0.35	7.84	.001	1
12/17/24	2.00	2.00	0.10	0.35	7.89	.001	1
12/22/24	2.00	2.00	0.10	0.30	8.17	.001	1
12/29/24	3.00	6.00	0.10	0.46	7.83	.001	11
Dec Average	***2.20***	***2.80***	***0.10***	***0.35***	***7.94***	***.001***	***2***
Annual Average	***2.04***	***2.90***	***0.15***	***0.39***	***7.83***	***.001***	***3***
MECP Limits (Avg. Monthly)	***15.0***	***15.0***	****2.0***	***1.0***	***> 6.0 <9.5***		***200***

*** NH3-N is a Contractual Limit**
*** E. Coli (cfu/100ml) limit is Average Monthly Concentrations reported as Geometric Mean Density**

In summary, while there were a few instances where the weekly results returned a higher-than-normal value, all parameters are below MECP Limits as established in the ECA for the Goderich Wastewater Treatment Plant.

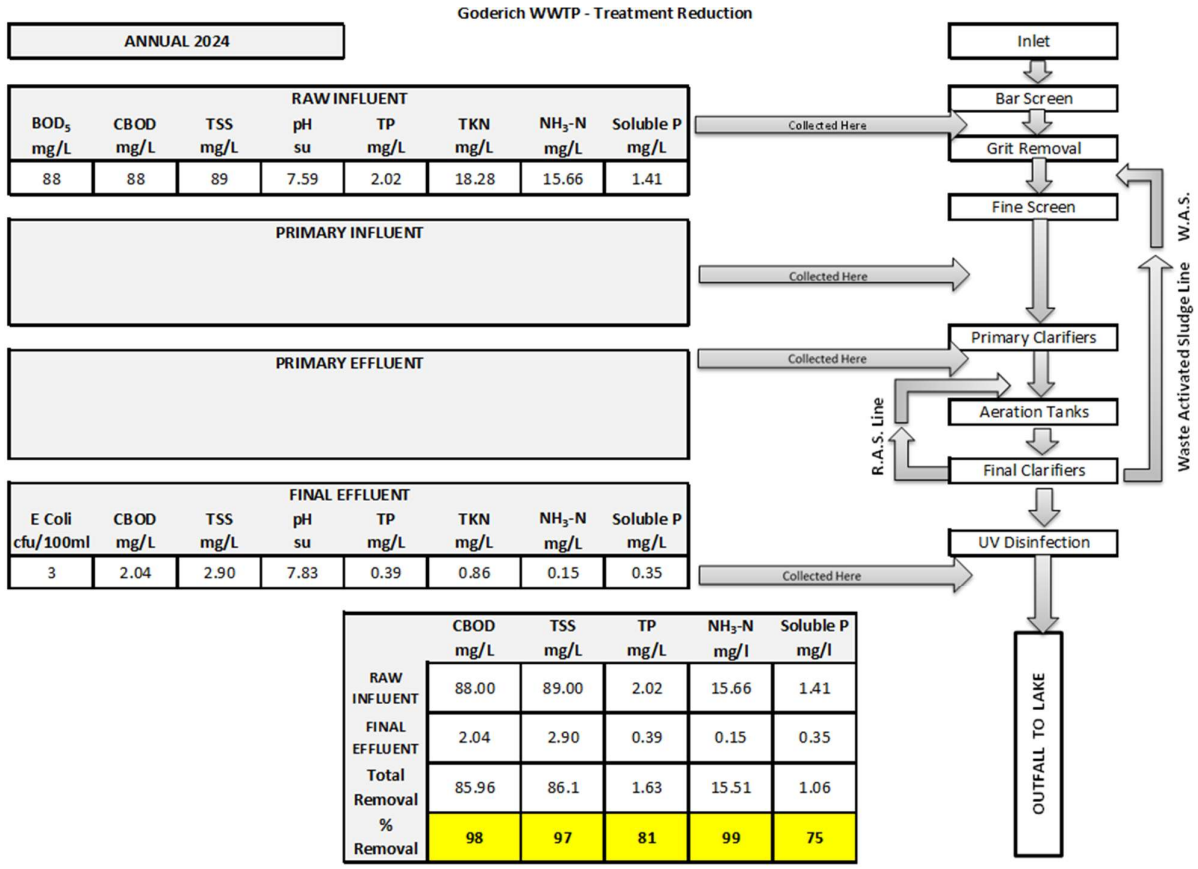
2.5 2024 Performance Summary

Table No. 2.5 is a summary of the overall effectiveness of the treatment of raw sewage from its entry to the Final Effluent entering Lake Huron.

Table 2.5 | Overall Sewage Reduction Based on Annual Averages 2024

Parameter (mg/L unless noted)	Raw Sewage	Final Effluent	Design Objective	MECP Limit	% Reduction
$CBOD_5$	88	2.04	10.0	15.0	98 %
Suspended Solids	89	2.90	12.0	15.0	97 %
Total Phosphorus	2.02	0.39	0.7	1.0	81 %

Figure 2.5 | 2024 Performance Summary Visualization



In general terms, the works are providing excellent treatment of the incoming sewage, and there is anticipated to be little, if any, impact to the receiving body (Lake Huron) from the works.

3.0 OPERATIONS

3.1 General

Condition **(10.6.a)** of the ECA requires the owner to report a summary and interpretation of monitoring data and comparisons to effluent limits and objectives. **Section 2.0** of this report provides a summary and interpretation of monitoring data and comparisons to effluent limits and effluent objectives.

3.2 Operating Problems (ECA 10.6.b)

Other than a few minor equipment breakdowns, which were repaired in a timely matter without affecting the treatment process, we did not experience any operating problems in 2024.

3.3 Maintenance and Repairs (ECA 10.6.c)

Routine maintenance occurred as required. The following activities were specifically carried out.

- Pressure Washed Interior of Wet Well at Gloucester Pumping Station. Spring and Fall.
- Pressure Washed Interior of Wet Well at Main Beach Pumping Station. Spring and Fall.
- Flushed grease in RAS pumps.
- Annual Backflow Preventer Certifications done by Fergusons Plumbing and Heating.
- H2S meters were calibrated by Hetek.
- Final Effluent flow meter calibrated by Iconix.
- Annual inspection of hoists and chain falls by Acu-Tec.
- New lifting posts for pumping stations.
- Brick work repairs and replacement completed on main Control Building and Pump Houses.
- New bearings installed in conveyor
- Gearbox repaired for brush on Mechanical Screen
- Filtrate Pump rebuilt
- Tube heaters replaced in Workshop and Belt Press Room
- Mud Valve for Primary Clarifier #4 in Primary Effluent Distribution Box Repaired
- New Water Heater Installed in Main Control Building
- 12,000 hr service work completed on the UV System

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3.4 Effluent Quality Assurance (ECA 10.6.d)

According to the Wastewater Systems Effluent Regulations Final Effluent is to be sampled quarterly to determine if the effluent being deposited is acutely lethal. Paragraph 11(6)(a) states that if samples tested in each of four consecutive quarters were determined not to be acutely lethal, then the Wastewater System is eligible to reduce the sampling frequency for the determination of acute lethality.

Due to reporting four consecutive quarters of not acutely lethal results in 2016 the Goderich Wastewater Treatment Plant has been granted a sampling frequency of once yearly.
A Final Effluent sample was collected July 17, 2024, and sent to an accredited lab to be tested for Acute Lethality. The result of the sample was zero (0), not acutely lethal.

All monitoring and sampling for quality assurance was completed as required by the ECA.

3.5 Calibration of Effluent Monitoring Equipment (10.6.e)

The final effluent flow monitoring equipment was calibrated by ICONIX. For Details **(See Appendix B)**

The HACH bench top pH meter is calibrated in-house on a monthly basis by Veolia operators using the 4.01, 7.00 and 10.01 buffers. The pH meter and Colorimeter are calibrated by a HACH Technician annually. Fixed mount D.O. sensors are calibrated annually. The Plant is equipped with a variety of Gas (H2S, LEL and 4 Gas Units) detection units which are calibrated semi-annually by Hetek Solutions Inc.

3.6 Effluent Quality Objectives (ECA 10.6.f)

With the use of the In-house labs and tests we can monitor the settleabilty of MLSS, Final Effluent Total Suspended Solids and Soluble Phosphorus levels. The results of these tests give us an indication where we stand in relation to meeting our Effluent Objectives and allow us to make process changes when necessary. All results are entered into the daily logbook and Hach WIMS database.

In addition to In-house labs and test Veolia employs a Process Management Control Plan that compiles the results from in-house labs and testing along with weekly and monthly lab results. The PCMP program provides monitoring of targets and flags throughout the process allowing operators the ability to identify and react to a situation in the process before it affects the quality of Final Effluent.

In-House Tests conducted and frequency:

- 30-minute settling test of all aeration tanks mixed liquor – Monday thru Friday
- TSS lab of Primary Effluent, Mixed Liquor, RAS, and Final Effluent – Monday, Wednesday, Friday.
- Soluble Phosphorus residual in Final Effluent – Monday thru Friday.
- Primary Clarifier sludge blankets measured – Monday thru Thursday.
- Secondary Clarifier sludge blankets measured – Monday thru Friday.
- Aeration tanks Dissolved Oxygen readings – Monday, Wednesday, Friday.

3.7 Sludge (ECA 10.6.g)

Sludge accumulates in the bottom of the Primary Clarifiers. The sludge blankets in the four (4) primary clarifiers are measured daily Monday thru Thursday. The purpose of the measurement is to monitor sludge levels and determine which Primary Clarifier(s) will have sludge drawn down from. The sludge is removed from the clarifiers by pumping it to the Belt Filter Press and loaded in a 20-yard self-levelling bin (up to) twice weekly. The bin is then picked up and transported under agreement with Canadian Waste Management to an approved facility. Canadian Waste Management hauls the dewatered sludge under ECA #A840311. The waste is taken to Twin Creeks Landfill Site in Lambton County operating under ECA #A032303.

Table 3.7 compares the last five years of sludge hauled to landfill.

Table 3.7 | 5 Year Comparison of Tonnes and Loads of Sludge Hauled to Landfill

YEAR	2020	2021	2022	2023	2024
Tonnes	*1228*	*1197*	*1120*	*1143*	*1202**
Loads	*88*	*82*	*74*	*84*	*84*
Operating Days	*88*	*82*	*74*	*84*	*84*
Avg. Weight Per Load	*13.95 Tonnes*	*14.60 Tonnes*	*15.36 Tonnes*	*14.27 Tonnes*	*14.31 Tonnes**

*Estimated Total Tonnes, Avg. Weight Per Load as complete data not received as of March 31, 2025.

Based on the past five years, we do not anticipate a major increase or decrease in sludge production for 2025.

3.8 Complaints (ECA 10.6.h)

No complaints were received by the Goderich WWTP for the year 2024.

3.9 Bypasses (ECA 10.6.i)

There were zero Plant-Bypasses in 2024 at the Goderich WWTP to Report

APPENDIX "A"
2024 PLANT DATA

Veolia Water | 211 Sunset Drive | Goderich, ON |Tel. 519-524-6250 | Fax 519-524-8575

GODERICH WPCP MONTHLY REPORT	January	February	March	April	May	June	July	August	September	October	November	December	Geometric Mean Total	Average
FLOWS (effluent)										Note:	Bacteria is a Monthly			
Total Flow (effluent)(m3)	252515	166474	178105	188132	162674	124662	127960	108650	104883	99179	99270	190044	1790549	
Maximum Daily Flow (m3/day)	12481	8713	8564	9370	6701	5268	7844	4398	6951	3599	3810	13766		7622
Average Daily Flow (m3/day)	8146	5740	5745	6271	5248	4155	4128	3505	3496	3006	3109	6130		4890
Peak Flow (Instantaneous)(m3/day)	17641	10467	16661	12266	10317	10084	14475	11693	11647	10210	7589	17463		12543
Return Activated Sludge														
Average Daily Flow (m3/day)	5626	4051	3998	4536	3477	2911	2833	2454	2428	2207	2311	4296		3409
Return Rate %	69	70	70	69	66	70	68	70	69	73	74	71		70
Waste Ave. Daily Flow (m3/day)	62	58	60	60	55	45	55	49	39	41	61	48		53
BYPASS														
Primary Bypass Volume (m3)														
Primary Bypass Duration (hours)														
Primary Bypass Events													0	
Secondary Bypass Duration (hours)														
Secondary Bypass Volume (m3)														
Secondary Bypass Events	0	0	0	0	0	0	0	0	0				0	
INFLUENT PARAMETERS														
Raw BOD (mg/l)	27.00	114.00	44.00	46.00	47.00	140.00	77.00	84.00	130.00	185.00	116.00	41.00		87.58
Raw CBOD (mg/l)	34.00	109.00	49.00	49.00	57.00	109.00	78.00	96.00	115.00	134.00	173.00	56.00		88.25
Raw CBOD Loading (Kg/day)	276.95	625.71	281.52	307.28	299.11	452.94	321.96	336.46	402.05	402.77	537.86	343.31	4,587.93	382.33
Raw TSS (mg/l)	22.00	91.00	40.00	40.00	53.00	138.00	74.00	79.00	188.00	164.00	121.00	58.00		89.00
Raw TSS Loading (Kg/day)	179.20	522.38	229.61	250.84	278.12	573.45	305.45	276.88	657.27	492.95	376.19	355.57	4,498.11	374.84
Raw TKN (mg/l)	730	16.80	14.50	10.20	13.40	19.80	15.60	21.50	29.00	32.60	27.50	11.20		18.28
Raw TKN Loading (Kg/day)	59.46	96.44	83.31	63.96	70.32	82.28	64.39	75.35	101.39	97.99	85.50	68.66	948.05	79.09
Raw NH3 (mg/l)	590	13.50	9.30	9.90	9.90	18.00	13.30	18.80	26.60	29.40	23.90	9.40		15.66
Raw NH3 Loading (Kg/day)	48.06	16.80	53.43	62.08	51.95	74.80	54.90	65.89	93.00	88.37	74.31	57.63	741.21	61.77
Raw TP (mg/l)	074	1.68	1.30	1.35	1.16	2.26	1.73	2.60	3.18	4.14	2.86	1.20		2.02
Raw TP Loading (Kg/day)	608	9.64	7.47	8.47	6.09	9.39	7.14	9.11	11.12	12.44	8.89	7.36	108.15	8.60
Raw pH (SU)	7.67	8.04	7.61	7.78	7.48	7.27	7.53	7.53	7.41	7.50	7.59	7.65		7.59
EFFLUENT PARAMETERS														
Final CBOD (mg/l)	2.00	2.25	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.20		2.04
Final CBOD Loading (Kg/day)	16.29	12.92	11.49	12.54	10.50	8.31	8.26	7.01	6.99	6.01	6.22	13.49	120.02	18.65
Final TSS (mg/l)	400	3.00	2.75	3.50	2.40	4.25	2.60	2.00	2.75	3.20	2.00	2.80		2.94
Final TSS Loading (Kg/day)	32.58	17.22	15.80	21.95	12.59	17.66	10.73	7.01	9.61	9.62	6.22	17.17	178.16	26.98
Final TKN (mg/l)	124	1.05	2.23	0.50	0.64	0.55	0.96	0.88	0.70	0.56	0.68	0.50		0.86
Final TKN Loading (Kg/day)	10.10	6.03	12.78	3.14	3.36	2.29	3.96	3.07	2.45	1.68	2.10	3.07	54.01	8.16
Final NH3 (mg/l)	012	0.12	0.65	0.10	0.14	0.10	0.10	0.10	0.10	0.10	0.10	0.10		0.15
Final NH3 Loading (Kg/day)	098	0.69	3.73	0.63	0.73	0.42	0.41	0.35	0.35	0.30	0.31	0.61	9.52	1.50
Final Unionized Ammonia (ug/l)	1.000	1.000	1.000	1.000	1.000	1.000		1.000	1.000	1.000	1.000	1.000		1.000
Final TP (mg/l)	027	0.19	0.24	0.28	0.29	0.49	0.48	0.54	0.57	0.56	0.47	0.35		0.39
Final TP Loading (Kg/day)	2.17	1.09	1.35	1.72	1.52	2.04	1.98	1.88	1.98	1.69	1.45	2.16	21.02	3.32
Final pH (SU)	7.86	8.08	7.93	7.90	7.99	7.64	7.92	7.86	7.63	7.56	7.67	7.94		7.83
Final Nitrite (mg/l)	003	0.03	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03		0.03
Final Nitrate (mg/l)	11.96	13.55	14.33	14.08	13.26	16.45	15.70	17.68	18.83	19.30	19.78	13.12		15.57
Bacteria E.Coli (cfu/100ml)	9	2	1	2	2	3	5	3	2	8	1	2		3
Sludge Hauled (Loads)	80	80	70	80	90	50	80	90	60	50	70	40	840	7.00

***Final Unionized Ammonia numbers shown in Monthly report are not correct and not used. Averages are taken from weekly final effluent results analyses as shown in Table 2.4.2 | 2024 Final Effluent Weekly Sample Results**

APPENDIX "B"
2024 CALIBRATION CERTIFICATE
EFFLUENT FLOW METER

Veolia Water | 211 Sunset Drive | Goderich, ON |Tel. 519-524-6250 | Fax 519-524-8575

Certificate of Calibration

Electro-Magnetic Flow Meter

Advanced Meter Service
548-388-4696
amsmeter@outlook.com
Ingersoll. ON N5C 1G8
advancedmeterservice.com

SCADA Instrument Reading Verification		
Instrument	SCADA	% Deviation

Calibration: ☐
Verification: ☐

Customer Information
County of Oxford - Public Works
21 Reeve St, PO Box 1614
Woodstock. On N4S 7Y3

Verification/Calibration Date: August 8 2024
Verification/Calibrtion Due Date: August 8 2025

Job Number: Veolia-2024		**Manufacturer:**	Millitonics	**Totalizer Reading:**	M3
Contact: Steve Walmsley		**Sensor Tube Model:**	OCMII		
Site Location:	Goderich	**Sensor Tube SN#:**	Not Seen	**mA Output Range:**	0-31000CM/D
Site Name:	211 Sunset Dr	**Transmitter Model:**	OCMII	**Current Output :**	4-20mA
Flow Meter Tag#:	Sewage Plant	**Transmitter SN#**	Not Seen	**Flow Units :**	L/S
Application:		**Flow Meter Size (mm):**		**Meter Operation (PASS/FAIL) :**	PASS

Reference L/S	As Found L/S	% Deviation	As Left L/S	% Deviation	PASS/FAIL
3940 CM/D	3940 CM/D	0.00%	3940 CM/D	0.00%	PASS
3980 CM/D	3980 CM/D	0.00%	3980 CM/D	0.00%	PASS
4000 CM/D	4000 CM/D	0.00%	4000 CM/D	0.00%	PASS
4026 CM/D	4026 CM/D	0.00%	4026 CM/D	0.00%	PASS

Reference mA	As Found mA	% Deviation	As Left mA	% Deviation	PASS/FAIL
6.03 mA	6.04 ma	0.16%	6.04 ma	0.16%	PASS
6.05 mA	6.07 ma	0.33%	6.07 ma	0.33%	PASS
6.06 mA	6.08 mA	0.33%	6.08 mA	0.33%	PASS
6.07 mA	6.09 mA	0.32%	6.09 mA	0.32%	PASS

Reference L/S	Time(Minutes)	Ultrasonic Flow Monitor L/S	% Deviation	PASS/FAIL

Technician Remarks:

Calibration/Verification Device Used		
Make/Description	**SN#**	**Calibration Due Date**
FLUKE15B+	61280422WS	Dec-24
BV Ultrasonic	S2241796H	Dec-24

S.Pate
Service Technician :
Signature