2024 ANNUAL PERFORMANCE REPORT

PORT MCNICOLL WASTEWATER TREATMENT PLANT

For the period of
January 1st, 2024 to December 31st, 2024

Prepared for the Corporation of the Township of Tay by the Ontario Clean Water Agency

TAY TOWNSHIP est. 1994

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

REQUIREMENTS FOR ANNUAL PERFORMANCE REPORT

This annual performance report is prepared in accordance with Amended Environmental Compliance Approval No. 8421-9PMHXN Section 10.(5) items a) through l) for the for the Port McNicoll Wastewater Treatment Plant and with Environmental Compliance Approval #129-W601, Issue 1 for the Tay Township Municipal Collection System.

10. REPORTING

(5) The Owner shall prepare and submit a performance report to the Water Supervisor on an annual basis, within ninety (90) days following the end of the period being reported upon. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the Works;

(b) a description of any operating problems encountered and corrective actions taken;

(c) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;

(d) a summary of any effluent quality assurance or control measures undertaken in the reporting period;

(e) a summary of the calibration and maintenance carried out on all effluent monitoring equipment; and

(f) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 5.

(g) a tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

(h) a summary of any complaints received during the reporting period and any steps taken to address the complaints;

(i) a summary of all By-pass, spill or abnormal discharge events;

(j) a copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification;

(k) a report summarizing all modifications completed as a result of Schedule B, Section 3; and

(l) any other information the Water Supervisor requires from time to time.

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This annual performance report is prepared in accordance with Amended Environmental Compliance Approval No. 8421-9PMHXN Section 10.(5) items a) through l) for the for the Port McNicoll Wastewater Treatment Plant and with Environmental Compliance Approval #129-W601, Issue 1 for the Tay Township Municipal Collection System for the 'reporting period' of January 1, 2024 to December 31, 2024.

1. System Description

The Port McNicoll Wastewater Treatment Plant (WWTP) is a Class II Treatment and Collection facility. The Port McNicoll WWTP is a membrane bioreactor (MBR) modified activated sludge process plant with chemical addition that serves the Community of Port McNicoll. The works is for the collection, transmission, treatment and disposal or domestic sewage consisting of a Raw Sewage Pumping Station, Sewage Treatment Plant. Biosolids Storage and Outfall Sewer.

Raw sewage is collected at the sewage pumping station, and conveyed to the sewage treatment plant through forcemains. Raw sewage passes through a screw-type mechanical screen or bar screen (standby) to remove larger debris. The sewage is then directed to the aeration system consisting of two train bioreactor tanks with an arrangement of membrane cassettes. The aeration system consists of two anoxic zones (for phosphorous removal and ammonia reduction). Treated effluent flows through UV for disinfection, and is discharged into Hogg Bay. Accumulated sludge is directed through the Zenon sludge thickening process, sludge digester and the sludge storage tank, which is then hauled off-site for land application. The facility is equipped with standby power in the event of a power failure.

An overview of the Port McNicoll Wastewater Treatment System can be found in the following table:

Table 1. Port McNicoll Wastewater Treatment Plant System Overview

Facility Name:	Port McNicoll Wastewater Treatment Plant
Facility Type:	Aeration, Chemical Dosing, Screening, UV Disinfection
Plant Classification:	WWT II, WWC II
Works Number:	110001417
Rated Capacity:	1,918 m^3/day
Discharge Point:	Hogg Bay
Environmental Compliance Approval:	8421-9PMHXN (Issue Date: October 21, 2014)

2. Monitoring Data and Comparison with ECA Objectives and Limits

ECA 8421-9PMHXN, Section 10.(5)(a) requires:

"A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the Works;"

Where Condition 6 *"is imposed to ensure that the effluent discharged from the Works to the Hogg Bay meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body."*

2.1 Discharge Data Report (MECP)

The Ontario Clean Water Agency (OCWA) has an agreement with the MECP to submit quarterly discharge data for all OCWA operated municipal sewage treatment facilities 45 days at the end of each quarter. Monitoring data is submitted via the Ministry of Environment Wastewater System (MEWS). The MECP has these reports stored in a shared location where MECP inspectors can obtain and review them. There are no limits/objectives for discharge for the quarterly Discharge Data Report.

2.2 Monitoring Report (WSER)

A monitoring report required under the Wastewater Systems Effluent Regulation (WSER) is submitted on a quarterly basis to the Government of Canada via the Effluent Regulatory Reporting Information System (ERRIS). The quarterly monitoring report requires that the following information be reported for the Port McNicoll WWTP:

- Number of days effluent was deposited
- Total volume of effluent deposited
- Average CBOD (limit of 25 mg/L)
- Average concentration of suspended solids (limit of 25 mg/L)

The monitoring reports were submitted as required for the reporting period and can be found within the ERRIS. All results for average $CBOD_5$ and concentration of suspended solids were below the limits set out in WSER for the Port McNicoll WWTP.

2.3 Influent ECA Monitoring Program Requirements

The following table (Table 2) outlines the influent water quality monitoring program required by the most current ECA for the reporting period. There are additional in-house samples taken and analyzed throughout the year in order to help with process performance monitoring, adjustment, and optimization. These parameters were analyzed by an accredited analytical laboratory (SGS Canada Inc., Lakefield, Ontario).

Table 2. Influent Water Quality Monitoring Program and Sampling Points- ***as per ECA 8421-9PMHXN Section 9(3) - Table 3- Influent Monitoring***

Influent Monitoring		
Raw Sewage Parameter	**Type of Sample**	**Minimum Frequency**
Biochemical Oxygen Demand (BOD_5)	Composite	Bi-Weekly
Suspended Solids	Composite	Bi-Weekly
Total Phosphorus	Composite	Bi-Weekly
Dissolved Reactive Phosphorus	Composite	Bi-Weekly
Total Kjeldahl Nitrogen Ammonia + Ammonium Nitrogen	Composite	Bi-Weekly
Nitrite + Nitrate Nitrogen	Composite	Bi-Weekly
Alkalinity	Composite	Bi-Weekly
Chlorides	Composite	Bi-Weekly
Conductivity	Composite	Bi-Weekly
pH	Composite	Bi-Weekly

2.4 Raw Sewage (Influent) Characteristics: Summary and Interpretation of Reporting Year

The following parameters in Table 3 and 4 are not reportable as they do not have limits or objectives but are monitored as required by the ECA and used to characterize the contents of incoming sewage flow.

A summary of the influent laboratory results can be seen in the following tables (Table 3 and 4) for samples taken and analyzed during the reporting period. Sample results are based on a bi-weekly composite sample taken and analyzed by an accredited external laboratory. A total of 26 influent samples were analyzed for the reporting period.

Table 3: Raw Sewage (Influent) Quality Analysis for 2024

Month	Monthly Influent Concentrations (mg/L)				
	BOD_5	**Total Suspended Solids**	**Total Phosphorus**	**Dissolved Reactive Phosphorus**	**Total Kjeldahl Nitrogen**
January	103.50	120.50	1.34	0.03	13.80
February	30.50	48.00	0.56	0.03	9.20
March	63.00	66.50	1.10	0.54	13.10
April	56.67	106.33	0.91	0.03	9.93
May	92.00	112.00	1.01	0.04	12.05
June	61.00	38.00	1.02	0.03	17.20
July	49.00	120.67	0.88	0.03	13.27
August	47.50	78.00	0.81	0.05	15.85

Month	Monthly Influent Concentrations (mg/L)				
	BOD_5	**Total Suspended Solids**	**Total Phosphorus**	**Dissolved Reactive Phosphorus**	**Total Kjeldahl Nitrogen**
September	82.50	77.50	1.00	0.04	18.50
October	83.00	71.00	1.47	0.10	22.05
November	109.33	96.33	2.35	0.25	26.77
December	95.00	118.00	1.42	0.07	12.15
2024 Annual Average	**73.08**	**91.96**	**1.18**	**0.10**	**15.40**

Table 4: Raw Sewage (Influent) Quality Analysis for 2024

Month	Monthly Influent Concentrations (mg/L)					
	Nitrite + Nitrate Nitrogen	**Alkalinity**	**Chlorides**	**Conductivity**	**pH**	
					Minimum	Maximum
January	1.28	217.00	68.00	705.50	7.65	7.79
February	2.17	204.50	75.50	724.00	7.81	7.85
March	1.62	249.50	94.50	800.50	7.79	8.07
April	1.40	214.67	63.67	711.00	7.62	7.98
May	0.16	212.50	59.00	698.00	7.63	7.72
June	0.06	225.00	63.00	729.00	7.68	7.68
July	0.09	212.00	63.33	694.67	7.62	7.78
August	0.06	216.50	66.00	737.50	7.60	7.88
September	0.06	187.00	59.50	686.00	7.21	7.68
October	0.06	171.00	61.00	644.50	7.29	7.41
November	0.06	204.67	60.00	710.67	6.76	7.66
December	0.92	218.50	63.00	763.50	7.59	7.70
2024	**0.67**	**210.46**	**66.04**	**715.27**	**-**	**-**

Influent Laboratory analysis for the reporting year based on samples at the inlet of the works averaged a Biochemical Oxygen Demand (BOD_5) concentration of 73.08 mg/L, a Total Suspended Solids (TSS) concentration of 91.96 mg/L, a Total Phosphorus (TP) concentration of 1.18 mg/L, a Dissolved Reactive Phosphorus concentration of 0.10 mg/L, a Total Kjeldahl Nitrogen concentration of 15.40 mg/L. Additionally, an average Nitrite + Nitrate Nitrogen concentration of 0.67 mg/L, an Alkalinity of 210.46 mg/L, a Chloride concentration of 66.04 mg/L, and a Conductivity concentration of 715.27 µS/cm. pH was maintained between 6.76 – 8.07 during the reporting period.

By comparison, the 2024 parameter concentrations are relatively similar from 2023. The average concentration of Biochemical Oxygen Demand (BOD5) in 2024 was 73.08 mg/L, compared to 79.50 mg/L in 2023. Total Phosphorus was 1.18 mg/L in 2024, and 1.20 mg/L in 2023. Dissolved Reactive Phosphorus was 0.10 mg/L in 2024 and 0.07 mg/L in 2024. Total Suspended Solids was 91.96 mg/L in 2024 and 92.70 mg/L in 2023. Total Kjeldahl Nitrogen was 15.40 mg/L in 2024, and 12.66 mg/L in 2023.

Additionally, the average Nitrite + Nitrate Nitrogen concentration was 0.67 mg/L in 2024, and 1.00 mg/L in 2023. Alkalinity in 2024 was 210.46 and 208.26 in 2023. Chlorides was 66.04 in 2024, and 70.70 in 2023. Conductivity in 2024 was 715.27 and in 2023 – 696.63.

2.5 Raw Sewage (Influent) Flow: Summary and Interpretation of Reporting Year

The Rated Capacity listed in the most current ECA for Port McNicoll WWTP is 1,918 cubic meters per day. Typically the Rated Capacity listed in an ECA is determined based on the highest average annual flow during which the sewage treatment plant can consistently meet site specific effluent quality criteria (as per the Ontario Design Guidelines for Sewage Works); this is usually dictated by the most limiting treatment/process unit in the system. ECA 8421-9PMHXN, Section 5(2) requires the Owner to use its best efforts to (b) operate the works within the Rated Capacity of the Works.

The peak flow rate is the maximum rate of sewage flow for which the plant or process unit was designed. Each process in the treatment system will have its own peak flow rate. The peak flow rate of an entire treatment system is determined by the process unit with the lowest peak flow rate. For Port McNicoll WWTP, the plant peak flow rate is limited by the Inlet Works, which has a peak flow rate of 3,836 cubic meters per day

2.6 Comparison of Influent Flow to Rated Capacity

A summary of influent flows data and comparison to the Rated Capacity during the reporting period can be found in the below table and graph. Based on the definition of the Rated Capacity, a single exceedance does not necessarily result in a non-compliance event, however, if a system continually exceeds its Rated Capacity, this could result in reduced treatment efficiency and lead to effluent objective exceedances.

Table 5. Raw Sewage (Influent) Flow Data during Reporting Period

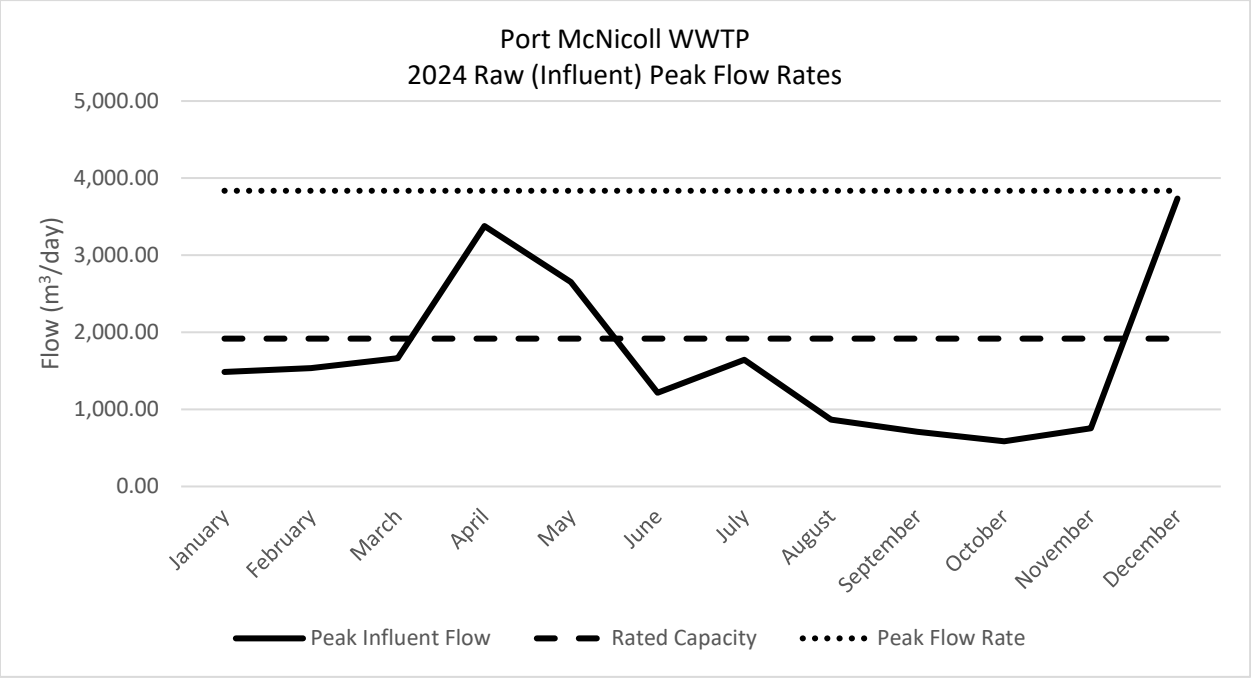
Month	Average Influent Flow (m^3/day)	% of Rated Capacity (1,918 m^3/day)	Maximum Influent Flow (m^3/day)	% of Plant Peak Flow Rate (3,836 m^3/day)	Total Influent Flow (m^3)
January	1,132.93	59.07%	1,484.00	38.69%	35,121.00
February	1,282.10	66.85%	1,535.00	40.02%	37,181.00

Month	**Average Influent Flow** (m^3/day)	**% of Rated Capacity** (1,918 m^3/day)	**Maximum Influent Flow** (m^3/day)	**% of Plant Peak Flow Rate** (3,836 m^3/day)	**Total Influent Flow** (m^3)
March	1,356.93	70.75%	1,665.00	43.40%	42,065.00
April	1,922.43	100.23%	3,379.00	88.09%	57,673.00
May	1,242.71	64.79%	2,654.00	69.19%	38,524.00
June	793.13	41.35%	1,214.00	31.65%	23,794.00
July	879.48	45.85%	1,642.00	42.81%	27,264.00
August	687.54	35.85%	868.00	22.63%	21,314.00
September	568.50	29.64%	708.00	18.46%	17,055.00
October	516.12	26.91%	586.00	15.28%	16,000.00
November	581.93	30.34%	756.00	19.71%	17,458.00
December	1,405.80	73.30%	3,735.00	97.37%	43,580.00
2024	**1,030.13**	**53.71%**	**3,735.00**	**97.37%**	**377,029.00**

Note: As per the ECA, 'Rated Capacity' is defined as "the Average Daily Flow for which the Works are approved to handle".

Note: As per the ECA, 'Average Daily Flow' is defined as "the cumulative total sewage flow to the sewage works during a calendar year divided by the number of days during which sewage was flowing to the sewage works that year".

Figure 1. Peak Flow versus Rated Capacity and Peak Flow Rate during the Reporting Period



The average daily flow of 1,030.13 m^3 is based on the total flow for the reporting period divided by the number of operational days (i.e. 365) as per the 'Average Daily Flow' definition in the ECA.

If the Annual Average Daily Flow reaches/exceeds 80% of the Rated Capacity, current best practice is to assess issues and provide recommendations for proactive actions. For 2024, the Annual Average Daily Flow was below 80% of the 'Rated Capacity' at 53.71% of the 'Rated Capacity'. The highest recorded peak flow event of 3,735.00 m^3 occurred on December 30, 2024, which was 97% of the maximum Rated Capacity and is attributed to warmer than usual temperatures and rainfall.

Refer to *Appendix* A for detailed monthly raw sewage (influent) flows at the facility.

2.7 Effluent ECA Monitoring Program

The following table outlines the effluent monitoring program at the Port McNicoll WWTP as required by the most current ECA for the reporting period. There are additional in-house samples taken and analyzed throughout the year in order to help with process performance monitoring, adjustment, and optimization.

Table 6. Effluent Water Quality Monitoring Program and Sampling Points- ***as per ECA 8421-9PMHXN Section 9(3)- Table 4- Effluent Monitoring***

Effluent Monitoring		
Final Effluent Parameter	**Type of Sample**	**Minimum Frequency**
$CBOD_5$	Composite	Bi-Weekly
Suspended Solids	Composite	Bi-Weekly
Total Phosphorus	Composite	Bi-Weekly
Dissolved Reactive Phosphorus	Composite	Bi-Weekly
Total Kjeldahl Nitrogen Ammonia + Ammonium Nitrogen	Composite	Bi-Weekly
Nitrite + Nitrate Nitrogen	Composite	Bi-Weekly
Alkalinity	Composite	Bi-Weekly
Chlorides	Composite	Bi-Weekly
Conductivity	Composite	Bi-Weekly
pH	Composite	Bi-Weekly
E.Coli	Grab	Weekly

Note: $CBOD_5$ = Carbonaceous Biochemical Oxygen Demand

The following tables outline the final effluent objectives, limits and loadings at the Port McNicoll WWTP as per its ECA. The applicable effluent parameters are either "concentrations" expressed as milligrams per litre or "loadings" expressed as kilograms per day. As per Section 6, concentration Limits for $CBOD_5$, TSS, TP, and TAN are reportable based on a monthly average effluent concentration, *E.Coli* based on a monthly Geometric Mean Density, pH based on a Single

Sample Result, and the Loading Limits are reportable based on a Monthly Average Daily Effluent Loading.

Table 7: Final Effluent Design Objectives- ***as per ECA 8421-9PMHXN Section 5(1)- Table 1- Effluent Objectives***

Effluent Water Quality Objectives		
Effluent Parameter	**Effluent Concentration Objective** (mg/L unless otherwise indicated)	**Total Loading Objective** (kg/day unless otherwise indicated)
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	7.0	13.43
Total Suspended Solids	7.0	13.43
Total Phosphorus	0.15	0.29
Ammonia + ammonium Nitrogen (June 1 – August 31)	2.0	3.8
E.Coli	200 organisms/100 mL	--
pH of the effluent maintained between 6.5 to 9.0, inclusive, at all times		

Table 8. Final Effluent Design Limits- ***as per ECA 8421-9PMHXN Section 6(1)- Table 2- Effluent Limits***

Effluent Water Quality Limits			
Effluent Parameter	**Effluent Concentration Limit (mg/L)**	**Waste Loading Limit (Kg/day)**	**Reportable**
$CBOD_5$	15.00	28.77	Monthly
Total Suspended Solids	15.00	28.77	Monthly
Total Phosphorus	0.25	0.48	Monthly
Ammonia + Ammonium Nitrogen (June 1 – August 31)	5.00	9.59	Monthly
Ammonia + ammonium Nitrogen (September 1 to May 31)	15.00	28.77	Monthly
E.Coli	200 organisms/100 mL	--	Monthly
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times			

2.8 Effluent Monitoring Data: Summary and Interpretation of Reporting Year and Comparison to Objectives and Limits

ECA 8421-9PMHXN, Section 10.(5)(a) requires:

"A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the Works;" where Condition 6 *"is imposed to ensure that the effluent discharged from the Works to the Hogg Bay meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body."*

and where ECA 8421-9PMHXN, section 10(5)(f) requires:

"A description of efforts made and results achieved in meeting the Effluent Objectives of Condition 5;" where Condition 5 *"is imposed to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occur and before the compliance limits of Condition 6 are exceeded."*

The following tables (Table 9-14) summarizes the effluent water quality for the reporting period compared with the ECA compliance objectives and limits.

A review of the effluent monitoring data shows that the following parameters were within the objectives (as applicable) and limits set out in the most current ECA for the duration of the 2024 reporting period:

- $CBOD_5$ monthly average effluent concentration
- $CBOD_5$ monthly average daily effluent loading
- TSS monthly average effluent concentration
- TSS monthly average daily effluent loading
- TAN monthly average effluent concentration
- TAN monthly average daily effluent loading
- *E.Coli* monthly geometric density

A review of the effluent monitoring data shows that the following parameters were within the limits set out in the most current ECA for the duration of reporting period but were unable to meet the objectives in the following instances:

- TP – monthly average daily effluent concentration – July 2024

It should be noted that as per the ECA, the objectives are non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs. Exceedances of objectives is not reportable.

Refer to *Appendix A* 2024 Annual Performance Report for a more detailed description of monthly sample results**.**

Table 9: Effluent Sampling Results: CBOD5 and CBOD5 Loading Concentrations

Month	**Monthly Average** (mg/L)	**Within Limits?** (15.0 mg/L)	**Within Objectives?** (7.0 mg/L)	**Monthly Loading** (kg/d)	**Within Waste Loading Limit?** (28.77 kg/d)
January	4.00	Yes	Yes	5.14	Yes
February	3.00	Yes	Yes	4.27	Yes
March	3.00	Yes	Yes	4.50	Yes
April	3.33	Yes	Yes	6.89	Yes
May	3.00	Yes	Yes	4.12	Yes
June	3.00	Yes	Yes	2.53	Yes
July	<2.00	Yes	Yes	2.16	Yes
August	<2.00	Yes	Yes	1.60	Yes
September	<2.00	Yes	Yes	1.35	Yes
October	<2.00	Yes	Yes	1.25	Yes
November	<2.00	Yes	Yes	1.41	Yes
December	<2.00	Yes	Yes	3.11	Yes

**As per the ECA, CBOD5 Concentration Averaging Calculator is a Monthly Average Effluent Concentration*

**As per the ECA, CBOD5 Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading*

Table 10: Effluent Sampling Results: TSS and TSS Loading Concentrations

Month	**Monthly Average** (mg/L)	**Within Limits?** (15.0 mg/L)	**Within Objectives?** (7.0 mg/L)	**Monthly Loading** (kg/d)	**Within Waste Loading Limit?** (28.77 kg/d)
January	<2.00	Yes	Yes	2.57	Yes
February	<2.00	Yes	Yes	2.84	Yes
March	<2.00	Yes	Yes	3.00	Yes
April	2.33	Yes	Yes	4.82	Yes
May	<2.00	Yes	Yes	2.74	Yes
June	<2.00	Yes	Yes	1.69	Yes
July	<2.00	Yes	Yes	2.16	Yes
August	<2.00	Yes	Yes	1.60	Yes
September	<2.00	Yes	Yes	1.35	Yes
October	<2.00	Yes	Yes	1.25	Yes
November	<2.00	Yes	Yes	1.41	Yes
December	<2.00	Yes	Yes	3.11	Yes

**As per the ECA, TSS Concertation Averaging Calculator is a Monthly Average Effluent Concentration*

**As per the ECA, TSS Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading*

Table 11: Effluent Sampling Results: TP and TP Loading Concentrations

Month	**Monthly Average** (mg/L)	**Within Limits?** *(0.25 mg/L)*	**Within Objectives?** *(0.15 mg/L)*	**Monthly Loading** (kg/d)	**Within Waste Loading Objective?** (0.29 kg/d)	**Within Waste Loading Limit?** (0.48 kg/d)
January	0.03	Yes	Yes	0.04	Yes	Yes
February	0.03	Yes	Yes	0.04	Yes	Yes
March	0.03	Yes	Yes	0.04	Yes	Yes
April	0.03	Yes	Yes	0.06	Yes	Yes
May	0.03	Yes	Yes	0.04	Yes	Yes
June	0.04	Yes	Yes	0.03	Yes	Yes
July	0.24	Yes	No	0.26	Yes	Yes
August	0.06	Yes	Yes	0.05	Yes	Yes
September	0.08	Yes	Yes	0.05	Yes	Yes
October	0.09	Yes	Yes	0.05	Yes	Yes
November	0.08	Yes	Yes	0.06	Yes	Yes
December	0.04	Yes	Yes	0.06	Yes	Yes

**As per the ECA, TP Concentration Averaging Calculator is a Monthly Average Effluent Concentration*

**As per the ECA, TP Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading*

Table 12: Effluent Sampling Results: TAN and TAN Loading Concentrations

Month	**Monthly Average** (mg/L)	**Within Monthly Objective?** (2.0 mg/L)	**Within Monthly Compliance Limit?** (5.0 mg/L Jun 1 – Aug 31) (15 mg/L Sept 1 – May 31)	**Monthly Loading** (kg/d)	**Within Waste Loading Objective?** (3.8 kg/d)	**Within Waste Loading Limit?** (9.59 kg/d Jun 1 – Aug 31) (28.77 kg/d Sept 1 – May 31)
January	<0.10	Yes	Yes	0.13	Yes	Yes
February	<0.10	Yes	Yes	0.14	Yes	Yes
March	<0.15	Yes	Yes	0.22	Yes	Yes
April	<0.10	Yes	Yes	0.21	Yes	Yes
May	<0.10	Yes	Yes	0.14	Yes	Yes
June	<0.10	Yes	Yes	0.08	Yes	Yes
July	<0.10	Yes	Yes	0.11	Yes	Yes
August	<0.10	Yes	Yes	0.08	Yes	Yes
September	<0.10	Yes	Yes	0.07	Yes	Yes
October	<0.10	Yes	Yes	0.06	Yes	Yes
November	<0.10	Yes	Yes	0.07	Yes	Yes
December	<0.10	Yes	Yes	0.16	Yes	Yes

**As per the ECA, TAN Concentration Averaging Calculator is a Monthly Average Effluent Concentration*

**As per the ECA, TAN Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading*

Table 13: Effluent Sampling Results: *E.Coli* Concentrations

Month	**Monthly Geometric Mean Density** (cfu/100 mL)	**Within Monthly Objective and Compliance Limit?** (200 cfu/100 mL)
January	2.00	Yes
February	2.00	Yes
March	2.00	Yes
April	2.00	Yes
May	1.68	Yes
June	2.00	Yes
July	2.00	Yes
August	2.00	Yes
September	1.68	Yes
October	2.00	Yes
November	1.41	Yes
December	2.00	Yes

**As per the ECA, E.Coli Concentration Averaging Calculator is a Monthly Geometric Density*

Table 14. Effluent Quality Data during Reporting Period: pH

2024	**pH**			
	Min.	**Max.**	**Within Objective?** (6.5 – 9.0) Inclusive, at all times)	**Within Limits?** (6.0 – 9.5) Inclusive, at all times
January	7.34	8.03	Yes	Yes
February	7.31	8.14	Yes	Yes
March	7.17	8.14	Yes	Yes
April	7.63	8.22	Yes	Yes
May	7.21	8.17	Yes	Yes
June	7.36	8.00	Yes	Yes
July	6.94	8.07	Yes	Yes
August	7.15	8.11	Yes	Yes
September	7.02	7.94	Yes	Yes
October	6.84	7.94	Yes	Yes
November	6.84	7.85	Yes	Yes
December	7.21	8.00	Yes	Yes

Refer to the below section (Section 2.10) for a comparison of effluent discharge data compared to the ECA objectives, limits and loadings with relation to the success and adequacy of the system.

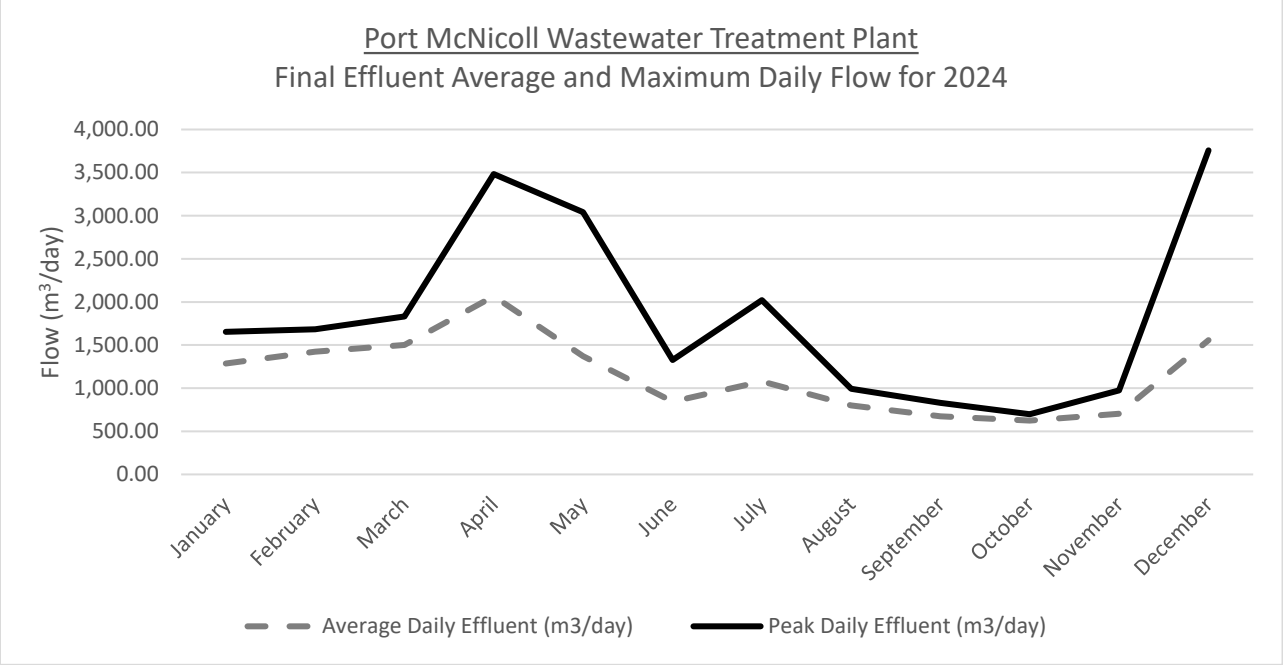
2.9 Effluent Flow: Summary and Interpretation of Reporting Year

The following table outlines the final effluent average daily flow data in 2024 and the graph shows the final effluent daily and peak final effluent flow by month for the reporting period.

Table 15: Final Effluent Average Daily Flow and Peak Flow Data by Month for 2024

Month	Average Daily Effluent (m^3/day)	Peak Daily Effluent (m^3/day)	Total (m^3/day)
January	1,284.32	1,652.00	39,814.00
February	1,422.58	1,682.00	41,255.00
March	1,500.09	1,833.00	46,503.00
April	2,066.16	3,483.00	61,985.00
May	1,372.71	3,040.00	42,554.00
June	844.30	1,328.00	25,329.00
July	1,079.35	2,022.00	33,460.00
August	798.51	991.00	24,754.00
September	674.86	829.00	20,246.00
October	624.29	698.00	19,353.00
November	703.66	974.00	21,110.00
December	1,556.22	3,758.00	48,243.00
2024	**1,160.12**	**3,758.00**	**424,606.00**

Figure 2: 2024 Average Daily and Peak Daily Final Effluent Flow by Month



During the reporting period, the average annual daily flow for final effluent to outfall (Hogg Bay) was 1,160.12 m^3/day. The maximum peak final effluent daily flow was 3,758.00 m^3/day, which occurred on December 31, 2024, corresponding with the maximum peak daily influent flows on December 31 2024.

2.10 Success & Adequacy of the System

ECA 8421-9PMHXN, Section 10.(5)(a) requires:

"A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the Works;" where Condition 6 *"is imposed to ensure that the effluent discharged from the Works to the Hogg Bay meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver and to protect water quality, fish and other aquatic life in the receiving water body."*

In 2024 Port McNicoll WWTP produced effluent with the following removal rates:

Parameter	Percent Removal
$CBOD_5$	95.87
Total Suspended Solids	97.38
Total Phosphorus	93.72

During the reporting period, Port McNicoll WWWTP provided effective wastewater treatment, producing effluent with removal rates for $CBOD_5$ at 95.87%, 97.38% for Total Suspended Solids, and 93.72% for Total Phosphorus.

Based on the monitoring program and effluent quality data, the Port McNicoll WWTP provided effective wastewater treatment for all wastewater parameters. This facility was in compliance with all of the effluent concentration and loading limits for the reporting year, there were no reportable non-compliance incidents. The bacteriological quality of the effluent complied with the ECA monthly geometric mean density of less than 200 *E.Coli* organisms per 100 mL sample of effluent discharged from the plant, which indicates effective effluent disinfection.

For the duration of the reporting period, $CBOD_5$ remained in compliance with ECA compliance limits (15 mg/L), objectives (7.0 mg/L), waste loading limits (28.77 kg/d) and waste loading objectives (13.43 kg/d). See *Section 2.5 Table 9* for a breakdown of month-to-month discharge sampling results.

For the duration of the reporting period, Total Suspended Solids remained in compliance with ECA compliance limits (15 mg/L), objectives (7.0 mg/L) and waste loading limits (28.77 kg/d) and objectives (13.43 kg/d). See *Section 2.5 Table 10* for a breakdown of month-to-month discharge sampling results.

For the duration of the reporting period, Total Phosphorus remained in compliance with ECA compliance limits (0.25 mg/L), waste loading limits (0.48 kg/d), waste loading objectives (0.29

kg/d). There was one instance where the Total Phosphorus exceeded the monthly compliance objective (0.15 mg/L) in July, 2024, due to a single sample exceedance on July 8, 2024. See *Section 2.5 Table 11* for a breakdown of month-to-month discharge sampling results.

For the duration of the reporting period, Total Ammonia Nitrogen remained in compliance with ECA compliance limits (5.0 mg/L – June 1 – August 31, and 15 mg/L – September 1 – May 31) and objective limits (2.0 mg/L – June 1 – August 31), and waste loading limits (3.8 kg/d) and waste loading objectives (28.77 kg/d – September 1 – May 31). See *Section 2.5 Table 12* for a breakdown of month-to-month discharge sampling results.

For the duration of the reporting period, pH remained in compliance with both ECA compliance limits (6.0 – 9.5, inclusive) and objectives (6.5 – 9.0, inclusive). See *Section 2.5 Table 14* for a breakdown of month-to-month discharge sampling results.

For 2024, best efforts were used to operate the works within the rated capacity of the system. For the reporting period, the annual average Daily Influent flow was 1,030.13, which was below 80% of the Rated Capacity at 54%. Best efforts were also made to ensure that the effluent from the works was free of floating and settleable solids and did not contain oil or any other substances in amounts sufficient to create a visible film or sheen or foam or discolouration on the receiving waters.

3. Operational Issues and Corrective Actions

ECA 8421-9PMHXN, Section 10 (5)(b) requires:

"A description of any operating problems encountered and corrective actions taken;"

There was one (1) operating problem that occurred during the reporting period, related to the Spill Incident on June 15, 2024. See *Section 9.2 Spill or Abnormal Discharge Events* for more details.

4. Maintenance Activities

ECA 8421-9PMHXN, section 10(5)(c) requires:

"A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming a part of the works;"

4.1 Work Management System

Planned maintenance, including scheduled and non-scheduled maintenance activities are scheduled using a computerized Work Management System (WMS) that allows user to:

- Enter detailed asset information

- Generate and process work orders
- Access maintenance and inspection procedures
- Plan, schedule, and document all asset related tasks and activities
- Access maintenance records and asset histories

Work Orders are automatically generated by the WMS program and are assigned to the applicable Operations staff accordingly.

4.2 Preventative Maintenance Activities

There were a number of preventative maintenance tasks completed throughout the reporting period. They are as follows:

- Monthly Generator Testing
- Monthly Alarm Testing
- Monthly Alum Pump Inspection
- Monthly UV Inspections
- Change Rag Bag – As required
- Monthly Verifications and Calibrations
- Monthly Headworks Inspections
- Monthly Process and Blowers Inspections
- Annual Pump Maintenance
- Annual Third Party Calibrations

4.3 Repairs and Improvement

There were a number of repairs and/or improvements completed throughout the reporting period. They are as follows:

- Compressor Pumps Servicing
- Alarm Upgrades
- Valve Maintenance
- PLC Upgrades
- UV Bank Service
- Sewer Lateral Repair
- Belt Replacement
- Blower Maintenance

5. Effluent Quality Assurance

ECA 8421-9PMHXN, section 10(5)(d) requires:

"A summary of any effluent quality assurance or control measures undertaken in the reporting period;"

Quality assurance and control measures undertaken during the reporting period include adherence to provincial regulations, use of accredited laboratories, operation of the system by licensed Operators, scheduled sampling and analysis, in-house laboratory analysis and calibration of equipment. The sections below provide further details of these measures.

5.1 Adherence to Provincial Regulations

The Ontario Clean Water Agency operates the Port McNicoll WWTP in accordance with provincial regulations and the Environmental Compliance Approval.

5.2 Use of Accredited Laboratories

Analytical tests to monitor the effluent quality are conducted by a laboratory audited by the Canadian Association for Laboratory Accreditation Inc. (CALA) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods. During the reporting period, all chemical sample analyses were conducted by SGS (Lakefield) Canada Inc.

5.3 Operation by Licensed Operators

Port McNicoll WWTP is operated and maintained by licensed Operators. The mandatory licensing program for operators of sewage treatment facilities in Ontario is regulated under the Ontario Water Resources Act (OWRA) Regulation 435/93 and Ontario Regulation 129/04. A Licensed individual has successfully passed the licensing exam and meets the education and experience requirements set out in the regulation.

5.4 Sampling and Analysis

The Ontario Clean Water Agency followed a sampling and analysis schedule that meets the requirements of the ECA.

5.5 In-House Analysis

In-house analysis were conducted by Licensed Operators for monitoring purposes using Standard Methods. The data generated from these tests is used to determine the treatment efficiency while maintaining process control. All in-house monitoring equipment is calibrated based on the manufacturer's recommendations. The Operators of the facility continue to use their expertise in order to meet our objective of no exceedances of the ECA Effluent Compliance Limits and OCWA will continue to make best efforts to meet the ECA Effluent Objectives.

5.6 Calibrations

Third-party and in-house calibrations are completed on various equipment and monitoring and analysis items as required based on manufacturer's recommendations. Refer to Section 6 for more information regarding calibration of monitoring equipment.

6. Calibration of Monitoring Equipment

ECA 8421-9PMHXN, section 10(5)(e) requires:

"A summary of the calibration and maintenance carried out on all effluent monitoring equipment;"

The flow meters used to measure raw sewage (influent) and final effluent at Port McNicoll WWTP were calibrated on June 10, 2024 by Indus Control. All program parameters received a passing inspection. Refer to *Appendix* B for detailed calibration records/reports.

7. Sludge Production and Disposal

ECA 8421-9PMHXN, section 10(5)(g) requires:

"A tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;"

During the reporting period, a total volume of 1,736.80 m^3 of sludge was produced at the Port McNicoll WWTP and hauled by Wessuc Inc, and Region of Huronia Environmental Services (ROHES). The sludge was either delivered to lagoons for storage or applied as soil conditioner to agricultural land to Non-Agricultural Source Material Plan (NASM Plan) sites/locations which were approved by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) under Ontario Regulation 338/09. NASM Plans under the Nutrient Management Act are issued to the owner (farmer) who is responsible for managing this plan with assistance from the NASM Plan Developer.

Refer to Table 16 for a tabulation of the hauled sludge and the locations of where the sludge was disposed and *Appendix* C a detailed record of specific sludge haulage dates and volumes.

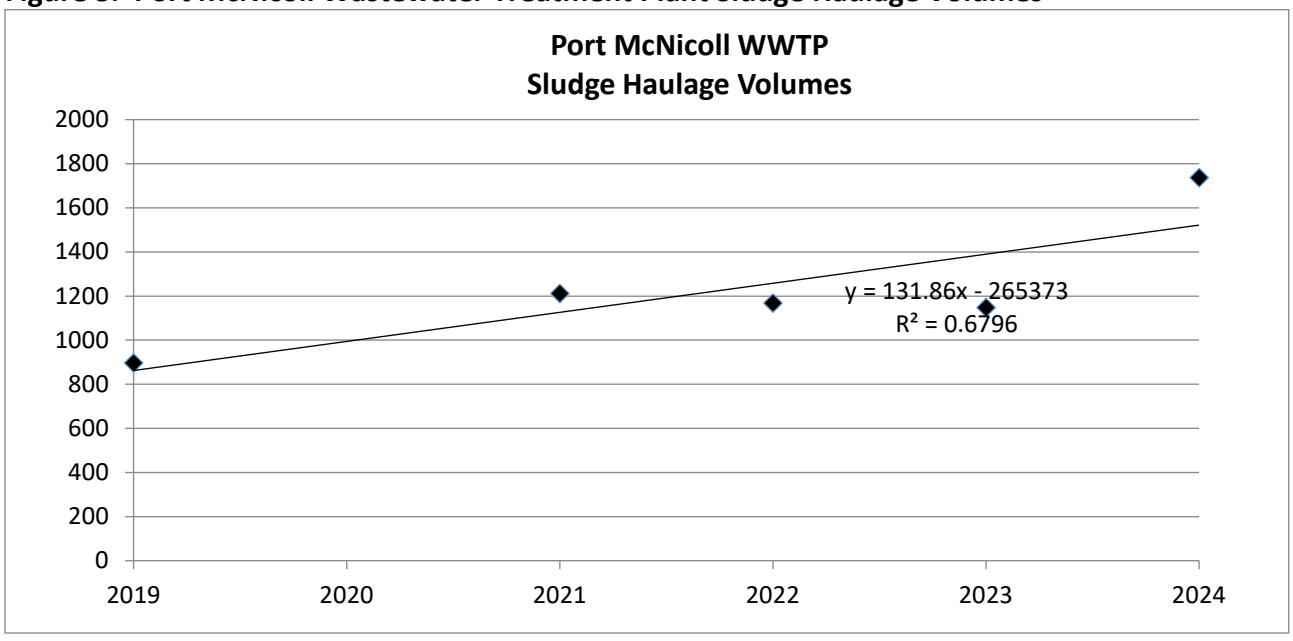
Table 16. Sludge Hauling during the Reporting Period

Haulage Months	Location	NASM #	Volume of Sludge Hauled (m^3)
May	Lagoon	N/A	462.00
June	Lagoon	N/A	672.00
July	Lagoon	N/A	240.80
August	Lagoon	N/A	84.00
	SD Corners-Field:1	24760	42.00
October	Home South-Field:F1	24536	236.00
Total Sludge Haulage for 2024			**1,736.80**

During the reporting period, a total volume of 1,736.80 m^3 of sludge was hauled from Port McNicoll WWTP. Compared to 2023, this was an increase of 51% (1,147.00 m^3)

To estimate the volume of sludge generated in the next reporting period, a linear regression using data from previous years was used. The regression model estimates the sludge volume for 2025 to be approximately 1,163.12 m^3 or less, the accuracy of this estimate is affected by the R^2 value (67.96% see Figure 3), the closer the R^2 value is to 100%, the better the regression model fits to the data. Operations staff will continue to optimize the dewatering process to reduce the relative volume of sludge.

Figure 3. Port McNicoll Wastewater Treatment Plant Sludge Haulage Volumes



Biosolids produced at the Port McNicoll WWTP met all the quality criteria specified in the Regulation for the reporting period. A summary of the Port McNicoll WWTP sludge quality with a comparison to quality criteria can be referenced in *Appendix D*.

8. Community Complaints

ECA 8421-9PMHXN, section 10(5)(h) requires:

"A summary of any complaints received during the reporting period and any steps taken to address the complaints;"

There is a standard operating procedure (SOP) in place that outlines the steps required for receiving and addressing community complaints. All complaints are to be discussed and/or investigated, and resolved as required. The community complaint is logged in detail in the facility logbook and then various details are entered into OCWA's electronic Work Management System (WMS). This database contains the history of all complaints with the relevant information enclosed.

For the reporting period, there were no community complaints received.

9. By-Pass, Spill or Abnormal Discharge Events

ECA 8421-9PMHXN, section 10(5)(i) requires:

"A summary of all By-pass, spill or abnormal discharge event;"

All quarterly by-pass reports were submitted to the MECP, as required in the ECA, for the reporting period.

9.1 By-Pass Events

There were no reportable bypass events for this reporting period.

9.2 Spill or Abnormal Discharge Events

There was one reportable spill event that occurred at the WWTP during this reporting period:

Date	Estimated or Measured Volume (m^3)	Details
June 15, 2024 to June 17, 2024	106 m^3	SAC Reference Number: 1-7PLMJQ Spill Location: Lands surrounding the holding tanks. Spill Date & Time: Approximately Saturday June 15, 2024 at 2200 hrs to Monday June 17, 2024 at 0800 hrs

		Duration: Approximately 36 hours Overflow Contents: Untreated Raw Sewage Approximate Volume: ~106 m^3 <u>Incident Description</u> • On Friday, June 14, 2024 at 2200 hrs the WWTP plant production stopped, and the PLC had stopped functioning, resulting in no alarm call outs. Untreated sewage was flowing to the plant, but the processes were not running so the process tanks were filled to the top. • On Monday, June 17, 2024 at 0800 hrs, OCWA staff arrived on site and found the process tanks were full to the top, with evidence of overflow along the tank walls. <u>Actions Taken to Control and Remediate the Incident</u> • OCWA staff opened the bypass valve, directing the untreated sewage to the equalization tanks and closed the valves to the process tanks. • OCWA UPIT attended the site to troubleshoot the PLC issue and restored the PLC on Monday June 17, 2024 at 1000 hrs. • OCWA staff completed calculations and estimated (based on the available tank space) that approximately 106 m^3 of untreated sewage rolled over the top of the process tanks over a 36-hour period. • OCWA staff determined that there was no evidence that the flow left the property - the spill was contained to the area around the tank and was absorbed into the ground. • A visual inspection was conducted to determine removal, however • Additional floats were added for high level alarms, to prevent reoccurrence. • Verbal notification provided to SAC, MoH-SMDHU, and local MECP inspector on June 17, 2024, and written notification was provided to SAC, MoH-SMDHU and local MECP inspector on June 18, 2024. No further actions required.

10. Notice of Modifications (Limited Operational Flexibility)

ECA 8421-9PMHXN, section 10(5)(j) requires:

"A *copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification;"* where *"Schedule B, Section 1 is the "Limited Operational Flexibility Criteria for Modifications to Municipal Sewage Works."*

There were no Notices of Modifications completed that required submission to the Water Supervisor during the reporting period.

11. Summary of Modifications

ECA 8421-9PMHXN, section 10(5)(k) requires:

"A report summarizing all modifications completed as a result of Schedule B, Section 3;" where Schedule B, Section 3 refers to *"normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment, provided that the modification is made with Equivalent Equipment, are considered pre-approved."*

Normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment are included in Section 4 of this report.

12. Other Information

ECA 8421-9PMHXN, section 10(5)(l) requires:

"Any other information the Water Supervisor requires from time to time."

There was no information required from the Water Supervisor during the reporting period.

Performance Assessment Report

Appendix A

Annual Flow & Effluent Quality Summary

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2024 to 12/31/2024 11:59:59 PM

1676 PORT MCNICOLL WASTEWATER TREATMENT FACILITY 110001417

	1 / 2024	2/ 2024	3/ 2024	4/ 2024	5/ 2024	6/ 2024	7/ 2024	8/ 2024	9/ 2024	10/ 2024	11/ 2024	12/ 2024	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Raw Flow: Total - Raw Sewage m³/d	35,121.00	37,181.00	42,065.00	57,673.00	38,524.00	23,794.00	27,264.00	21,314.00	17,055.00	16,000.00	17,458.00	43,580.00	377,029.00			0.00
Raw Flow: Avg - Raw Sewage m³/d	1,132.94	1,282.10	1,356.94	1,922.43	1,242.71	793.13	879.48	687.55	568.50	516.13	581.93	1,405.81		1,030.13		
Raw Flow: Max - Raw Sewage m³/d	1,484.00	1,535.00	1,665.00	3,379.00	2,654.00	1,214.00	1,642.00	868.00	708.00	586.00	756.00	3,735.00			3,735.00	0.00
Raw Flow: Count - Raw Sewage m³/d	31.00	29.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	366.00			0.00
Eff. Flow: Total - Final Effluent m³/d	39,814.00	41,255.00	46,503.00	61,985.00	42,554.00	25,329.00	33,460.00	24,754.00	20,246.00	19,353.00	21,110.00	48,243.00	424,606.00			0.00
Eff. Flow: Avg - Final Effluent m³/d	1,284.32	1,422.59	1,500.10	2,066.17	1,372.71	844.30	1,079.35	798.52	674.87	624.29	703.67	1,556.23		1,160.13		
Eff. Flow: Max - Final Effluent m³/d	1,652.00	1,682.00	1,833.00	3,483.00	3,040.00	1,328.00	2,022.00	991.00	829.00	698.00	974.00	3,758.00			3,758.00	0.00
Eff Flow: Count - Final Effluent m³/d	31.00	29.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	366.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Final Effluent mg/L	< 4.00	< 3.00	< 3.00	< 3.33	< 3.00	< 3.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00		< 2.59	< 4.00	
Eff: # of samples of cBOD5 - Final Effluent	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	27.00			0.00
Loading: cBOD5 - Final Effluent kg/d	< 5.137	< 4.268	< 4.500	< 6.887	< 4.118	< 2.533	< 2.159	< 1.597	< 1.350	< 1.249	< 1.407	< 3.112		< 3.01	< 6.89	28.770
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage mg/L	103.50	30.50	63.00	56.67	92.00	61.00	49.00	47.50	82.50	83.00	109.33	95.00		73.08	109.33	0.00
Raw: # of samples of BOD5 - Raw Sewage	2.00	2.00	2.00	3.00	2.00	1.00	3.00	2.00	2.00	2.00	3.00	2.00	26.00			0.00
Percent Removal: BOD5 - Raw Sewage %	96.14	90.16	95.24	94.12	96.74	95.08	95.92	95.79	97.58	97.59	98.17	97.89		95.87	98.17	0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	120.50	48.00	66.50	106.33	112.00	38.00	120.67	78.00	77.50	71.00	96.33	118.00		91.96	120.67	0.00
Raw: # of samples of TSS - Raw Sewage	2.00	2.00	2.00	3.00	2.00	1.00	3.00	2.00	2.00	2.00	3.00	2.00	26.00			0.00
Eff: Avg TSS - Final Effluent mg/L	< 2.00	< 2.00	< 2.00	< 2.33	< 2.00	2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00		< 2.04	< 2.33	
Eff: # of samples of TSS - Final Effluent	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	27.00			0.00
Loading: TSS - Final Effluent kg/d	< 2.569	< 2.845	< 3.000	< 4.821	< 2.745	1.689	< 2.159	< 1.597	< 1.350	< 1.249	< 1.407	< 3.112		< 2.36	< 4.82	28.770
Percent Removal: TSS - Raw Sewage %	98.34	95.83	96.99	97.81	98.21	94.74	98.34	97.44	97.42	97.18	97.92	98.31		97.38	98.34	0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	1.34	0.56	1.10	0.91	1.01	1.02	0.88	0.81	1.00	1.47	2.35	1.42		1.18	2.35	0.00
Raw: # of samples of TP - Raw Sewage	2.00	2.00	2.00	3.00	2.00	1.00	3.00	2.00	2.00	2.00	3.00	2.00	26.00			0.00
Eff: Avg TP - Final Effluent mg/L	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	0.24	0.06	0.08	0.09	0.08	< 0.04		< 0.07	< 0.24	0.25
Eff: # of samples of TP - Final Effluent	2.00	2.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00	3.00	3.00	2.00	28.00			0.00
Loading: TP - Final Effluent kg/d	< 0.039	< 0.043	< 0.045	< 0.062	< 0.041	< 0.030	0.263	0.048	0.054	0.054	0.056	< 0.062		< 0.08	< 0.26	0.480
Percent Removal: TP - Raw Sewage %	97.75	94.64	97.26	96.69	97.03	96.57	72.35	92.55	92.00	94.08	96.59	97.17		93.72	97.75	0.00
Nitrogen Series																
Raw: Avg TKN - Raw Sewage mg/L	13.80	9.20	13.10	9.93	12.05	17.20	13.27	15.85	18.50	22.05	26.77	12.15		15.4	26.77	0.00
Raw: # of samples of TKN - Raw Sewage	2.00	2.00	2.00	3.00	2.00	1.00	3.00	2.00	2.00	2.00	3.00	2.00	26.00			0.00
Eff: Avg TAN - Final Effluent mg/L	< 0.10	< 0.10	< 0.15	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.15	15.00
Eff: # of samples of TAN - Final Effluent	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	27.00			0.00
Loading: TAN - Final Effluent kg/d	< 0.128	< 0.142	< 0.225	< 0.207	< 0.137	< 0.084	< 0.108	< 0.080	< 0.067	< 0.062	< 0.070	< 0.156		< 0.12	< 0.23	28.770
Eff: Avg NO3-N - Final Effluent mg/L	12.40	11.50	7.62	9.22	12.50	14.00	15.50	14.95	15.60	18.17	20.23	14.05		13.81	20.23	0.00
Eff: # of samples of NO3-N - Final Effluent	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00	2.00	27.00			0.00

Performance Assessment Report

From 1/1/2024 to 12/31/2024 11:59:59 PM

Eff: Avg NO2-N - Final Effluent mg/L	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03		<	0.03	<		0.00
Eff: # of samples of NO2-N - Final Effluent		2.00		2.00		2.00		3.00		2.00		2.00		2.00		2.00		2.00		3.00		3.00		2.00	27.00					0.00
Disinfection																														
Eff: GMD E. Coli - Final Effluent cfu/100mL		2.00		2.00		2.00		2.00		1.68		2.00		2.00		2.00		1.68		2.00		1.41		2.00						
Eff: # of samples of E. Coli - Final Effluent		5.00		4.00		4.00		5.00		4.00		4.00		5.00		4.00		4.00		5.00		4.00		5.00	53.00					0.00

Calibration Reports for 2024

Appendix B

With Flow Meter Reports

IndusControl Inc
3170 Ridgeway Dr, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	Township of Tay	Site/Plant Address:	551 FIRST AVENUE
Plant Name:	Port McNicoll		PORT MCNICOLL, ON L0K1R0

Device Information		Service Information	
Make:	Fisher-Porter	Date:	June 10, 2024
Model:	50XM13NXAD20AABC22	Report No:	CO1541-2406-31
Order Code:	N/A	Job No:	CO1541-2406
Serial No.:	4211000201		
Tag:	FIT7620	**Flow Details**	
Job Location:	Raw sewage	Unit:	L/SEC
Asset Id:	0000350482	Flow Range:	N/A
		Current Output:	4-20 mA
Sensor Details		4 mA Set Point	0
Line size:	8 inch	20 mA Set Point	N/A
Model:	10DX3111AAD18P1A3BA1432		
Max flow	1080 m3/hr		

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	4800278	4800285
FLOW (l/sec)	0.0000	65.7500

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Test-Point	Flow Measured on Hand-Held Calibrator (M3/hr)	UUT Display (M3/hr)	Deviation (M3/hr)
1	66.3300	67.2000	-0.87
2	65.4800	65.1800	0.30
3	64.3200	64.1000	0.22

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 2
Device Description:	Portable Doppler flow meter	Electrical Multimeter	NA
Manufacturer:	Greyline	Fluke	NA
Model No:	PDFM 5.1	179	NA

* Refer Calibration Tools Certificates submittal for more Information

Overall Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement working as per specification

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	June 10, 2024		

End of Report

Version: 19-12

IndusControl Inc
3170 Ridgeway Dr, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	Township of Tay	Site/Plant Address:	551 FIRST AVENUE
Plant Name:	Tay are DWS		PORT MCNICOLL, ON L0K1R0

Device Information		Service Information	
Make:	Khrone	Date:	June 10, 2024
Model:	IFC010F	Report No:	CO1541-2406-32
Order Code:	N/A	Job No:	CO1541-2406
Serial No.:	450078-2/2		
Tag:	FIT7520		
Job Location:	Final sewage		
Asset Id:	0000350483		

Sensor Details		Flow Details	
Line size:	200 mm 8 inch	Unit:	m3/hr
GKL:	8.4094	Flow Range:	0 - 700
		Current Output:	4-20 mA
		4 mA Set Point	0
		20 mA Set Point	700

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	415446	415446
FLOW (m3/hr)	0.4	0.4

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Set-Point as Per Calibration KIT	Calculated Flow (m3/hr)	Calculated O/P (mA)	UUT Display (m3/hr)	UUT Measured Output (mA)	Deviation (m3/hr)
0	0.00	4.00	0.03	4.01	-0.03
A	72.47	5.66	72.80	5.60	-0.33
B	144.94	7.31	144.88	7.25	0.06
C	289.89	10.63	289.84	10.55	0.05

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Calibrator	Electrical Multimeter	NA
Manufacturer:	Khrone	Fluke	NA
Model No:	GS8B	179	NA

* Refer Calibration Tools Certificates submittal for more Information

Overall Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement working as per specification

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	June 10, 2024		

End of Report

IndusControl Inc
3170 Ridgeway Dr, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	Township of Tay	Site/Plant Address:	551 FIRST AVENUE
Plant Name:	Port McNicoll		PORT MCNICOLL, ON L0K1R0

Device Information		Service Information	
Make:	Fisher-Porter	Date:	June 10, 2024
Model:	N/A	Report No:	CO1541-2406-33
Order Code:	N/A	Job No:	CO1541-2406
Serial No.:	4587700102		
Tag:	FIT 3520-1		
Job Location:	Pearmeate		

Sensor Details		Flow Details	
Line size:	4 inch	Unit:	L/SEC
		Flow Range:	N/A
		Current Output:	4-20 mA
		4 mA Set Point	N/A
		20 mA Set Point	N/A

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (gal)	218020	218040
FLOW (l/sec)	0	0

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Test-Point	Flow Measured on Hand-Held Calibrator (l/sec)	UUT Display (l/sec)	Deviation (l/sec)
1	20.48	20.63	-0.15
2	19.14	19.28	-0.14
3	16.02	16.23	-0.21

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 2
Device Description:	Portable Doppler flow meter	Electrical Multimeter	NA
Manufacturer:	Greyline	Fluke	NA
Model No:	PDFM 5.1	179	NA

* Refer Calibration Tools Certificates submittal for more Information

Overall Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement working as per specification

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	June 10, 2024		

End of Report

Version: 19-12

IndusControl Inc
3170 Ridgeway Dr, Unit 11
Mississauga, ON, L5L 5R4

VERIFICATION REPORT
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	Township of Tay	Site/Plant Address:	551 FIRST AVENUE
Plant Name:	Port McNicoll		PORT MCNICOLL, ON L0K1R0

Device Information		Service Information	
Make:	Fisher-Porter	Date:	June 10, 2024
Model:	N/A	Report No:	CO1541-2406-34
Order Code:	N/A	Job No:	CO1541-2406
Serial No.:	4587700101		
Tag:	FIT 3520-2	**Flow Details**	
Job Location:	Pearmeate	Unit:	L/SEC
		Flow Range:	N/A
Sensor Details		Current Output:	4-20 mA
Line size:	4 inch	4 mA Set Point	N/A
		20 mA Set Point	N/A

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (gal)	22139	22143
FLOW (l/sec)	0	0

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Test-Point	Flow Measured on Hand-Held Calibrator (l/sec)	UUT Display (l/sec)	Deviation (l/sec)
1	14.85	14.75	0.10
2	13.15	13.33	-0.18
3	12.63	12.53	0.10

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 2
Device Description:	Portable Doppler flow meter	Electrical Multimeter	NA
Manufacturer:	Greyline	Fluke	NA
Model No:	PDFM 5.1	179	NA

* Refer Calibration Tools Certificates submittal for more Information

Overall Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement working as per specification

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	June 10, 2024		

End of Report

Biosolids Quantity and Haulage Records

Appendix C

ROHES
REGION OF HURONIA
Environmental Services (2013) Ltd.

Port McNicoll Report

Mon, 01 Jan 2024 To Tue, 31 Dec 2024

Phone: 705-424-9799
Toll Free: 800-268-6060
Fax: 705-424-6075
info@regionofhuronia.com

Deliveries From Port McNicoll To Farm Fields								
Delivered	**Ticket**	**NASM**	**Field**	**Drvr**	**Trck**	**Trlr**	**#Loads**	**Volume In M^3**
30 Aug,2024	80738	24760	SD Corners-Field:1	336	T080	TT084	1	42.00
						Totals for August:	**1**	**42.00**
23 Oct,2024	83172	24536	Home South-Field:F1	270	T081	TT099	2	84.00
25 Oct,2024	83126	24536	Home South-Field:F1	105	T079	TT053	1	26.00
25 Oct,2024	83179	24536	Home South-Field:F1	270	T081	TT099	2	84.00
25 Oct,2024	83324	24536	Home South-Field:F1	336	T080	TT084	1	42.00
						Totals To October:	**6**	**236.00**
						Totals To NASM #24536, Farm 'Home South', Field 'F1':	**6**	**236.00**
						Totals To NASM #24760, Farm 'SD Corners', Field '1':	**1**	**42.00**
						Grand Totals:	**7**	**278.00**

ROHES
REGION OF HURONIA
Environmental Services (2013) Ltd.

Port McNicoll Report

Mon, 01 Jan 2024 To Tue, 31 Dec 2024

Phone: 705-424-9799
Toll Free: 800-268-6060
Fax: 705-424-6075
info@regionofhuronia.com

Deliveries From Port McNicoll To Other Locations							
Delivered	**Ticket**	**To**	**Drvr**	**Trck**	**Trlr**	**#Loads**	**Volume In M^3**
02 May,2024	74162	Rohes 4 Lagoon	61	T082	TT100	2	84.00
03 May,2024	74165	Rohes 4 Lagoon	61	T082	TT100	2	84.00
06 May,2024	74168	Rohes 4 Lagoon	61	T082	TT100	2	84.00
23 May,2024	73870	Rohes 4 Lagoon	317	T083	TT080	2	84.00
24 May,2024	73873	Rohes 4 Lagoon	317	T083	TT080	3	126.00
					Totals for May:	**11**	**462.00**
04 Jun,2024	79754	Rohes 4 Lagoon	317	T083	TT080	1	42.00
05 Jun,2024	80506	Rohes 4 Lagoon	61	T082	TT100	1	42.00
07 Jun,2024	79761	Rohes 4 Lagoon	317	T083	TT080	1	42.00
07 Jun,2024	74459	Rohes 4 Lagoon	270	T081	TT099	1	42.00
07 Jun,2024	80511	Rohes 4 Lagoon	61	T082	TT100	1	42.00
10 Jun,2024	80514	Rohes 4 Lagoon	61	T082	TT100	1	42.00
10 Jun,2024	79764	Rohes 4 Lagoon	317	T083	TT080	1	42.00
12 Jun,2024	80518	Rohes 4 Lagoon	61	T082	TT100	2	84.00
13 Jun,2024	80519	Rohes 4 Lagoon	61	T082	TT100	3	126.00
13 Jun,2024	79768	Rohes 4 Lagoon	317	T083	TT080	2	84.00
14 Jun,2024	80520	Rohes 4 Lagoon	61	T082	TT100	2	84.00
					Totals for June:	**16**	**672.00**
26 Jul,2024	81552	Rohes 4 Lagoon	270	T081	TT099	1	42.00
26 Jul,2024	81653	Rohes 4 Lagoon	323	T077	TT022	2	72.80
26 Jul,2024	82913	Rohes 4 Lagoon	317	T083	TT080	1	42.00
30 Jul,2024	72782	Rohes 4 Lagoon	317	T083	TT080	1	42.00
31 Jul,2024	82921	Rohes 4 Lagoon	317	T083	TT080	1	42.00
					Totals for July:	**6**	**240.80**
01 Aug,2024	83813	Rohes 4 Lagoon	61	T082	TT100	2	84.00
					Totals for August:	**2**	**84.00**
					Totals To Rohes 4 Lagoon:	**35**	**1,458.80**
					Grand Totals:	**35**	**1,458.80**

Biosolids Quality Data

Appendix D

Biosolids Quality Report

Facility: PORT MCNICOLL WASTEWATER TREATMENT FACILITY

Solids & Nutrients

Period: 01/01/2024 to 12/31/2024

Works: 1676 / Digestor Type: Anaerobic

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Solids & Nutrients | **Metals & Criteria** | **Last 4 Samples**

Facility Works Number:	110001417	Receiver:	Hoggs Bay
Facility Owner:	Municipality: Township of Tay	Service Population:	1856
Facility Classification:	Class 2 Wastewater Treatment	Total Design Capacity:	7776 m3/day

Note: all parameters in this report are derived from the Bslq Station

Month	Hauled Vol. (m^3)	Total Solids (mg/L)	Volatile Solids (mg/L)	Total Phosphorus (mg/L)	Total Ammonia Nitrogen (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Ammonia + Nitrate (mg/L)	Potassium (mg/L)
Parameter Short Name	HauledVol	TS	VS	TP	NH3p_NH4p_N	NO3-N	NO2-N	TKN	Calculation in Report	K
T/S	IH Month.Total	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	- no T/S	Lab Published Month Mean
Jan		31,600.00	23,900.00	1,000.00	16.60	3.00	3.00	2,070.00	9.80	110.00
Feb		36,200.00	25,300.00	950.00	6.80	4.00	3.00	2,330.00	5.40	120.00
Mar		31,300.00	22,500.00	790.00	4.90	3.00	3.00	1,510.00	3.95	120.00
Apr		28,500.00	18,800.00	820.00	6.60	15.00	3.00	1,100.00	10.80	100.00
May	462.00	23,800.00	16,800.00	620.00	1.40	100.00	3.00	1,050.00	50.70	82.00
Jun	672.00	23,100.00	16,900.00	730.00	3.10	200.00	3.00	1,120.00	101.55	100.00
Jul		10,800.00	7,400.00	260.00	1.00	99.00	3.00	470.00	50.00	34.00
Aug		13,400.00	9,550.00	360.00	3.10	14.00	3.00	717.00	8.55	47.00
Sep		21,300.00	18,200.00	680.00	3.40	67.00	3.00	1,070.00	35.20	74.00
Oct		24,200.00	16,000.00	810.00	5.00	86.00	3.00	1,210.00	45.50	76.00
Nov		35,100.00	24,400.00	1,400.00	23.00	3.00	3.00	1,040.00	13.00	110.00
Dec		36,500.00	24,900.00	1,120.00	3.60	31.00	3.00	2,030.00	17.30	85.00
Average	567.00	26,316.67	18,720.83	795.00	6.54	52.08	3.00	1,309.75	29.31	88.17
Total	1,134.00	315,800.00	224,650.00	9,540.00	78.50	625.00	36.00	15,717.00	351.75	1,058.00

Note: all parameters in this report are derived from the Bslq Station

Month	Arsenic (mg/L)	Cadmium (mg/L)	Cobalt (mg/L)	Chromium (mg/L)	Copper (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Lead (mg/L)	Selenium (mg/L)	Zinc (mg/L)
Parameter Short Name	As	Cd	Co	Cr	Cu	Hg	Mo	Ni	Pb	Se	Zn
T/S	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean
Jan	0.10	0.01	0.04	0.41	9.80	0.01	0.19	0.57	0.40	0.20	18.00
Feb	0.10	0.02	0.05	0.36	9.00	0.00	0.18	0.59	0.40	0.20	18.00
Mar	0.10	0.02	0.04	0.34	8.80	0.00	0.16	0.50	0.30	0.20	17.00
Apr	0.10	0.01	0.04	0.35	8.80	0.00	0.15	0.52	0.50	0.10	17.00
May	0.10	0.01	0.03	0.25	6.80	0.00	0.12	0.36	0.30	0.10	13.00
Jun	0.10	0.01	0.03	0.29	7.10	0.00	0.14	0.40	0.30	0.10	14.00
Jul	0.10	0.01	0.01	0.10	2.80	0.00	0.05	0.16	0.10	0.10	5.00
Aug	0.10	0.01	0.02	0.19	3.80	0.00	0.08	0.25	0.10	0.10	8.00
Sep	0.10	0.01	0.03	0.28	6.80	0.00	0.14	0.38	0.20	0.10	14.00
Oct	0.10	0.01	0.04	0.33	8.00	0.00	0.12	0.44	0.30	0.10	16.00
Nov	0.10	0.03	0.06	0.53	14.00	0.01	0.27	0.70	0.50	0.20	27.00
Dec	0.10	0.02	0.05	0.42	12.00	0.01	0.22	0.61	0.40	0.20	23.00
Average	0.10	0.01	0.04	0.32	8.14	0.00	0.15	0.46	0.32	0.14	15.83
Min. Acceptable Ammonia + Nitrate Nitrogen to Metal Ratio	100.00	500.00	50.00	6.00	10.00	1,500.00	180.00	40.00	15.00	500.00	4.00
Ammonia + Nitrate Nitrogen to Metal Ratio in Sludge	297.20	2,110.26	810.53	92.63	3.65	8,105.34	195.95	65.08	93.85	209.79	1.88

Biosolids Quality Report

Facility: PORT MCNICOLL WASTEWATER TREATMENT FACILITY

Last 4 Samples

Period: 01/01/2024 to 12/31/2024

Works: 1676 / Digestor Type: Anaerobic

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Solids & Nutrients **Metals & Criteria** **Last 4 Samples**

Note: all parameters in this report are derived from the Bslq Station

Parameter Short Name	Time Series	09/03/2024	10/01/2024	11/04/2024	12/02/2024	Average	Metal Concentrations in Sludge (mg/kg)	Max. Permissible Metal Concentrations (mg/kg of Solids)
As (mg/L)	Lab Published	0.10	0.10	0.10	0.10	0.10	3.42	170
Cd (mg/L)	Lab Published	0.01	0.01	0.03	0.02	0.02	0.67	34
Co (mg/L)	Lab Published	0.03	0.04	0.06	0.05	0.05	1.54	340
Cr (mg/L)	Lab Published	0.28	0.33	0.53	0.42	0.39	13.32	2800
Cu (mg/L)	Lab Published	6.80	8.00	14.00	12.00	10.20	348.42	1700
Hg (mg/L)	Lab Published	0.00	0.00	0.01	0.01	0.00	0.15	11
Mo (mg/L)	Lab Published	0.14	0.12	0.27	0.22	0.19	6.40	94
Ni (mg/L)	Lab Published	0.38	0.44	0.70	0.61	0.53	18.19	420
Pb (mg/L)	Lab Published	0.20	0.30	0.50	0.40	0.35	11.96	1100
Se (mg/L)	Lab Published	0.10	0.10	0.20	0.20	0.15	5.12	34
Zn (mg/L)	Lab Published	14.00	16.00	27.00	23.00	20.00	683.18	4200
E.Coli Dry Wt (cfu/g)	Lab Published	107,981.00	57,851.00	71,225.00	73,973.00	75,742.73	E. Coli average is the GMD	
TS (mg/L)	Lab Published	21,300.00	24,200.00	35,100.00	36,500.00	29,275.00		
VS (mg/L)	Lab Published	18,200.00	16,000.00	24,400.00	24,900.00	20,875.00		
TP (mg/L)	Lab Published	680.00	810.00	1,400.00	1,120.00	1,002.50		
NO2-N (mg/L)	Lab Published	3.00	3.00	3.00	3.00	3.00		
TKN (mg/L)	Lab Published	1,070.00	1,210.00	1,040.00	2,030.00	1,337.50		
K (mg/L)	Lab Published	74.00	76.00	110.00	85.00	86.25		
NH3p_NH4p_N (mg/L)	Lab Published	3.40	5.00	23.00	3.60	8.75		
NO3-N (mg/L)	Lab Published	67.00	86.00	3.00	31.00	46.75		