Minden Wastewater Treatment Facility

Works # 110002390

Annual Wastewater Performance Report

Prepared For: The Township of Minden Hills

Reporting Period of January 1st – December 31st, 2024

Issued: March 31, 2025

Operating Authority:

The Minden Hills Sewage Treatment Plant, unless noted within this report, complies with all requirements of the regulating authorities and operates under:

- Environmental Compliance Approval (ECA) No. 5475-BPYLDH issued October 2, 2020
- Environmental Compliance Approval (ECA) No. 246-W601 issued November 2, 2022

2024 Performance Report for the Minden Sewage Treatment Plant

In 2024, the Minden Sewage Treatment Plant operated under by Amended Environmental Compliance Approval (ECA) No. 5475-BPYLDH. Condition 11.4. of this ECA states, *"The Owner shall prepare performance reports on a calendar year basis and submit to the District Manager by March 31 of the calendar year following the period being reported upon. The reports shall contain, but shall not be limited to, the following information pertaining to the reporting period:*

a) summary and interpretation of all Influent monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

b) a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

c) a summary of all operating issues encountered and corrective actions taken;

d) a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

e) a summary of any effluent quality assurance or control measures undertaken;

f) a summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

g) a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

i. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

h) a tabulation of the volume of sludge generated, 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;

i) a summary of any complaints received and any steps taken to address the complaints;

j) a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

k) a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

l) a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

m) any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es) / equipment groups in the Proposed Works.

n) a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;

The above information is incorporated in the following report format and submitted to the MECP District Manager of the Peterborough District Office of the Ministry of the Environment, Conservation and Parks as per the requirements of the ECA No. 5475-BPYLDH.

The Environmental Compliance Approval Number 246-W601 for the Minden Hills Sewage Collection System, stipulates that the operating authority for the following conditions shall maintain annual records:

Schedule E – Reporting (4.6)

a) a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.
b) a summary of any operating problems encountered and corrective actions taken.
c) a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.
d) a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.

e) a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.
f) a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:
    i. Dates;
    ii. Volumes and durations;
    iii. If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli;
    iv. Disinfection, if any; and
    v. Any adverse impact(s) and any corrective actions, if applicable.
g) a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:
    i. A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.
    ii. Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.
    iii. An assessment of the effectiveness of each action taken.
    iv. An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.
    v. Public reporting approach including proactive efforts

Environmental Compliance Approval (ECA) No. 5475-BPYLDH

During the period of 2024, the Ontario Clean Water Agency (OCWA) operated the Minden STP, Invergordon Avenue Sewage Pumping Station (SPS) and 25 Orde Street SPS on behalf of the Corporation of the Township of Minden Hills. OCWA's goals have remained consistent during this period and remain consistent with the following priorities:

- provide quality assurance, safety and environmental compliance of facility operations;
- assist our clients in achieving compliance;
- provide advice on up-to-date technology in Operations and Maintenance service delivery.

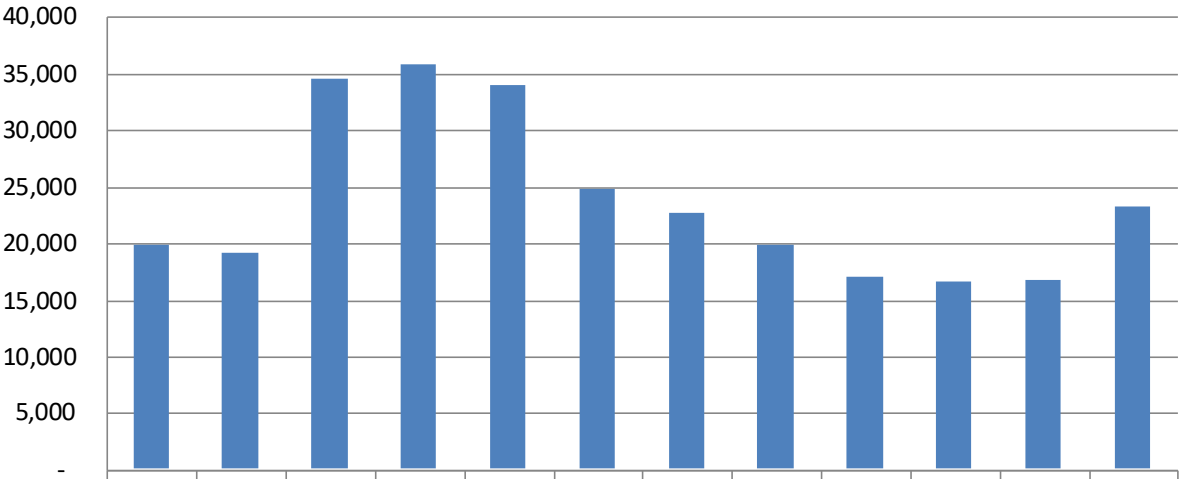
This report will show that the Ontario Clean Water Agency has made every attempt to achieve its goals through its operational performance. This performance was enhanced through the use of an electronic process data collection database, an electronic maintenance and work order database, an electronic operational excellence database, a training program focused on providing the right skills to staff - also captured and tracked by the use of an electronic database and a multi-skilled, flexible workforce.

a) Environmental Compliance Approval (ECA) No. 5475-BPYLDH requires a summary and interpretation of all Influent, and a review of the historical trend of the sewage characteristics and flow rates;

The Minden STP has a Rated Capacity of 945 m^3/day. Flows are continuously measured through the plant effluent flow meter (V-notch weir) on the effluent from the disinfection channel from the chlorine contact tank. The influent and effluent streams are considered not significantly different in flow rates and quantities so the effluent flow measurements are also used for influent flow measurements. ECA No. 5475-BPYLDH requires that everything practicable be undertaken to operate the STP so that the annual average daily influent is within the Rated Capacity. The 2024 annual average daily influent flow was 774 m^3/day or 82% of the Rated Capacity.

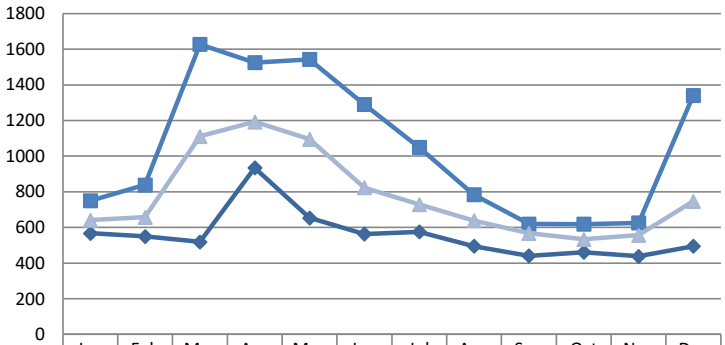
The total influent/effluent flow in 2024 was 283,542 m^3.

Graph 1: 2024 Influent/Effluent Flow Monthly Totals



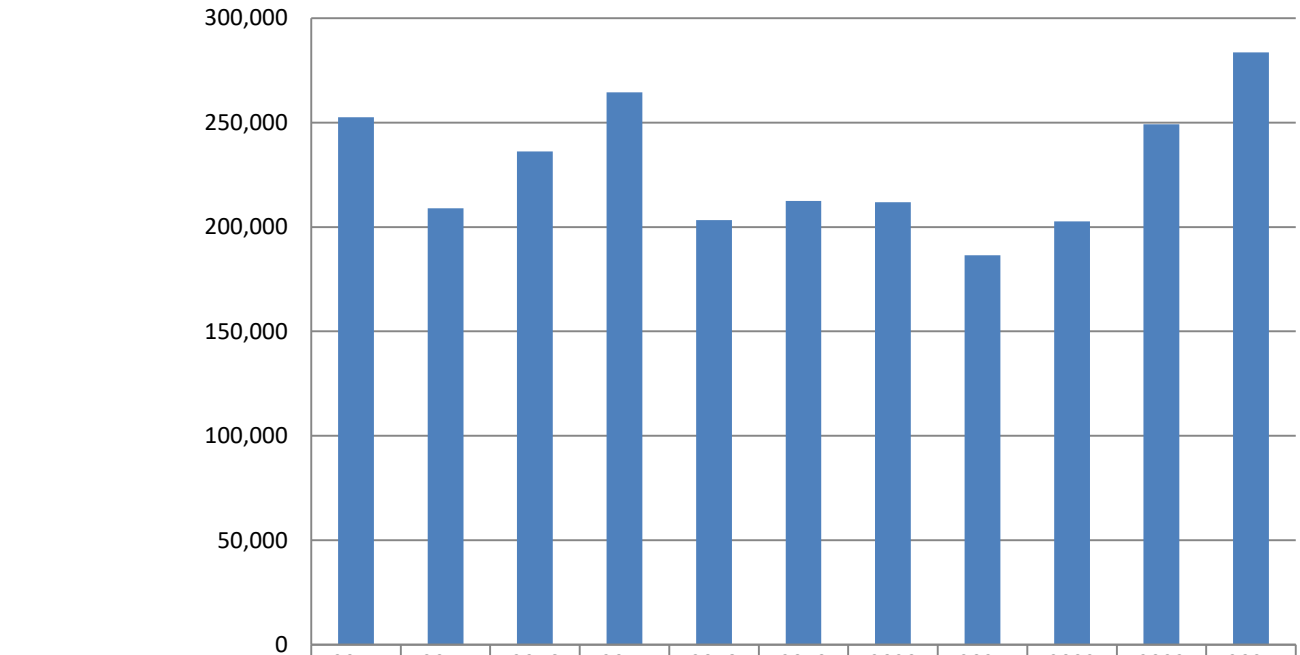
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Influent/Effluent Flow (m3)	19,853	19,063	34,448	35,771	33,946	24,702	22,571	19,793	17,010	16,543	16,690	23,152

Graph 2: 2024 Influent/Effluent Daily Minimum, Maximum and Average Flows



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min (m3/day)	567	549	518	934	653	562	575	494	440	460	438	494
Max (m3/day)	749	838	1627	1525	1543	1290	1049	783	619	618	625	1341
Avg(m3/day)	640	657	1111	1192	1095	823	728	638	567	533	556	746

Graph 3: Historical Influent/Effluent Flows from 2014 to 2024



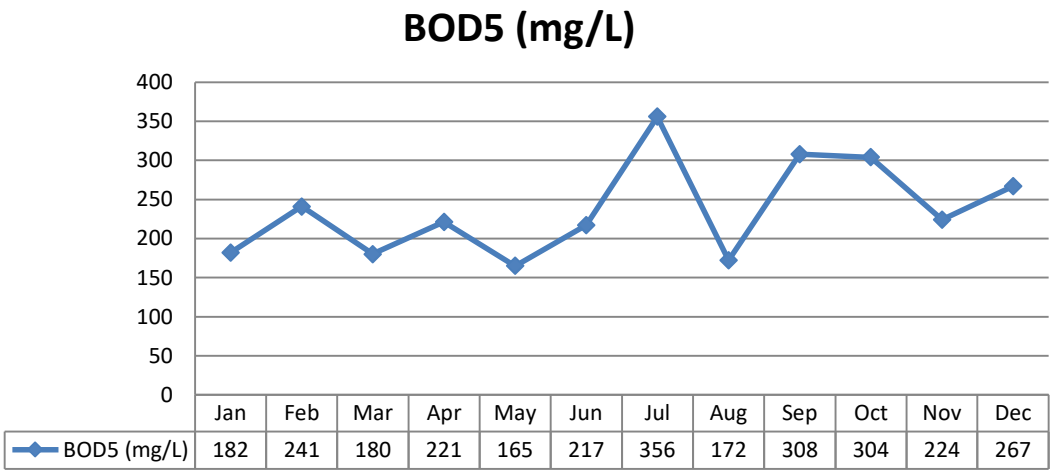
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Influent/Effluent Flow (m3)	252,472	208,982	236,205	264,470	203,316	212,404	211,880	186,478	202,616	249,244	283,542

Influent Monitoring - Sewage Characteristics

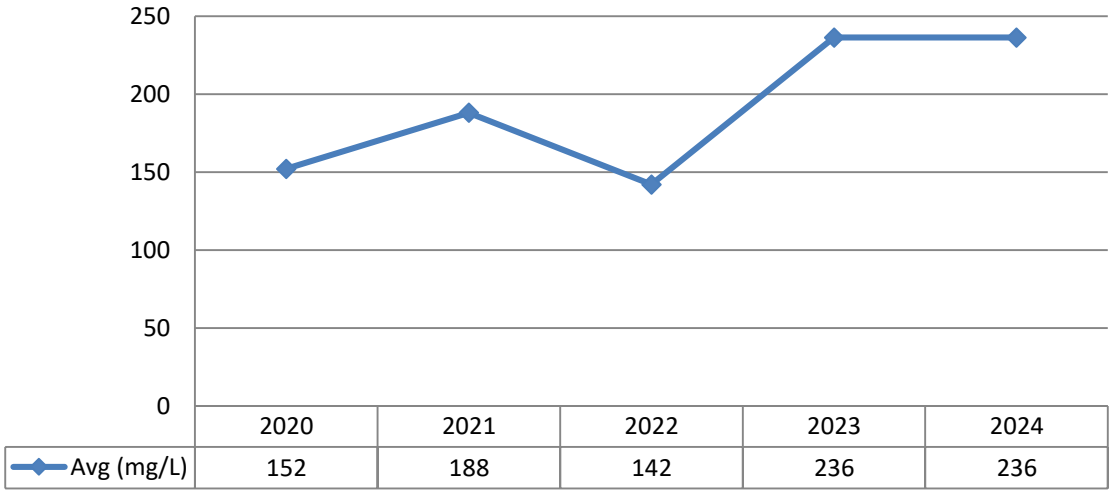
Biochemical Oxygen Demand (BOD5)

ECA No. 5475-BPYLDH requires at least one composite sample be collected and analyzed monthly for Biochemical Oxygen Demand (BOD5). The Biochemical Oxygen Demand (BOD5) monthly average results ranged from 165 mg/L to 356 mg/L.

Graph 4: 2024 Monthly BOD5 Influent Concentration Comparison



Graph 5: Historical BOD5 Influent Concentration Comparison



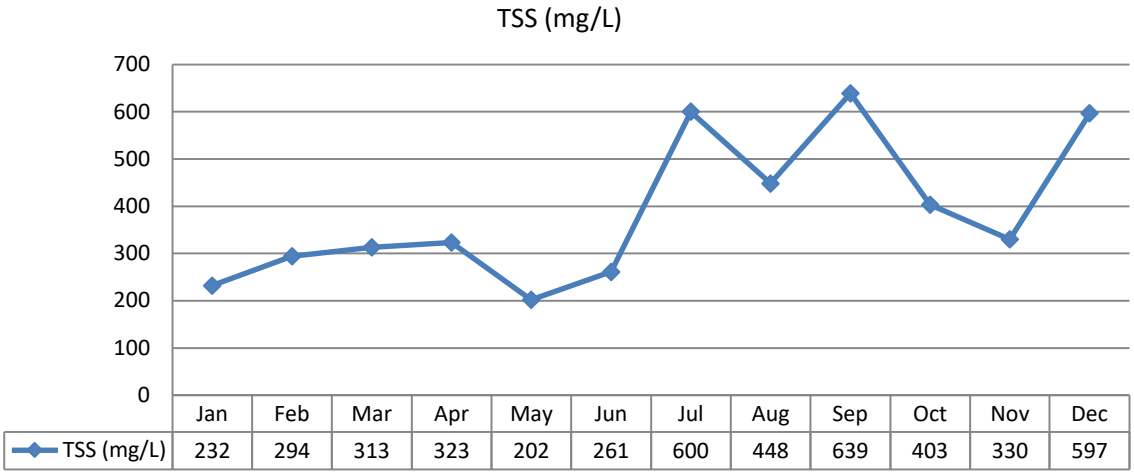
Biochemical Oxygen Demand Historical Trends

Historical trends are limited as the previous approvals for the Minden STP did not require influent BOD5 sampling until ECA No. 1926-BDRLK3 issued July 31st, 2019. BOD5 concentrations in the influent have averaged annually between 142 mg/L to 236 mg/L.

Total Suspended Solids

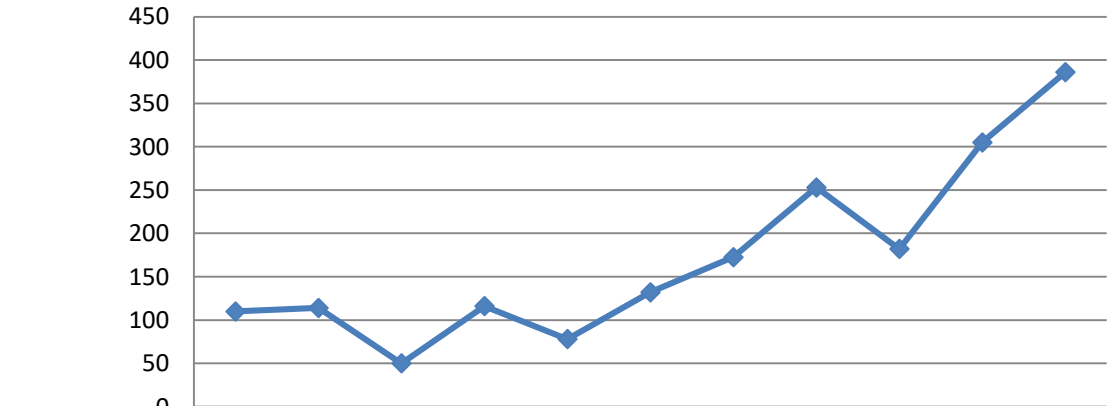
ECA No. 5475-BPYLDH requires at least one composite sample be collected and analyzed monthly for Total Suspended Solids. The monthly results ranged from 98 mg/L to 615 mg/L.

Graph 6: 2024 Monthly Total Suspended Solids Influent Concentration Comparisons



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TSS (mg/L)	232	294	313	323	202	261	600	448	639	403	330	597

Graph 7: Historical Influent Total Suspended Solids Concentration Comparisons



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Avg (mg/L)	110	114	50	116	78	132	173	253	182	305	386

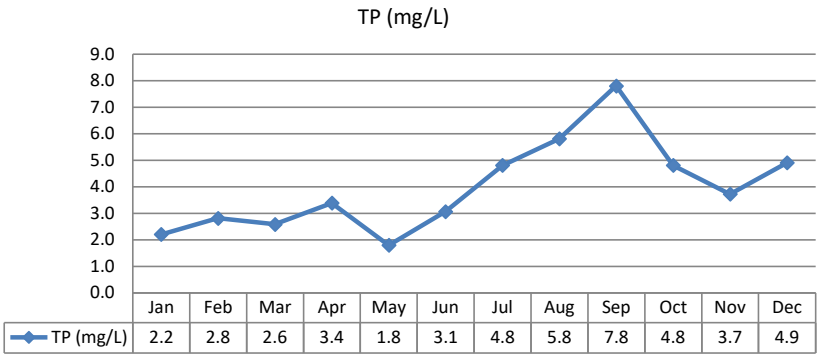
Total Suspended Solids Historical Review

The Total Suspended Solids annual average has been between 50 mg/L and 386 mg/L with the highest average occurring in 2024.

Total Phosphorus

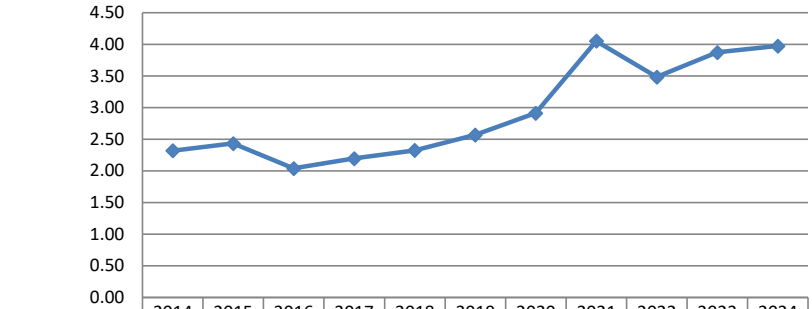
ECA No. 5475-BPYLDH requires at least one composite sample be collected and analyzed monthly for Total Phosphorus. The monthly average Total Phosphorus results ranged from 1.8 mg/L to 7.8 mg/L.

Graph 8: 2024 Monthly Total Phosphorus Influent Concentration Comparisons



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TP (mg/L)	2.2	2.8	2.6	3.4	1.8	3.1	4.8	5.8	7.8	4.8	3.7	4.9

Graph 9: Historical Influent Total Phosphorus Concentration Comparisons



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Avg (mg/L)	2.32	2.43	2.04	2.19	2.32	2.57	2.91	4.05	3.48	3.87	3.97

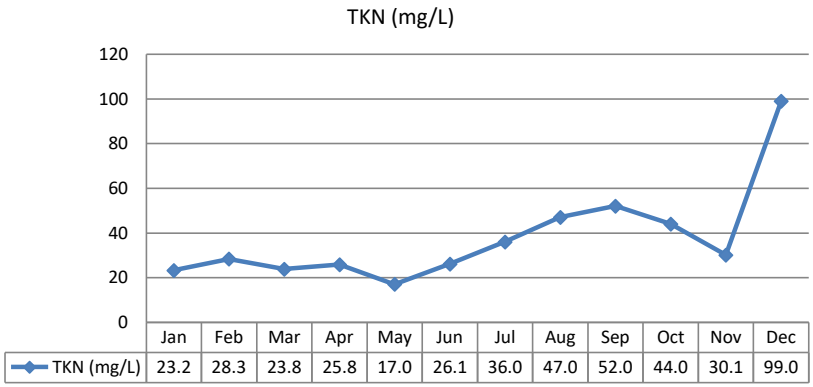
Total Phosphorus Historical Trends

The Total Phosphorus annual average increased in 2021 and has stabilized from 2022 – 2024.

Total Kjeldahl Nitrogen (TKN)

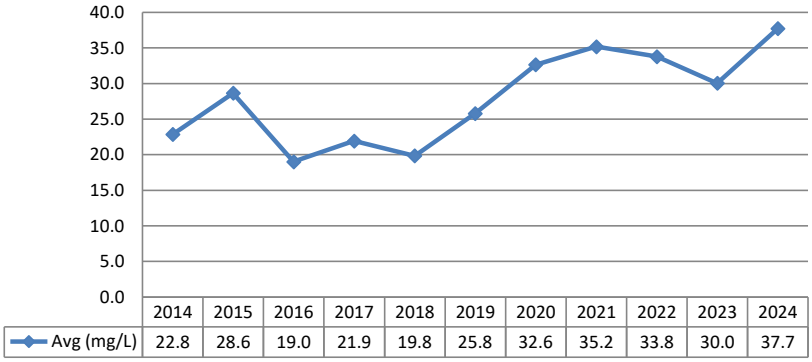
ECA No. 5475-BPYLDH require at least one composite sample be collected and analyzed monthly for Total Kjeldahl Nitrogen. The monthly Total Kjeldahl Nitrogen results ranged from 17.0 mg/L to 99.0 mg/L.

Graph 10: 2024 Monthly Total Kjeldahl Nitrogen Influent Concentration Comparisons



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TKN (mg/L)	23.2	28.3	23.8	25.8	17.0	26.1	36.0	47.0	52.0	44.0	30.1	99.0

Graph 11: Historical Influent Total Kjeldahl Nitrogen Concentration Comparisons



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Avg (mg/L)	22.8	28.6	19.0	21.9	19.8	25.8	32.6	35.2	33.8	30.0	37.7

Total Kjeldahl Nitrogen Historical Review

The Total Kjeldahl Nitrogen annual average has remained fairly consistent but an upward trend has occurred since 2020 with a slight decrease in 2023.

Refer to Appendix I for the 2024 Performance Assessment Report for the Minden STP.

b. Environmental Compliance Approval (ECA) No. 5475-BPYLDH requires a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works.

The Final Effluent Monitoring Data for 2024 is summarized below and compared to design objectives and compliance limits in ECA No. 5475-BPYLDH.

Flows are continuously measured through the plant effluent flow meter (V-notch weir) on the effluent from the disinfection channel from the chlorine contact tank. The influent and effluent streams are considered not significantly different in flow rates and quantities so the effluent flow measurements are also used for influent flow measurements.

The total influent/effluent flow in 2024 was 283,542 m3. The effluent flow summary and interpretation are included in a. above with the influent flow summary and interpretation.

In August 2022, the construction of the UV disinfection was completed. ECA No. 5475-BPYLDH includes limits and objectives for the final effluent for prior to completion and upon completion of construction of all Proposed Works. All the final effluent concentrations for 2024 will be compared to the limits and objectives listed for upon completion of construction of all Proposed Works.

Carbonaceous Biochemical Oxygen Demand (CBOD5) and Total Suspended Solids (TSS)

ECA No. 5475-BPYLDH has a monthly average concentration limit of 15 mg/L for CBOD5 and TSS upon completion of the Proposed Works. The results are presented in the following table.

Table 1: CBOD5 and Suspended Solids 2024 Effluent Concentration Results Comparison to Limits

Effluent Parameter	Monthly Average Limit 15 mg/L	Monthly Average (mg/L)	Compliant Y/N
CBOD5	January	<3.20	Y
	February	<2.50	Y
	March	<4.00	Y
	April	<4.10	Y
	May	<4.07	Y
	June	<3.00	Y
	July	<3.60	Y
	August	<3.50	Y
	September	<4.00	Y
	October	<3.20	Y
	November	<4.00	Y
	December	<4.33	Y
Total Suspended Solids	January	<2.00	Y
	February	<2.75	Y

	March	<2.25	Y
	April	<4.30	Y
	May	<2.87	Y
	June	<2.25	Y
	July	<2.20	Y
	August	<3.50	Y
	September	<2.25	Y
	October	<2.20	Y
	November	<2.25	Y
	December	<6.83	Y

ECA No. 5475-BPYLDH has a monthly average concentration objective of 10 mg/L for CBOD5 and TSS upon completion of the Proposed Works. The results are presented in the following table.

Table 2: CBOD5 and Suspended Solids 2024 Effluent Concentration Results Comparison to Objective

Effluent Parameter	Monthly Average Objective 10 mg/L	Monthly Average (mg/L)	Compliant Y/N
CBOD5	January	<3.20	Y
	February	<2.50	Y
	March	<4.00	Y
	April	<4.10	Y

	May	<4.07	Y
	June	<3.00	Y
	July	<3.60	Y
	August	<3.50	Y
	September	<4.00	Y
	October	<3.20	Y
	November	<4.00	Y
	December	<4.33	Y
Total Suspended Solids	January	<2.00	Y
	February	<2.75	Y
	March	<2.25	Y
	April	<4.30	Y
	May	<2.87	Y
	June	<2.25	Y
	July	<2.20	Y
	August	<3.50	Y
	September	<2.25	Y
	October	<2.20	Y

	November	<2.25	Y
	December	<6.83	Y

ECA No. 5475-BPYLDH has a monthly average daily effluent loading limit of 14.18 kg/day for CBOD5 and TSS after the completion of the Proposed Works. The results for 2024 are presented in the following table.

Table 3: CBOD5 and Suspended Solids 2024 Effluent Loading Results Comparison to Limit

Effluent Parameter	Monthly Average Daily Loading Limit 14.18mg/L	Monthly Daily Average Loading (mg/L)	Compliant Y/N
CBOD5	January	<2.049	Y
	February	<1.643	Y
	March	<4.445	Y
	April	<4.889	Y
	May	<4.453	Y
	June	<2.470	Y
	July	<2.621	Y
	August	<2.235	Y
	September	<2.268	Y
	October	<1.708	Y
	November	<2.225	Y
	December	<3.236	Y
Total Suspended Solids	January	<1.281	Y
	February	<1.808	Y
	March	<2.500	Y
	April	<5.127	Y
	May	<3.139	Y
	June	<1.853	Y
	July	<1.602	Y
	August	<2.235	Y
	September	<1.276	Y
	October	<1.174	Y
	November	<1.252	Y
	December	<5.103	Y

All effluent results were below the concentration and loading limits, as well as objectives for CBOD5 and TSS in 2024.

Total Phosphorus (TP)

ECA No. 5475-BPYLDH has a monthly average concentration limit of 0.5 mg/L for Total Phosphorus. The monthly average results for 2024 are presented in the following table.

Table 4: Total Phosphorus 2024 Monthly Average Concentrations

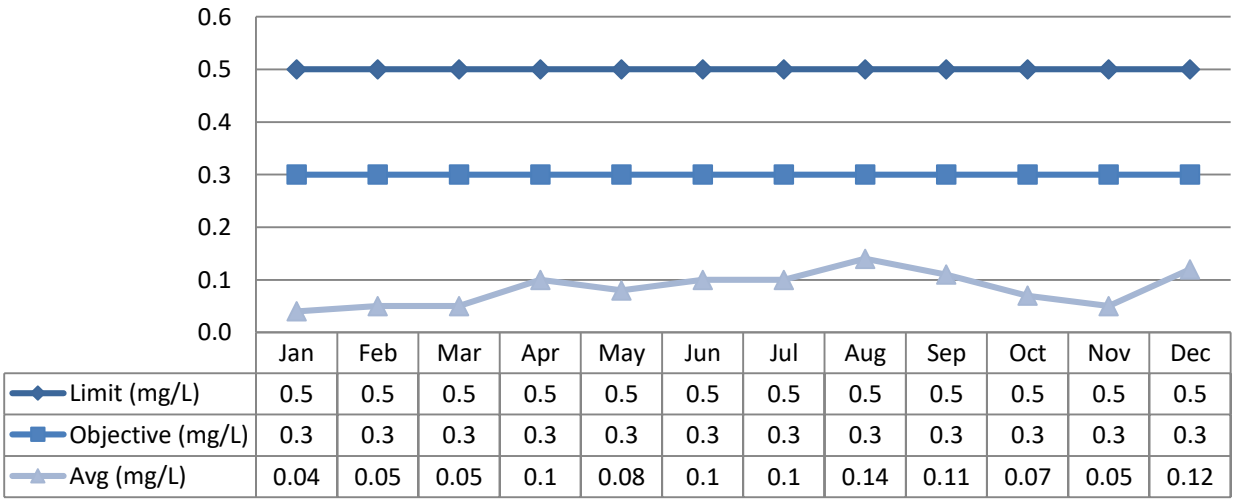
Month	ECA No. 5475-BPYLDH Monthly Average Limit (mg/L)	Monthly Average (mg/L)	Compliant Y/N
January	0.5	0.04	Y
February	0.5	0.05	Y
March	0.5	0.05	Y
April	0.5	0.10	Y
May	0.5	0.08	Y
June	0.5	0.10	Y
July	0.5	0.10	Y
August	0.5	0.14	Y
September	0.5	0.11	Y
October	0.5	0.07	Y
November	0.5	0.05	Y
December	0.5	0.12	Y

ECA No. 5475-BPYLDH has a monthly average concentration objective of 0.3 mg/L for Total Phosphorus. The monthly average results for 2024 are presented in the following table.

Table 5: Total Phosphorus 2024 Monthly Average Concentrations

Month	Monthly Average Objective (mg/L)	Monthly Average (mg/L)	Objective Met Y/N
January	0.3	0.04	Y
February	0.3	0.05	Y
March	0.3	0.05	Y
April	0.3	0.10	Y
May	0.3	0.08	Y
June	0.3	0.10	Y
July	0.3	0.10	Y
August	0.3	0.14	Y
September	0.3	0.11	Y
October	0.3	0.07	Y
November	0.3	0.05	Y
December	0.3	0.12	Y

Graph 12: 2024 Monthly Final Effluent Phosphorus Concentration Comparisons



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (mg/L)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Objective (mg/L)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Avg (mg/L)	0.04	0.05	0.05	0.1	0.08	0.1	0.1	0.14	0.11	0.07	0.05	0.12

ECA No. 5475-BPYLDH has a monthly average daily effluent loading limit of 0.47 kg/day for Total Phosphorus. The loadings for 2024 are presented in the following table.

Table 6: Total Phosphorus 2024 Monthly Average Daily Effluent Loading

Month	Monthly Average Daily Effluent Loading Limit (kg/day)	Monthly Average Daily Effluent Loading Limit Result (kg/day)	Limit Met Y/N
January	0.47	<0.023	Y
February	0.47	<0.030	Y
March	0.47	0.050	Y
April	0.47	0.121	Y
May	0.47	0.089	Y
June	0.47	0.078	Y
July	0.47	0.074	Y
August	0.47	0.086	Y
September	0.47	0.064	Y
October	0.47	0.039	Y
November	0.47	0.026	Y
December	0.47	0.086	Y

All effluent results were below the concentration and loading limits, as well as objectives for Total Phosphorus in 2024.

Total Ammonia Nitrogen (TAN)

ECA No. 5475-BPYLDH has a Total Ammonia Nitrogen (TAN) average concentration loading limit based on monthly averages for seasonal limits for Oct 1 – Apr 30 and May 1 – Sep 30. The limits are applied monthly upon completion of construction of all Proposed Works. The monthly average results for 2024 are presented in Table 7. All effluent results were below the concentration and loading limits and objectives for TAN.

Table 7: Total Ammonia Nitrogen 2024 Monthly Average Concentrations and Loadings upon completion of construction of all Proposed Works

Month	Monthly Average Concentration Limit (mg/L)	Monthly Average (mg/L)	Compliant Y/N
January	12.0	<0.10	Y
February	12.0	<0.10	Y
March	12.0	<0.10	Y
April	12.0	<0.11	Y
May	6.0	<0.12	Y
June	6.0	0.10	Y
July	6.0	<0.12	Y
August	6.0	<0.13	Y
September	6.0	<0.10	Y
October	12.0	<0.10	Y
November	12.0	<0.10	Y
December	12.0	<0.27	Y

Month	Monthly Average Daily Effluent Loading Limit (kg/d)	Monthly Average Daily Effluent Loading Average (kg/d)	Compliant Y/N
January	11.3	<0.064	Y
February	11.3	<0.066	Y
March	11.3	<0.111	Y
April	11.3	<0.125	Y
May	5.7	<0.131	Y
June	5.7	0.082	Y
July	5.7	<0.087	Y
August	5.7	<0.080	Y
September	5.7	<0.057	Y
October	11.3	<0.053	Y
November	11.3	<0.056	Y
December	11.3	<0.199	Y

ECA No. 5475-BPYLDH has a Total Ammonia Nitrogen (TAN) average concentration loading objective based on monthly averages for seasonal objectives for Oct 1 – Apr 30 and May 1 – Sep 30. The objectives are applied monthly upon completion of construction of all Proposed Works. The monthly average results for 2024 are presented in Table 8. All effluent results were below the concentration and loading limits and objectives for TAN.

Table 8: Total Ammonia Nitrogen 2023 Monthly Average Concentrations and Loadings upon completion of construction of all Proposed Works

Month	Monthly Average Concentration Objective (mg/L)	Monthly Average (mg/L)	Objective Met Y/N
January	6.0	<0.10	Y
February	6.0	<0.10	Y
March	6.0	<0.10	Y
April	6.0	<0.11	Y
May	3.0	<0.12	Y
June	3.0	0.10	Y
July	3.0	<0.12	Y
August	3.0	<0.13	Y
September	3.0	<0.10	Y
October	6.0	<0.10	Y
November	6.0	<0.10	Y
December	6.0	<0.27	Y

Total Residual Chlorine (TRC)

ECA No. 5475-BPYLDH has a Total Residual Chlorine compliance limit of 0.02 mg/L and an objective of not detectable as measured by a method with a sensitivity of at least 0.02 mg/L for every single sample result.

The Final Effluent TRC measured in 2024 are provided in Appendix I and are compared to the limit and objective. The installation of the UV disinfection system was completed in August 2022 and is used for disinfection except when a sand filter bypass occurs, in these instances sodium hypochlorite is used for disinfection and sodium bisulphite for dechlorination.

Table 9: Total Residual Chlorine 2024 Results Comparison to Limits

Limit 0.02mg/L	Every Single Sample Result Compliant (Y/N)
Results range: 0.00 – 0.01	Y

ECA No. 5475-BPYLDH has a Total Residual Chlorine objective of Non-detectable. Appendix I includes a comparison of all results to the objectives. The following readings did not meet the objective.

Table 10: Total Residual Chlorine 2024 Results Outside of Objective of Non-Detectable		
Date	**Results**	**Single Sample Result Objective Met Y/N**
04/13/24	0.01	N
04/16/24	0.01	N
04/17/24	0.01	N
04/19/24	0.01	N
04/20/24	0.01	N
04/24/24	0.01	N
04/25/24	0.01	N
04/26/24	0.01	N
05/10/24	0.01	N
05/11/24	0.01	N
12/29/24	0.01	N

E. Coli

ECA No. 5475-BPYLDH has a compliance monthly geometric mean density limit of 200 cfu/100mL. Many wastewater treatment facilities must test for and report results using a 'Geometric Mean' (average) of all the test results obtained during a specific reporting period. The geometric mean calculation is different than a normal arithmetic mean (average) calculation and is considered to be a more accurate calculation. A geometric mean, unlike an arithmetic mean, tends to dampen the effect of very high or low values which might bias the mean if a straight average (arithmetic mean) were calculated.

The following provides monthly geometric mean density values of E. Coli in the final effluent for each month in 2024.

Table 11: E. Coli 2024 Results Comparison to Limit												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Monthly Geometric Mean Density of E. Coli (cfu/100mL)	2.5	2.0	4.9	42.0	15.8	2.4	2.0	2.0	3.6	2.0	2.0	2.0
Compliant with Limit of 200 cfu/100 mL (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

ECA No. 5475-BPYLDH has a design objective of <200cfu/100mL.

Table 12: E. Coli 2024 Results Compared to Objective												
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Monthly Geometric Mean Density of E. Coli (cfu/100mL)	2.5	2.0	4.9	42.0	15.8	2.4	2.0	2.0	3.6	2.0	2.0	2.0
Objective of <200 cfu/100 mL Met (Y/N)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

pH

ECA No. 5475-BPYLDH has a pH compliance limit with a range of 6.0 to 9.5, inclusive, for every single sample result. Every pH reading in 2024 was within the compliance limit. The summary of effluent pH, provided in Appendix I, provides all measurements recorded in 2024 and compares the results to the limits.

Table 13: Field pH 2023 Results Comparison to Limits	
Limit 6.0 – 9.5	**Every Single Sample Result Compliant (Y/N)**
Results range: 6.03 – 7.81	Y

ECA No. 5475-BPYLDH has a pH objective of 6.5 – 8.5 inclusive for every single sample result. Appendix I includes a comparison of all results to the objectives. The following readings were below the lower pH objective of 6.5 in 2024.

Table 14: Field pH 2024 Results Outsides of Objective		
Date	**Results**	**Single Sample Result Objective Met Y/N**
04/11/24	6.50	N
05/03/24	6.45	N
05/14/24	6.35	N
05/16/24	6.33	N
05/24/24	6.27	N
05/27/24	6.35	N
05/28/24	6.03	N
05/29/24	6.33	N
05/30/24	6.26	N
05/31/24	6.39	N
06/06/24	6.27	N
06/10/24	6.45	N
06/13/24	6.23	N

The results in the preceding tables show the limits for concentrations and loadings of the effluent CBOD5, Total Suspended Solids, Total Phosphorus and Total Ammonia Nitrogen were in compliance with ECA No. 5475-BPYLDH in 2024. E. Coli monthly geomean results and all results for pH met the ECA's limits in 2024

Objectives were met for CBOD5, TP, TAN, TSS and E. Coli.

Total Residual Chlorine (TRC) had 11 out of the 34 TRC readings were detected at 0.01mg/L with one exceedance reading at 0.05mg/L. Thirteen (13) of the 214 pH readings were below the objective set by the ECA.

Refer to Appendix I for Performance Assessment Report and Summaries of Effluent TRC, pH and E. Coli Results for 2024.

c. a summary of all operating issues encountered and corrective actions taken;

The following details describe all operating problems encountered during the reporting period and the corrective actions taken.

Table 15: Summary of Operating Issues		
Date	**Challenges**	**Corrective Actions**
Apr 12 – May 12	Heavy rain events created high flows which caused the sand filters to become hydraulically overloaded	Township issued an alert on their website. Monitored flows and processes. Composite effluent samples collected. Effluent met concentration and loading limits and objectives. Additional information included in Condition j.
Dec 29 – Jan 2	Heavy rain events created high flows which caused the sand filters to become hydraulically overloaded	Township issued an alert on their website. Monitored flows and processes. Composite effluent samples collected. Effluent met concentration and loading limits and objectives. Additional information included in Condition j.

d. a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

OCWA uses a Work Maintenance System (WMS) to schedule normal maintenance activities and track repairs. WMS is a maintenance tracking system that can generate work orders as well as give summaries of completed and scheduled work. During the year, the operating authority at the facility generates scheduled work orders on a weekly, monthly and annual basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is carried out and assets are maintained to manufacturer's and/or industry standards. Emergency and capital repair maintenance is completed and added to the system.

Refer to Appendix II for work order and maintenance summary.

e. a summary of any effluent quality assurance or control measures undertaken;

Effluent quality assurance is maintained in several ways. Laboratory samples are sent to accredited laboratory (SGS Lakefield) for analysis of all effluent parameters. Sampling calendars issued to the operator denote frequency of sampling and these calendars are submitted to the Process Compliance Technician at the end of each month. Raw and effluent samples were collected as per ECA No. 5475-BPYLDH and the results are reviewed on a regular basis to ensure compliance with the site's objectives and limits.

Effluent control measures include in-house sampling and testing for operational parameters such as chlorine residual, pH, temperature, phosphorus, and dissolved oxygen. In-house testing provides real time results which are then evaluated to determine if process changes are necessary to enhance operational performance. All in-house sampling and analysis are

performed by certified operations staff utilizing approved methods and protocols for sampling, analysis and recording as specified in the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works", the Ministry's publication, "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" and the publication, "Standard Methods for the Examination of Water and Wastewater".

Work orders are scheduled through OCWA's asset maintenance management system to ensure preventative and corrective maintenance is completed and recorded by operations staff. A summary is attached as Appendix II. Flow meters are calibrated annually and the 2024 calibration report is provided in Appendix III.

OCWA conducts internal audits of facilities and develops Action Plans to ensure deficiencies are identified and corrected. OCWA has developed comprehensive manuals detailing operations, maintenance, instrumentation and emergency procedures. To ensure facilities are operated in compliance with applicable legal requirements, facility staff has access to a network of compliance and support professionals at the hub, region and corporate level.

Continuous phosphorus removal is achieved with the dosing of aluminum sulphate. A summary of its use and dosing rates for 2024 is provided in the following table.

Table 16: Coagulant Use and Dosing 2024

Month	Aluminum Sulphate (kg)	Aluminum Sulphate Average Dosage (mg/L)
January	845	42.74
February	791	41.77
March	845	25.57
April	818	23.69
May	845	26.00
June	818	34.78
July	845	37.85
August	845	43.22
September	818	48.27
October	845	51.21
November	818	49.16
December	845	38.51

f. a summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

Refer to Appendix III for 2024 calibration reports.

g. a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

i when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

ii when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

Continuous efforts were made to meet the Effluent Objectives in 2024:

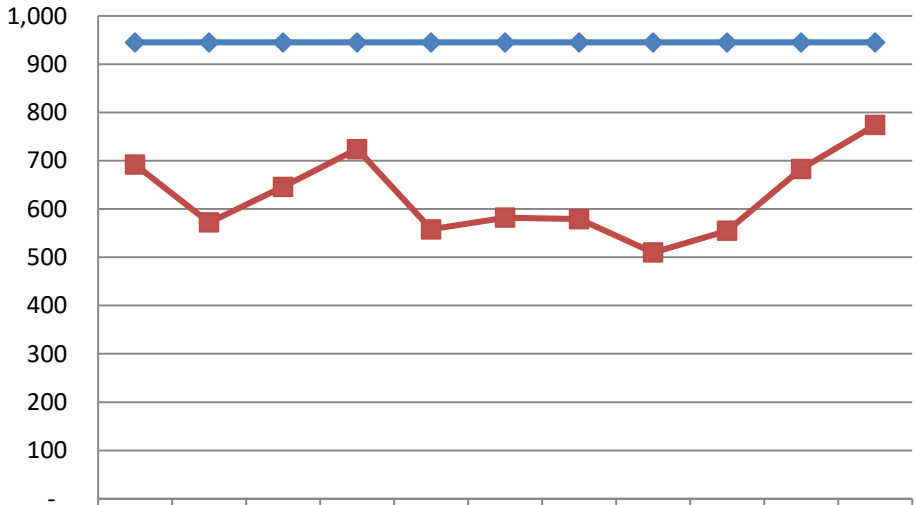
1. Development of the sampling plan which meets or exceeds the minimum sample requirements as required in the ECA;
2. Visual Inspection of the entire process while performing rounds;
3. Influent monitoring;
4. Ensuring that chemicals are being dosed as required;
5. Calibration of lab equipment;
6. Annual calibration of flow meters;
7. Performing preventative maintenance activities in accordance with work order schedules;
8. Performing in-house lab tests;
9. Monitoring treatment processes by performing regular laboratory analysis and reviewing of lab results;
10. Biosolids monitoring

Effluent design objectives were met more than 50% of the time.

The ECA states the plant has a Rated Capacity of 945m^3/day. The Rated Capacity means the Average Daily Flow for which the plant is approved to treat. The Average Daily Flow is determined by the cumulative total sewage flow into the plant during a calendar year, which is then divided by the number of days during which sewage flowed into the plant. The annual average daily influent flow was 774 m^3/day or 82% of the Rated Capacity.

The following graph shows the plant has been operating within the Rated Capacity for the past ten years.

Graph 13: Average Sewage Flow and Rated Capacity Comparisons



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Rated Capacity m3/day	945	945	945	945	945	945	945	945	945	945	945
Average Sewage Flow (m3/day)	692	572	646	724	558	582	579	510	555	683	774

h. a tabulation of the volume of sludge generated, 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;

Attached is Appendix IV: Sludge/Biosolids Summary that contains quantities of organics, inorganics, e-coli and volumes of Biosolids/sludge generated for the reporting period - which was a total of 1,430.53 m^3. This is consistent with 2023 volumes but a decrease from 2022 when 1,600.42 m^3 of biosolids were generated and hauled. The anticipated volume for the next reporting period is not expected to be appreciably different from this reporting period.

Biosolids from the Minden STP were hauled, stored and land applied by Shepherds Enterprises Inc. in 2024 and will be again in 2025. The biosolids are hauled to fields with a valid NASM Plan or to A710160 Shepherds Environmental Storage Structure and then applied to fields with valid NASM Plans. The majority of Minden's STP biosolids is stored because of the small volumes the plant generates. The certified fields which received biosolids for land application directly from the Minden STP in 2024 are listed in the following table.

Table 17: Summary of Biosolids Land Application 2024		
Date	**Amount m^3**	**Location**
May 22	29.1	NASM Plan 60384

i. a summary of any complaints received and any steps taken to address the complaints

Table 18: Complaints Received Summary for 2024		
Date	**Issue**	**Actions Taken**
No Complaints received for 2024		

j. a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

The following table summarizes all Bypasses, Overflows and spills and abnormal discharge events that occurred in 2024. The Operations Event Forms and sampling results for these events are provided in Appendix V. The events were reported to MOH, MECP and the Township.

Table 19: 2024 Summary of Events as per Condition 11.4.j.					
Date	**Type of Event**	**Total Volume (m3)**	**Disinfect (Y/N)**	**Samples Collected (Y/N)**	**Reason**
April 12 – May 12	Sand Filter Bypass	31,877	Y	Y	Weather
December 29 – Jan 2	Sand Filter Bypass	4,322	Y	Y	Weather

ECA No. 5475-BPYLDH requires submission of quarterly summary reports of any Bypass Events and Overflows Events. Copies of these reports are provided in Appendix V.

ECA No. 5475-BPYLDH includes a Peak Daily Flow Rate which is the overall design capacity of the sewage treatment plant of 3,410m^3/d. A one-day flow total, greater than this Peak Daily Flow Rate, will trigger additional sampling as per Condition 9.2 for situations outside of Normal Operating Conditions. The maximum daily flow in 2024 was 1,627 m^3.

k. summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

Appendix VI provides an update on the Notice of Modification for Fleming College's Centre for Advancement of Water and Wastewater Technologies (CAWT) pilot facility. This pilot

facility will serve as an important expansion of the research and testing capabilities in the Province of Ontario.

This project experienced a number of delays since March 2020 due to the COVID-19 pandemic. The original LOF expired July 30, 2021 but had been extended to October 2, 2024.

l. a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

2024 efforts included collection system flushing/cleanings, manhole repairs and spot manhole inspections.

m. any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es) / equipment groups in the Proposed Works.

Proposed works for the Minden STP include modifications to the existing sand filter effluent channel to install a UV disinfection system and a dechlorination system. This work was completed in August 2022. A copy of the Professional Engineer's statement of completion of works was included in the 2022 Annual Report.

n. a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year

Summary of Influent and Effluent Monitoring and Recording Results

ECA No. 5475-BPYLDH Schedule D describes the requirement for sample collection at the following locations, frequencies and by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 20:Influent Monitoring Program		
Parameter	Type of Sample	Minimum Sampling Frequency
BOD_5	24 hour composite	Monthly
Total Suspended Solids	24 hour composite	Monthly
Total Phosphorus	24 hour composite	Monthly
Total Kjeldahl Nitrogen	24 hour composite	Monthly

Table 21: Final Effluent – Monitoring Program		
Parameter	Type of Sample	Minimum Sampling Frequency
$CBOD_5$	24 hour composite	Weekly
Total Suspended Solids	24 hour composite	Weekly
Total Phosphorus	24 hour composite	Weekly
Total Ammonia Nitrogen	24 hour composite	Weekly
Total Kjeldahl Nitrogen	24 hour composite	Weekly
Nitrate as Nitrogen	24 hour composite	Weekly
Nitrite as Nitrogen	24 hour composite	Weekly
E. Coli	Grab	Weekly
Total Residual Chlorine	Grab/Analyzer	Weekly (prior to commissioning the proposed UV disinfection system) Daily (if chlorination or superchlorination is employed in the liquid train post to the commissioning of the proposed UV disinfection system)
Dissolved Oxygen (DO)***	Grab/Probe/Analyzer	Weekly (Daily if dechlorination is employed)
pH*	Grab/Probe/Analyzer	Weekly
Temperature*	Grab/Probe/Analyzer	Weekly
Un-ionized Ammonia**	As Calculated	Weekly

*pH and temperature of the Final Effluent shall be determined in the field at the time of sampling for Total Ammonia Nitrogen.
** The concentration of un-ionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in ”Ontario’s Provincial Water Quality Objectives” dated July 1994, as amended.
***The Owner shall monitor and record DO in the Final Effluent as outlined in the table above for a period of not shorter than two (2) years as of January 1, 2021. The Owner shall, within three (3) months after the 2-year term, submit to the District Manager a set of raw data of DO monitoring results as well as the review of the DO variation in relation to the plant disinfection practice for this 2-year term (I.e. routine UV disinfection vs. occasional chlorination and dechlorination during filter bypass events as well as in the sand filter superchlorination events). The monitoring frequencies with respect to DO may be modified at the discretion of the District Manager in Writing, upon conclusion of his / her review of the required submission.

Dissolved Oxygen (DO) was monitored as required in the Final Effluent as outlined in the monitoring program for two years (January 2021-January 2023) in ECA 5475-BPYLDH. The DO monitoring results over the two year period were submitted in the required timeframe to

the District Manager. The monitoring frequency proposed in the letter to the District Manager was to remain the same as outlined in Schedule D-Final Effluent in the ECA for continued data collection while the UVs are providing disinfection. Please see Appendix VIII.

The following tables provide a summary of the number of samples collected each month for those parameters required for analysis.

Influent Sample Collection Summary

Table 22: Minden STP - Number of Influent Parameters Tested in 2024

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BOD_5	1	1	1	1	1	1	1	1	1	1	1	1
TSS	1	1	1	1	1	1	1	1	1	1	1	1
Total P	1	1	1	1	1	1	1	1	1	1	1	1
TKN	1	1	1	1	1	1	1	1	1	1	1	1

Final Effluent Sample Collection Summary

Table 23: Minden STP - Number of Final Effluent Parameters Tested in 2024

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
$cBOD_5$	5	4	4	20	15	4	5	4	4	5	4	6
TSS	5	4	4	20	15	4	5	4	4	5	4	6
Total P	5	4	4	20	15	4	5	4	4	5	4	6
Total Ammonia Nitrogen	5	4	4	20	15	4	5	4	4	5	4	6
TKN	5	4	4	4	5	4	5	4	4	5	4	4
Nitrite as N	5	4	4	4	5	4	5	4	4	5	4	4
Nitrate as N	5	4	4	4	5	4	5	4	4	5	4	4
E. Coli	5	4	4	4	6	4	5	4	4	5	4	4
Total Chlorine Residual	0	0	0	19	12	0	0	0	0	0	0	3
pH	16	15	17	25	24	14	21	17	18	13	17	17
Temp ^oC	16	15	17	25	24	14	21	18	18	13	16	17
DO	16	12	14	25	24	14	21	14	17	13	17	17
Unionized Ammonia	5	4	4	4	5	4	5	4	4	5	4	4

The required number of influent and final effluent samples were collected at the specified locations and frequencies during the reporting period as per ECA No. 5475-BPYLDH Schedule D. The following samples were deviations from the 2024 sampling schedule:

During sand filter bypass events, additional sampling was completed as required.

Summary of Sludge/Biosolids and Recording Results

Table 24: Sludge Solids – holding tank/truck loading bay - Monitoring Program		
Parameter	Type of Sample	Minimum Sampling Frequency
Total Solids	Grab	Quarterly
Total Phosphorus	Grab	Quarterly
Total Ammonia Nitrogen	Grab	Quarterly
Nitrate as Nitrogen	Grab	Quarterly
Potassium	Grab	Quarterly
Metal Scan - Arsenic - Cadmium - Cobalt - Chromium - Copper - Lead - Mercury - Molybdenum - Nickel - Potassium - Selenium - Zinc	Grab	Quarterly

Table 25: Minden STP - Number of Sludge/Biosolids Parameters Tested in 2024												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Total Solids	2	1	1	1	1	1	2	2	3	1	2	1
TP	2	1	1	1	1	1	2	2	3	1	2	1
TAN	2	1	1	1	1	1	2	2	3	1	2	1
Nitrate as Nitrogen	2	1	1	1	1	1	2	2	3	1	2	1
Arsenic	2	1	1	1	1	1	2	2	3	1	2	1

Table 25: Minden STP - Number of Sludge/Biosolids Parameters Tested in 2024												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Cadmium	2	1	1	1	1	1	2	2	3	1	2	1
Cobalt	2	1	1	1	1	1	2	2	3	1	2	1
Chromium	2	1	1	1	1	1	2	2	3	1	2	1
Copper	2	1	1	1	1	1	2	2	3	1	2	1
Lead	2	1	1	1	1	1	2	2	3	1	2	1
Mercury	2	1	1	1	1	1	2	2	3	1	2	1
Molyb-denum	2	1	1	1	1	1	2	2	3	1	2	1
Nickel	2	1	1	1	1	1	2	2	3	1	2	1
Potassium	2	1	1	1	1	1	2	2	3	1	2	1
Selenium	2	1	1	1	1	1	2	2	3	1	2	1
Zinc	2	1	1	1	1	1	2	2	3	1	2	1

Sludge/biosolids samples are collected typically once per month when sludge/biosolids are hauled from the facility. This meets the required minimum number of samples at the specified location and frequency during the reporting period as required by the ECA. 2024 Sludge/Biosolids results are provided in Appendix IV.

For the 2024 sample schedule refer to Appendix VII.

Environmental Compliance Approval (ECA) No. 141-W601

4.6 (a) a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.

The Minden Hills Sewage Collection System consists of works for the collection and transmission of sewage, consisting of trunk sewers, normally separate sewers, 2 sewage pumping stations, and a forcemain, with discharge into the Minden Sewage Treatment Plant.

Raw Sewage flow data from sewage received from the Pumping Stations is captured in Appendix I and section a of this report along with an interpretation of the data and any conclusions drawn from the data evaluation.

4.6 (b) a summary of any operating problems encountered and corrective actions taken.

There were no operating problems encountered in the Minden Hills Sewage Collection System in 2024.

4.6 (c) a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.

A regular scheduled calibration and maintenance program has been kept up to date as scheduled on a daily, weekly, semi-annual and annual basis. All equipment calibration & maintenance scheduling and standard procedures are provided by Maximo Computerized Maintenance System.

Attached is Appendix ll: Maintenance Summary, a Work Order Summary report, showing all preventive and corrective maintenance activities performed at the Minden Hills Sewage Treatment Plant, including the collection system, during 2024.

Attached is Appendix lII: Calibration Report, flow meters are calibrated annually.

4.6 (d) a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.

Complaints related to the Minden Hills Sewage Collection System and steps taken to address the complaints from 2024 are included in Table 18: Summary of Community Complaints.

4.6 (e) a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.

There were no Alterations made to the Minden Hills Sewage Collection System in 2024.

4.6 (f) a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:

i) Dates;
ii) Volumes and durations;
iii) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli;
iv) Disinfection, if any; and
v) Any adverse impact(s) and any corrective actions, if applicable.

The Minden Hills Collection system did not experience any collection system Overflows or Spills in 2024.

4.6 (g) a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:

i) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.

Refer to section l above for prosed projects.

ii) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.

The Minden Hills Sewage Collection system does not contain combined sewers and therefore is not required to complete a Pollution Prevention and Control Plan (PPCP).

iii) An assessment of the effectiveness of each action taken.

None to report at this time.

iv) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.

Not applicable

v) Public reporting approach including proactive efforts.

The Township of Minden Hills utilizes their website to post Media Releases. Residents have the ability to subscribe to receive Media Releases from the Township of Minden Hills to an email address.

Appendix I

Performance Assessment Report

TRC Results Comparison to Limit and Objective

Field pH Results Comparison to Limits and Objectives

Un-ionized Ammonia Results

Minden STP – 2024 Final Effluent Field pH Results

Date	pH	Date	pH	Date	pH	Date	pH	Date	pH
01/02/2024	7.41	04/04/2024	6.63	06/06/2024	6.27	09/04/2024	7.05	12/06/2024	7.16
01/03/2024	7.25	04/09/2024	6.60	06/07/2024	6.65	09/05/2024	7.05	12/09/2024	7.14
01/04/2024	7.03	04/10/2024	6.63	06/10/2024	6.45	09/06/2024	6.92	12/10/2024	7.07
01/08/2024	7.03	04/11/2024	6.50	06/12/2024	6.74	09/09/2024	7.05	12/11/2024	7.04
01/09/2024	7.01	04/12/2024	6.82	06/13/2024	6.23	09/10/2024	7.14	12/12/2024	7.02
01/10/2024	7.23	04/13/2024	6.54	06/18/2024	6.56	09/11/2024	7.12	12/13/2024	7.14
01/11/2024	7.24	04/14/2024	6.66	06/19/2024	6.54	09/12/2024	7.08	12/17/2024	7.08
01/15/2024	7.23	04/15/2024	6.69	06/24/2024	7.06	09/16/2024	7.02	12/18/2024	7.16
01/16/2024	6.99	04/16/2024	6.95	06/25/2024	7.00	09/17/2024	7.04	12/19/2024	7.15
01/17/2024	7.18	04/17/2024	7.19	06/26/2024	7.10	09/18/2024	7.08	12/23/2024	7.26
01/18/2024	7.16	04/18/2024	7.15	06/28/2024	7.07	09/19/2024	7.04	12/24/2024	7.81
01/19/2024	7.12	04/19/2024	6.61	07/02/2024	7.04	09/20/2024	7.08	12/27/2024	7.32
01/22/2024	6.91	04/20/2024	6.61	07/03/2024	7.05	09/23/2024	7.08	12/30/2024	7.05
01/24/2024	7.00	04/21/2024	6.63	07/04/2024	7.03	09/24/2024	6.99	12/31/2024	7.26
01/25/2024	7.01	04/22/2024	6.60	07/08/2024	7.10	09/25/2024	7.05		
01/29/2024	7.09	04/23/2024	6.59	07/09/2024	7.02	09/26/2024	7.00		
02/01/2024	7.04	04/24/2024	6.71	07/10/2024	7.10	09/27/2024	7.03		
02/02/2024	7.08	04/25/2024	6.82	07/11/2024	7.01	10/01/2024	7.08		
02/07/2024	7.11	04/26/2024	6.51	07/12/2024	7.15	10/02/2024	7.01		
02/08/2024	7.05	04/27/2024	6.52	07/15/2024	7.10	10/10/2024	7.23		
02/12/2024	7.24	04/28/2024	6.51	07/16/2024	7.13	10/11/2024	7.13		
02/13/2024	7.07	04/29/2024	6.90	07/17/2024	7.14	10/15/2024	7.09		
02/14/2024	6.98	04/30/2024	6.60	07/18/2024	7.06	10/17/2024	7.01		
02/16/2024	6.65	05/01/2024	6.75	07/19/2024	7.15	10/18/2024	7.08		
02/20/2024	7.06	05/02/2024	6.98	07/22/2024	7.14	10/21/2024	7.04		
02/21/2024	7.00	05/03/2024	6.45	07/23/2024	7.06	10/23/2024	7.02		
02/22/2024	6.89	05/04/2024	6.93	07/24/2024	7.06	10/28/2024	7.03		
02/23/2024	6.89	05/05/2024	6.78	07/25/2024	7.08	10/29/2024	6.92		
02/27/2024	6.74	05/06/2024	6.53	07/26/2024	7.06	10/30/2024	6.94		
02/28/2024	7.49	05/07/2024	6.50	07/29/2024	7.03	10/31/2024	6.90		
02/29/2024	6.75	05/08/2024	6.80	07/30/2024	6.98	11/01/2024	6.90		
03/01/2024	7.22	05/09/2024	6.80	07/31/2024	6.98	11/04/2024	7.05		
03/04/2024	6.75	05/10/2024	6.97	08/01/2024	7.07	11/05/2024	6.99		
03/05/2024	6.74	05/11/2024	7.01	08/02/2024	6.99	11/06/2024	7.02		
03/06/2024	7.51	05/12/2024	7.04	08/06/2024	7.02	11/07/2024	6.97		
03/08/2024	6.74	05/13/2024	6.63	08/07/2024	7.13	11/08/2024	7.03		
03/12/2024	6.81	05/14/2024	6.35	08/08/2024	6.91	11/12/2024	7.09		
03/13/2024	6.65	05/15/2024	7.15	08/09/2024	7.03	11/13/2024	7.14		
03/15/2024	6.74	05/16/2024	6.33	08/12/2024	7.01	11/14/2024	7.08		
03/18/2024	7.04	05/21/2024	6.90	08/14/2024	7.19	11/15/2024	7.08		
03/19/2024	6.78	05/22/2024	7.04	08/16/2024	7.13	11/18/2024	7.14		
03/20/2024	6.81	05/24/2024	6.27	08/19/2024	7.08	11/20/2024	7.10		
03/21/2024	6.70	05/27/2024	6.35	08/20/2024	7.04	11/22/2024	7.10		
03/22/2024	6.89	05/28/2024	6.03	08/21/2024	7.01	11/25/2024	7.12		
03/25/2024	6.98	05/29/2024	6.33	08/22/2024	7.01	11/26/2024	7.09		
03/26/2024	6.64	05/30/2024	6.26	08/26/2024	7.03	11/27/2024	7.18		
03/27/2024	7.07	05/31/2024	6.39	08/27/2024	7.17	11/29/2024	7.09		
03/28/2024	6.67	06/03/2024	6.63	08/28/2024	7.04	12/02/2024	7.18		
04/02/2024	6.64	06/04/2024	6.74	08/29/2024	7.02	12/04/2024	7.10		
04/03/2024	6.91	06/05/2024	6.92	09/03/2024	7.13	12/05/2024	7.16		

Minden STP – Total Chlorine Residual Results for 2024 Comparison to Limit and Objective

Date	Total Chlorine Residual mg/L	Limit 0.02 mg/L	Objective - Non Detected Y/N
04/12/24	0.00	Y	Y
04/13/24	0.01	Y	N
04/14/24	0.00	Y	Y
04/15/24	0.00	Y	Y
04/16/24	0.01	Y	N
04/17/24	0.01	Y	N
04/18/24	0.00	Y	Y
04/19/24	0.01	Y	N
04/20/24	0.01	Y	N
04/21/24	0.00	Y	Y
04/22/24	0.00	Y	Y
04/23/24	0.00	Y	Y
04/24/24	0.01	Y	N
04/25/24	0.01	Y	N
04/26/24	0.01	Y	N
04/27/24	0.00	Y	Y
04/28/24	0.00	Y	Y
04/29/24	0.00	Y	Y
04/30/24	0.00	Y	Y
05/01/24	0.00	Y	Y
05/02/24	0.00	Y	Y
05/03/24	0.00	Y	Y
05/04/24	0.00	Y	Y
05/05/24	0.00	Y	Y
05/06/24	0.00	Y	Y
05/07/24	0.00	Y	Y
05/08/24	0.00	Y	Y
05/09/24	0.00	Y	Y
05/10/24	0.01	Y	N
05/11/24	0.01	Y	N
05/12/24	0.00	Y	Y
12/29/24	0.01	Y	N
12/30/24	0.00	Y	Y
12/31/24	0.00	Y	Y

Date (mm/dd/yy)	Total Ammonia Nitrogen (mg/L)	Field pH	Field Temp (ºC)	Un-ionized Ammonia (mg/L)
01/03/2024	<0.1	7.25	12.00	<0.001
01/10/2024	<0.1	7.23	11.60	<0.001
01/17/2024	<0.1	7.18	9.70	<0.001
01/24/2024	<0.1	7.00	10.70	<0.001
01/31/2024	<0.1	7.09	10.50	<0.001
02/07/2024	<0.1	7.11	10.70	<0.001
02/14/2024	<0.1	6.98	10.00	<0.001
02/21/2024	<0.1	7.00	10.40	<0.001
02/28/2024	<0.1	7.49	11.40	<0.001
03/06/2024	<0.1	7.51	10.80	<0.001
03/13/2024	0.10	6.65	9.10	<0.001
03/20/2024	<0.1	6.81	9.00	<0.001
03/27/2024	<0.1	7.07	10.90	<0.001
04/03/2024	<0.1	6.91	11.00	<0.001
04/10/2024	<0.1	6.63	11.60	<0.001
04/17/2024	0.10	7.19	11.30	<0.001
04/24/2024	<0.1	6.71	11.40	<0.001
05/08/2024	0.10	6.80	13.30	<0.001
05/15/2024	<0.1	7.15	14.00	<0.001
05/22/2024	0.30	7.04	14.80	<0.001
05/29/2024	0.20	6.33	14.20	<0.001
06/05/2024	<0.1	6.92	16.80	<0.001
06/12/2024	<0.1	6.71	14.10	<0.001
06/19/2024	<0.1	6.54	17.50	<0.001
06/26/2024	<0.1	7.10	16.50	<0.001
07/03/2024	<0.1	7.05	16.80	<0.001
07/10/2024	0.10	7.10	18.00	<0.001
07/17/2024	0.20	7.14	17.90	<0.001
07/24/2024	<0.1	7.06	18.00	<0.001
07/31/2024	<0.1	6.98	19.30	<0.001
08/07/2024	0.20	7.13	18.10	<0.001
08/14/2024	0.10	7.19	18.60	<0.001
08/21/2024	<0.1	7.01	17.00	<0.001
08/28/2024	<0.1	7.04	20.10	<0.001
09/04/2024	<0.1	7.05	17.40	<0.001
09/11/2024	<0.1	7.12	17.40	<0.001
09/18/2024	<0.1	7.08	18.10	<0.001
09/25/2024	<0.1	7.05	18.10	<0.001
10/02/2024	<0.1	7.01	17.50	<0.001
10/09/2024	<0.1	7.23	15.50	<0.001
10/16/2024	<0.1	7.09	15.30	<0.001
10/23/2024	<0.1	7.02	16.30	<0.001

10/30/2024	<0.1	6.94	14.90	<0.001
11/06/2024	<0.1	7.02	16.20	<0.001
11/13/2024	<0.1	7.14	13.70	<0.001
11/20/2024	<0.1	7.10	14.00	<0.001
11/27/2024	<0.1	7.18	12.30	<0.001
12/04/2024	<0.1	7.10	12.00	<0.001
12/11/2024	<0.1	7.04	12.60	<0.001
12/18/2024	<0.1	7.16	12.70	<0.001
12/24/2024	<0.1	7.81	10.60	<0.001

Ontario Clean Water Agency
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Performance Assessment Re

From 1/1/2024 to 12/31

5839 MINDEN WASTEWATER TREATMENT FACILITY 110002390

	1 / 2024	2/ 2024	3/ 2024	4/ 2024	5/ 2024	6/ 2024	7/ 2024
Flows							
Raw Flow: Total - Raw m³/d	19,853.00	19,063.00	34,448.00	35,771.00	33,946.00	24,702.00	22,571.00
Raw Flow: Avg - Raw m³/d	640.42	657.34	1,111.23	1,192.37	1,095.03	823.40	728.10
Raw Flow: Max - Raw m³/d	749.00	838.00	1,627.00	1,525.00	1,543.00	1,290.00	1,049.00
Raw Flow: Count - Raw m³/d	31.00	29.00	31.00	30.00	31.00	30.00	31.00
Eff. Flow: Total - Eff m³/d	19,853.00	19,063.00	34,448.00	35,771.00	33,946.00	24,702.00	22,571.00
Eff. Flow: Avg - Eff m³/d	640.42	657.34	1,111.23	1,192.37	1,095.03	823.40	728.10
Eff. Flow: Max - Eff m³/d	749.00	838.00	1,627.00	1,525.00	1,543.00	1,290.00	1,049.00
Eff Flow: Count - Eff m³/d	31.00	29.00	31.00	30.00	31.00	30.00	31.00
Biochemical Oxygen Demand: BOD5							
Raw: Avg BOD5 - Raw mg/L	182.00	241.00	180.00	221.00	165.00	217.00	356.00
Raw: # of samples of BOD5 - Raw mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Carbonaceous Biochemical Oxygen Demand: CBOD							
Eff: Avg cBOD5 - Final Effluent including Bypass mg/L	< 3.20	< 2.50	< 4.00	< 4.10	< 4.07	< 3.00	< 3.60
Eff.Flow : Weighted Avg cBOD5 - Final Effluent including Bypass mg/L	0.00	0.00	0.00	< 4.42	< 4.07	0.00	0.00
Eff: # of samples of cBOD5 - Final Effluent including Bypass mg/L	5.00	4.00	4.00	20.00	15.00	4.00	5.00
Loading: cBOD5 - Final Effluent including Bypass kg/d	< 2.049	< 1.643	< 4.445	< 4.889	< 4.453	< 2.470	< 2.621
Loading Flow Weighted: cBOD5 - Final Effluent including Bypass kg/d	0.000	0.000	0.000	< 5.268	< 4.457	0.000	0.000
Total Suspended Solids: TSS							
Raw: Avg TSS - Raw mg/L	232.00	294.00	313.00	323.00	202.00	261.00	600.00
Raw: # of samples of TSS - Raw mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Eff: Avg TSS - Final Effluent including Bypass mg/L	< 2.00	< 2.75	< 2.25	< 4.30	< 2.87	< 2.25	< 2.20
Eff.Flow : Weighted Avg TSS - Final Effluent including Bypass mg/L	0.00	0.00	0.00	3.84	2.89	0.00	0.00
Eff: # of samples of TSS - Final Effluent including Bypass mg/L	5.00	4.00	4.00	20.00	15.00	4.00	5.00
Loading: TSS - Final Effluent including Bypass kg/d	< 1.281	< 1.808	< 2.500	< 5.127	< 3.139	< 1.853	< 1.602
Loading Flow Weighted: TSS - Final Effluent including Bypass kg/d	0.000	0.000	0.000	4.579	3.170	0.000	0.000
Total Phosphorus: TP							

Raw: Avg TP - Raw mg/L	2.20	2.81	2.58	3.38	1.79	3.06	4.80	
Raw: # of samples of TP - Raw mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Eff: Avg TP - Final Effluent including Bypass mg/L	< 0.04	< 0.05	0.05	0.10	0.08	0.10	0.10	
Eff.Flow : Weighted Avg TP - Final Effluent including Bypass mg/L	0.00	0.00	0.00	0.10	0.08	0.00	0.00	
Eff: # of samples of TP - Final Effluent including Bypass mg/L	5.00	4.00	4.00	20.00	15.00	4.00	5.00	
Loading: TP - Final Effluent including Bypass kg/d	< 0.023	< 0.030	0.050	0.121	0.089	0.078	0.074	
Loading Flow Weighted: TP - Final Effluent including Bypass kg/d	0.000	0.000	0.000	0.123	0.089	0.000	0.000	
Nitrogen Series								
Raw: Avg TKN - Raw mg/L	23.20	28.30	23.80	25.80	17.00	26.10	36.00	
Raw: # of samples of TKN - Raw mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Eff: Avg TAN - Final Effluent including Bypass mg/L	< 0.10	< 0.10	< 0.10	< 0.11	< 0.12	0.10	< 0.12	<
Eff.Flow : Weighted Avg TAN - Final Effluent including Bypass mg/L	0.00	0.00	0.00	< 0.10	< 0.11	0.00	0.00	
Eff: # of samples of TAN - Final Effluent including Bypass mg/L	5.00	4.00	4.00	20.00	15.00	4.00	5.00	
Loading: TAN - Final Effluent including Bypass kg/d	< 0.064	< 0.066	< 0.111	< 0.125	< 0.131	0.082	< 0.087	<
Loading Flow Weighted: TAN - Final Effluent including Bypass kg/d	0.000	0.000	0.000	< 0.123	< 0.120	0.000	0.000	
Eff: Avg NO3-N - Eff mg/L	17.30	17.95	12.70	13.60	13.24	14.55	13.16	
Eff: # of samples of NO3-N - Eff mg/L	5.00	4.00	4.00	4.00	5.00	4.00	5.00	
Eff: Avg NO2-N - Eff mg/L	< 0.04	< 0.04	< 0.04	< 0.05	< 0.51	1.32	1.41	
Eff: # of samples of NO2-N - Eff mg/L	5.00	4.00	4.00	4.00	5.00	4.00	5.00	
Disinfection								
Eff: GMD E. Coli - Eff cfu/100mL	2.49	2.00	4.90	42.02	15.80	2.38	2.00	
Eff: # of samples of E. Coli - Eff cfu/100mL	5.00	4.00	4.00	4.00	6.00	4.00	5.00	

port Standard ECA

03/31/2025

L/2024

8/ 2024		9/ 2024		10/ 2024		11/ 2024		12/ 2024	<--Total-->		<--Avg-->		<--Max-->	<-Criteria->
19,793.00		17,010.00		16,543.00		16,690.00		23,152.00	283,542.00					0.00
638.48		567.00		533.65		556.33		746.84			774.70			945.00
783.00		619.00		618.00		625.00		1,341.00					1,627.00	0.00
31.00		30.00		31.00		30.00		31.00	366.00					0.00
19,793.00		17,010.00		16,543.00		16,690.00		23,152.00	283,542.00					0.00
638.48		567.00		533.65		556.33		746.84			774.70			
783.00		619.00		618.00		625.00		1,341.00					1,627.00	0.00
31.00		30.00		31.00		30.00		31.00	366.00					0.00
172.00		308.00		304.00		224.00		267.00			236.42		356.00	0.00
1.00		1.00		1.00		1.00		1.00	12.00					0.00
3.50	<	4.00	<	3.20	<	4.00	<	4.33		<	3.79	<	4.33	15.00
0.00		0.00		0.00		0.00		0.00		<	3.72	<	4.42	15.00
4.00		4.00		5.00		4.00		6.00	80.00					0.00
2.235	<	2.268	<	1.708	<	2.225	<	3.236		<	2.93	<	4.89	
0.000		0.000		0.000		0.000		0.000		<	2.88	<	5.27	
448.00		639.00		403.00		330.00		597.00			386.83		639.00	0.00
1.00		1.00		1.00		1.00		1.00	12.00					0.00
3.50	<	2.25	<	2.20	<	2.25	<	6.83		<	3.29	<	6.83	15.00
0.00		0.00		0.00		0.00		0.00			2.98		3.84	15.00
4.00		4.00		5.00		4.00		6.00	80.00					0.00
2.235	<	1.276	<	1.174	<	1.252	<	5.103		<	2.55	<	5.13	
0.000		0.000		0.000		0.000		0.000			2.30		4.58	

port Standard ECA

03/31/2025

L/2024

5.80		7.80		4.80		3.72		4.90				3.97		7.80		0.00
1.00		1.00		1.00		1.00		1.00		12.00						0.00
0.14		0.11		0.07		0.05		0.12			<	0.09	<	0.14		0.50
0.00		0.00		0.00		0.00		0.00				0.08		0.10		0.50
4.00		4.00		5.00		4.00		6.00		80.00						0.00
0.086		0.064		0.039		0.026		0.086			<	0.06	<	0.12		
0.000		0.000		0.000		0.000		0.000				0.06		0.12		

47.00		52.00		44.00		30.10		99.00				37.69		99.00		0.00
1.00		1.00		1.00		1.00		1.00		12.00						0.00
0.13	<	0.10	<	0.10	<	0.10	<	0.27			<	0.12	<	0.27		6.00
0.00		0.00		0.00		0.00		0.00			<	0.12	<	0.11		6.00
4.00		4.00		5.00		4.00		6.00		80.00						0.00
0.080	<	0.057	<	0.053	<	0.056	<	0.199			<	0.09	<	0.20		5.700
0.000		0.000		0.000		0.000		0.000			<	0.09	<	0.12		5.700
14.48		17.88		21.16		21.58		19.50				16.42		21.58		0.00
4.00		4.00		5.00		4.00		4.00		52.00						0.00
1.21		1.11		0.20	<	0.08	<	0.03			<	0.50	<	1.41		0.00
4.00		4.00		5.00		4.00		4.00		52.00						0.00

2.00		3.64		2.00		2.00		2.00								200.00
4.00		4.00		5.00		4.00		4.00		53.00						0.00

Appendix II

Work Order and Maintenance Summary

Work Order	Description	Location	Asset	Status	Work Type	Classification	Reported Date
1102565	DEFERRED, 5839, SPS 1, Pumping Station Rehabilitation	5839-SPS1-P	0000168308	CLIENT	CAP	REFURBISH/REPLACE	1/1/24 00:00:00
2091841	DEFERRED, 5839, Minden WWT, Tertiary Filter Structure Rehabilitation	5839-WWMD-P-TT-FILT	0000168280	CLIENT	CAP	REFURBISH/REPLACE	1/1/24 00:00:00
2091844	DEFERRED, 5839, Minden WWT, Alum Tank Structural Coating	5839-WWMD-P-ST	0000168297	CLIENT	CAP	REFURBISH/REPLACE	1/1/24 00:00:00
3526365	DEFERRED, 5839, Minden Wastewater Collection, Sanitary Servicing Study	5839-WCMD		APPR	CAP	REFURBISH/REPLACE	1/1/24 00:00:00
3849875	5839, Minden WWT UV Bulbs, SPARE	5839-WWMD		CLOSE	CORR	REFURBISH/REPLACE	3/18/24 09:52:27
3850985	5839, Minden WWT, Clarifier Current Switch, Replacement	5839-WWMD-P		CLOSE	CORR	REFURBISH/REPLACE	3/25/24 08:29:29
3903672	5839, Minden WWT, De-Chlorination (Bisulphite) Piping, Replacement	5839-WWMD-P-DI-CHLR	0000291244	CLOSE	CORR	REFURBISH/REPLACE	4/25/24 13:49:15
3999308	5839, SPS 2, Alarm Dialer, Install	5839-SPS2-F		CLOSE	CORR	REFURBISH/REPLACE	6/14/24 10:12:32
4001342	5839, Minden WWT, Alarm Dialer Fault	5839-WWMD-F-IT	0000158722	CLOSE	CORR	REFURBISH/REPLACE	6/24/24 13:58:47

Appendix III

Calibration Report

Franklin Empire Inc,
550 Braidwood Ave.
Peterborough ON K9J 1W1, CANADA

Tel: (705) 745-1626
Fax: (705) 745-3493

OCWA Kawartha

2024 Calibrations Minden WWTP

CALIBRATION REPORT

Report No.: OCWAK24 FIT-Clarifier

Date: 6/13/24

SITE:	Minden Hills WWTP	**SERVICE DATE:**	6/13/24
PROCESS AREA:	Effluent Flow		
INSTR. TAG:	FIT-Clarifier	**TECHNICIAN:**	M Manley
MANUFACTURER:	Milltronics		
MODEL:	Multiranger Plus	**JOB REFERENCE:**	OCWAK24
SERIAL No.:	ML 5101982		
INSTR. RANGE:	0000168343		

Input	**(Test)**
Type:	meters
Min:	0.00
Max:	0.33
V notch (Deg.)	30
Constant	1344

Output	**(Display)**	**(Process)**
Type or EGU:	m3/day	m3/hr
Min:	0.00	0.00
Max:	2000.00	83.30

			Before Calibration		**After Calibration**	
Input (m)	**Calc. Flow m3/hr**	**Display Flow m3/d**	**Output**	**%Error**	**Output**	**%Error**
4mA	0.00	0.00	1	0.00%	1	0.00%
0.2150	28.80	691.11	692	0.13%	692	0.13%
20mA		2000	2001	0.05%	2001	0.05%

Calibration Equipment			
Type:	Tape Measure	DMM	
Manufacturer:		Fluke	
Model:		Model 87	
Serial No.:		13440128	
Last Cal. Date:		Feb. 16, 2024	

Comments: Actual process conditions were used. The weir plate is facing the wrong way (180 degrees on the Y-axis). The sharp edge of the plate should be upstream of the beveled edge. The small amout of error this introduces is not known.
Span unchanged, Empty distance is 746mm, measured 75cm

AS FOUND: PASS **AS LEFT:** PASS

CERTIFIED BY:

CALIBRATION REPORT

Report No.: OCWAK24

Date: 6/13

SITE:	Minden Hills WWTP
PROCESS AREA:	NORTH SUTRO WEIR - RAW FLOW
INSTR. TAG:	FIT-N
MANUFACTURER:	Milltronics multiranger 100
MODEL:	MULTIRANGER 100
SERIAL No.:	PBD/L9260085 (METER)
OCWA CODE:	0000204794 (METER) / 0000306117 (TRANSDUCER)

SERVICE DATE:	6/13/24
TECHNICIAN:	M Manley
JOB REFERENCE:	OCWAK2

Input	**(Test)**
Type:	Head meters
Min:	0.0000
Max:	0.1335
Weir Angle	180
exponent	1
constant	2000.0000

Output	**(Process)**	**(Signal)**
Type or EGU:	mA	m3/day
Min:	4.00	0.00
Max:	20.00	2000.00

			Before Calibration		**After Calibration**	
Input (m)	**Calc flow (m3/day)**	**mA**	**Flow**	**%Error**	**Flow**	**%E**
almost zero flow			-3		-3	
Meas	Calc flow (m3/day)					
0.110	1647	17.18	1716	4.16%	1716	4.1
20 mA	2000	20.00	1998	-0.10%	1998	-0.0

Calibration Equipment			
Type:	Tape Measure	DMM	
Manufacturer:		Fluke	
Model:		Model 87	
Serial No.:		13440128	
Last Cal. Date:		Feb. 16, 2024	

Comments: Measured Target 0.48m unit read 0.476

AS FOUND: PASS **AS LEFT:** PASS

CERTIFIED BY:

North Sutro Weir

FIT-N
3/24
4

rror
6%
5%

CALIBRATION REPORT

Report No.: OCWAK24

Date: 6/13

SITE:	Minden Hills WWTP	**SERVICE DATE:**	6/13/24
PROCESS AREA:	SOUTH SUTRO WEIR RAW FLOW		
INSTR. TAG:	FIT-S	**TECHNICIAN:**	M Manley
MANUFACTURER:	Milltronics multiranger 200		
MODEL:	MULTIRANGER 200	**JOB REFERENCE:**	OCWAK2
SERIAL No.:	PBD/U4030303 (METER)		
OCWA CODE:	0000204794 (METER) / '0000192286 (TRANSDUCER)		

Input	**(Test)**
Type:	Head meters
Min:	0.0000
Max:	0.1335
Weir Angle	180
exponent	1
constant	2000.0000

Output	**(Process)**	**(Signal)**
Type or EGU:	mA	m3/day
Min:	0.00	0.00
Max:	2000.00	2000.00

			Before Calibration		**After Calibration**	
Input (m)	**Calc flow (m3/day)**	**Calc. O/P (mA)**	**Flow**	**%Error**	**Flow**	**%E**
0.000	0.000	4.00	-1		-1	
Meas	Calc flow (m3/day)					
0.083	1243	13.94	1257	1.12%	1257	1.1
20 mA	2000.000	20.00	2000	0.00%	2000	-0.0

Calibration Equipment			
Type:	Tape Measure	DMM	
Manufacturer:		Fluke	
Model:		Model 87	
Serial No.:		13440128	
Last Cal. Date:		Feb. 16, 2024	

Comments: Measured target 58.5cm, unit meas 0.583m

AS FOUND: PASS **AS LEFT:** PASS

CERTIFIED BY:

South Sutro Weir

FIT-S
3/24
4

rror
2%
5%

CALIBRATION REPORT

Report No.: OCWAK24 QIR-1

Date: 6/13/24

SITE:	Minden WWTP	**SERVICE DATE:**	6/13/24
PROCESS AREA:	E&H Videograph		
INSTR. TAG:	QIR-1	**TECHNICIAN:**	M Manley
MANUFACTURER:	E&H Videograph		
MODEL:	RSG40	**JOB REFERENCE:**	OCWAK24
SERIAL No.:	F4003A04267		
OCWA CODE:	0000204816		

Input	**(Test)**	**Output**	**(Signal)**	**(Process)**
Type:	mA	**Type or EGU:**	mA	
Min:		**Min:**	4.00	
Max:		**Max:**	20.00	

			Before Calibration		**After Calibration**	
			Display		**Display**	
FIN OUT	m3/day	0	1		1	
	0-2000	2000	2001		2001	
North in	m3/day	0	-3		-3	
	0-2000	2000	1998		1998	
South in	m3/day	0	-1		-1	
	0-2000	2000	2000		2000	

Calibration Equipment			
Type:		DMM	
Manufacturer:		Fluke	
Model:		87V	
Serial No.:		13440128	
Last Cal. Date:		Feb. 16, 2024	

Comments:

AS FOUND: PASS **AS LEFT:** PASS

CERTIFIED BY:

Appendix IV

Sludge/Biosolids Summary

A710160 SEWAGE BIOSOLIDS HAULED FROM SEWAGE TREATMENT PLANTS 2024							
DATE	BOBCAYGEON	FENELON	MINDEN	HALIBURTON	BARK LAKE	DESTINATION	ECA/
	CUBIC METRES					STORAGE/FARM AND FIELD #	NASM
12-12-2023	0.00	0.00	79.98	0.00	0.00	STORAGE TANK SHEPHERDS	A710160
12-13-2023	0.00	140.87	0.00	0.00	0.00	STORAGE TANK SHEPHERDS	A710160
12-18-2023	116.40	0.00	0.00	0.00	0.00	STORAGE TANK SHEPHERDS	A710160
12-19-2023	198.20	0.00	0.00	0.00	0.00	STORAGE TANK SHEPHERDS	A710160
12-20-2023	116.40	0.00	0.00	0.00	0.00	STORAGE TANK SHEPHERDS	A710160
12-21-2023	58.20	0.00	0.00	0.00	0.00	STORAGE TANK SHEPHERDS	A710160
DECEMBER TOTAL	**489.20**	**140.87**	**79.98**	**0.00**	**0.00**		
1-3-2024	0.00	112.70	0.00	0.00	0.00	STORAGE TANK -SHEPHERDS	A710160
1-4-2024	0.00	0.00	79.98	0.00	0.00	STORAGE TANK -SHEPHERDS	A710160
1-15-2024	103.66	0.00	0.00	0.00	0.00	STORAGE TANK -SHEPHERDS	A710160
1-16-2024	193.65	0.00	0.00	0.00	0.00	STORAGE TANK -SHEPHERDS	A710160
1-17-2024	193.65	0.00	0.00	0.00	0.00	STORAGE TANK -SHEPHERDS	A710160
1-24-2024	0.00	0.00	64.44	0.00	0.00	STORAGE TANK -SHEPHERDS	A710160
1-30-2024	0.00	159.05	0.00	0.00	0.00	STORAGE TANK -SHEPHERDS	A710160
JANUARY TOTAL	**490.96**	**271.75**	**144.42**	**0.00**	**0.00**		
2-7-2024	0.00	65.44	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
2-12-2024	242.73	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
2-13-2024	226.37	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
2-14-2024	73.65	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
2-20-2024	0.00	0.00	79.98	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
FEBRUARY TOTAL	**542.75**	**65.44**	**79.98**	**0.00**	**0.00**		
3-6-2024	0.00	207.22	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
3-12-2024	225.46	0.00	64.53	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
3-13-2024	196.36	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
3-14-2024	79.07	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
MARCH TOTAL	**500.89**	**207.22**	**64.53**	**0.00**	**0.00**		
4-4-2024	114.52	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
4-5-2024	223.58	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
4-8-2024	145.50	139.05	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
4-9-2024	145.50	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
4-10-2024	90.90	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
4-11-2024	0.00	0.00	87.30	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
4-15-2024	0.00	0.00	0.00	116.40	0.00	STORAGE TANK - SHEPHERDS	A710160
4-16-2024	0.00	0.00	0.00	116.40	0.00	STORAGE TANK - SHEPHERDS	A710160
4-17-2024	0.00	0.00	0.00	116.40	0.00	STORAGE TANK - SHEPHERDS	A710160
4-18-2024	0.00	0.00	0.00	87.30	0.00	STORAGE TANK - SHEPHERDS	A710160
4-22-2024	87.30	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
4-23-2024	370.05	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
APRIL TOTAL	**1177.35**	**139.05**	**87.30**	**436.50**	**0.00**		
5-7-2024	232.80	0.00	0.00	0.00	0.00	KETTLE F6	24165
5-8-2024	174.60	0.00	0.00	0.00	0.00	KETTLE F6	24165
5-8-2024	29.10	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
5-21-2024	0.00	174.60	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
5-22-2024	0.00	0.00	29.10	0.00	0.00	SIMS F3	60384
5-22-2024	0.00	0.00	58.20	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
5-24-2024	277.35	0.00	0.00	0.00	0.00	BEATTY HOME F6	24158
5-27-2024	116.40	0.00	0.00	0.00	0.00	BEATTY HOME F6	24158
5-27-2024	87.30	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
MAY TOTAL	**917.55**	**174.60**	**87.30**	**0.00**	**0.00**		
6-12-2024	0.00	0.00	87.30	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
6-13-2024	87.30	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
6-14-2024	416.40	0.00	0.00	0.00	0.00	SMITH F3	25040
6-17-2024	0.00	194.58	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
6-18-2024	0.00	0.00	0.00	213.54	0.00	STORAGE TANK - SHEPHERDS	A710160
6-19-2024	0.00	0.00	0.00	104.55	0.00	STORAGE TANK - SHEPHERDS	A710160
6-24-2024	0.00	145.50	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
6-27-2024	282.75	0.00	0.00	0.00	0.00	SMITH F3	25040
6-27-2024	207.30	0.00	0.00	0.00	0.00	SMITH F1	25040
JUNE TOTAL	**993.75**	**340.08**	**87.30**	**318.09**	**0.00**		

A710160 SEWAGE BIOSOLIDS HAULED FROM SEWAGE TREATMENT PLANTS 2024							
DATE	BOBCAYGEON	FENELON	MINDEN	HALIBURTON	BARK LAKE	DESTINATION	ECA/
	CUBIC METRES					STORAGE/FARM AND FIELD #	NASM
7-4-2024	**0.00**	**162.75**	**0.00**	**0.00**	**0.00**	STORAGE TANK - SHEPHERDS	A710160
7-8-2024	**0.00**	**0.00**	**87.30**	**0.00**	**0.00**	STORAGE TANK - SHEPHERDS	A710160
7-10-2024	**58.20**	**0.00**	**0.00**	**0.00**	**0.00**	STORAGE TANK - SHEPHERDS	A710160
7-11-2024	**58.20**	**0.00**	**0.00**	**0.00**	**0.00**	STORAGE TANK - SHEPHERDS	A710160
7-12-2024	**58.20**	**0.00**	**0.00**	**0.00**	**0.00**	STORAGE TANK - SHEPHERDS	A710160
7-15-2024	445.50	0.00	0.00	0.00	0.00	SMITH F2	25040
7-23-2024	0.00	116.40	0.00	0.00	0.00	TAMBLYN F3B	61442
7-23-2024	0.00	133.65	0.00	0.00	0.00	TAMBLYN F3A	61442
7-25-2023	261.90	0.00	0.00	0.00	0.00	KETTLE F1	
7-30-2024	0.00	0.00	87.30	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
7-31-2024	0.00	0.00	0.00	58.20	0.00	STORAGE TANK - SHEPHERDS	A710160
JULY TOTAL	**882.00**	**412.80**	**174.60**	**58.20**	**0.00**		
8-1-2024	0.00	145.30	0.00	0.00	0.00	TAMBLYN F3A	61442
8-8-2024	87.30	0.00	0.00	0.00	0.00	KETTLE F4	24165
8-8-2028	284.55	0.00	0.00	0.00	0.00	KETTLE F3	24165
8-13-2024	0.00	0.00	87.30	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
8-15-2024	58.20	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
8-19-2024	29.10	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
8-22-2024	292.80	0.00	0.00	0.00	0.00	KETTLE F7	24165
8-23-2024	203.70	0.00	0.00	0.00	0.00	KETTLE F7	24165
8-29-2024	0.00	0.00	87.30	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
AUGUST TOTAL	**955.65**	**145.30**	**174.60**	**0.00**	**0.00**		
9-3-2024	73.65	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
9-4-2024	0.00	0.00	0.00	29.10	0.00	STORAGE TANK - SHEPHERDS	A710160
9-5-2024	430.05	0.00	0.00	0.00	0.00	BEATTY HOME F5	24158
9-9-2024	0.00	0.00	29.10	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
9-10-2024	0.00	0.00	0.00	199.10	0.00	TAMBLYN 2B	61442
9-11-2024	0.00	120.02	0.00	0.00	0.00	TAMBLYN F2A	61442
9-11-2024	0.00	61.82	0.00	0.00	0.00	TAMBLYN F2B	61442
9-11-2024	0.00	0.00	0.00	62.72	0.00	TAMBLYN F2B	61442
9-16-2024	29.10	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
9-17-2024	29.10	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
9-18-2024	29.10	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
9-19-2024	400.95	0.00	0.00	0.00	0.00	BEATTY HOME F5	24158
9-24-2024	58.20	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
9-25-2024	0.00	0.00	87.30	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
SEPTEMBER TOTAL	**1050.15**	**181.84**	**116.40**	**290.92**	**0.00**		
10-1-2024	58.20	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
10-2-2024	236.40	0.00	0.00	0.00	0.00	KETTLE F1	24165
10-3-2024	232.80	0.00	0.00	0.00	0.00	BEATTY KETTLE F1	24165
10-8-2024	0.00	203.70	0.00	0.00	0.00	TAMBLYN 1C	61442
10-10-2024	87.30	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
10-16-2024	0.00	0.00	75.46	0.00	0.00	STORAGE TANK - SHEPHERDS	A710160
10-18-2024	261.90	0.00	0.00	0.00	0.00	SMITH F3	25040
10-21-2024	178.20	0.00	0.00	0.00	0.00	SMITH F3	25040
OCTOBER TOTAL	**1054.80**	**203.70**	**75.46**	**0.00**	**0.00**		
11-4-2024	203.70	0.00	0.00	0.00	0.00	BEATTYHOME F4	24158
11-4-2024	58.20	0.00	0.00	0.00	0.00	BEATTY KETTLE F6	24165
11-5-2024	87.30	0.00	0.00	0.00	0.00	BEATTY HOME F3	24158
11-5-2024	0.00	116.40	0.00	0.00	0.00	TAMBLYN F1C	61442
11-6-2024	0.00	44.55	0.00	0.00	0.00	TAMBLYN F1C	61442
11-6-2024	0.00	73.65	0.00	0.00	0.00	TAMBLYN F1B	61442
11-6-2024	0.00	0.00	0.00	30.90	0.00	TAMBLYN F1C	61442
11-6-2024	0.00	0.00	0.00	29.10	0.00	TAMBLYN F1B	61442
11-7-2024	0.00	0.00	0.00	149.10	0.00	TAMBLYN F1B	61442
11-8-2024	0.00	0.00	86.82	0.00	0.00	TAMBLYN F1A	61442
11-8-2024	0.00	0.00	0.00	87.30	0.00	TAMBLYN F1A	61442
11-18-2024	29.10	0.00	0.00	0.00	0.00	STORAGE TANK-SHEPHERDS	A710160
11-22-2024	432.80	0.00	0.00	0.00	0.00	KETTLE F5	24165
11-25-2024	0.00	147.30	0.00	0.00	0.00	SIMS GLENARM F2N	60384
11-26-2024	0.00	0.00	82.72	0.00	0.00	STORAGE TANK-SHEPHERDS	A710160
11-26-2024	0.00	0.00	0.00	87.30	0.00	STORAGE TANK-SHEPHERDS	A710160
11-27-2024	245.50	0.00	0.00	0.00	0.00	KETTLE F6	24165
NOVEMBER TOTAL	**1056.60**	**381.90**	**169.54**	**383.70**	**0.00**		

A710160 SEWAGE BIOSOLIDS HAULED FROM SEWAGE TREATMENT PLANTS 2024							
DATE	BOBCAYGEON	FENELON	MINDEN	HALIBURTON	BARK LAKE	DESTINATION	ECA/ NASM
	CUBIC METRES					STORAGE/FARM AND FIELD #	
2024 TOTAL	10111.65	2664.55	1341.41	1487.41	0.00		
TOTAL INPUTS	15605.02						

Ontario Clean Water Agency
Biosolids Quality Report
Solids and Nutrients

Facility: MINDEN WASTEWATER TREATMENT FACILITY
Works: 5839
Period: 01/01/2024 to 12/01/2024
Facility Name: *MINDEN WASTEWATER TREATMENT FACILITY*
Facility Owner: *Municipality: Township of Minden Hills*
Facility Classification: *Class 2 Wastewater Treatment*

Month	Total Sludge Hauled (m3)	Avg. Total Solids (mg/L)	Avg. Volatile Solids (mg/L)	Avg. Total Phosphorus (mg/L)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	TKN (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 - no T/S**	**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**		**Lab Published Month Mean**
Jan	144.420	36,850.000		975.000	199.500	3.000	3.000	2,065.000	101.250	150.000
Feb	79.980	39,700.000		960.000	299.000	3.000	3.000	2,390.000	151.000	160.000
Mar	64.530	40,400.000		820.000	398.000	3.000	4.000	2,230.000	200.500	190.000
Apr	87.300	47,200.000		1,000.000	536.000	3.000	3.000	2,870.000	269.500	200.000
May	87.300	43,500.000		1,000.000	592.000	3.000	3.000	2,460.000	297.500	170.000
Jun	87.300	34,400.000		750.000	286.000	3.000	3.000	2,060.000	144.500	120.000
Jul	174.600	30,100.000		700.000	220.500	3.000	3.000	1,325.000	111.750	91.000
Aug	174.600	30,650.000		785.000	146.500	3.000	3.000	1,575.000	74.750	93.000
Sep	203.700	23,266.667		640.000	117.567	3.000	3.000	1,416.667	60.283	90.333
Oct	75.460	33,000.000		720.000	153.000	3.000	3.000	1,350.000	78.000	74.000
Nov	169.540	29,400.000		710.000	192.500	3.000	3.000	1,610.000	97.750	89.500
Dec	81.800	21,700.000		604.000	109.000	3.000	3.000	1,220.000	56.000	86.000
Average	119.211	34,180.556		805.333	270.797	3.000	3.083	1,880.972	136.899	126.153
Total	1,430.530	410,166.667	0.000	9,664.000	3,249.567	36.000	37.000	22,571.667	1,642.783	1,513.833

SLUDGE HAULED FROM SEWAGE TREATMENT PLANTS 2018-Current						
DATE	BOBCAYGEON	FENELON	MINDEN	HALIBURTON	OCWA	DESTINATION
	CUBIC METRES	CUBIC METRES	CUBIC METRES	CUBIC METRES	CUBICMETRES	STORAGE/FARM AND FIELD #
12-11-2024	32.72	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS
12-16-2024	0.00	0.00	81.80	0.00	0.00	STORAGE TANK - SHEPHERDS
12-17-2024	61.82	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS
12-17-2024	0.00	152.74	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS
12-18-2024	165.48	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS
12-19-2024	165.48	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS
12-30-2024	77.27	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS
TOTAL	**502.77**	**152.74**	**81.80**	**0.00**	**0.00**	
1-3-2024	94.54	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS
1-7-2025	32.72	0.00	0.00	0.00	0.00	STORAGE TANK - SHEPHERDS

Ontario Clean Water Agency
Biosolids Quality Report
Metals and Criteria

Facility: MINDEN WASTEWATER TREATMENT FACILITY
Works: 5839
Period: 01/01/2024 to 12/01/2024

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	0.100	0.023	0.085	0.490	9.100	0.038	0.165	0.480	0.500	0.150	13.500
Feb	0.100	0.027	0.100	0.540	11.000	0.033	0.190	0.570	0.500	0.200	15.000
Mar	0.100	0.022	0.100	0.470	7.600	0.022	0.170	0.480	0.400	0.100	12.000
Apr	0.100	0.033	0.140	0.670	11.000	0.029	0.230	0.690	0.500	0.200	16.000
May	0.100	0.029	0.130	0.610	11.000	0.051	0.210	0.610	0.500	0.200	19.000
Jun	0.100	0.021	0.080	0.390	6.800	0.028	0.140	0.380	0.300	0.100	12.000
Jul	0.100	0.018	0.065	0.355	6.300	0.016	0.125	0.340	0.300	0.100	11.500
Aug	0.100	0.021	0.075	0.410	7.150	0.020	0.135	0.395	0.350	0.150	13.500
Sep	0.100	0.014	0.047	0.307	5.367	0.008	0.097	0.253	0.300	0.100	10.000
Oct	0.100	0.017	0.060	0.340	6.200	0.012	0.130	0.310	0.300	0.100	11.000
Nov	0.100	0.017	0.055	0.320	6.100	0.011	0.135	0.305	0.250	0.100	11.000
Dec	0.100	0.011	0.040	0.250	4.900	0.008	0.110	0.240	0.200	0.100	8.000
Average	0.100	0.021	0.081	0.429	7.710	0.023	0.153	0.421	0.367	0.133	12.708
Max. Permissible Metal Concentrations (mg/kg of Solids)	170.000	34.000	340.000	2,800.000	1,700.000	11.000	94.000	420.000	1,100.000	34.000	4,200.000
Metal Concentrations in Sludge (mg/kg)	2.926	0.613	2.381	12.560	225.559	0.669	4.478	12.320	10.727	3.901	371.800

Appendix V

Bypass & Overflow Reports

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Box 279
Bobcaygeon, ON
K0M 1A0

October 28, 2024

David Bradley, District Manager
Peterborough District Office
Ministry of Environment, Conservation and Parks
300 Water Street South, 2nd Floor, South Tower
Peterborough ON K9J 3C7

Dear David Bradley:

Re: Minden STP Q3 2024 Bypass and Overflow Event Report

Amended Environmental Compliance Approval #5475-BPYLDH Conditions 4 and 5 issued October 2, 2020, for the Minden STP require Bypass and Overflow quarterly reports be submitted to the District Manager. These reports are to be submitted no later than February 15, May 15, August 15, and November 15 each year for Events that occurred during the preceding quarter.

No Bypass or Overflow Events occurred at the Minden STP during the third quarter of 2024 – reports are attached.

Please contact me if you have any questions or comments.

Best regards,

Christine Craig
Process & Compliance Technician
Ontario Clean Water Agency
Kawartha Hub
(705) 731-9579

Attachments

cc: J. Manning, Sr. Operations Manager, OCWA Kawartha-Trent Regional Hub
N. Lamiot, Process & Compliance Technician, OCWA Kawartha Hub
M. Timmins, Director of Public Works, Township of Minden Hills
A. McCann, Safety, Process & Compliance Manager, OCWA Kawartha Hub
L. Nicholson, General Manager, OCWA Kawartha Hub
K. Lorente, Regional Manager, OCWA Kawartha Hub
C. Biswanger, Water Inspector, MECP – Peterborough District Office

Minden STP - Quarterly Bypass Report

Environmental Compliance Approval #5475-BPYLDH

Year: 2024

Q3= July, August, September

Did a Bypass occur during this quarter:

Yes☐ No ☑

Condition 4. Bypasses		Event
4.3	a. the type of the Bypass (emergency or planned)	
	b. the date and time of the beginning of the Bypass	
	c. the treatment process(es) gone through prior to the Bypass and the treatment process(es) bypassed;	
	d. the effort(s) done to maximize the flow through the downstream treatment process(es) and the reason(s) why the Bypass was not avoided.	
4.4	a. the date and time of the end of the Bypass;	
	b. the estimated or measured volume of Bypass.	
4.5	For any Bypass Event, the Owner shall collect daily sample(s) of the Final Effluent, inclusive of the Event and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples following the same protocol specified in the Monitoring and Recording condition for the regular samples. The sample(s) shall be in addition to the regular Final Effluent samples required under the monitoring and recording condition. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.	
4.6	. …The summary reports shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5) and either a statement of compliance or a summary of the non-compliance notifications submitted as required under Paragraph 1 of Condition 11. If there is no Bypass Event during a quarter, a statement of no occurrence of Bypass is deemed sufficient.	No Occurrence of Bypass.

Minden STP - Quarterly Overflow Report

Environmental Compliance Approval #5475-BPYLDH

Year: 2024

Q3 = July, August, September

Did an Overflow occur during this quarter:

Yes☐ No ☑

Condition 5. Overflow		Event
5.3	a. the type of the Overflow (emergency or planned)	
	b. the date and time of the beginning of the Overflow	
	c. the point of the Overflow from the Works, the treatment process(es) gone through prior to the Overflow, the disinfection status of the Overflow and whether the Overflow is discharged through the effluent disposal facilities or an alternate location;	
	d. the effort(s) done to maximize the flow through the downstream treatment process(es) and Bypasses and the reason(s) why the Overflow was not avoided.	
5.4	a. the date and time of the end of the Overflow;	
	b. the estimated or measured volume of Overflow.	
5.5	a. Overflow event in Sewage Treatment Plant, grab sample(s) of the Overflow, one near the beginning of the Event and one every eight (8) hours for the duration of the Event, and have them analyzed at least for CBOD5, total suspended solids, total phosphorus, total ammonia nitrogen, nitrate as N, nitrite as N, total Kjeldahl nitrogen, E. coli., except that raw sewage and primary treated effluent Overflow shall be analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen only.	
	b. at a sewage pumping station in the collection system, at least one (1) grab sample representative of the Overflow Event and have it analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen	
5.6	…The summary report shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5). If there is no Overflow Event during a quarter, a statement of no occurrence of Overflow is deemed sufficient.	No Occurrence of Overflow.

Minden STP - Quarterly Bypass Report

Environmental Compliance Approval #5475-BPYLDH

Year: 2024

Q2 = April, May and June

Did a Bypass occur during this quarter:

Yes☑ No ☐

Condition 4. Bypasses		Event
4.3	a. the type of the Bypass (emergency or planned)	SAC # 1-5OB6NA - emergency post-secondary treatment sand filter bypass due to weather
	b. the date and time of the beginning of the Bypass	Started April 12, 2024 at 08:25
	c. the treatment process(es) gone through prior to the Bypass and the treatment process(es) bypassed;	Primary, Secondary, and Disinfection
	d. the effort(s) done to maximize the flow through the downstream treatment process(es) and the reason(s) why the Bypass was not avoided.	Monitored flows and processes - bypass due to heavy rain which caused the sand filters to become hydraulically overloaded.
4.4	a. the date and time of the end of the Bypass;	Ended May 12, 2024 at 08:20
	b. the estimated or measured volume of Bypass.	31 877 m^3 estimate
4.5	For any Bypass Event, the Owner shall collect daily sample(s) of the Final Effluent, inclusive of the Event and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples following the same protocol specified in the Monitoring and Recording condition for the regular samples. The sample(s) shall be in addition to the regular Final Effluent samples required under the monitoring and recording condition. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.	Composite sample collected every 24 hours from April 12, 2024 to May 12, 2024. Operations Event Form Summary and lab reports attached.
4.6	. …The summary reports shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5) and either a statement of compliance or a summary of the non-compliance notifications submitted as required under Paragraph 1 of Condition 11. If there is no Bypass Event during a quarter, a statement of no occurrence of Bypass is deemed sufficient.	Compliant with ECA. Monthly limits met for April & May 2024. See the attached Minden STP April & May 2024 PAR.

Minden STP - Quarterly Bypass Report

Environmental Compliance Approval #5475-BPYLDH

Year: 2024

Q4= October, November, December

Did a Bypass occur during this quarter:

Yes☑ No ☐

Condition 4. Bypasses		Event
4.3	a. the type of the Bypass (emergency or planned)	SAC #1-FC7824 - emergency post-secondary treatment sand filter bypass due to weather
	b. the date and time of the beginning of the Bypass	December 29, 2024 @ 18:25
	c. the treatment process(es) gone through prior to the Bypass and the treatment process(es) bypassed;	Primary, Secondary and Disinfection
	d. the effort(s) done to maximize the flow through the downstream treatment process(es) and the reason(s) why the Bypass was not avoided.	Monitored flows and processes - bypass due to heavy rain which caused the sand filters to become hydraulically overloaded.
4.4	a. the date and time of the end of the Bypass;	January 2, 2025 @ 11:00
	b. the estimated or measured volume of Bypass.	4,322 m^3
4.5	For any Bypass Event, the Owner shall collect daily sample(s) of the Final Effluent, inclusive of the Event and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples following the same protocol specified in the Monitoring and Recording condition for the regular samples. The sample(s) shall be in addition to the regular Final Effluent samples required under the monitoring and recording condition. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.	Composite sample collected every 24 hours from December 29, 2024 to January 2, 2025. Operations Event Form Summary and lab reports attached.
4.6	. …The summary reports shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5) and either a statement of compliance or a summary of the non-compliance notifications submitted as required under Paragraph 1 of Condition 11. If there is no Bypass Event during a quarter, a statement of no occurrence of Bypass is deemed sufficient.	Compliant with ECA.

Minden STP - Quarterly Overflow Report

Environmental Compliance Approval #5475-BPYLDH

Year: 2024

Q1 = January, February and March

Did an Overflow occur during this quarter:

Yes☐ No ☑

Condition 5. Overflow		Event
5.3	a. the type of the Overflow (emergency or planned)	
	b. the date and time of the beginning of the Overflow	
	c. the point of the Overflow from the Works, the treatment process(es) gone through prior to the Overflow, the disinfection status of the Overflow and whether the Overflow is discharged through the effluent disposal facilities or an alternate location;	
	d. the effort(s) done to maximize the flow through the downstream treatment process(es) and Bypasses and the reason(s) why the Overflow was not avoided.	
5.4	a. the date and time of the end of the Overflow;	
	b. the estimated or measured volume of Overflow.	
5.5	a. Overflow event in Sewage Treatment Plant, grab sample(s) of the Overflow, one near the beginning of the Event and one every eight (8) hours for the duration of the Event, and have them analyzed at least for CBOD5, total suspended solids, total phosphorus, total ammonia nitrogen, nitrate as N, nitrite as N, total Kjeldahl nitrogen, E. coli., except that raw sewage and primary treated effluent Overflow shall be analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen only.	
	b. at a sewage pumping station in the collection system, at least one (1) grab sample representative of the Overflow Event and have it analyzed for BOD5, total suspended solids, total phosphorus and total Kjeldahl nitrogen	
5.6	…The summary report shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5). If there is no Overflow Event during a quarter, a statement of no occurrence of Overflow is deemed sufficient.	No Occurrence of Overflow.

Minden STP - Quarterly Overflow Report

Environmental Compliance Approval #5475-BPYLDH

Year: 2024

Q2 = April, May, June

Did an Overflow occur during this quarter:

Yes☐ No ☑

Condition 5. Overflow		Event
5.3	a. the type of the Overflow (emergency or planned)	
	b. the date and time of the beginning of the Overflow	
	c. the point of the Overflow from the Works, the treatment process(es) gone through prior to the Overflow, the disinfection status of the Overflow and whether the Overflow is discharged through the effluent disposal facilities or an alternate location;	
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5.6	…The summary report shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5). If there is no Overflow Event during a quarter, a statement of no occurrence of Overflow is deemed sufficient.	No Occurrence of Overflow.

Minden STP - Quarterly Overflow Report

Environmental Compliance Approval #5475-BPYLDH

Year: 2024

Q4 = October, November, December

Did an Overflow occur during this quarter:

Yes☐ No ☑

Condition 5. Overflow		Event
5.3	a. the type of the Overflow (emergency or planned)	
	b. the date and time of the beginning of the Overflow	
	c. the point of the Overflow from the Works, the treatment process(es) gone through prior to the Overflow, the disinfection status of the Overflow and whether the Overflow is discharged through the effluent disposal facilities or an alternate location;	
	d. the effort(s) done to maximize the flow through the downstream treatment process(es) and Bypasses and the reason(s) why the Overflow was not avoided.	
5.4	a. the date and time of the end of the Overflow;	
	b. the estimated or measured volume of Overflow.	
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5.6	…The summary report shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5). If there is no Overflow Event during a quarter, a statement of no occurrence of Overflow is deemed sufficient.	No Occurrence of Overflow.

Minden STP - Quarterly Bypass Report

Environmental Compliance Approval #5475-BPYLDH

Year: 2024

Q1= January, February, March

Did a Bypass occur during this quarter:

Yes☐ No ☑

Condition 4. Bypasses		Event
4.3	a. the type of the Bypass (emergency or planned)	
	b. the date and time of the beginning of the Bypass	
	c. the treatment process(es) gone through prior to the Bypass and the treatment process(es) bypassed;	
	d. the effort(s) done to maximize the flow through the downstream treatment process(es) and the reason(s) why the Bypass was not avoided.	
4.4	a. the date and time of the end of the Bypass;	
	b. the estimated or measured volume of Bypass.	
4.5	For any Bypass Event, the Owner shall collect daily sample(s) of the Final Effluent, inclusive of the Event and analyze for all effluent parameters outlined in Compliance Limits condition that require composite samples following the same protocol specified in the Monitoring and Recording condition for the regular samples. The sample(s) shall be in addition to the regular Final Effluent samples required under the monitoring and recording condition. If the Event occurs on a scheduled monitoring day, the regular sampling requirements prevail. If representative sample for the effluent parameter(s) that require grab sample cannot be obtained, they shall be collected after the Event at the earliest time when situation returns to normal.	
4.6	. …The summary reports shall contain, at a minimum, the types of information set out in Paragraphs (3), (4) and (5) and either a statement of compliance or a summary of the non-compliance notifications submitted as required under Paragraph 1 of Condition 11. If there is no Bypass Event during a quarter, a statement of no occurrence of Bypass is deemed sufficient.	No Occurrence of Bypass

Appendix VII

Minden STP 2023 Sample Schedule

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

January 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
	1 New Year's Day Stat	2	3 ☐ Weekly ☐ Monthly	4	5	6
7	8	9	10 ☐ Weekly	11	12	13
14	15	16	17 ☐ Weekly	18	19	20
21	22	23	24 ☐ Weekly	25	26	27
28	29	30	31 ☐ Weekly		Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

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Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

February 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40			1	2	3
4	5	6	7 ☐ Weekly ☐ Monthly	8	9	10
11	12	13	14 ☐ Weekly	15	16	17
18	19 Family Day Stat	20	21 ☐ Weekly	22	23	24
25	26	27	28 ☐ Weekly	29		

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

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Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

March 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40				1	2
3	4	5	6 ☐ Weekly ☐ Monthly	7	8	9
10	11	12	13 ☐ Weekly	14	15	16
17	18	19	20 ☐ Weekly	21	22	23
24	25	26	27 ☐ Weekly	28	29 Good Friday Stat	30
31						

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

April 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
	1 Easter Monday Stat	2	3 ☐ Weekly ☐ Monthly	4	5	6
7	8	9	10 ☐ Weekly	11	12	13
14	15	16	17 ☐ Weekly	18	19	20
21	22	23	24 ☐ Weekly	25	26	27
28	29	30		Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40	

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

May 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40		1 ☐ Weekly ☐ Monthly	2	3	4
5	6	7	8 ☐ Weekly	9	10	11
12	13	14	15 ☐ Weekly	16	17	18
19	20 Victoria Day Stat	21	22 ☐ Weekly	23	24	25
26	27	28	29 ☐ Weekly	30	31	

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

June 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
						1
2	3	4	5 ☐ Weekly ☐ Monthly	6	7	8
9	10	11	12 ☐ Weekly	13	14	15
16	17	18	19 ☐ Weekly	20	21	22
23	24	25	26 ☐ Weekly	27	28	29
30				Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40	

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

July 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 Canada Day Stat	2	3 ☐ Weekly ☐ Monthly	4	5	6
7	8	9	10 ☐ Weekly	11	12	13
14	15	16	17 ☐ Weekly	18	19	20
21	22	23	24 ☐ Weekly	25	26	27
28	29	30	31 ☐ Weekly	Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40	

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

August 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
	Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40		1	2	3
4	5 Civic Holiday Stat	6	7 ☐ Weekly ☐ Monthly	8	9	10
11	12	13	14 ☐ Weekly	15	16	17
18	19	20	21 ☐ Weekly	22	23	24
25	26	27	28 ☐ Weekly	29	30	31

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

September 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
1	2 Labour Day Stat	3	4 ☐ Weekly ☐ Monthly	5	6	7
8	9	10	11 ☐ Weekly	12	13	14
15	16	17	18 ☐ Weekly	19	20	21
22	23	24	25 ☐ Weekly	26	27	28
29	30 National Day for Truth & Reconciliation Stat				Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

October 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40	1	2 ☐ Weekly ☐ Monthly	3	4	5
6	7	8	9 ☐ Weekly	10	11	12
13	14 Thanksgiving Day Stat	15	16 ☐ Weekly	17	18	19
20	21	22	23 ☐ Weekly	24	25	26
27	28	29	30 ☐ Weekly	31		

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

November 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40				1	2
3	4	5	6 ☐ Weekly ☐ Monthly	7	8	9
10	11 Remembrance Day Stat	12	13 ☐ Weekly	14	15	16
17	18	19	20 ☐ Weekly	21	22	23
24	25	26	27 ☐ Weekly	28	29	30

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Sample Calendar

MINDEN WPCP – org 5839 – works # 110002390

Samples must be collected on the day indicated on Calendar. If day has to be switched (i.e. composite sampler failed), the reason must be noted in the logbook and an email sent to the ORO, PCT and Sr. Ops Manager.

Weekly: Final composite – CBOD, TSS, Total Phos, Total Ammonia Nitrogen (TAN), TKN, Nitrate, Nitrite, Un-ionized Ammonia
Final grab - E.coli
pH & temperature to be collected with final effluent composite to calculate un-ionized ammonia
Dissolved Oxygen

Monthly:Raw composite – BOD, TSS, Total Phos, TKN
Federal Wastewater Systems Effluent Regulations
Final Effluent – CBOD, TSS, Total Residual Chlorine (TRC only if bypass occurs)

Quarterly: Sludge grab – TS, Total Phos, TAN, Nitrate, E. Coli, metals scan – As, Cd, Co, Cr, Cu, Hg, K, Mo, Ni, Pb, Se, Zn & E.coli
(note: regulatory requirement is quarterly, may collect monthly for operational purposes)

DAILY ONLY DURING A BYPASS - Final Effluent: Daily DO & Daily Total Residual Chlorine

OPERATOR SIGN-OFF: _____ DATE: _____
(all collection and submission complete as per ECA, Federal Reg's etc. + any special requirements)

December 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
1	2	3	4 ☐ Weekly ☐ Monthly	5	6	7
8	9	10	11 ☐ Weekly	12	13	14
15	16	17	18 ☐ Weekly	19	20	21
22 *Please review SGS's Holiday schedule prior to sampling	23	24 ☐ Weekly	25 Christmas Day Stat	26 Boxing Day Stat	27	28
29	30	31			Sample Collection Time Frames (Days)	Weekly >5 & <10 Monthly >20 & <40