Coboconk Sewage Lagoons

Works # 120002353

Annual Wastewater Performance Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2023

Issued: March 28, 2024

Revision: 0

Operating Authorities:

2023 Performance Report for Coboconk Sewage Lagoons

The Coboconk Sewage Lagoons, unless noted within this report, complies with all requirements of the regulating authorities and operates under:

- Environmental Compliance Approval (ECA) #9527-AHVRDY issued March 17, 2017
- Environmental Compliance Approval (ECA) No. 141-W601 issued June 20, 2023

The Coboconk Sewage Lagoons is a dual lagoon system with continuous phosphorus removal using aluminum sulphate, and seasonal effluent discharges. The discharge window in the spring is April 1 to May 31 and in the fall is November 1 to December 31.

The Coboconk Sewage Lagoons operate under Amended Environmental Compliance Approval (ECA) #9527-AHVRDY issued March 17, 2017. Condition 11 (5) Reporting of the ECA requires the following:

The Owner shall prepare and submit to the Water Supervisor a performance report, on an annual basis, within ninety (90) days following the end of the period being reported upon. The first such report shall cover the first annual period following the commencement of operation of the Works and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7, including an overview of the success and adequacy of the Works;
(b) a summary and interpretation of all effluent plume monitoring data and effluent discharge impact assessment to Gull River
(c) tabulation of calculated un-ionized ammonia concentrations in final effluent, based on Total Ammonia Nitrogen concentrations, temperature and pH of final effluent;
(d) tabulation of daily flow rates and monthly volumes including average daily flows for discharge periods reported;
(e) a summary of all Bypass, spill or abnormal discharge events;
(f) an overview of the sludge disposal program, including tabulation of quantity and quality of sludge and the disposal areas used for each sludge source during the reporting period, together with an outline of the proposed sludge handling method and disposal areas to be utilized over the next reporting period;
(g) a description of any operating problems encountered and corrective actions taken;
(h) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6
(i) a summary of any complaints received during the reporting period and any steps taken to address the complaints;
(j) a copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification;

(k) a report summarizing all modifications completed as a result of Schedule B, Section 3; and
(l) any other information the Water Supervisor may require from time to time.

The Environmental Compliance Approval Number 141-W601 for the City of Kawartha Lakes Wastewater Collection System, including the Coboconk Sewage Collection System, stipulates that the Owner shall prepare an annual performance report for the Authorized System that includes:

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. 9527- AHVRDY

During the period of 2023, the Ontario Clean Water Agency (OCWA) operated the Coboconk Sewage Lagoons on behalf of the Corporation of the City of Kawartha Lakes. 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.

This report will show that the requirements of the facility ECA including effluent monitoring, effluent plume monitoring and reporting requirements were consistently met and that effluent quality was consistently within ECA requirements.

(a) Attached as **Appendix I** is the Performance Assessment Report (PAR) and as **Appendix II** is the Lagoon Discharge Report. These reports summarize flows and monitoring data for 2023. During the reporting period there was two instances where the effluent quality did not meet the Effluent Limits set in the ECA. During the March 2023 spring discharge there was an exceedance in the daily limit of Hydrogen Sulphide. A sample result of 0.12 mg/L of Hydrogen Sulphide was reported. The monthly Geometric Mean Density for E. Coli for March 2023 exceeded the limit of 200 organisms/100mL with results of 316 cfu/100mL. Some factors impacted the effluent quality due to having an early discharge where relief was requested, see attached **Appendix V**. All other effluent quality was below the Effluent Limits set in the ECA. These results are indicative of the facility's ability to adequately treat the sewage it receives for the remainder of the discharge season. The following table summarizes the effluent parameters with limits and 2023 effluent results for each discharge.

Table 1: Coboconk Sewage Lagoons – Effluent Compliance Limits – 2023 Discharges

Effluent Parameter (Column 1)	Concentration (mg/L unless otherwise indicated) (Column 2)	Concentration (mg/L)	Compliant (Y/N)	Waste Loading (Kg/d unless otherwise indicated) (Column 3)	Waste Loading (Kg/d)	Compliant (Y/N)
Spring March 29 - 31						
CBOD5	25.0 (average per discharge)	4.0	Y	231.0	25.5	Y
Total Suspended Solids	25.0 (average per discharge)	4.0	Y	231.0	25.5	Y
Total Phosphorus	0.5 (average per discharge)	0.04	Y	4.62	0.25	Y
Total Ammonia Nitrogen Spring (April 1 – May 31)	15.0 (daily limit)	5.8 5.3	Y Y	139.0	30.5 27.4	Y Y
Hydrogen Sulphide	0.1 (daily limit)	0.12* 0.09	N Y	0.92	0.63 0.46	Y Y
pH	6.0 to 9.5 at all times	7.3 7.3	Y Y	-	-	-
Spring April 24 - 27						
CBOD5	25.0 (average per discharge)	2.5	Y	231.0	19.5	Y
Total Suspended Solids	25.0 (average per discharge)	2.0	Y	231.0	15.6	Y

Effluent Parameter (Column 1)	Concentration (mg/L unless otherwise indicated) (Column 2)	Concentration (mg/L)	Compliant (Y/N)	Waste Loading (Kg/d unless otherwise indicated) (Column 3)	Waste Loading (Kg/d)	Compliant (Y/N)
Total Phosphorus	0.5 (average per discharge)	<0.03	Y	4.62	<0.23	Y
Total Ammonia Nitrogen Spring (April 1 – May 31)	15.0 (daily limit)	4.3 4.3	Y Y	139.0	26.9 34.0	Y Y
Hydrogen Sulphide	0.1 (daily limit)	<0.02 <0.02	Y Y	0.92	0.13 0.16	Y Y
pH	6.0 to 9.5 at all times	7.6 8.3	Y Y	-	-	-
Spring May 8 – 11						
CBOD5	25.0 (average per discharge)	2.5	Y	231.0	14.3	Y
Total Suspended Solids	25.0 (average per discharge)	3.0	Y	231.0	<17.1	Y
Total Phosphorus	0.5 (average per discharge)	<0.03	Y	4.62	<0.17	Y
Total Ammonia Nitrogen Spring (April 1 – May 31)	15.0 (daily limit)	4.8 4.0	Y Y	139.0	27.6 17.0	Y Y
Hydrogen Sulphide	0.1 (daily limit)	<0.02 <0.02	Y Y	0.92	0.12 0.09	Y Y
pH	6.0 to 9.5 at all times	8.1 7.7	Y Y	-	-	-

Effluent Parameter (Column 1)	Concentration (mg/L unless otherwise indicated) (Column 2)	Concentration (mg/L)	Compliant (Y/N)	Waste Loading (Kg/d unless otherwise indicated) (Column 3)	Waste Loading (Kg/d)	Compliant (Y/N)
Spring May 16 – 18						
CBOD5	25.0 (average per discharge)	3.0	Y	231.0	18.8	Y
Total Suspended Solids	25.0 (average per discharge)	6.5	Y	231.0	40.7	Y
Total Phosphorus	0.5 (average per discharge)	0.04	Y	4.62	0.25	Y
Total Ammonia Nitrogen Spring (April 1 – May 31)	15.0 (daily limit)	4.1 0.05	Y Y	139.0	23.4 2.4	Y Y
Hydrogen Sulphide	0.1 (daily limit)	<0.02 <0.02	Y Y	0.92	0.11 0.10	Y Y
pH	6.0 to 9.5 at all times	7.7 8.4	Y Y	-	-	-
Fall November 16 – 21						
CBOD5	25.0 (average per discharge)	<2.7	Y	231.0	<18.6	Y
Total Suspended Solids	25.0 (average per discharge)	5.7	Y	231.0	39.5	Y
Total Phosphorous	0.5 (average per discharge)	0.06	Y	4.62	0.44	Y

Effluent Parameter (Column 1)	Concentration (mg/L unless otherwise indicated) (Column 2)	Concentration (mg/L)	Compliant (Y/N)	Waste Loading (Kg/d unless otherwise indicated) (Column 3)	Waste Loading (Kg/d)	Compliant (Y/N)
Total Ammonia Nitrogen Fall (Nov 1 to Dec 31)	8.0 (daily limit)	2.9 3.1 3.3	Y Y Y	74.0	13.4 26.6 9.9	Y Y Y
Hydrogen Sulphide	0.1 (daily limit)	<0.02 <0.02 <0.02	Y Y Y	0.92	0.09 0.17 0.06	Y Y Y
pH	6.0 to 9.5 at all times	8.1 8.1 8.4	Y Y Y	-	-	-

*The Water Supervisor was notified of the exceedance noted in the above table. See attached **Appendix V**.

Note:
For the purposes of determining compliance with and enforcing subsection (1):
(a) The Seasonal Average Concentration of CBOD5, Total Suspended Solids and Phosphorus named in Column 1 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of subsection (1).
(b) The Seasonal Average Loading of CBOD5, Total Suspended Solids and Phosphorus named in Column 1 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of subsection (1).
(c) The Daily Concentration of Total Ammonia Nitrogen and Hydrogen Sulphide named in Column 1 of subsection (1) shall not exceed the corresponding maximum concentration set out in Column 2 of subsection (1).
(d) The Daily Loading of Total Ammonia Nitrogen and Hydrogen Sulphide named in Column 1 of subsection(1) shall not exceed the corresponding maximum waste loading set out in Column 3 of subsection (1).
(e) The pH of the effluent shall be maintained within the limits outlined in subsection (1), at all times.

The ECA requires one grab sample to be collected on the first day of a discharge, every third calendar day of the discharge and on the last day of the discharge. The discharge windows are April 1 to May 31 which is the Spring Discharge, and November 1 to

December 31 which is the Fall Discharge. Each window allows a maximum period of 14 days at a discharge flow rate not exceeding 9,245m^3/day.

The results in Table 1 show that the effluent concentrations and the waste loadings of $CBOD_5$, Total Suspended Solids, Total Phosphorus, Total Ammonia Nitrogen and Hydrogen Sulphide were in compliance with the ECA, with the exception of one result for Hydrogen Suphide in the Spring Discharge between March 29 – 31, 2023. The pH of the effluent was maintained within the limits and compliant at all times.

Additionally, ECA Effluent Limits, (3) states *"...the monthly Geometric Mean Density of E. Coli does not exceed 200 organisms per 100 milliliters of effluent discharged..."*

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.

Table 2 provides monthly geometric mean density values of E. Coli in the Coboconk Lagoon effluent for each month that a discharge occurred in 2023.

Table 2: Coboconk Sewage Lagoon – Effluent E. coli Results for 2023 (org/100mL)

Seasonal Discharge Month	March	April	May	November
Monthly Geometric Mean Density of	316	10.58	6.93	4.82
Compliant with Limit of 200 org/100 mL (Y/N)	N*	Y	Y	Y

*The Water Supervisor was notified of the exceedance noted in the above table. See attached **Appendix V**.

Total Kjeldhal Nitrogen (TKN) was also sampled in the effluent and results ranged from 6.5 mg/L- 8.8 mg/L in March, 4.9 – 5.4mg/L in April, 0.7 – 4.3 mg/L in May, during the spring discharge periods and 3.6 – 4.3 mg/L during the fall discharge period.

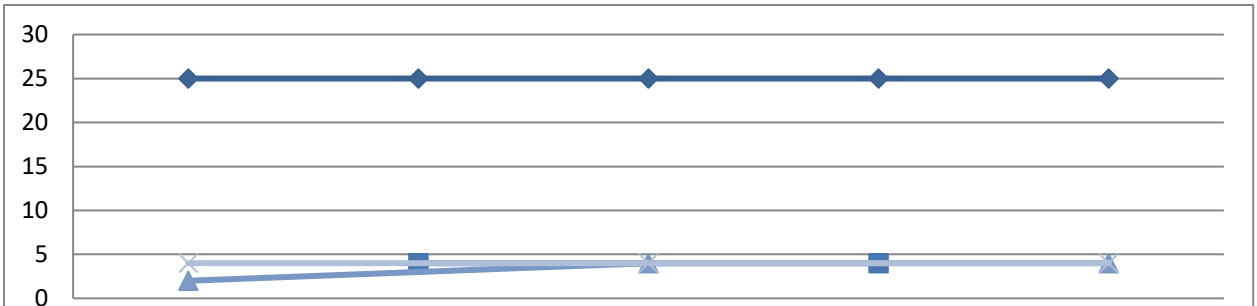
(b) An Effluent Plume Monitoring Program is conducted during each seasonal discharge period to assess the dilution effect of the sewage effluent discharged to the Gull River. Samples are collected from the North Bridge and Dam Centre Sluice and analyzed for CBOD5, Total Suspended Solids (TSS), Total Phosphorus (TP), Total Ammonia Nitrogen (TAN), Total Kjeldahl Nitrogen (TKN), Hydrogen Sulphide, pH and Temperature. The ECA requires a grab sample be collected one day prior to the seasonal effluent discharge period, every other day during the effluent discharge period, and one day following the end of the seasonal discharge period.

Spring discharges occurred March 29 to 31, 2023; April 24 to 27, 2023; May 8 to 11, 2023 and May 16 to 18, 2023. A fall discharge occurred November 16 to 21, 2023. Results for the effluent, North Bridge and Centre Sluice Dam are presented in the following graphs and tables for each Effluent Plume Monitoring parameter.

Spring Discharge – March 29 to 31, 2023

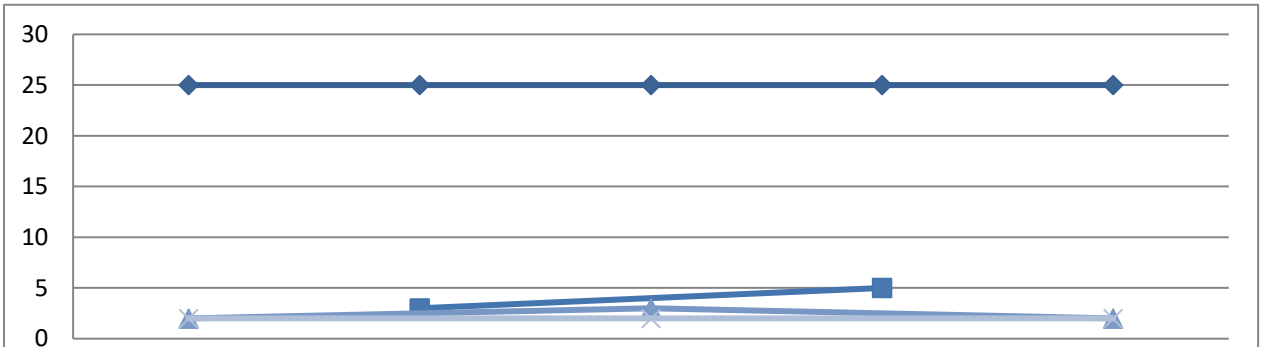
Note: This discharge is outside the spring discharge window. Relief was requested due to the high lagoon levels as a result of large amounts of snow and rainfall accumulation having added to regular volumes along with a forecasted rainfall event and sludge was planned to be removed in 2022 but the contractor rescheduled until 2023. The local Water Compliance Supervisor was contacted about this request on March 28, 2023. Relief was granted.

CBOD5



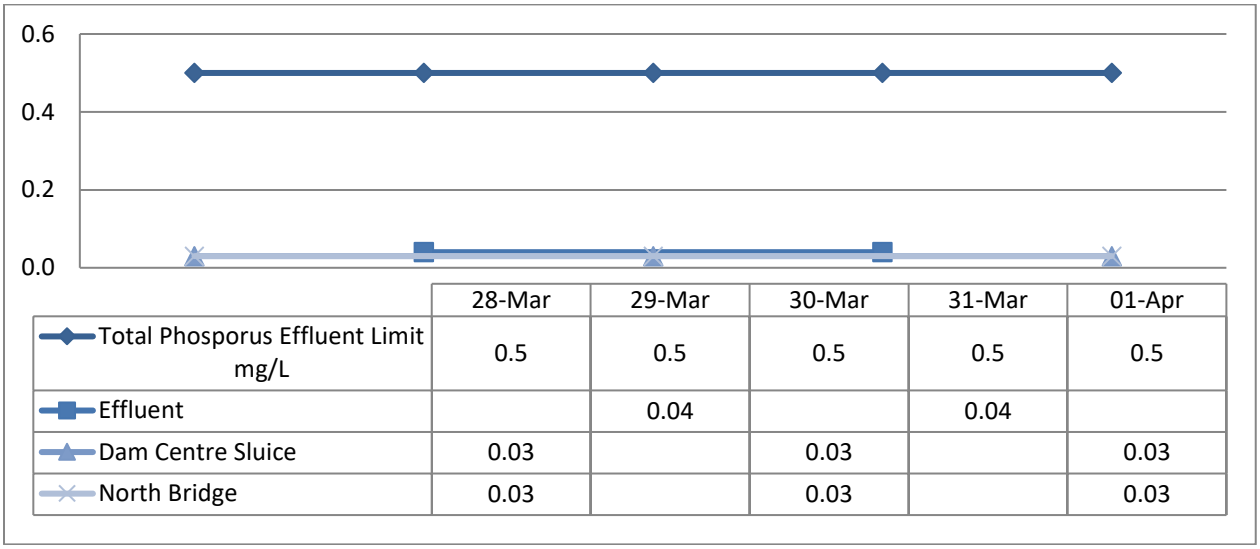
	28-Mar	29-Mar	30-Mar	31-Mar	01-Apr
CBOD5 Effluent Limit mg/L	25	25	25	25	25
Effluent		4		4	
Dam Centre Sluice	2		4		4
North Bridge	4		4		4

Total Suspended Solids



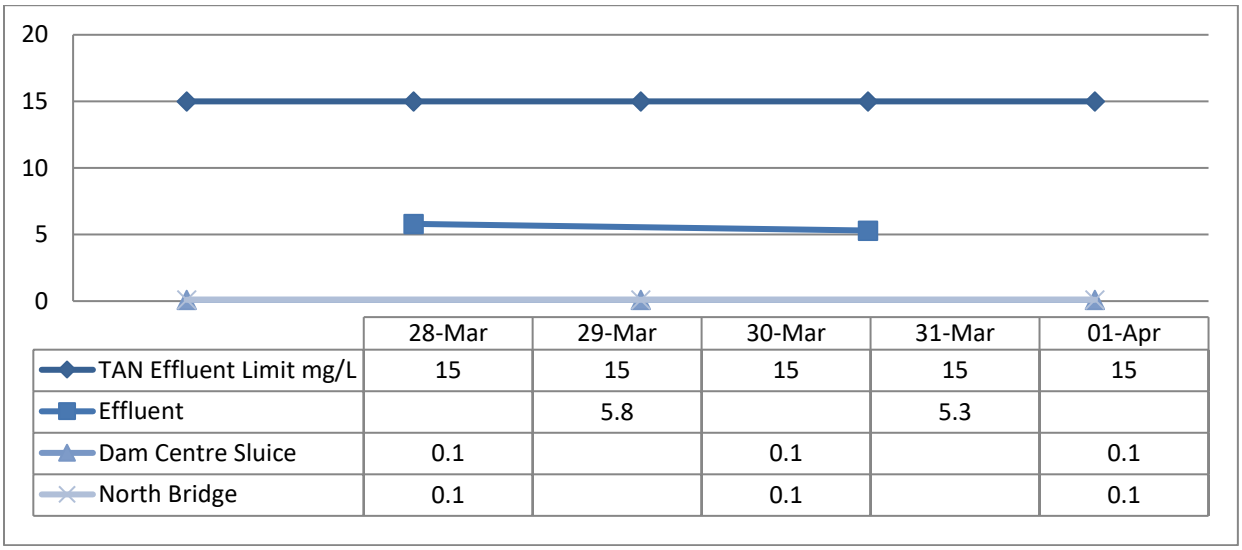
	28-Mar	29-Mar	30-Mar	31-Mar	01-Apr
TSS Effluent Limit mg/L	25	25	25	25	25
Effluent		3		5	
Dam Centre Sluice	2		3		2
North Bridge	2		2		2

Total Phosphorus



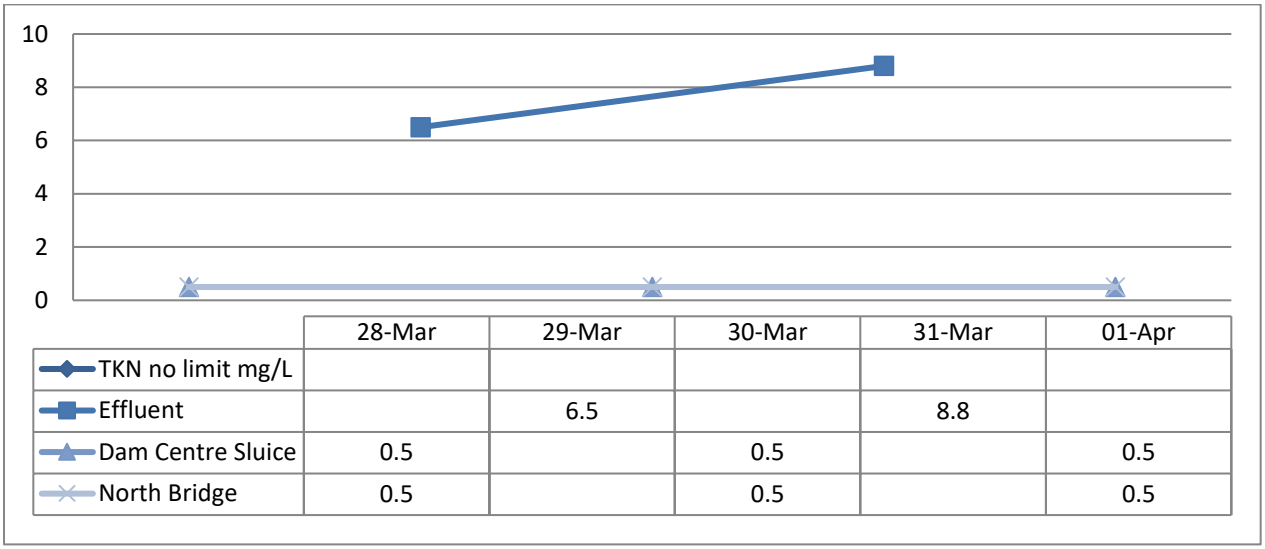
	28-Mar	29-Mar	30-Mar	31-Mar	01-Apr
Total Phosporus Effluent Limit mg/L	0.5	0.5	0.5	0.5	0.5
Effluent		0.04		0.04	
Dam Centre Sluice	0.03		0.03		0.03
North Bridge	0.03		0.03		0.03

Total Ammonia Nitrogen



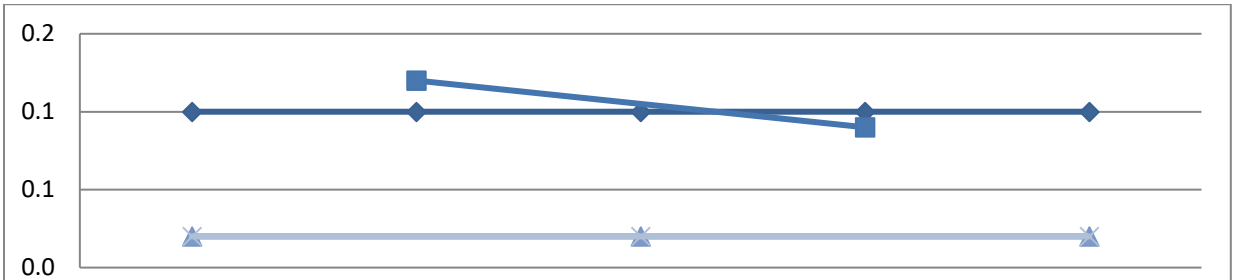
	28-Mar	29-Mar	30-Mar	31-Mar	01-Apr
TAN Effluent Limit mg/L	15	15	15	15	15
Effluent		5.8		5.3	
Dam Centre Sluice	0.1		0.1		0.1
North Bridge	0.1		0.1		0.1

Total Kjeldahl Nitrogen



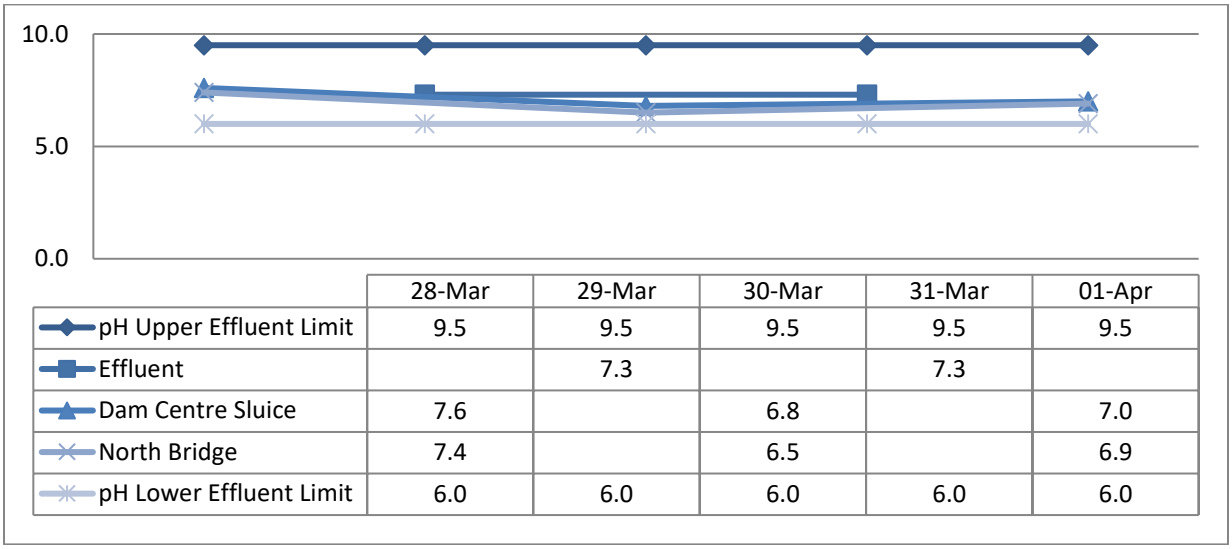
	28-Mar	29-Mar	30-Mar	31-Mar	01-Apr
TKN no limit mg/L					
Effluent		6.5		8.8	
Dam Centre Sluice	0.5		0.5		0.5
North Bridge	0.5		0.5		0.5

Hydrogen Sulphide



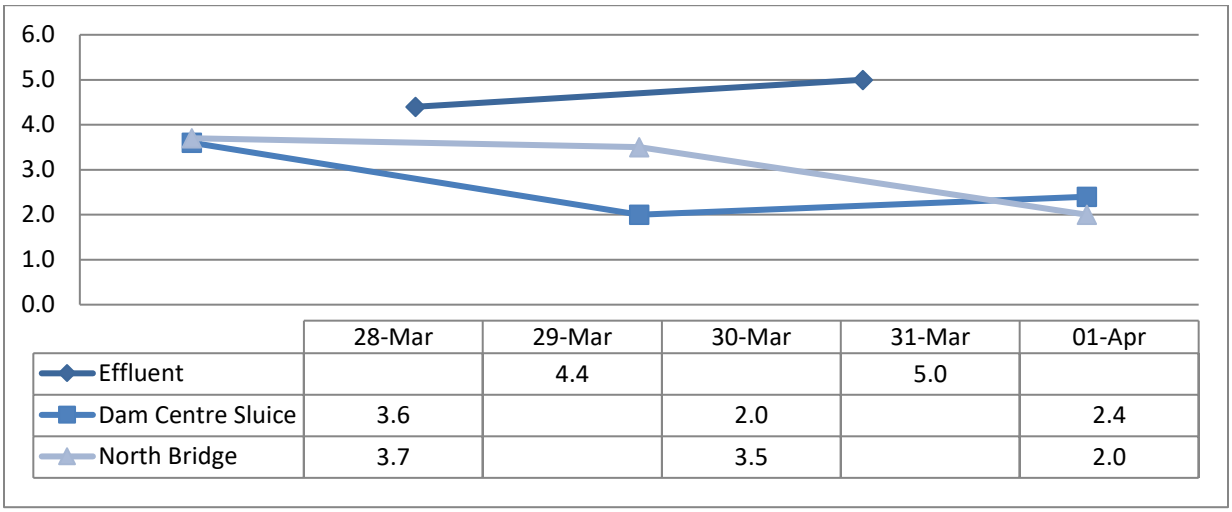
	28-Mar	29-Mar	30-Mar	31-Mar	01-Apr
Hydrogen Sulphide Effluent Limit mg/L	0.1	0.1	0.1	0.1	0.1
Effluent		0.12		0.09	
Dam Centre Sluice	0.02		0.02		0.02
North Bridge	0.02		0.02		0.02

pH



	28-Mar	29-Mar	30-Mar	31-Mar	01-Apr
pH Upper Effluent Limit	9.5	9.5	9.5	9.5	9.5
Effluent		7.3		7.3	
Dam Centre Sluice	7.6		6.8		7.0
North Bridge	7.4		6.5		6.9
pH Lower Effluent Limit	6.0	6.0	6.0	6.0	6.0

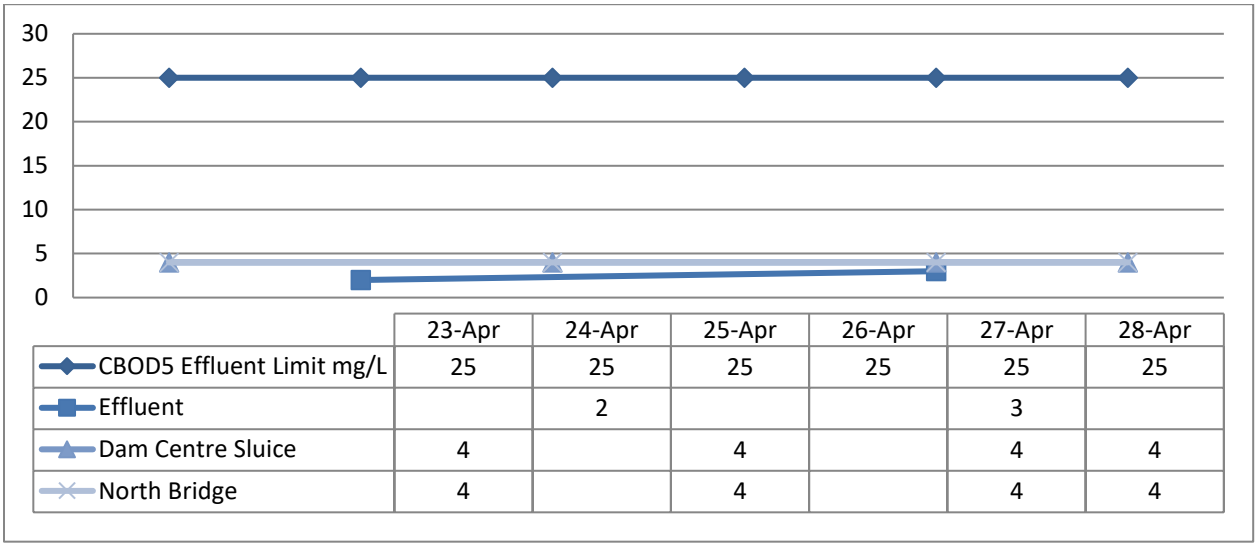
Temperature



	28-Mar	29-Mar	30-Mar	31-Mar	01-Apr
Effluent		4.4		5.0	
Dam Centre Sluice	3.6		2.0		2.4
North Bridge	3.7		3.5		2.0

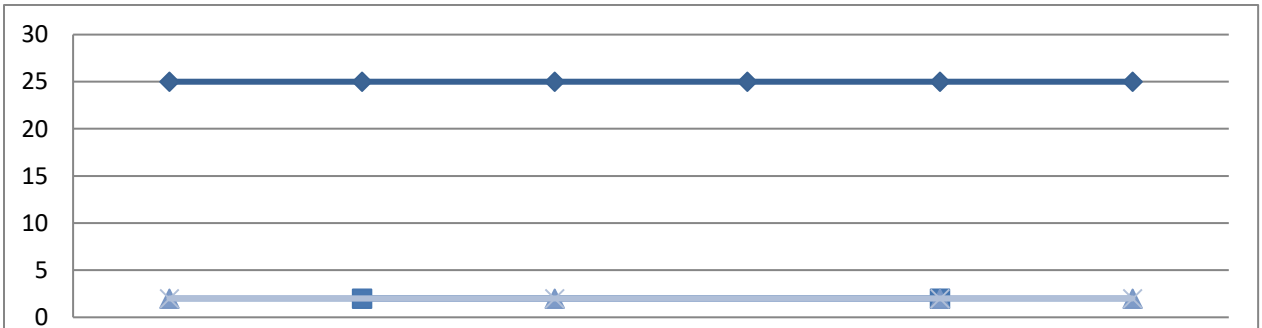
Spring Discharge – April 24 to 27, 2023

CBOD5



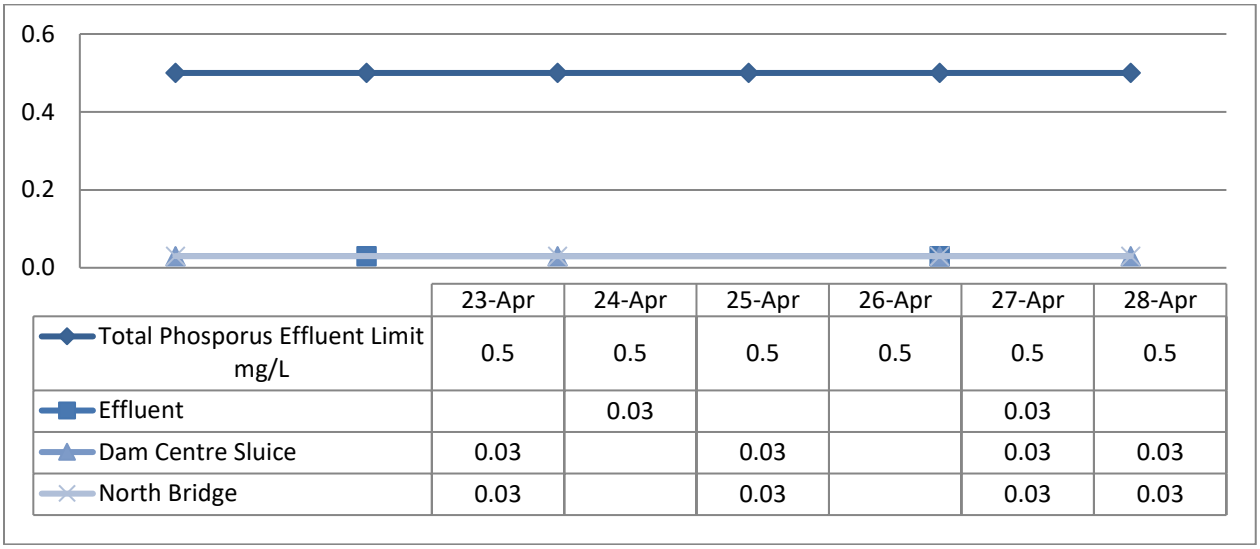
	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
CBOD5 Effluent Limit mg/L	25	25	25	25	25	25
Effluent		2			3	
Dam Centre Sluice	4		4		4	4
North Bridge	4		4		4	4

Total Suspended Solids



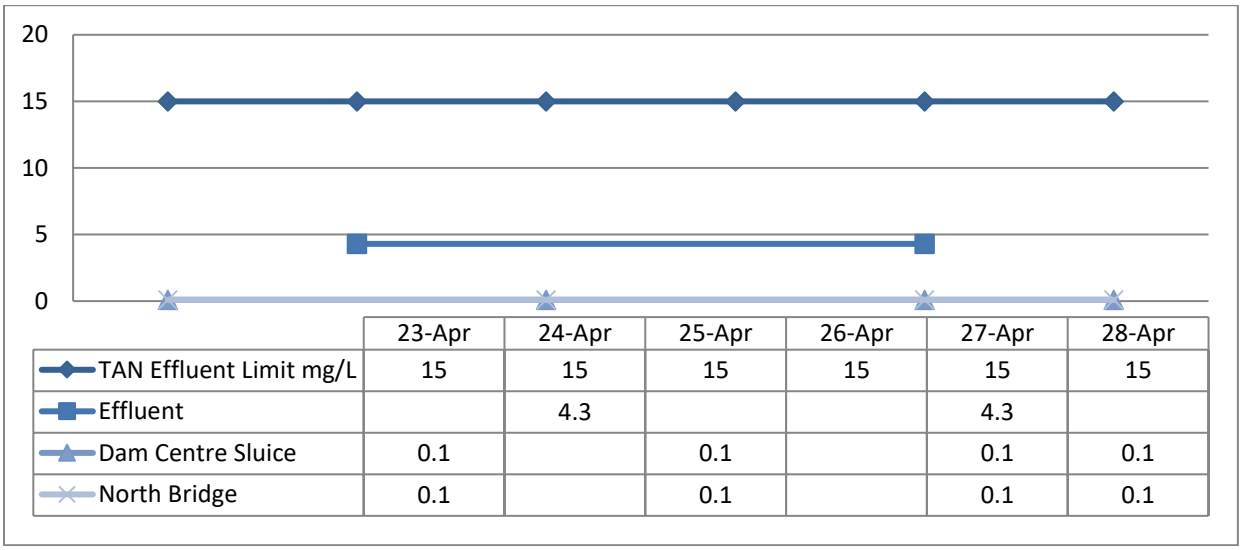
	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
TSS Effluent Limit mg/L	25	25	25	25	25	25
Effluent		2			2	
Dam Centre Sluice	2		2		2	2
North Bridge	2		2		2	2

Total Phosphorus



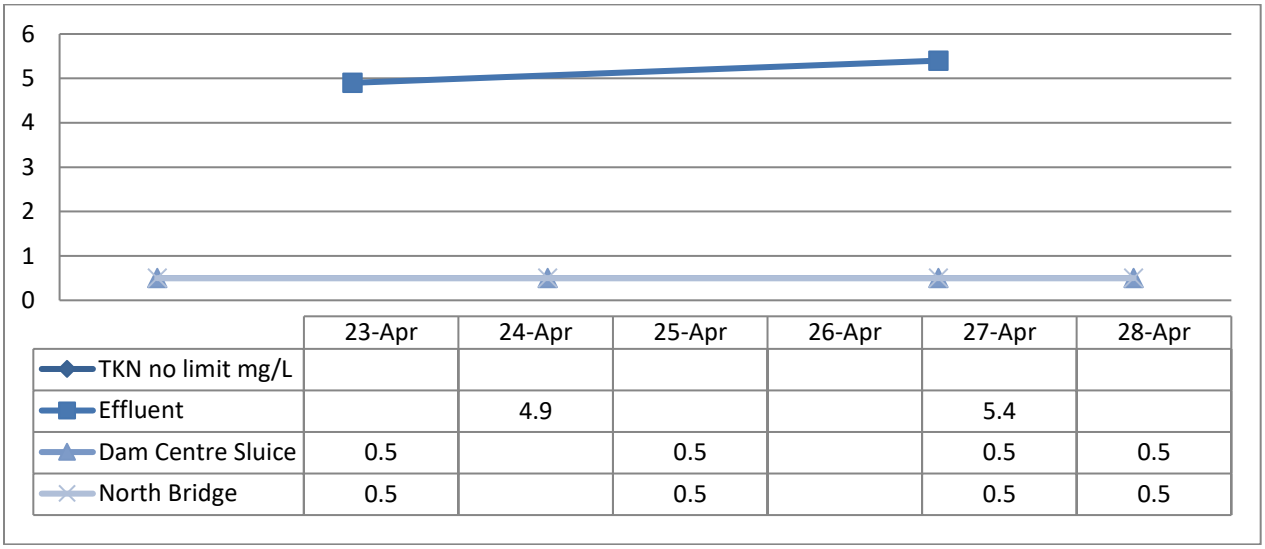
	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
Total Phosporus Effluent Limit mg/L	0.5	0.5	0.5	0.5	0.5	0.5
Effluent		0.03			0.03	
Dam Centre Sluice	0.03		0.03		0.03	0.03
North Bridge	0.03		0.03		0.03	0.03

Total Ammonia Nitrogen



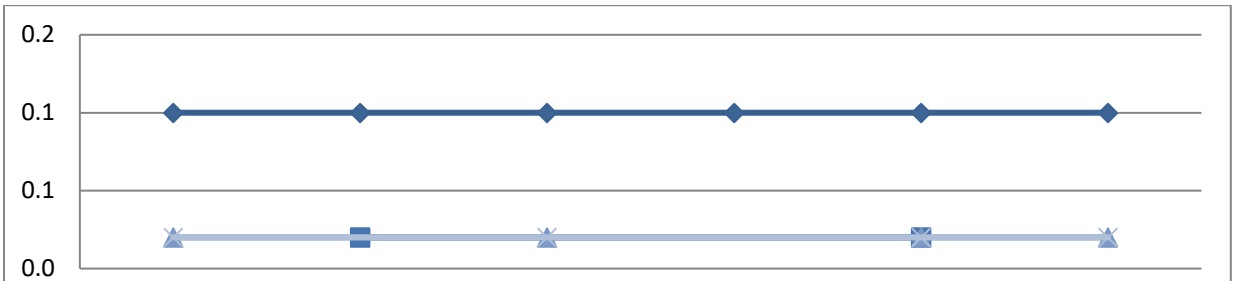
	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
TAN Effluent Limit mg/L	15	15	15	15	15	15
Effluent		4.3			4.3	
Dam Centre Sluice	0.1		0.1		0.1	0.1
North Bridge	0.1		0.1		0.1	0.1

Total Kjeldahl Nitrogen



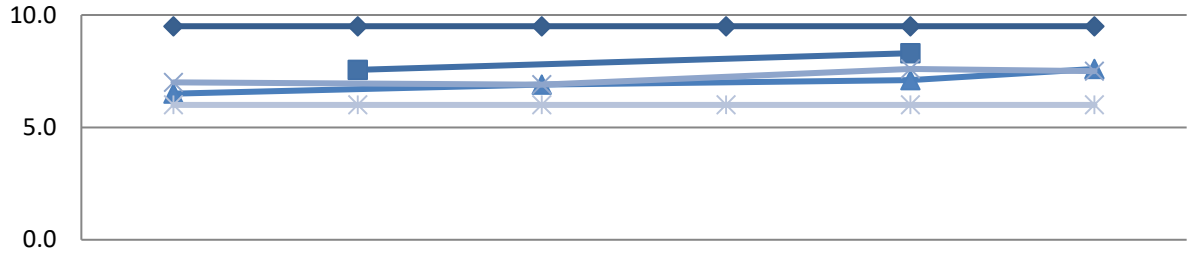
	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
TKN no limit mg/L						
Effluent		4.9			5.4	
Dam Centre Sluice	0.5		0.5		0.5	0.5
North Bridge	0.5		0.5		0.5	0.5

Hydrogen Sulphide



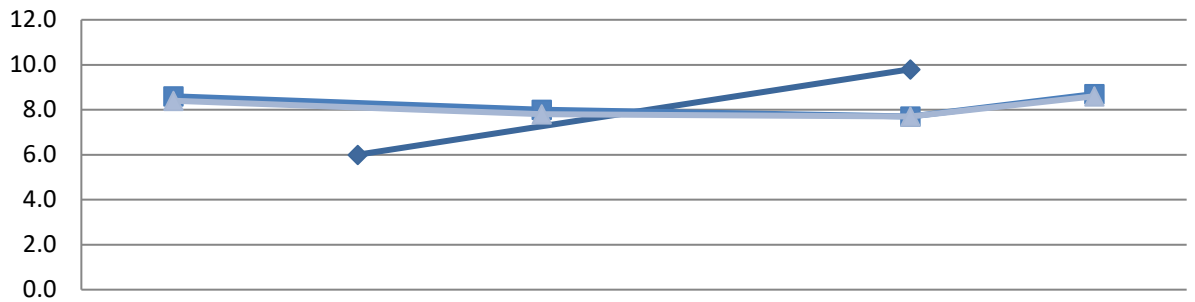
	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
Hydrogen Sulphide Effluent Limit mg/L	0.1	0.1	0.1	0.1	0.1	0.1
Effluent		0.02			0.02	
Dam Centre Sluice	0.02		0.02		0.02	0.02
North Bridge	0.02		0.02		0.02	0.02

pH



	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
pH Upper Effluent Limit	9.5	9.5	9.5	9.5	9.5	9.5
Effluent		7.6			8.3	
Dam Centre Sluice	6.5		6.9		7.1	7.6
North Bridge	7.0		6.9		7.6	7.5
pH Lower Effluent Limit	6.0	6.0	6.0	6.0	6.0	6.0

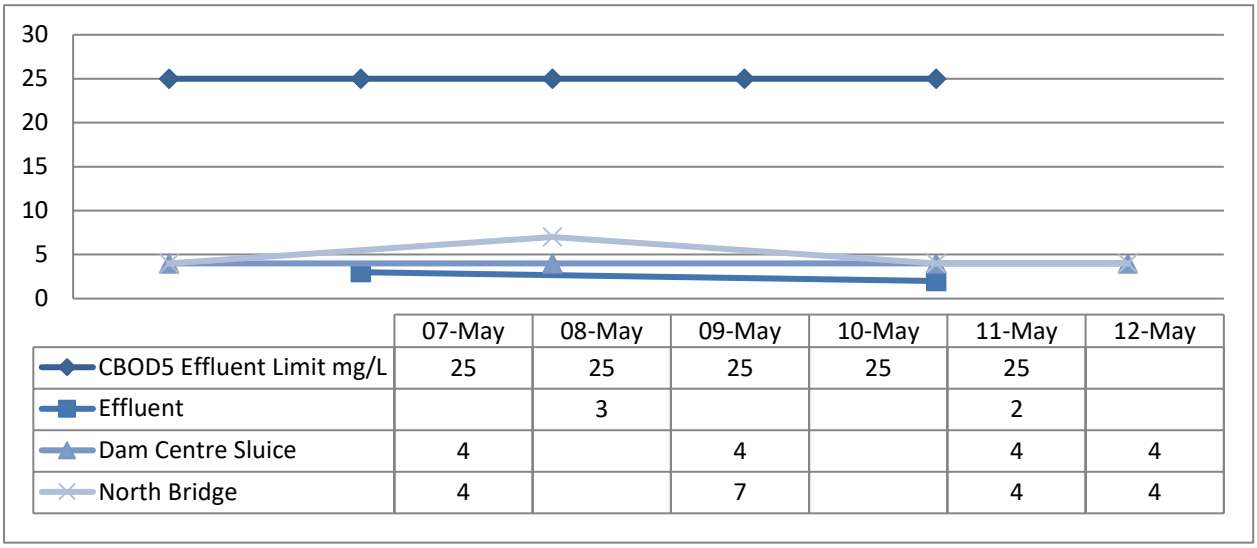
Temperature



	23-Apr	24-Apr	25-Apr	26-Apr	27-Apr	28-Apr
Effluent		6.0			9.8	
Dam Centre Sluice	8.6		8.0		7.7	8.7
North Bridge	8.4		7.8		7.7	8.6

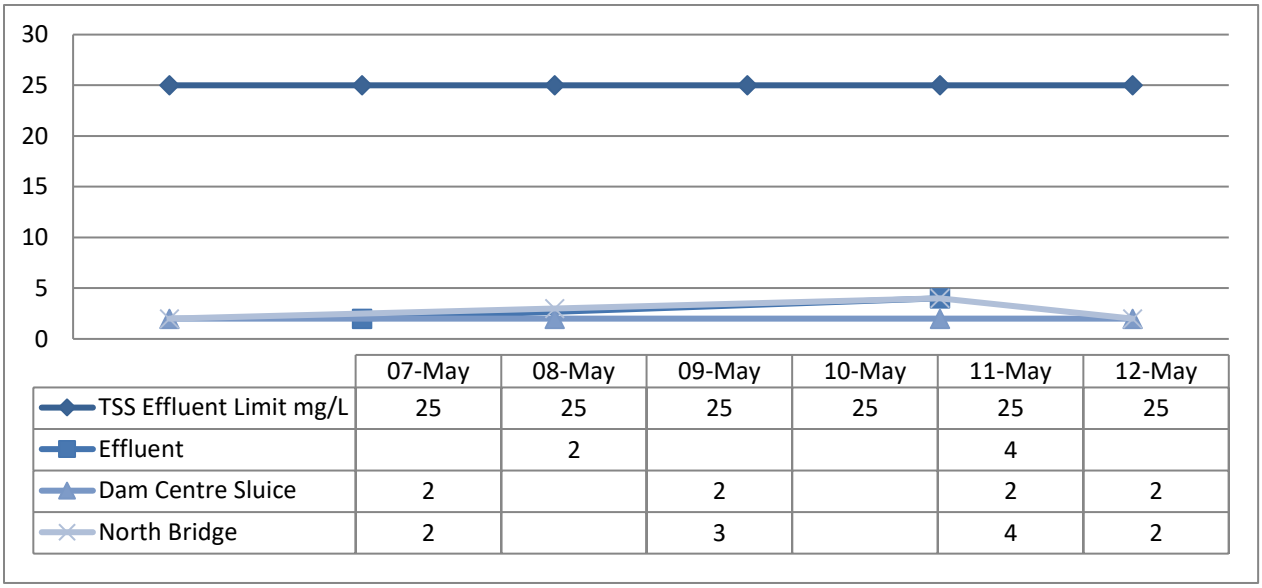
Spring Discharge – May 8 to 11, 2023

CBOD5



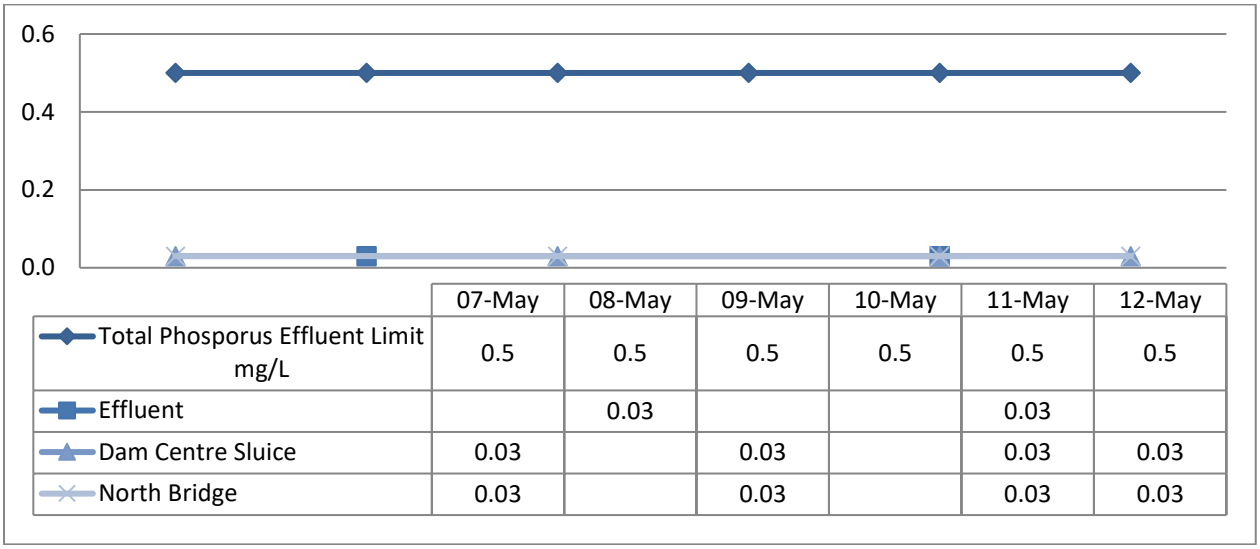
	07-May	08-May	09-May	10-May	11-May	12-May
CBOD5 Effluent Limit mg/L	25	25	25	25	25	
Effluent		3			2	
Dam Centre Sluice	4		4		4	4
North Bridge	4		7		4	4

Total Suspended Solids



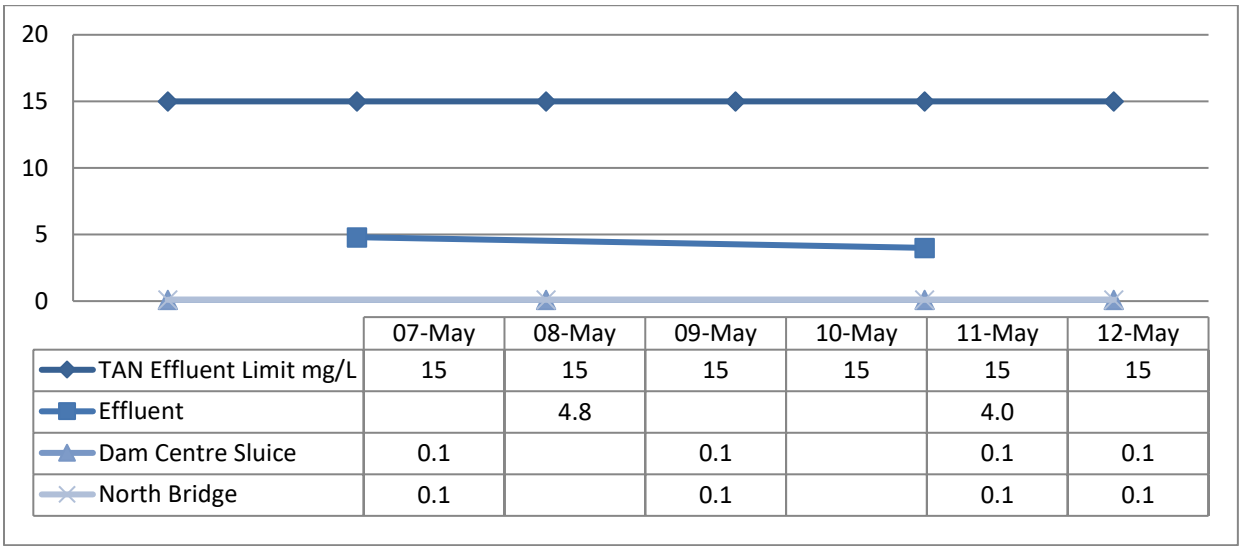
	07-May	08-May	09-May	10-May	11-May	12-May
TSS Effluent Limit mg/L	25	25	25	25	25	25
Effluent		2			4	
Dam Centre Sluice	2		2		2	2
North Bridge	2		3		4	2

Total Phosphorus



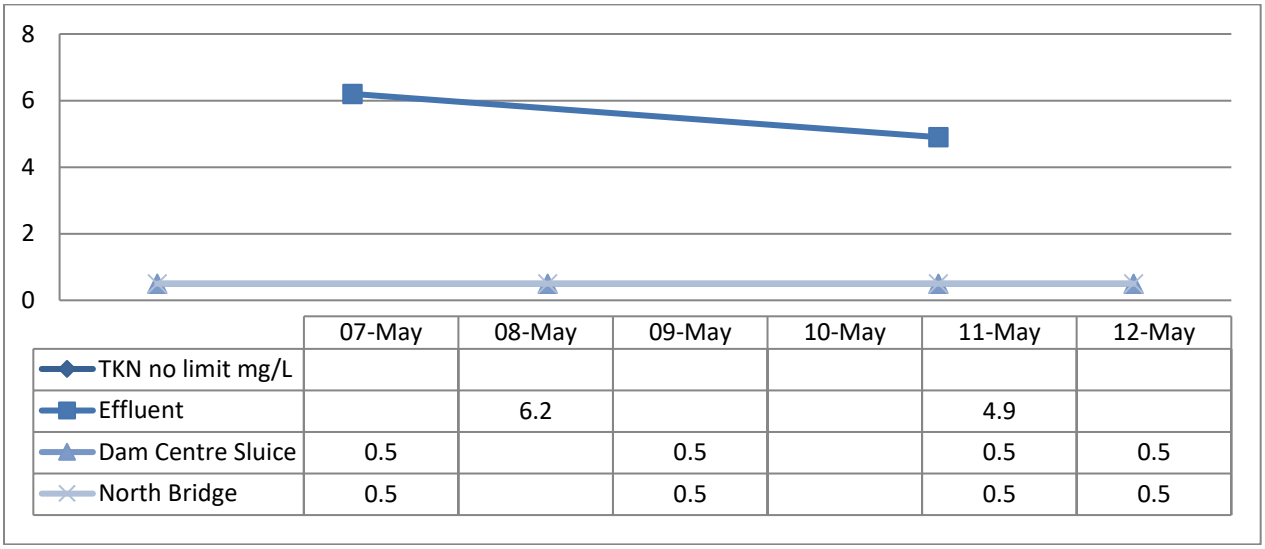
	07-May	08-May	09-May	10-May	11-May	12-May
Total Phosporus Effluent Limit mg/L	0.5	0.5	0.5	0.5	0.5	0.5
Effluent		0.03			0.03	
Dam Centre Sluice	0.03		0.03		0.03	0.03
North Bridge	0.03		0.03		0.03	0.03

Total Ammonia Nitrogen



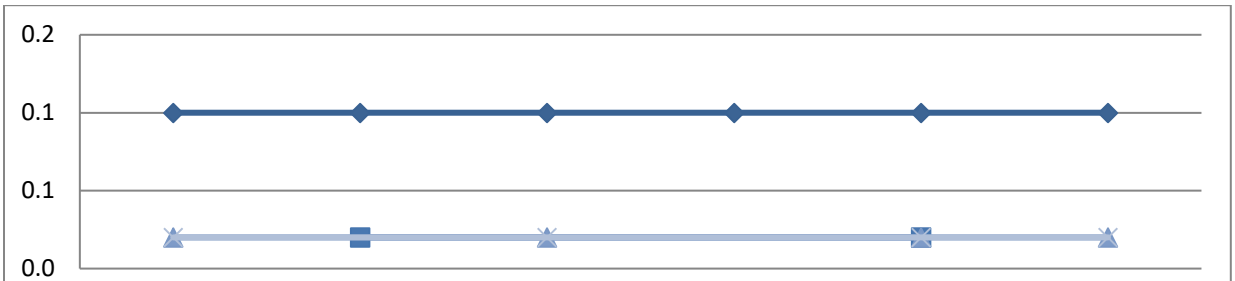
	07-May	08-May	09-May	10-May	11-May	12-May
TAN Effluent Limit mg/L	15	15	15	15	15	15
Effluent		4.8			4.0	
Dam Centre Sluice	0.1		0.1		0.1	0.1
North Bridge	0.1		0.1		0.1	0.1

Total Kjeldahl Nitrogen



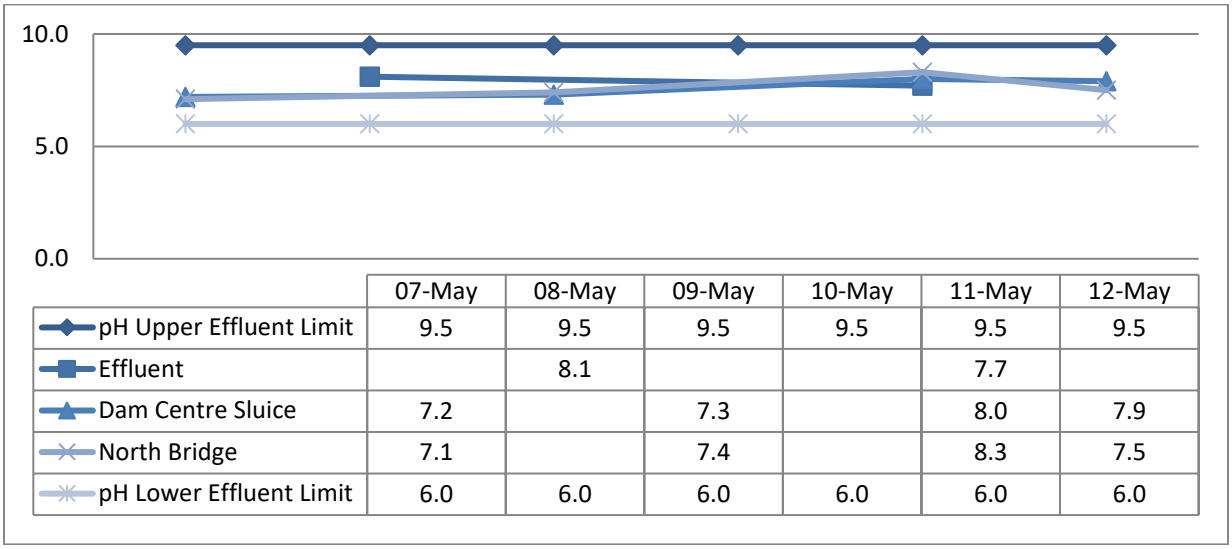
	07-May	08-May	09-May	10-May	11-May	12-May
TKN no limit mg/L						
Effluent		6.2			4.9	
Dam Centre Sluice	0.5		0.5		0.5	0.5
North Bridge	0.5		0.5		0.5	0.5

Hydrogen Sulphide



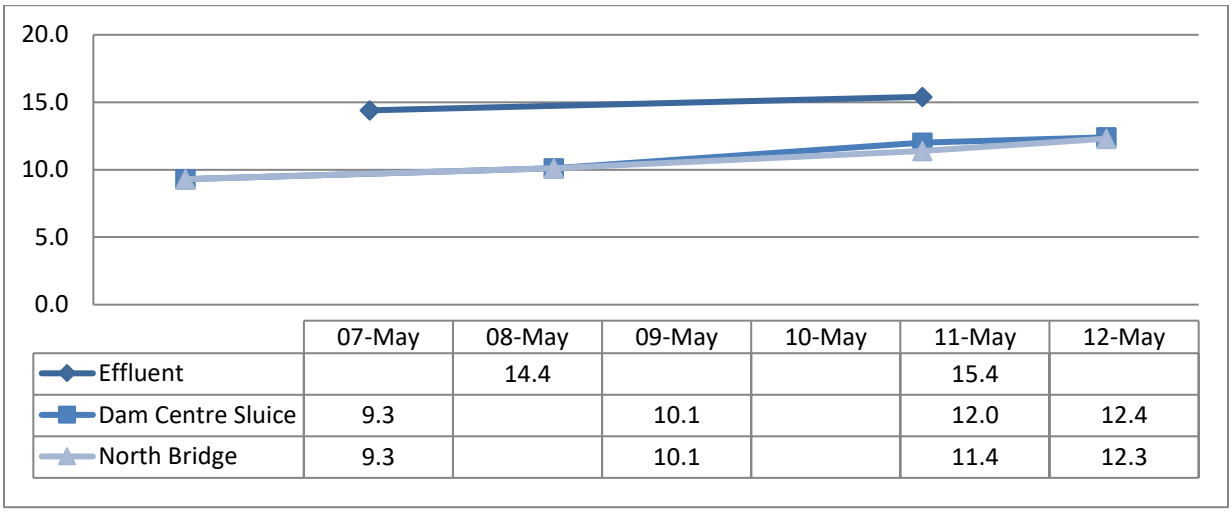
	07-May	08-May	09-May	10-May	11-May	12-May
Hydrogen Sulphide Effluent Limit mg/L	0.1	0.1	0.1	0.1	0.1	0.1
Effluent		0.02			0.02	
Dam Centre Sluice	0.02		0.02		0.02	0.02
North Bridge	0.02		0.02		0.02	0.02

pH



	07-May	08-May	09-May	10-May	11-May	12-May
pH Upper Effluent Limit	9.5	9.5	9.5	9.5	9.5	9.5
Effluent		8.1			7.7	
Dam Centre Sluice	7.2		7.3		8.0	7.9
North Bridge	7.1		7.4		8.3	7.5
pH Lower Effluent Limit	6.0	6.0	6.0	6.0	6.0	6.0

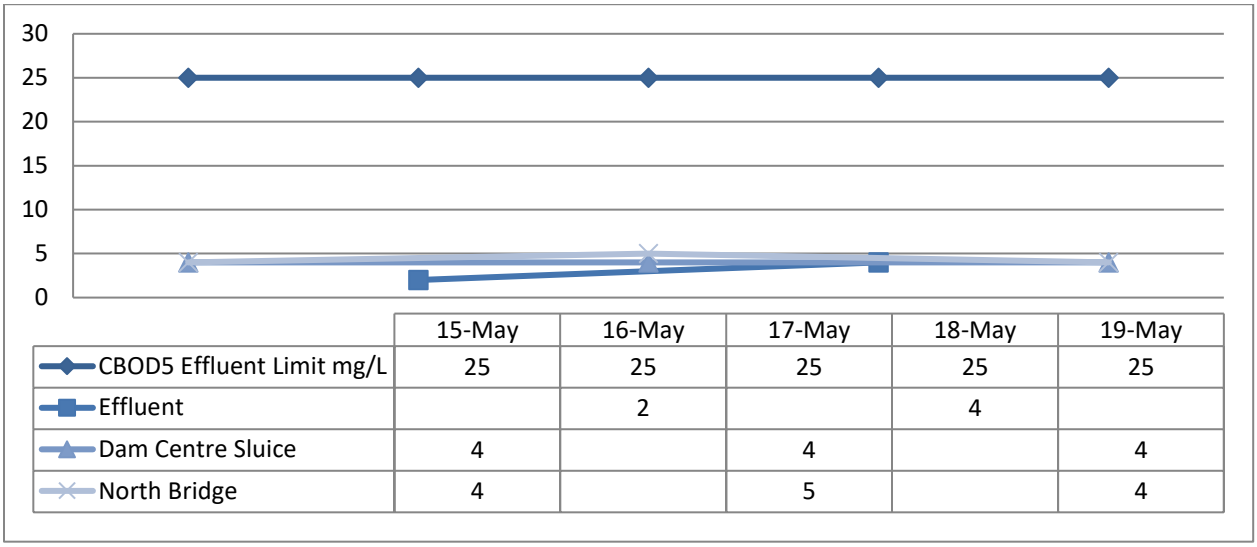
Temperature



	07-May	08-May	09-May	10-May	11-May	12-May
Effluent		14.4			15.4	
Dam Centre Sluice	9.3		10.1		12.0	12.4
North Bridge	9.3		10.1		11.4	12.3

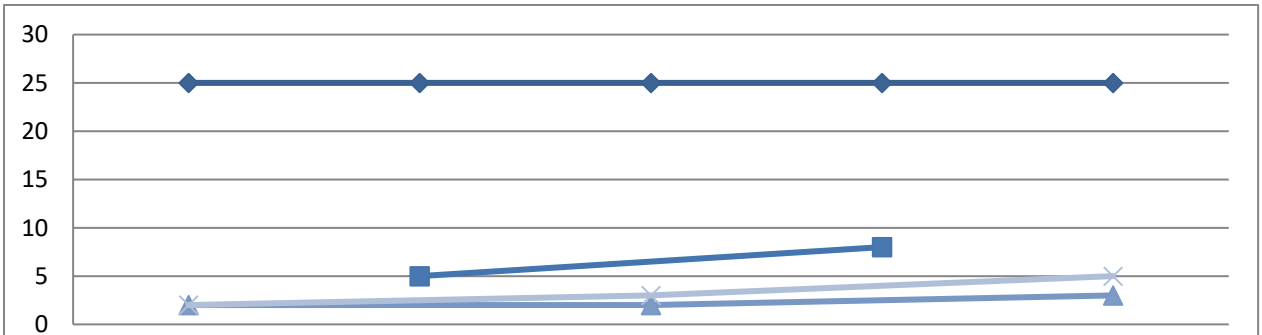
Spring Discharge – May 16 to 18, 2023

CBOD5



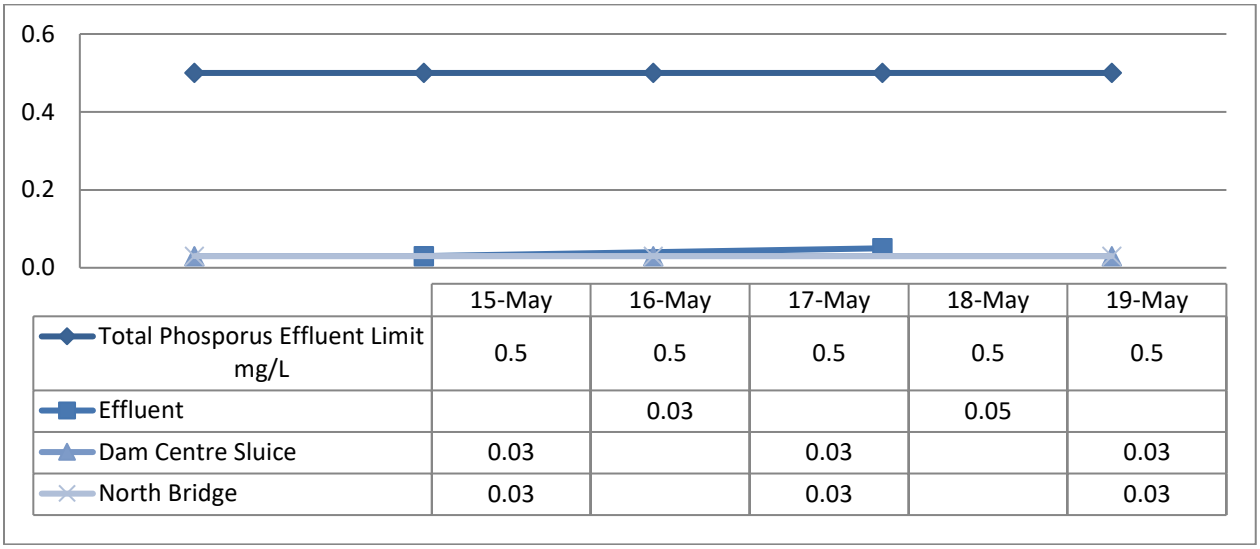
	15-May	16-May	17-May	18-May	19-May
CBOD5 Effluent Limit mg/L	25	25	25	25	25
Effluent		2		4	
Dam Centre Sluice	4		4		4
North Bridge	4		5		4

Total Suspended Solids



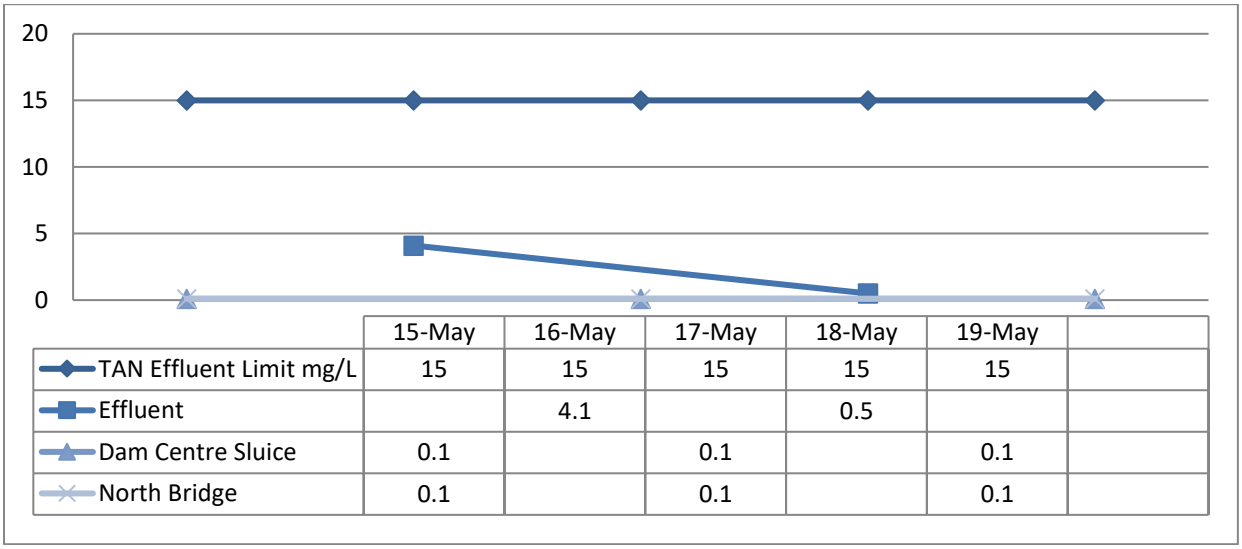
	15-May	16-May	17-May	18-May	19-May
TSS Effluent Limit mg/L	25	25	25	25	25
Effluent		5		8	
Dam Centre Sluice	2		2		3
North Bridge	2		3		5

Total Phosphorus



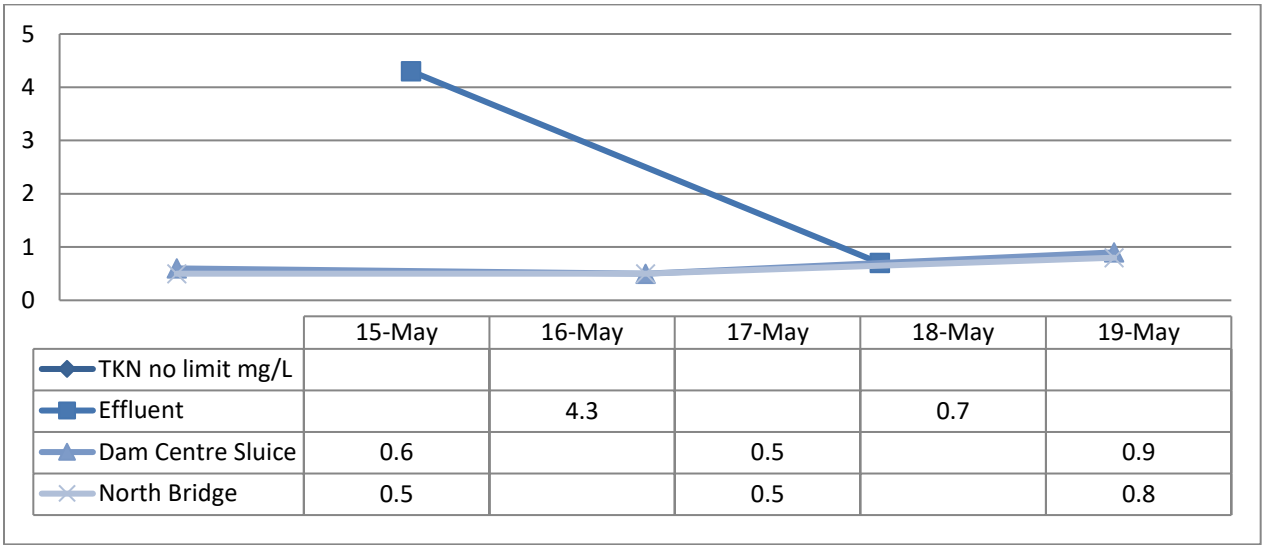
	15-May	16-May	17-May	18-May	19-May
Total Phosporus Effluent Limit mg/L	0.5	0.5	0.5	0.5	0.5
Effluent		0.03		0.05	
Dam Centre Sluice	0.03		0.03		0.03
North Bridge	0.03		0.03		0.03

Total Ammonia Nitrogen



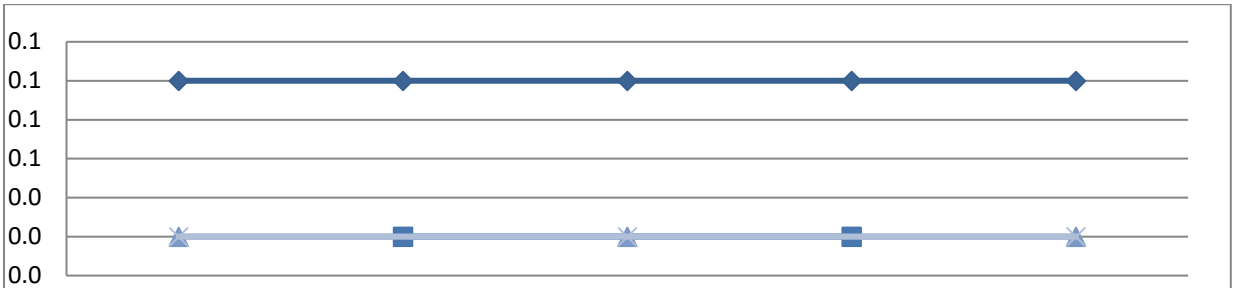
	15-May	16-May	17-May	18-May	19-May	
TAN Effluent Limit mg/L	15	15	15	15	15	
Effluent		4.1		0.5		
Dam Centre Sluice	0.1		0.1		0.1	
North Bridge	0.1		0.1		0.1	

Total Kjeldahl Nitrogen



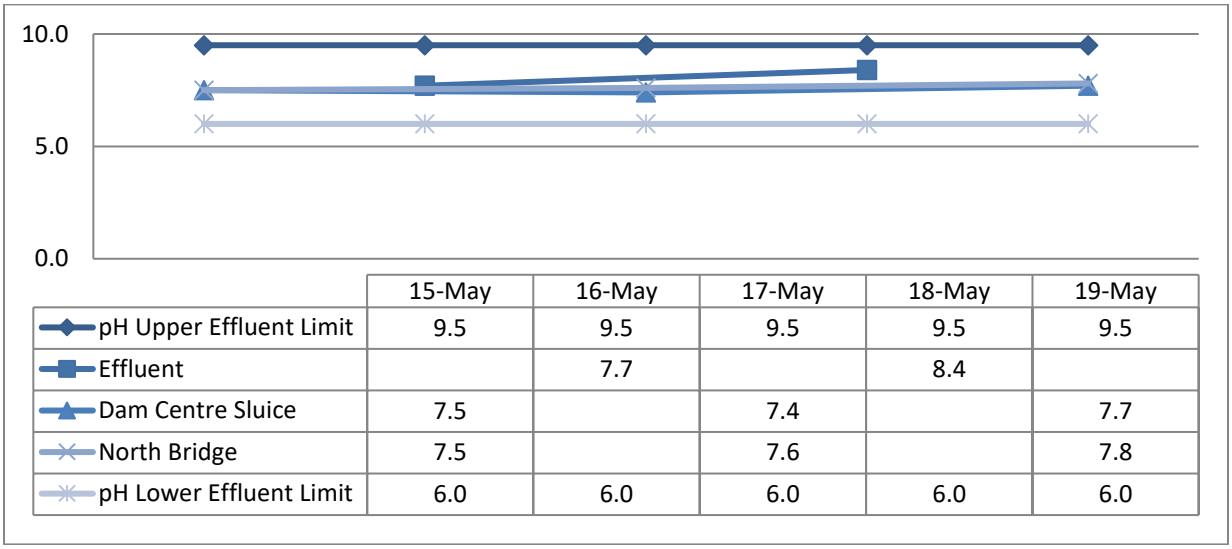
	15-May	16-May	17-May	18-May	19-May
TKN no limit mg/L					
Effluent		4.3		0.7	
Dam Centre Sluice	0.6		0.5		0.9
North Bridge	0.5		0.5		0.8

Hydrogen Sulphide



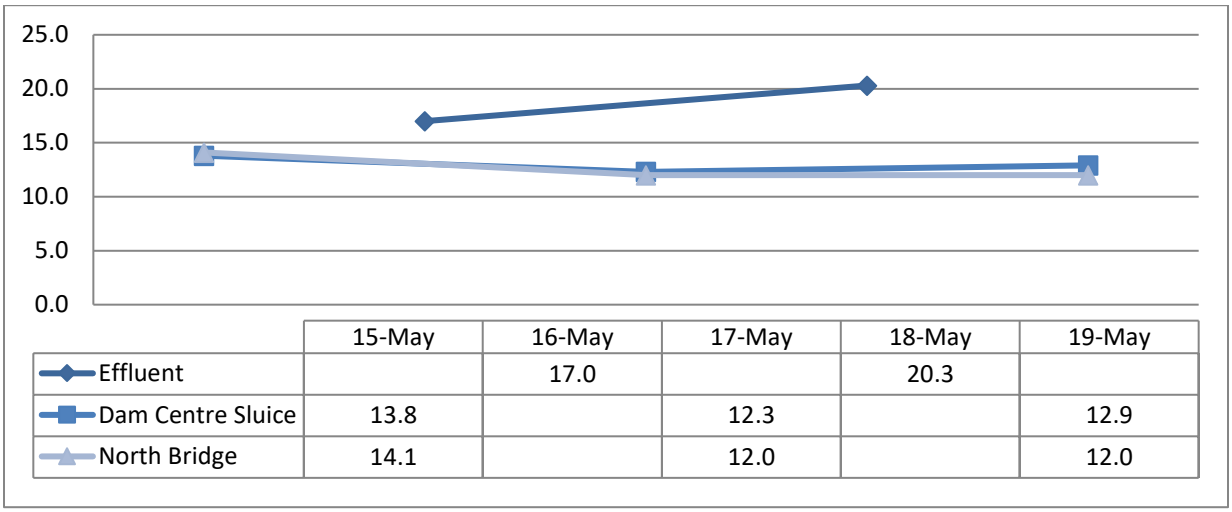
	15-May	16-May	17-May	18-May	19-May
	0.1	0.1	0.1	0.1	0.1
		0.02		0.02	
	0.02		0.02		0.02
	0.02		0.02		0.02

pH



	15-May	16-May	17-May	18-May	19-May
pH Upper Effluent Limit	9.5	9.5	9.5	9.5	9.5
Effluent		7.7		8.4	
Dam Centre Sluice	7.5		7.4		7.7
North Bridge	7.5		7.6		7.8
pH Lower Effluent Limit	6.0	6.0	6.0	6.0	6.0

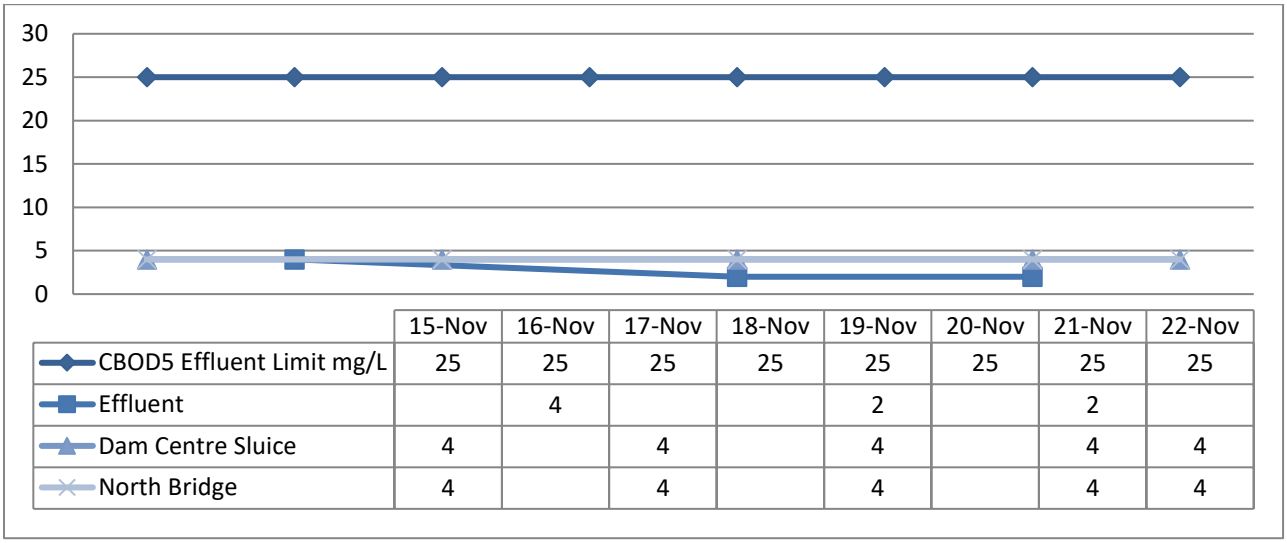
Temperature



	15-May	16-May	17-May	18-May	19-May
Effluent		17.0		20.3	
Dam Centre Sluice	13.8		12.3		12.9
North Bridge	14.1		12.0		12.0

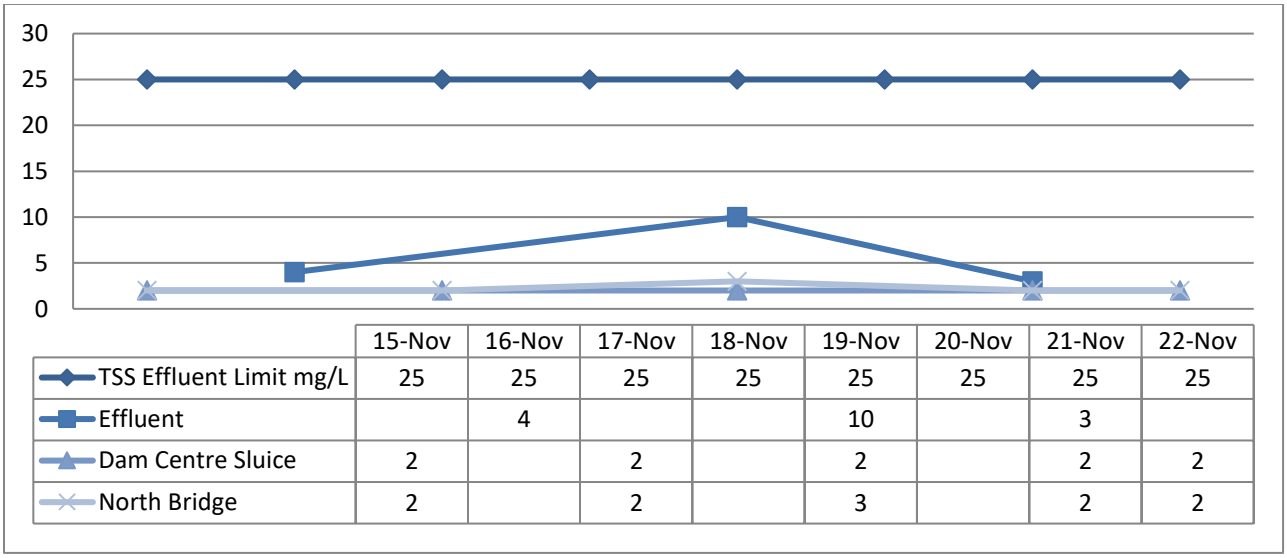
Fall Discharge – November 16 to 21, 2023

CBOD5



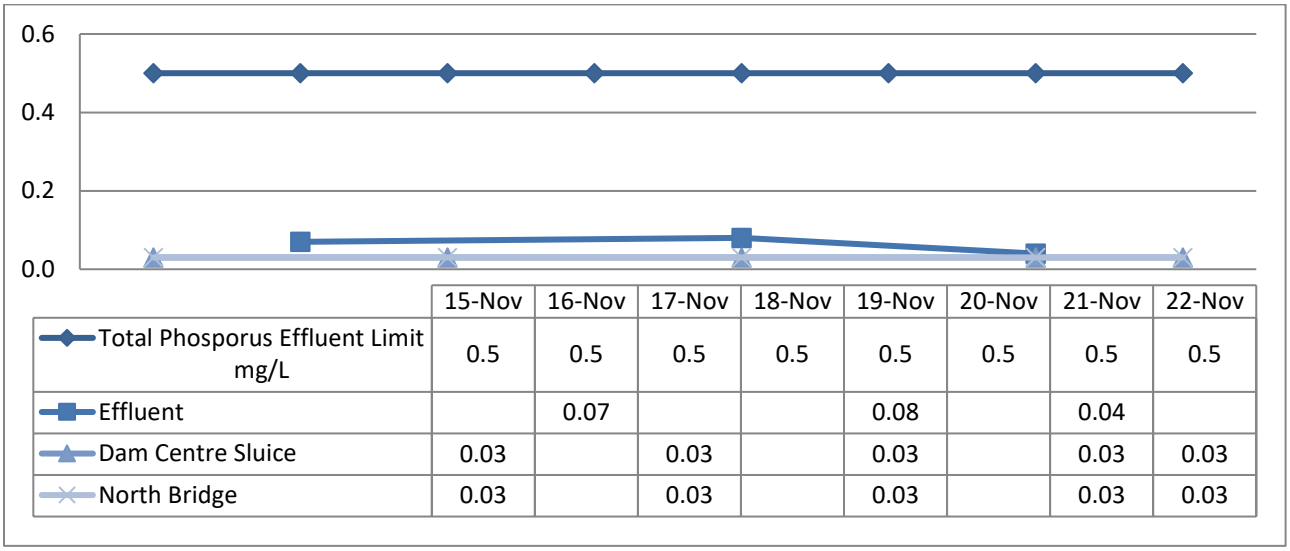
	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
CBOD5 Effluent Limit mg/L	25	25	25	25	25	25	25	25
Effluent		4			2		2	
Dam Centre Sluice	4		4		4		4	4
North Bridge	4		4		4		4	4

Total Suspended Solids



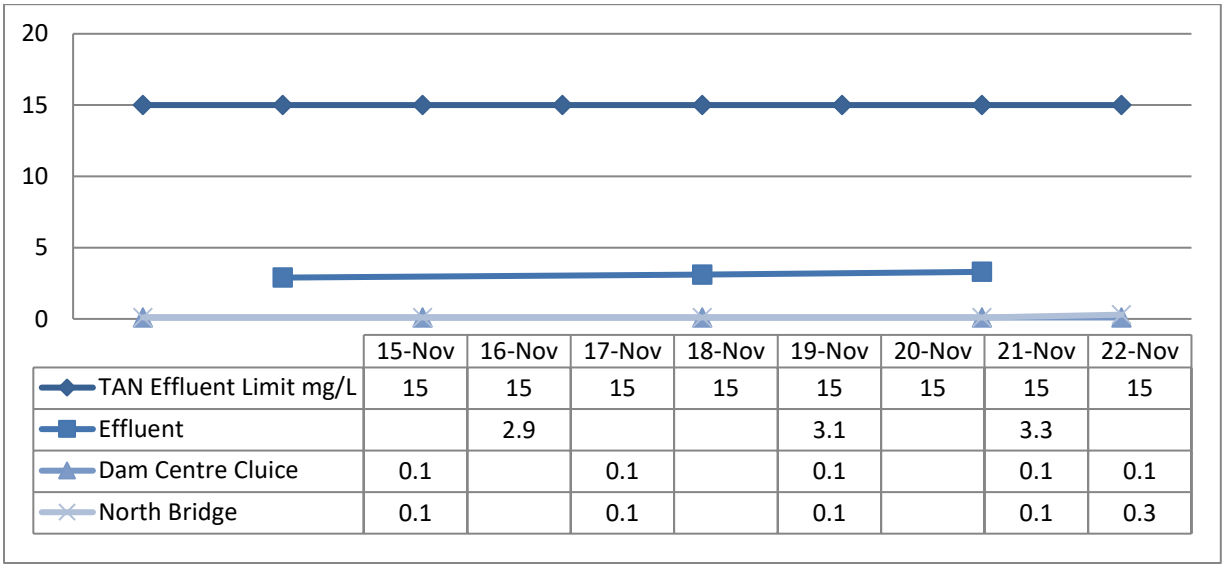
	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
TSS Effluent Limit mg/L	25	25	25	25	25	25	25	25
Effluent		4			10		3	
Dam Centre Sluice	2		2		2		2	2
North Bridge	2		2		3		2	2

Total Phosphorus



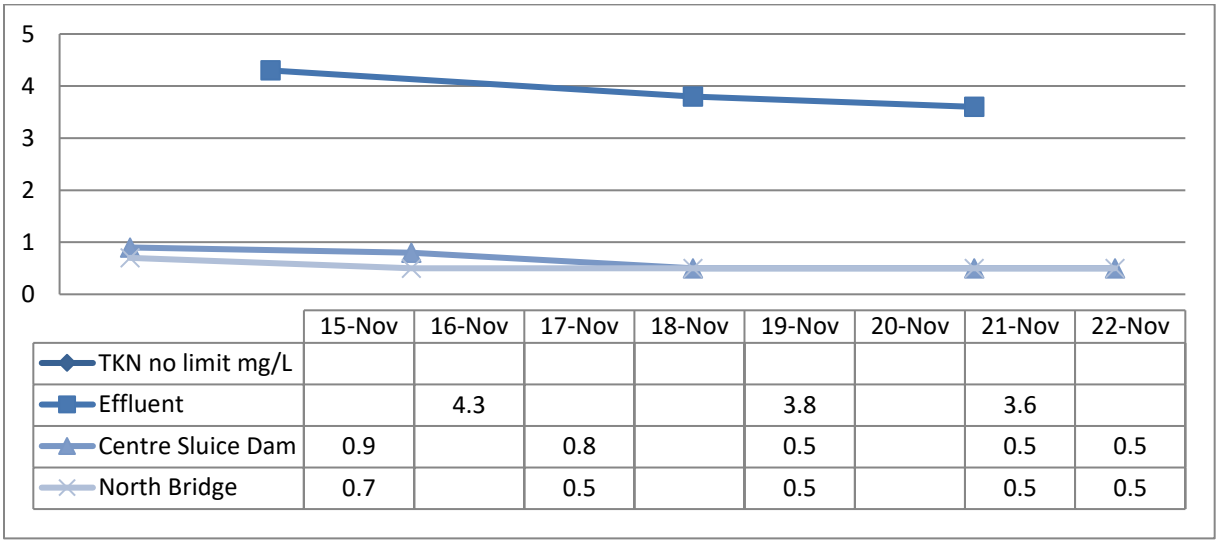
	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
Total Phosporus Effluent Limit mg/L	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Effluent		0.07			0.08		0.04	
Dam Centre Sluice	0.03		0.03		0.03		0.03	0.03
North Bridge	0.03		0.03		0.03		0.03	0.03

Total Ammonia Nitrogen



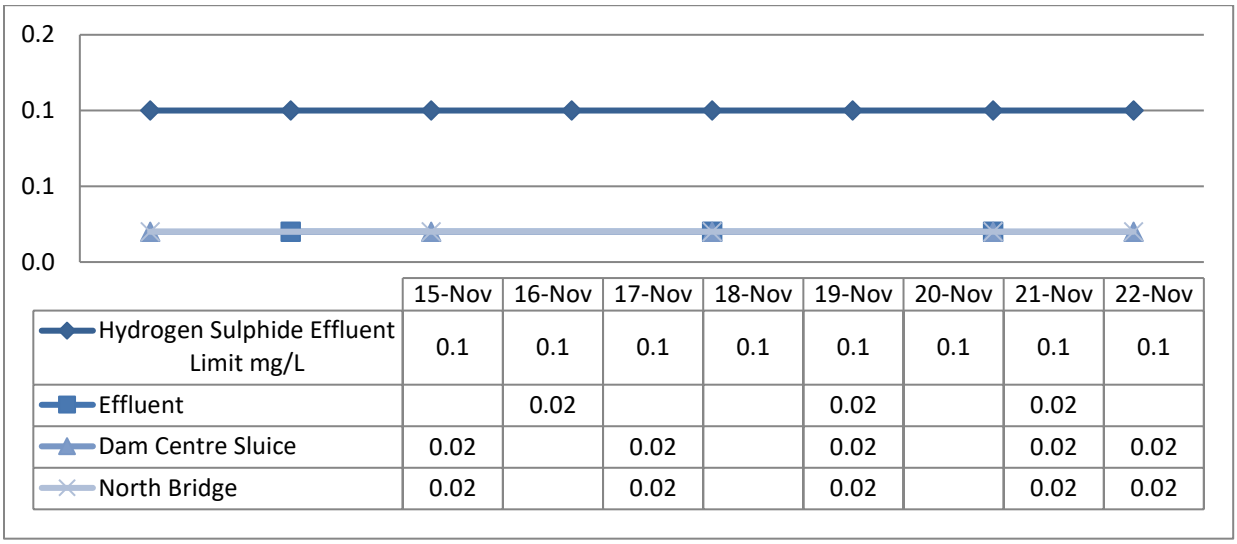
	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
TAN Effluent Limit mg/L	15	15	15	15	15	15	15	15
Effluent		2.9			3.1		3.3	
Dam Centre Cluice	0.1		0.1		0.1		0.1	0.1
North Bridge	0.1		0.1		0.1		0.1	0.3

Total Kjeldahl Nitrogen



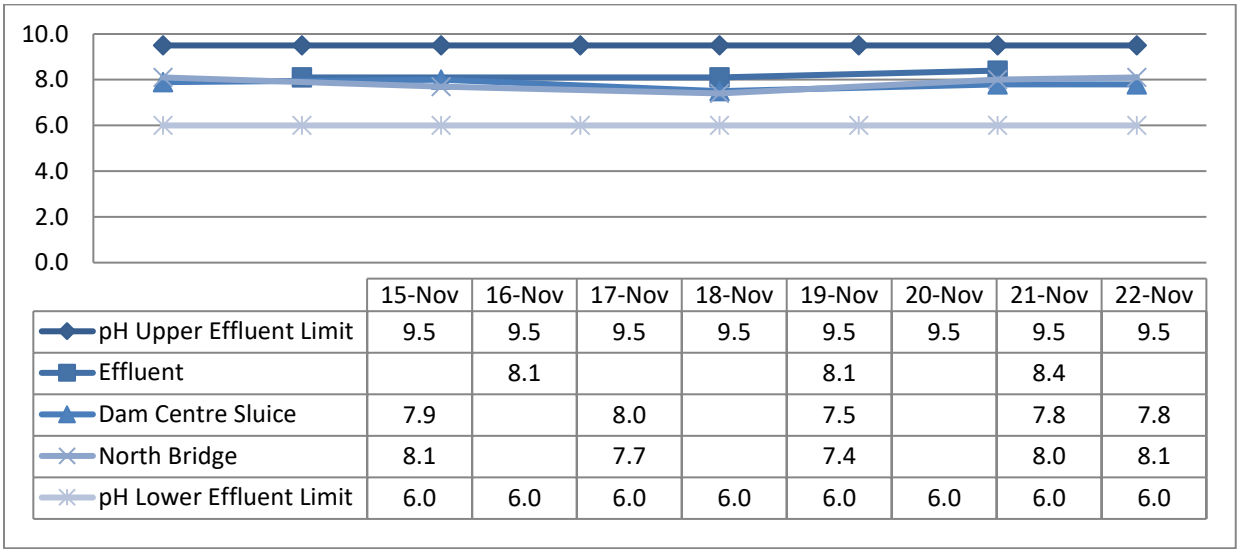
	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
TKN no limit mg/L								
Effluent		4.3			3.8		3.6	
Centre Sluice Dam	0.9		0.8		0.5		0.5	0.5
North Bridge	0.7		0.5		0.5		0.5	0.5

Hydrogen Sulphide



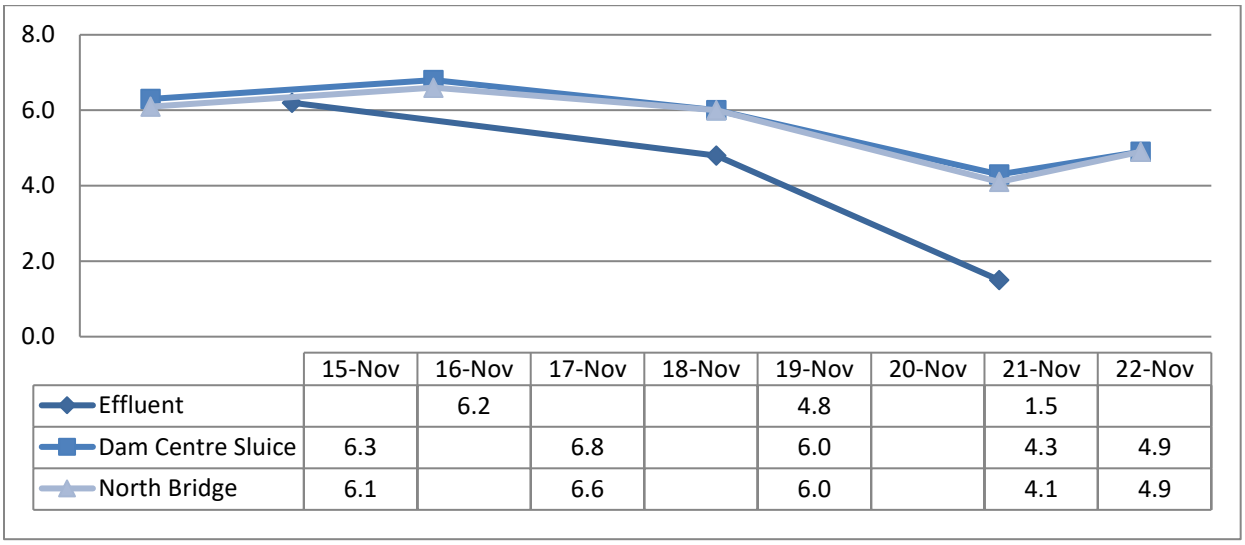
	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
Hydrogen Sulphide Effluent Limit mg/L	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Effluent		0.02			0.02		0.02	
Dam Centre Sluice	0.02		0.02		0.02		0.02	0.02
North Bridge	0.02		0.02		0.02		0.02	0.02

pH



	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
pH Upper Effluent Limit	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Effluent		8.1			8.1		8.4	
Dam Centre Sluice	7.9		8.0		7.5		7.8	7.8
North Bridge	8.1		7.7		7.4		8.0	8.1
pH Lower Effluent Limit	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0

Temperature



	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov
Effluent		6.2			4.8		1.5	
Dam Centre Sluice	6.3		6.8		6.0		4.3	4.9
North Bridge	6.1		6.6		6.0		4.1	4.9

These results suggest that, for the parameters analyzed, the effluent discharges have had little to no impact on the water quality of the Gull River in 2023.

(c) Condition 9 (7) requires the temperature and pH of the effluent be determined in the field at the time of sampling for TAN. The concentration of un-ionized ammonia shall be calculated using the TAN concentration, pH and temperature using the methodology stipulated in “Ontario’s Provincial Water Quality Objective” dated July 1994, as amended, for ammonia (un-ionized). Table 3 provides a tabulation of the Coboconk Sewage Lagoon Effluent Un-ionized Ammonia Results for 2023.

Table 3: Coboconk Lagoon Effluent Un-ionized Ammonia Results for 2023

Date	Total Ammonia Nitrogen (mg/L)	Field Temperature (°C)	Field pH	Unionized Ammonia (mg/L)
Mar 29	5.8	4.4	7.3	0.015
Mar 31	5.3	5.0	7.3	0.013
Apr 24	4.3	6.0	7.6	0.021
Apr 27	4.3	9.8	8.3	0.148
May 8	4.8	14.4	8.1	0.150
May 11	4.0	15.4	7.7	0.058
May 16	4.1	17.0	7.7	0.064
May 18	0.5	20.3	8.4	0.046
Nov 16	2.9	6.2	8.1	0.048
Nov 19	3.1	4.8	8.1	0.051
Nov 21	3.3	1.5	8.4	0.068

(d) The facility is operated on a semi-annual discharge basis with the effluent discharge commencing no earlier than April 1 or terminating not later than May 31 in spring (Spring Effluent Discharge Period) and not earlier than November 1 or terminating not later than December 31 in the fall (Fall Effluent Discharge Period). Each period is allowed a maximum of 14 days at a discharge flow rate not exceeding 9,245m^3/day. Relief was requested to start a discharge outside of the Spring Effluent Discharge Period due to high lagoon levels. Relief was granted. Tables 4 and 5 show the effluent discharges were compliant with the Spring and Fall Effluent Discharge Periods, number of discharge days and the discharge flow rate.

Seasonal Discharge Flows per Discharge Period
Note: A discharge started outside of the Spring Effluent Discharge Period in March 2023. Relief was requested due to the high lagoon levels as a result of large amounts of snow and rainfall accumulation having added to regular volumes along with a forecasted rainfall event and sludge was planned to be removed in 2022 but the contractor rescheduled until 2023. The local Water Compliance Supervisor was contacted about this request on March 28, 2023. Relief was granted.

Table 4: Spring Effluent Discharge Period April 1 to May 31

Date	Flow Limit m^3/day	Flow (m^3/day)	Compliant Y/N	# Days / Discharge Limit	# of Days of Discharge	Compliant Y/N
Mar 29	9,245	5,252.0	Y	14	14	Y
Mar 30	9,245	8,694.2	Y	14	14	Y
Mar 31	9,245	5,162.7	Y	14	14	Y
Apr 24	9,245	6,255.5	Y	14	14	Y
Apr 25	9,245	8,490.0	Y	14	14	Y
Apr 26	9,245	8,462.2	Y	14	14	Y

Date	Flow Limit m³/day	Flow (m³/day)	Compliant Y/N	# Days / Discharge Limit	# of Days of Discharge	Compliant Y/N
Apr 27	9,245	7,915.1	Y	14	14	Y
May 08	9,245	5,750.1	Y	14	14	Y
May 09	9,245	6,432.9	Y	14	14	Y
May 10	9,245	6,376.4	Y	14	14	Y
May 11	9,245	4,258.9	Y	14	14	Y
May 16	9,245	5,699.2	Y	14	14	Y
May 17	9,245	8,199.9	Y	14	14	Y
May 18	9,245	4,867.2	Y	14	14	Y

Total volume of effluent discharged in the Spring of 2023 was 91,816 m^3.

Table 5: Fall Effluent Discharge Period November 1 to December 31

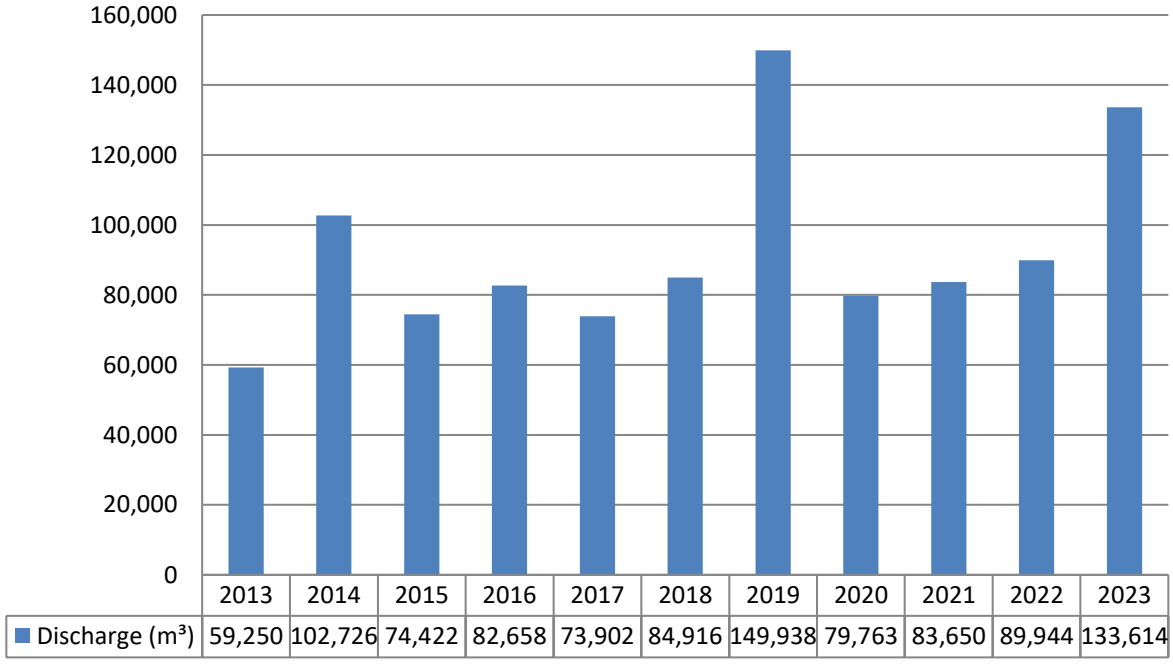
Date	Flow Limit m³/day	Flow (m³/day)	Compliant Y/N	# Days / Discharge Limit	# of Days of Discharge	Compliant Y/N
Nov 16	9,245	4,624.8	Y	14	6	Y
Nov 17	9,245	8,627.4	Y	14	6	Y
Nov 18	9,245	8,624.1	Y	14	6	Y
Nov 19	9,245	8,577.2	Y	14	6	Y
Nov 20	9,245	8,359.8	Y	14	6	Y
Nov 21	9,245	2,985.5	Y	14	6	Y

Total volume of effluent discharged in the Fall of 2023 was 41,798 m^3.

The total volume of effluent discharged from the Coboconk Sewage Lagoons is 133,614 m^3.

The following chart provides the annual total discharge flow from the Coboconk Sewage Lagoons since 2013.

Annual Total Discharge Flow Comparison



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Discharge (m^3)	59,250	102,726	74,422	82,658	73,902	84,916	149,938	79,763	83,650	89,944	133,614

The total discharge effluent flows from the Coboconk Sewage Lagoons have been relatively consistent in recent years however 2019 and 2023 experienced an increase. Weather conditions have an impact on the amount of effluent discharged each year. Evaporation due to high temperatures and strong winds can lower the volumes while heavy precipitation periods can increase the total effluent discharged.

(e) No Bypasses or Overflows events occurred in 2023. One spill occurred upon the attempted startup of the fall discharge. A spill or abnormal discharge occurred at the maintenance hole at the junction of Shadow Lake Rd 57 and Hwy 35 which contains an air relief valve. The air relief valve malfunctioned upon start up. Please see **Appendix V** for Operations Event Form.

(f) A sludge disposal program took place at the Coboconk Sewage Lagoons from July – September 06, 2023 with all 6,682 m^3 of sludge being removed from the south cell and disposed of via field application. See Table 6 for the quantity and quality of sludge and the valid NASM Plans where the sludge was applied. In preparation for the removal of sludge, a sludge sample was collected in 2022 to show the quality of the sludge, see **Appendix VI**. No sludge is planned to be removed in 2024.

Table 6: 2023 Sludge Disposal

Date	Total Sludge Removed (m^3)	Location	Laboratory TSS (%)	Laboratory Specific Gravity (g/mL)
July 25	1,176	NASM Plan 23954	1.90	1.02
July 26	894	NASM Plan 23954	0.90	1.02
Aug 01	1,131	NASM Plan 23954	4.00	1.04
Aug 02	429	NASM Plan 23954	0.20	1.00

Date	Total Sludge Removed (m^3)	Location	Laboratory TSS (%)	Laboratory Specific Gravity (g/mL)
Sept 01	692	NASM Plan 60620	3.60	1.02
Sept 02	630	NASM Plan 60620	5.40	1.02
Sept 05	1,045	NASM Plan 60620	6.30	1.02
Sept 06	685	NASM Plan 60620	4.20	1.01

(g) An operating problem occurred at the beginning of the November discharge. Operations planned to start the fall discharge on November 01 but the air relief valve malfunctioned. This instance was reported as a spill and the valve was replaced. The discharge was able to start November 16 within the regulated release window and did not adversely impact lagoon operations.

Appendix III (attached) outlines scheduled and corrective maintenance completed throughout 2023.

Table 7 Coboconk Sewage Lagoon Effluent Objectives summarizes the results for the parameters tested.

Table 7: Coboconk Sewage Lagoon – Effluent Objectives – 2023 Discharges

Effluent Parameter (Column 1)	Concentration Objective (mg/L unless otherwise indicated)	Concentration (mg/L)	Objective Met (Y/N)	Waste Loading (Kg/d unless otherwise indicated) (Column 3)	Waste Loading (Kg/d)	Objective met (Y/N)
Spring March 29 - 31						
CBOD5	15.0 (average per discharge)	4.0	Y	139.0	25.5	Y
Total Suspended Solids	20.0 (average per discharge)	4.0	Y	185.0	25.5	Y
Total Phosphorus	<0.5 (average per discharge)	0.04	Y	<4.62	0.25	Y
Total Ammonia Nitrogen Spring (April 1 to May 31)	10.0 (daily limit)	5.8 5.3	Y Y	92.5	30.5 27.4	Y Y
Hydrogen Sulphide	Absent	0.12 0.09	N Y	Absent	0.63 0.46	See note below
pH	6.5 to 8.5 at all times	7.3	Y	-	-	-

Effluent Parameter (Column 1)	Concentration Objective (mg/L unless otherwise indicated)	Concentration (mg/L)	Objective Met (Y/N)	Waste Loading (Kg/d unless otherwise indicated) (Column 3)	Waste Loading (Kg/d)	Objective met (Y/N)
		7.3	Y			
E. Coli	200 organisms/100 mL	166 600	Y N	-	-	-
Spring April 24 - 27						
CBOD5	15.0 (average per discharge)	2.5	Y	139.0	19.5	Y
Total Suspended Solids	20.0 (average per discharge)	2.0	Y	185.0	15.6	Y
Total Phosphorus	<0.5 (average per discharge)	<0.03	Y	<4.62	<0.23	Y
Total Ammonia Nitrogen Spring (April 1 to May 31)	10.0 (daily limit)	4.3 4.3	Y Y	92.5	26.9 34.0	Y Y
Hydrogen Sulphide	Absent	<0.02 <0.02	Y Y	Absent	0.13 0.16	See note below
pH	6.5 to 8.5 at all times	7.6 8.3	Y Y	-	-	-
E. Coli	200 organisms/100 mL	56 2	Y Y	-	-	-
Spring May 8 - 11						
CBOD5	15.0 (average per discharge)	2.5	Y	139.0	14.3	Y
Total Suspended Solids	20.0 (average per discharge)	3.0	Y	185.0	17.1	Y
Total Phosphorus	<0.5 (average per discharge)	<0.03	Y	<4.62	<0.17	Y
Total Ammonia Nitrogen Spring	10.0 (daily limit)	4.8	Y	92.5	27.6	Y

Effluent Parameter (Column 1)	Concentration Objective (mg/L unless otherwise indicated)	Concentration (mg/L)	Objective Met (Y/N)	Waste Loading (Kg/d unless otherwise indicated) (Column 3)	Waste Loading (Kg/d)	Objective met (Y/N)
(April 1 to May 31)		4.0	Y		17.0	Y
Hydrogen Sulphide	Absent	<0.02 <0.02	Y Y	Absent	0.12 0.09	See note below
pH	6.5 to 8.5 at all times	8.1 7.7	Y Y	-	-	-
E. Coli	200 organisms/100 mL	8 12	Y Y	-	-	-
Spring May 16 - 18						
CBOD5	15.0 (average per discharge)	3.0	Y	139.0	18.8	Y
Total Suspended Solids	20.0 (average per discharge)	6.5	Y	185.0	40.7	Y
Total Phosphorus	<0.5 (average per discharge)	0.04	Y	<4.62	0.25	Y
Total Ammonia Nitrogen Spring (April 1 – May 31)	10.0 (daily limit)	4.1 0.5	Y Y	92.5	23.4 2.4	Y Y
Hydrogen Sulphide	Absent	<0.02 <0.02	Y Y	Absent	0.11 0.10	See note below
pH	6.5 to 8.5 at all times	7.7 8.4	Y Y	-	-	-
E. Coli	200 organisms/100 mL	6 4	Y Y	-	-	-
Fall November 16 - 21						
CBOD5	15.0 (average per discharge)	<2.7	Y	139.0	<18.6	Y

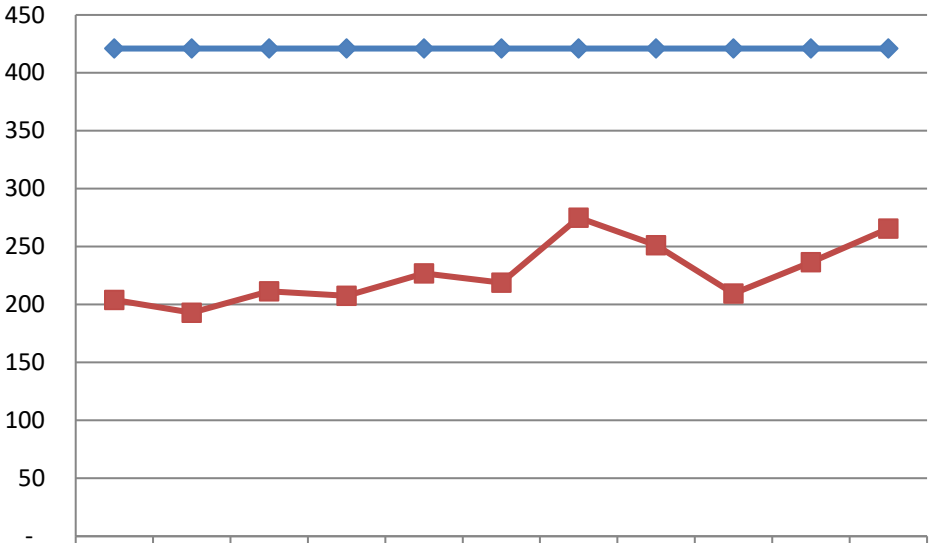
Effluent Parameter (Column 1)	Concentration Objective (mg/L unless otherwise indicated)	Concentration (mg/L)	Objective Met (Y/N)	Waste Loading (Kg/d unless otherwise indicated) (Column 3)	Waste Loading (Kg/d)	Objective met (Y/N)
Total Suspended Solids	20.0 (average per discharge)	5.7	Y	185.0	39.5	Y
Total Phosphorus	<0.5 (average per discharge)	0.06	Y	<4.62	0.44	Y
Total Ammonia Nitrogen Fall (Nov 1 to Dec 31)	5.0 (daily)	2.9 3.1 3.3	Y Y Y	92.5	13.4 26.6 9.9	Y Y Y
Hydrogen Sulphide	Absent	<0.02 <0.02 <0.02	Y Y Y	Absent	0.09 0.17 0.06	See note below
pH	6.5 to 8.5 at all times	8.1 8.1 8.4	Y Y Y	-	-	-
E. Coli	200 organisms/100 mL	4 12	Y Y	-	-	-

Note: For the purpose of calculating loadings for hydrogen sulphide, a value of 0.02mg/L was used; however, a result of < the laboratory's method detection limit is indicative of the possible absence of hydrogen sulphide.

Rated Capacity of 421m^3/day is the Annual Average Daily Flow for which the Coboconk Sewage Lagoons is approved to handle sewage. 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 total raw flow for 2023 was 96,913.75 m^3 resulting in an average daily flow of 265.52 m^3/day. This is an increase from 2022 which had an average daily flow of 236.49 m^3/day.

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

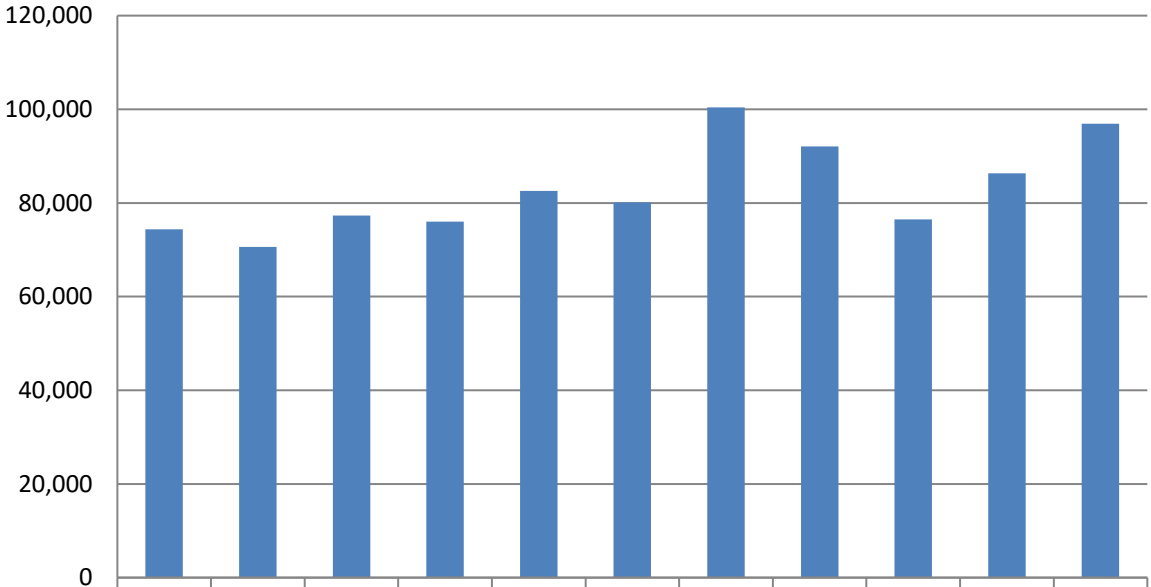
Average Sewage Flow & Rated Capacity Comparison



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Rated Capacity m³/day	421	421	421	421	421	421	421	421	421	421	421
Average Sewage Flow (m³/day)	204	193	211	208	227	219	275	251	210	236	266

Additionally, the following graph depicts total annual sewage flow since 2013 into the Coboconk Sewage Lagoons.

Annual Total Sewage Flow Comparison



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Raw (m³)	74,395	70,615	77,284	76,039	82,586	80,134	100,379	92,059	76,498	86,319	96,914

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, effluent and effluent plume monitoring samples are collected as per the ECA and the results are reviewed on a regular basis to ensure compliance with the site's objectives and limits.

Work orders are scheduled through our asset maintenance management system to ensure preventative and corrective maintenance is completed and recorded by operations staff. A summary is attached as **Appendix III**. Flow meters are calibrated annually and the 2023 calibration report is provided in **Appendix IV**.

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 2023 is provided in Table 8.

Table 8: Coagulant Use and Dosing 2023

Month	Aluminum Sulphate (kg)	Aluminum Sulphate Average Dosage (mg/L)
January	1338.1	115.7
February	983.0	114.5
March	1152.9	112.9
April	1356.0	112.7
May	1234.4	119.8
June	948.1	130.7
July	844.6	119.4
August	903.9	124.6
September	638.8	130.5
October	624.9	131.4
November	605.8	171.8
December	695.4	159.7

Some of the continuous efforts made to meet the Effluent Objectives are as follows:

Efforts Made to Meet the Effluent Objectives of Condition 6

1. Sampling effluent and raw as per the ECA.
2. Routine inspection of the lagoons for berm stability, odours, and condition of cell contents.
3. Ensuring that aluminum sulphate is being dosed.
4. Calibration of the pH meter before use.

5. Performing preventative maintenance activities in accordance with work order schedules.
6. Monitoring treatment processes through review of lab results.
7. Annual calibration of flow meters.
8. Monitoring sludge depth.

(h) A Site Inspection Report was developed by the City and put into use in 2018. Inspections are completed by operations staff and forwarded to the City. These reports are reviewed during the routine meetings held between the City and OCWA. A summary of complaints received by the operating authority is provided in the following table.

Table 9: Summary of Community Complaints

Date	Issue	Actions Taken
March 21	Odour	Odour caused by seasonal transfer between lagoons. Information was provided to owner.
April 03	Odour	Odour caused by seasonal transfer between lagoons. Information provided to owner.
June 01	Odour	Odour completed site inspection on June 2 and no odour was detected. Information was provided to owner.

(i) No Notices of Modifications were submitted to the Water Supervisor in 2023.

(j) A summary of all modifications completed as a result of Schedule B, Section 3 are included in **Appendix III**: Maintenance Summary.

(k) The Water Supervisor has not requested any additional information be included in this report.

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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 Coboconk Sewage Collection System consists of works for the collection and transmission of sewage, consisting of 3.5 km of sanitary sewer piping, three sewage pumping stations that eventually discharges into the Coboconk Sewage Lagoons.

Raw Sewage flow data from Pumping Station Number Three is captured in **Appendix I** and section g of this report along with an interpretation of the data and any conclusions drawn from the data evaluation.

Aluminum Sulphate monthly use and average dosage is captured in Table 8: Coagulant Use and Dosing 2023. Continuous phosphorus removal was achieved with the dosing of aluminum sulphate

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

Operating Problem	Corrective Action(s)
Operations planned to start the fall discharge on November 01 but the air relief valve malfunctioned at the maintenance hole located at the junction of Shadow Lake Rd 57 and Hwy 35.	This instance was reported as a spill and the valve was replaced by City operations staff. The discharge was able to start November 16 within the regulated release window and did not adversely impact lagoon operations. Please see **Appendix V** for Operations Event Form.
Grease build up and infiltration identified in MH2253 located at 6720 Highway #35. There was no spill or risk to the environment.	A contractor was hired to remove the grease and flush/clean the sanitary main, lateral and manhole. The manhole was also grouted to repair infiltration.
MH2242 on Highway #35 had evidence of infiltration.	A contractor was hired to grout manhole to address infiltration issue.

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 lll**: Maintenance Summary, a Work Order Summary report, showing all preventive and corrective maintenance activities performed at the Coboconk Sewage Lagoons, including the collection system, during 2023.

Attached is **Appendix lV**: 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 Coboconk Sewage Collection System and steps taken to address the complaints from 2023 are included in Table 9: 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 Coboconk Sewage Collection System in 2023.

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 Coboconk Sewage Collection system had one Spill. Please see Summary of Events as per Condition 11.5.e in ECA #9527-AHVRDY and the Operations Event Form and sampling results for the event is provided in **Appendix V**.

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.

Annually manhole inspections are completed by City operations staff within the collection systems to identify any deficiencies that may result in excess flows increasing the risk of potential overflows. In an effort to reduce all excess flows, the City has an annual manhole rehabilitation program which includes but is not limited to grouting, moduloc replacement and frame and cover replacements.

Operationally, where manholes are located in lower lying areas and are at risk of being submerged and contributing to inflow, rain bladders are installed to prevent excess water from entering the system, further reducing the risk of overflow.

During the 2023 reporting period there were no incidents of a bypass or overflow within the sanity sewer system or the WWTP. However, the following operational activities were performed to help reduce overflow potential.

MH2253 – infiltration on North, South and East walls repaired by grouting and removal of excess grease
MH2242 – infiltration on East wall repaired by grouting
MH Lime & Mill St. – rain bladder installed
MH 6702 Highway 35 – rain bladder installed
MH 34 Albert St. – rain bladder installed.

There are no large scale capital projects to eliminate bypasses or overflows forecasted for the 2024 reporting period, however there is an operational budget of $3,500 available for any necessary operational repairs.

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

The Coboconk 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.

N/A

v) Public reporting approach including proactive efforts.

SOP WWC02 Waterwater Bypass/Overflow Notification Procedure has been developed and has been in practice since 2021, which clearly outlines all reporting protocols to both regulatory agencies and the public in various situations. This procedure was developed in consultation with Ontario Clean Water Agency, Ministry of Environment, Conservation and Parks and Ministry of Health.

Appendix I

Performance Assessment Report

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2023 to 12/31/2023

6078 COBOCONK WASTEWATER TREATMENT LAGOON 120002353

	1 / 2023	2/ 2023	3/ 2023	4/ 2023	5/ 2023	6/ 2023	7/ 2023	8/ 2023	9/ 2023	10/ 2023	11/ 2023	12/ 2023	<--Total-->	<--Avg-->	<--Max-->
Flows															
Raw Flow: Total - Raw m³/d	11,612.10	8,531.60	9,934.80	12,367.60	10,299.27	7,211.36	7,053.60	7,278.80	4,919.52	6,059.70	6,003.40	5,642.00	96,913.75		
Raw Flow: Avg - Raw m³/d	374.58	304.70	320.48	412.25	332.23	240.38	227.54	234.80	163.98	195.47	200.11	182.00		265.52	
Raw Flow: Max - Raw m³/d	636.50	345.00	500.00	555.80	559.50	262.50	257.40	340.00	206.50	1,487.30	1,546.00	233.50			1,546.00
Raw Flow: Count - Raw m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00		
Eff. Flow: Total - Effluent m³/d	0.00	0.00	19,108.90	31,122.80	41,584.37	0.00	0.00	0.00	0.00	0.00	41,798.70	0.00	133,614.77		
Eff. Flow: Avg - Effluent m³/d	0.00	0.00	6,369.63	7,780.70	5,940.62	0.00	0.00	0.00	0.00	0.00	6,966.45	0.00		6,680.74	
Eff. Flow: Max - Effluent m³/d	0.00	0.00	8,694.22	8,490.00	8,199.85	0.00	0.00	0.00	0.00	0.00	8,627.38	0.00			8,694.22
Eff Flow: Count - Effluent m³/d	0.00	0.00	3.00	4.00	7.00	0.00	0.00	0.00	0.00	0.00	6.00	0.00	20.00		
Carbonaceous Biochemical Oxygen Demand: CBOD															
Eff: Avg cBOD5 - Effluent mg/L	0.00	0.00	4.00	< 2.50	< 2.75	0.00	0.00	0.00	0.00	0.00	< 2.67	0.00		2.91	4.00
Loading: cBOD5 - Effluent kg/d	0.000	0.000	25.479	< 19.452	< 16.337	0.000	0.000	0.000	0.000	0.000	< 18.577	0.000		19.43	25.48
Biochemical Oxygen Demand: BOD5															
Raw: Avg BOD5 - Raw mg/L	86.00	40.00	42.00	26.00	30.00	56.00	46.00	40.00	173.00	337.00	51.00	40.00		80.58	337.00
Raw: # of samples of BOD5 - Raw	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00		
Total Suspended Solids: TSS															
Raw: Avg TSS - Raw mg/L	122.00	74.00	84.00	25.00	96.00	110.00	97.00	78.00	207.00	75.00	90.00	78.00		94.67	207.00
Raw: # of samples of TSS - Raw	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00		
Eff: Avg TSS - Effluent mg/L	0.00	0.00	4.00	< 2.00	4.75	0.00	0.00	0.00	0.00	0.00	5.67	0.00		4.36	5.67
Eff: # of samples of TSS - Effluent	0.00	0.00	2.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	11.00		
Loading: TSS - Effluent kg/d	0.000	0.000	25.479	< 15.561	28.218	0.000	0.000	0.000	0.000	0.000	39.477	0.000		29.15	39.48
Percent Removal: TSS - Raw %	0.00	0.00	95.24	92.00	95.05	0.00	0.00	0.00	0.00	0.00	93.70	0.00		94.00	95.24
Total Phosphorus: TP															
Raw: Avg TP - Raw mg/L	1.33	0.71	1.29	0.11	1.00	1.64	0.88	0.80	4.13	1.06	0.99	1.35		1.27	4.13
Raw: # of samples of TP - Raw	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00		
Eff: Avg TP - Effluent mg/L	0.00	0.00	0.04	< 0.03	< 0.04	0.00	0.00	0.00	0.00	0.00	0.06	0.00		0.04	0.06
Eff: # of samples of TP - Effluent	0.00	0.00	2.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	11.00		
Loading: TP - Effluent kg/d	0.000	0.000	0.255	< 0.233	< 0.208	0.000	0.000	0.000	0.000	0.000	0.441	0.000		0.29	0.44
Percent Removal: TP - Raw %	0.00	0.00	96.90	72.73	96.50	0.00	0.00	0.00	0.00	0.00	93.60	0.00		89.93	96.90
Nitrogen Series															
Raw: Avg TKN - Raw mg/L	13.70	5.80	16.00	11.40	8.70	19.10	10.70	10.60	34.70	14.80	14.20	13.20		14.41	34.70
Raw: # of samples of TKN - Raw	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00		
Eff: Avg TAN - Effluent mg/L	0.00	0.00	5.55	4.30	3.35	0.00	0.00	0.00	0.00	0.00	3.10	0.00		3.85	5.55
Eff: # of samples of TAN - Effluent	0.00	0.00	2.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	11.00		
Loading: TAN - Effluent kg/d	0.000	0.000	35.351	33.457	19.901	0.000	0.000	0.000	0.000	0.000	21.596	0.000		25.75	35.35
Eff: Avg NO3-N - Effluent mg/L	0.00	0.00 <	0.06 <	0.06	0.28	0.00	0.00	0.00	0.00	0.00	0.07	0.00		< 0.12	< 0.28
Eff: Avg NO2-N - Effluent mg/L	0.00	0.00 <	0.03 <	0.03 <	0.11	0.00	0.00	0.00	0.00	0.00 <	0.03	0.00		< 0.05	< 0.11
Disinfection															
Eff: GMD E. Coli - Effluent cfu/100mL	0.00	0.00	315.59	10.58	6.93	0.00	0.00	0.00	0.00	0.00	4.82	0.00			
Eff: # of samples of E. Coli - Effluent	0.00	0.00	2.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	11.00		

Appendix II

Daily Lagoon Discharge Report

Lagoon Discharge Report: Spring March 2023

Facility Works Number: *120002353*
Facility Name: *COBOCONK SEWAGE LAGOONS*
Facility Owner: *Municipality: City of Kawartha Lakes*
Facility Classification: *Class 1 Wastewater Treatment*
Receiver: *Gull River*

Date	Station	Flow (m3/day)	Carbonaceous Biochemical Oxygen Demand: CBOD5 (mg/L)	Total Suspended Solids: TSS (mg/L)	Total Phosphorus: TP (mg/L)	Total Ammonia Nitrogen: NH3 + NH4+ as N		pH	Temperature (°C)	Un-ionized Ammonia: NH3 (mg/L)	E. Coli: EC (cfu/100mL)	Hydrogen Sulphide: H2S		Total Kjeldhal Nitrogen: TKN (mg/L)
						(mg/L)	Daily Loading kg/day					(mg/L)	Daily Loading kg/day	
Spring Discharge May														
03/29/23	Effluent	5252.0	4	3	0.04	5.8	30.5	7.3	4.4	0.015	166	0.12	0.63	6.5
03/30/23	Effluent	8694.2												
03/31/23	Effluent	5162.7	4	5	0.04	5.3	27.4	7.3	5.0	0.013	600	0.09	0.46	8.8
	Total	19,108.9												
	Average	6,369.6	4.0	4.0	0.04	5.6		7.3	4.7	0.014		0.105		7.7
	Average Loading		25.5	25.5	0.25									
03/28/23	Dam		< 2	2	< 0.03	< 0.1		7.6	3.6	0.000		< 0.02		<0.5
03/30/23	Dam		< 4	3	< 0.03	< 0.1		6.8	2.0	0.000		< 0.02		<0.5
04/01/23	Dam		< 4	< 2	< 0.03	< 0.1		7.0	2.4	0.000		< 0.02		<0.5
03/28/23	N Bridge		< 4	2	< 0.03	< 0.1		7.4	3.7	0.000		< 0.02		<0.5
03/30/23	N Bridge		< 4	< 2	< 0.03	< 0.1		6.5	3.5	0.000		< 0.02		<0.5
04/01/23	N Bridge		< 4	< 2	< 0.03	< 0.1		6.9	2.0	0.000		< 0.02		<0.5

Notes: Average Loading of CBOD5, Total Suspended Solids and Total Phosphorus = the Average Concentration mulitiplied by the Average Daily Flow during a specified period of operation.
A grab sample shall be collected on the first and last day of an effluent discharge period as well as every three (3) calendar days during the effluent discharge period.
Hydrogen Sulphide results reported at laboratory's method detection limit. For the purpose of calculating Hydrogen Sulphide loadings, the laboratory's method detection limit is used. < the method detection limit is indicative of the possible absence of the parameter.

Lagoon Discharge Report: Spring April 2023

Facility Works Number: *120002353*
Facility Name: *COBOCONK SEWAGE LAGOONS*
Facility Owner: *Municipality: City of Kawartha Lakes*
Facility Classification: *Class 1 Wastewater Treatment*
Receiver: *Gull River*

Date	Station	Flow (m3/day)	Carbonaceous Biochemical Oxygen Demand: CBOD5 (mg/L)	Total Suspended Solids: TSS (mg/L)	Total Phosphorus: TP (mg/L)	Total Ammonia Nitrogen: NH3 + NH4+ as N		pH	Temperature (°C)	Un-ionized Ammonia: NH3 (mg/L)	E. Coli: EC (cfu/100mL)	Hydrogen Sulphide: H2S		Total Kjeldhal Nitrogen: TKN (mg/L)
						(mg/L)	Daily Loading kg/day					(mg/L)	Daily Loading kg/day	
Spring Discharge May														
04/24/23	Effluent	6255.5	< 2	< 2	< 0.03	4.3	26.9	7.6	6.0	0.021	56	< 0.02	0.13	4.9
04/25/23	Effluent	8490.0								0.000				
04/26/23	Effluent	8462.2								0.000				
04/27/23	Effluent	7915.1	3	< 2	< 0.03	4.3	34.0	8.3	9.8	0.148	2	< 0.02	0.16	5.4
	Total	31,122.8												
	Average	7,780.7	2.5	2.0	< 0.03	4.3		7.9	7.9	0.042		< 0.02		5.2
	Average Loading		19.5	15.6	< 0.23									
04/23/23	Dam		< 4	< 2	< 0.03	< 0.1		6.5	8.6	0.000		< 0.02		<0.5
04/25/23	Dam		< 4	< 2	< 0.03	< 0.1		6.9	8.0	0.000		< 0.02		<0.5
04/27/23	Dam		< 4	2	< 0.03	< 0.1		7.1	7.7	0.000		< 0.02		<0.5
04/28/23	Dam		< 4	< 2	< 0.03	< 0.1		7.6	8.7	0.001		< 0.02		<0.5
04/23/23	N Bridge		< 4	< 2	< 0.03	< 0.1		7.0	8.4	0.000		< 0.02		<0.5
04/25/23	N Bridge		< 4	< 2	< 0.03	< 0.1		6.9	7.8	0.000		< 0.02		<0.5
04/27/23	N Bridge		< 4	2	< 0.03	< 0.1		7.6	7.7	0.001		< 0.02		<0.5
04/28/23	N Bridge		< 4	2	< 0.03	< 0.1		7.5	8.6	0.001		< 0.02		<0.5

Notes: Average Loading of CBOD5, Total Suspended Solids and Total Phosphorus = the Average Concentration mulitiplied by the Average Daily Flow during a specified period of operation.
A grab sample shall be collected on the first and last day of an effluent discharge period as well as every three (3) calendar days during the effluent discharge period.
Hydrogen Sulphide results reported at laboratory's method detection limit. For the purpose of calculating Hydrogen Sulphide loadings, the laboratory's method detection limit is used. < the method detection limit is indicative of the possible absence of the parameter.

Lagoon Discharge Report: Spring May 2023

Facility Works Number: *120002353*
Facility Name: *COBOCONK SEWAGE LAGOONS*
Facility Owner: *Municipality: City of Kawartha Lakes*
Facility Classification: *Class 1 Wastewater Treatment*
Receiver: *Gull River*

Date	Station	Flow (m3/day)	Carbonaceous Biochemical Oxygen Demand: CBOD5 (mg/L)	Total Suspended Solids: TSS (mg/L)	Total Phosphorus: TP (mg/L)	Total Ammonia Nitrogen: NH3 + NH4+ as N		pH	Temperature (°C)	Un-ionized Ammonia: NH3 (mg/L)	E. Coli: EC (cfu/100mL)	Hydrogen Sulphide: H2S		Total Kjeldhal Nitrogen: TKN (mg/L)
						(mg/L)	Daily Loading kg/day					(mg/L)	Daily Loading kg/day	
Spring Discharge May														
05/08/23	Effluent	5750.1	3	2	< 0.03	4.8	27.6	8.1	14.4	0.150	8	< 0.02	0.12	6.2
05/09/23	Effluent	6432.9												
05/10/23	Effluent	6376.4												
05/11/23	Effluent	4258.9	< 2	4	< 0.03	4.0	17.0	7.7	15.4	0.058	12	< 0.02	0.09	4.9
	Total	22,818.3												
	Average	5,704.6	2.5	3.0	< 0.03	4.4		7.9	14.9	0.104		< 0.02		5.6
	Average Loading		14.3	17.1	< 0.17									
05/07/23	Dam		< 4	2	< 0.03	0.1		7.2	9.3	0.000		< 0.02		<0.5
05/09/23	Dam		< 4	< 2	< 0.03	< 0.1		7.3	10.1	0.000		< 0.02		<0.5
05/11/23	Dam		< 4	2	< 0.03	< 0.1		8.0	12.0	0.002		< 0.02		<0.5
05/12/23	Dam		< 4	< 2	< 0.03	< 0.1		7.9	12.4	0.002		< 0.02		<0.5
05/07/23	N Bridge		< 4	2	< 0.03	< 0.1		7.1	9.3	0.000		< 0.02		<0.5
05/09/23	N Bridge		7	3	< 0.03	< 0.1		7.4	10.2	0.000		< 0.02		<0.5
05/11/23	N Bridge		< 4	4	< 0.03	0.1		8.3	11.4	0.004		< 0.02		<0.5
05/12/23	N Bridge		< 4	< 2	< 0.03	< 0.1		7.5	12.3	0.001		< 0.02		<0.5

Notes: Average Loading of CBOD5, Total Suspended Solids and Total Phosphorus = the Average Concentration mulitiplied by the Average Daily Flow during a specified period of operation.
A grab sample shall be collected on the first and last day of an effluent discharge period as well as every three (3) calendar days during the effluent discharge period.
Hydrogen Sulphide results reported at laboratory's method detection limit. For the purpose of calculating Hydrogen Sulphide loadings, the laboratory's method detection limit is used. < the method detection limit is indicative of the possible absence of the parameter.

Lagoon Discharge Report: Spring May 2023

Facility Works Number: *120002353*
Facility Name: *COBOCONK SEWAGE LAGOONS*
Facility Owner: *Municipality: City of Kawartha Lakes*
Facility Classification: *Class 1 Wastewater Treatment*
Receiver: *Gull River*

Date	Station	Flow (m3/day)	Carbonaceous Biochemical Oxygen Demand: CBOD5 (mg/L)	Total Suspended Solids: TSS (mg/L)	Total Phosphorus: TP (mg/L)	Total Ammonia Nitrogen: NH3 + NH4+ as N		pH	Temperature (°C)	Un-ionized Ammonia: NH3 (mg/L)	E. Coli: EC (cfu/100mL)	Hydrogen Sulphide: H2S		Total Kjeldhal Nitrogen: TKN (mg/L)
						(mg/L)	Daily Loading kg/day					(mg/L)	Daily Loading kg/day	
Spring Discharge May														
05/16/23	Effluent	5699.2	2	5	< 0.03	4.1	23.4	7.7	17.0	0.064	6	< 0.02	0.11	4.3
05/17/23	Effluent	8199.9												
05/18/23	Effluent	4867.2	< 4	8	0.05	0.5	2.4	8.4	20.3	0.046	4	< 0.02	0.10	0.7
	Total	18,766.3												
	Average	6,255.4	3.0	6.5	0.04	2.3		8.1	18.7	0.055		< 0.02		2.5
	Average Loading		18.8	40.7	0.25									
05/15/23	Dam		< 4	2	< 0.03	< 0.1		7.5	13.8	0.001		< 0.02		0.6
05/17/23	Dam		< 4	2	< 0.03	< 0.1		7.4	12.3	0.001		< 0.02		<0.5
05/19/23	Dam		< 4	3	< 0.03	< 0.1		7.7	12.9	0.001		< 0.02		0.9
05/15/23	N Bridge		4	< 2	< 0.03	< 0.1		7.5	14.1	0.001		< 0.02		<0.5
05/17/23	N Bridge		5	3	< 0.03	< 0.1		7.6	12.0	0.001		< 0.02		<0.5
05/19/23	N Bridge		< 4	5	< 0.03	< 0.1		7.8	12.0	0.001		< 0.02		0.8

Notes: Average Loading of CBOD5, Total Suspended Solids and Total Phosphorus = the Average Concentration mulitiplied by the Average Daily Flow during a specified period of operation.
A grab sample shall be collected on the first and last day of an effluent discharge period as well as every three (3) calendar days during the effluent discharge period.
Hydrogen Sulphide results reported at laboratory's method detection limit. For the purpose of calculating Hydrogen Sulphide loadings, the laboratory's method detection limit is used. < the method detection limit is indicative of the possible absence of the parameter.

Lagoon Discharge Report: Fall Nov 2023

Facility Works Number: *120002353*
Facility Name: *COBOCONK SEWAGE LAGOONS*
Facility Owner: *Municipality: City of Kawartha Lakes*
Facility Classification: *Class 1 Wastewater Treatment*
Receiver: *Gull River*

Date	Station	Flow (m3/day)	Carbonaceous Biochemical Oxygen Demand: CBOD5 (mg/L)	Total Suspended Solids: TSS (mg/L)	Total Phosphorus: TP (mg/L)	Total Ammonia Nitrogen: NH3 + NH4+ as N		pH	Temperature (°C)	Un-ionized Ammonia: NH3 (mg/L)	E. Coli: EC (cfu/100mL)	Hydrogen Sulphide: H2S		Total Kjeldhal Nitrogen: TKN (mg/L)
						(mg/L)	Daily Loading kg/day					(mg/L)	Daily Loading kg/day	
Fall Discharge														
11/16/23	Effluent	4624.8	< 4	4	0.07	2.9	13.4	8.1	6.2	0.048	4	< 0.02	0.09	4.3
11/17/23	Effluent	8627.4												
11/18/23	Effluent	8624.1												
11/19/23	Effluent	8577.2	< 2	10	0.08	3.1	26.6	8.1	4.8	0.051	14	< 0.02	0.17	3.8
11/20/23	Effluent	8359.8												
11/21/23	Effluent	2985.5	< 2	3	0.04	3.3	9.9	8.4	1.5	0.068	2	< 0.02	0.06	3.6
	Total	41,798.8												
	Average	6,966.5	< 2.7	5.7	0.06	3.1		8.2	4.2	0.056		< 0.02		3.9
	Average Loading		< 18.6	39.5	0.44									
11/15/23	Dam		< 4	< 2	< 0.03	< 0.1		7.9	6.3	0.001		< 0.02		0.9
11/17/23	Dam		< 4	< 2	< 0.03	< 0.1		8.0	6.8	0.001		< 0.02		0.8
11/19/23	Dam		< 4	2	< 0.03	< 0.1		7.5	6.0	0.000		< 0.02		<0.5
11/21/23	Dam		< 4	< 2	< 0.03	< 0.1		7.8	4.3	0.001		< 0.02		<0.5
11/22/23	Dam		< 4	< 2	< 0.03	< 0.1		7.8	4.9	0.001		< 0.02		<0.5
11/15/23	N Bridge		< 4	< 2	< 0.03	< 0.1		8.1	6.1	0.002		< 0.02		0.7
11/17/23	N Bridge		< 4	< 2	< 0.03	< 0.1		7.7	6.6	0.001		< 0.02		<0.5
11/19/23	N Bridge		< 4	3	< 0.03	< 0.1		7.4	6.0	0.000		< 0.02		<0.5
11/21/23	N Bridge		< 4	< 2	< 0.03	< 0.1		8.0	4.1	0.001		< 0.02		<0.5
11/22/23	N Bridge		< 4	< 2	< 0.03	< 0.3		8.1	4.9	0.004		< 0.02		<0.5

Notes: Average Loading of CBOD5, Total Suspended Solids and Total Phosphorus = the Average Concentration mulitiplied by the Average Daily Flow during a specified period of operation.
A grab sample shall be collected on the first and last day of an effluent discharge period as well as every three (3) calendar days during the effluent discharge period.
Hydrogen Sulphide results reported at laboratory's method detection limit. For the purpose of calculating Hydrogen Sulphide loadings, the laboratory's method detection limit is used. < the method detection limit is indicative of the possible absence of the parameter.

Appendix III

Maintenance Summary

Coboconk Lagoon 2023 Maintenance Summary

Work Order	Description	Location	Asset	Status	Work Type	Classification	Reported Date
3153936	Corporate Facility Workplace H & S Inspection (3m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	HEALTH AND SAFETY	1/1/23 01:34:35
3153943	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	1/1/23 01:34:41
3153950	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	1/1/23 01:34:47
3153962	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	1/1/23 01:34:56
3155029	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	1/1/23 01:50:04
3178181	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	1/1/23 08:17:16
3179160	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	1/1/23 08:31:17
3179801	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	1/1/23 08:40:15
3181584	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	1/1/23 09:04:46
3182647	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	1/1/23 09:19:45
2774411	6078, PS 4 (Lagoon), Valve, Replacement	6078-SPS4-F	0000295508	CLOSE	CORR	REFURBISH/REPLACE	2/1/23 00:00:00
3209827	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	2/1/23 00:58:00
3209829	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	2/1/23 00:58:02
3209841	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	2/1/23 00:58:10
3210620	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	2/1/23 01:20:07
3226925	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	2/1/23 06:22:28
3227464	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	2/1/23 06:30:20
3227851	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	2/1/23 06:35:48
3229044	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	2/1/23 06:53:03
3229668	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	2/1/23 07:03:00
3250747	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	3/1/23 01:08:36
3250749	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	3/1/23 01:08:43
3250761	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	3/1/23 01:08:58
3251533	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	3/1/23 01:30:47

3269857	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	3/1/23 07:02:44
3270378	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	3/1/23 07:11:48
3270792	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	3/1/23 07:18:00
3272001	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	3/1/23 07:34:28
3272598	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	3/1/23 07:42:23
3290644	6078, Coboconk WWT, Community Complaint Odour Complaint March 21, 2023	6078-WWCO		CLOSE	CORR	INSPECTION	3/22/23 12:51:14
3295140	Corporate Facility Workplace H & S Inspection (3m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	HEALTH AND SAFETY	4/1/23 00:56:06
3295147	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	4/1/23 00:56:11
3295149	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	4/1/23 00:56:13
3295161	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	4/1/23 00:56:21
3296125	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	4/1/23 01:09:41
3296428	Online Process Equipment Calibration Service by Contractor (1y) - 6078 - KTN	6078-WWCO		CLOSE	PM	CALIBRATION	4/1/23 01:14:08
3296952	FEP Site Plan Review (1y) - 6078 - KTN	6078-WWCO		CLOSE	PM	COMPLIANCE	4/1/23 01:20:58
3296957	Tank Wetwell Cleaning/Inspection (6m) - 6078 - KTN	6078-WWCO		CLOSE	PM	REFURBISH/REPLACE	4/1/23 01:21:01
3297571	Heat Trace Insp (6m) - 6078 - KTN	6078-SPS3-F-HV	0000168362	CLOSE	PM	INSPECTION	4/1/23 01:29:22
3315993	Valve Exercising Pump Station Discharge (1y) - 6078 - KTN	6078-SPS3		CLOSE	PM	REFURBISH/REPLACE	4/1/23 05:44:38
3316157	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	4/1/23 05:46:43
3316828	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	4/1/23 05:55:33
3317413	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	4/1/23 06:02:32
3318871	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	4/1/23 06:19:37
3319680	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	4/1/23 06:28:56
3338057	6078, Coboconk WWT, Odour Compliant 94 Shadow Lake Rd 57	6078-WWCO		CLOSE	CORR	INSPECTION	4/3/23 12:51:59
3339559	6078, PS 3, Facility, Alarm	6078-SPS3-F		CLOSE	CALL	COMPLIANCE	4/12/23 11:40:25
3345089	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	5/1/23 01:01:47
3345091	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	5/1/23 01:01:52

3345103	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	5/1/23 01:02:05
3345870	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	5/1/23 01:13:55
3354357	Lifting Devices & Fall Arrest Inspection by Contractor (1y) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	5/1/23 03:04:47
3364247	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	5/1/23 05:51:11
3364830	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	5/1/23 05:59:03
3365162	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	5/1/23 06:03:34
3366423	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	5/1/23 06:19:55
3367075	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	5/1/23 06:28:16
3373942	ESA Inspection By Contractor (1y) - 6078 - KTN	6078-WWCO-F		CLOSE	PM	CALIBRATION	5/1/23 08:23:35
3385334	6078, Coboconk WWT, PS 3, Generator Running, Alarm	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	CALL	REFURBISH/REPLACE	5/15/23 08:29:16
3390768	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	6/1/23 00:58:59
3390770	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	6/1/23 00:59:01
3390782	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	6/1/23 00:59:09
3391612	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	6/1/23 01:10:46
3411170	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	6/1/23 06:03:30
3411933	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	6/1/23 06:14:07
3412522	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	6/1/23 06:22:22
3413749	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	6/1/23 06:40:52
3414364	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	6/1/23 06:49:40
3439640	Corporate Facility Workplace H & S Inspection (3m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	HEALTH AND SAFETY	7/1/23 01:09:12
3439647	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	7/1/23 01:09:17
3439649	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	7/1/23 01:09:19
3439661	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	7/1/23 01:09:26
3440573	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	7/1/23 01:22:40
3458741	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	7/1/23 05:47:19

3459333	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	7/1/23 05:56:13
3459914	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	7/1/23 06:03:29
3461242	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	7/1/23 06:20:20
3462065	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	7/1/23 06:30:32
3481373	6078, Coboconk WWT, Fire and CO Detector (alarm to Trent if available) , Install	6078-WWCO-F-SY		CLOSE	CORR	HEALTH AND SAFETY	7/11/23 13:25:45
3487248	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	8/1/23 00:58:52
3487250	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	8/1/23 00:58:54
3487262	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	8/1/23 00:59:02
3488042	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	8/1/23 01:10:05
3504805	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	8/1/23 04:59:30
3505324	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	8/1/23 05:44:54
3505673	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	8/1/23 05:51:39
3506819	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	8/1/23 06:07:27
3507382	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	8/1/23 06:15:26
3525063	6078, PS 1, Generator, Alarm	6078-SPS1-F-PD		CLOSE	CALL	COMPLIANCE	8/14/23 05:37:27
3525442	6078, PS 3, Alum Pump Alarms, Wiring and Programming	6078-SPS3-P-PC		CLOSE	CORR	REFURBISH/REPLACE	8/16/23 12:03:39
3530628	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	9/1/23 00:59:47
3530630	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	9/1/23 00:59:49
3530642	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	9/1/23 00:59:58
3531412	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	9/1/23 01:11:35
3531747	HVAC, Fans, Dehumidifiers, Heaters (1y) - 6078 - KTN	6078-WWCO		CLOSE	PM	REFURBISH/REPLACE	9/1/23 01:16:54
3532415	HS09 Chemical Review (1y) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	9/1/23 01:26:26
3532422	UPS Insp/Service (1y) - 6078 - KTN	6078-SPS1-F	0000291297	CLOSE	PM	INSPECTION	9/1/23 01:26:32
3532429	Pump Cent Insp/Service (1y) - 6078 SPS #3 Domestic Water - KTN	6078-SPS3-P-SE	0000192705	CLOSE	PM	INSPECTION	9/1/23 01:26:39
3550282	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	9/1/23 06:25:13
3550858	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	9/1/23 06:33:18

3551287	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	9/1/23 06:39:30
3552596	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	9/1/23 06:58:34
3553326	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	9/1/23 07:13:06
3579190	Corporate Facility Workplace H & S Inspection (3m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	HEALTH AND SAFETY	10/1/23 01:00:47
3579197	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	10/1/23 01:00:52
3579199	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	10/1/23 01:00:54
3579211	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	10/1/23 01:01:02
3580116	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	10/1/23 01:12:56
3580846	Engine Diesel Inspection/Service by Contractor (1y) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	REFURBISH/REPLACE	10/1/23 01:22:51
3580852	Tank Wetwell Cleaning/Inspection (6m) - 6078 - KTN	6078-WWCO		CLOSE	PM	REFURBISH/REPLACE	10/1/23 01:22:56
3598758	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	10/1/23 06:03:21
3599712	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	10/1/23 06:15:45
3600330	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	10/1/23 06:23:28
3601829	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	10/1/23 06:42:35
3602696	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	10/1/23 06:53:10
3628376	Building and Grounds Maintenance (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	11/1/23 01:02:23
3628378	Lagoon Inspection (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	INSPECTION	11/1/23 01:02:26
3628390	Alarm Dialer (1m) - 6078 - KTN	6078-SPS3-F-IT	0000295506	CLOSE	PM	INSPECTION	11/1/23 01:02:36
3629160	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	11/1/23 01:15:11
3644454	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	11/1/23 04:56:43
3645396	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	11/1/23 05:29:37
3645754	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	11/1/23 05:36:23
3646873	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	11/1/23 05:50:38
3647484	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	11/1/23 05:58:29

3661903	6078, Coboconk Wastewater Collection, Manhole Overflow from Discharge, Valve Repair	6078-WCCO	0000343804	CLOSE	EMER	REFURBISH/REPLACE	11/2/23 07:58:28
3670406	Engine Diesel (1m) - 6078 - KTN	6078-SPS3-F-PG-ENGN	0000168345	CLOSE	PM	INSPECTION	12/1/23 01:07:49
3686386	Chemical Feed System Insp (1m) - 6078 - KTN	6078-SPS3		CLOSE	PM	INSPECTION	12/1/23 05:10:54
3686885	Tank Alum Inspection (1m) - 6078 - KTN	6078-SPS3-P-SE	0000168358	CLOSE	PM	REFURBISH/REPLACE	12/1/23 05:27:27
3687264	HS03 H & S Equipment Check (1m) - 6078 - KTN	6078-WWCO		CLOSE	PM	HEALTH AND SAFETY	12/1/23 05:32:58
3688325	Water Well Inspection (1m) - 6078 - KTN	6078-WWCO-F	0000327416	CLOSE	PM	INSPECTION	12/1/23 05:47:32
3688934	Operator PDM Entry & Review (1m) - 6078 - KTN	6078-WWCO		CLOSE	OPER	COMPLIANCE	12/1/23 05:55:34

Appendix IV

Calibration Report

Franklin Empire Inc,
550 Braidwood Ave.
Peterborough ON K9J 6X6, CANADA

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

OCWA Kawartha

2023 Calibrations Coboconk

CALIBRATION REPORT

Report No.: OCWA K23 12 inch

Date: Mar 30 2023

SITE:	Coboconk SPS3 Discharge
PROCESS AREA:	Meter chamber
INSTR. TAG:	12 inch
MANUFACTURER:	Siemens
MODEL:	FST-020
SERIAL No.:	34253
OCWA CODE:	0000192877

SERVICE DATE:	Mar 30 2023
TECHNICIAN:	M Manley
JOB REFERENCE:	OCWA K23

Input	**(Test)**
Type:	Flow Comparison

Output	**(Signal)**	**(Process)**
Type or EGU:	l/s	l/s
Min:	0.00	0.00
Max:	125.00	125.00

			Before Calibration		**After Calibration**	
Input	**Input %**	**Siemens**	**Display**	**%Error**	**Display**	**%Error**
Zero	NA					
Pump		103.0	101.0	-1.60%	101.0	-1.60%

Calibration Equipment			
Type:	Clamp-On Flow Meter	DMM	
Manufacturer:	Siemens	Fluke	
Model:	FUP 1010	Model 87	
Serial No.:	U20781	13440128	
Last Cal. Date:		February 17, 2023	

Comments:
ALC 50 Aer 8, VS 1476
Pipe 13.2"
Wall thickness 0.31"
Ductile Iron
Reflect
Spacing 29 8.652

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

CERTIFIED BY:

CALIBRATION REPORT

Report No.: OCWA K23 FIT-101

Date: Mar 30 2023

SITE:	Coboconk SPS3, Raw Water
PROCESS AREA:	Meter chamber
INSTR. TAG:	FIT-101
MANUFACTURER:	Greyline
MODEL:	DFM 5.1
SERIAL No.:	72681
OCWA CODE:	0000306043

SERVICE DATE:	Mar 30 2023
TECHNICIAN:	M Manley
JOB REFERENCE:	OCWA K23

Input	**(Test)**
Type:	Flow Comparison

Output	**(Signal)**	**(Process)**
Type or EGU:	l/s	l/s
Min:	0.00	0.00
Max:	50.00	50.00

			Before Calibration		**After Calibration**	
Input	**Input %**	**Siemens**		**%Error**	**E&H**	**%Error**
Process Flow	38.20%	19.10	18.85	-0.50%	18.85	-0.50%
pump off		slightly negative	0.00		0.00	

Calibration Equipment

Type:	Clamp-On Flow Meter	DMM	
Manufacturer:	Siemens	Fluke	
Model:	FUP 1010	Model 87	
Serial No.:	U20781	13440128	
Last Cal. Date:		February 17, 2023	

Comments:

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

CERTIFIED BY:

Appendix V

Spill Event Reporting
ECA Limit Exceedence Reporting

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

April 20, 2023

Chris Johnston Senior Environmental Officer, Peterborough District Office Ministry of the Environment, Conservation and Parks 300 Water Street South, 2nd Floor, South Tower Peterborough, ON K9J 3C7	Brad Jackson Water Supervisor (Acting), Peterborough District Office Ministry of the Environment, Conservation and Parks 300 Water Street South, 2nd Floor, South Tower Peterborough, ON K9J 3C7

Dear Chris Johnston & Brad Jackson:

Re: Hydrogen Sulphide and Monthly Geometric Mean Density of E. Coli Exceedance – March 2023

Further to our conversation earlier today on April 19, 2023, I am submitting written notification of the exceedance of effluent for hydrogen sulphide and the March 2023 monthly Geometric Mean Density of E. Coli as required ECA No. 9527-AHVRDY, issued March 17, 2017 for the Coboconk Sewage Lagoons.

The ECA sets an effluent limit of 0.1 mg/L for hydrogen sulphide; during the spring discharge March 29-31, 2023 the results from the sample collected on March 29, 2023 was 0.12 mg/L. The hydrogen sulphide sample collected on March 31, 2023 was below the limit along with the waste loadings from both days being below the limit.

The ECA sets a limit of a monthly Geometric Mean Density of E. Coli to not exceed 200 organisms/100 mL of effluent discharged from the Works; the monthly Geometric Mean Density for E. Coli for March 2023 was 316 cfu/100 mL. Since the spring discharge in March 2023, cell content samples have been collected which show results below the E. Coli limit set out in the ECA.

Some factors that impacted the effluent quality include having an early discharge while ice cover was present on the lagoons. The early discharge was caused by high lagoon levels due to:

- Preparing for sludge removal in 2022 but the contractor had to reschedule until 2023
- Large amounts of snow and rainfall accumulation added to regular volumes along with a forecasted heavy rainfall event to occur later the week of March 29th into the weekend

The hydrogen sulphide decreased in the second sample during the discharge in March 2023. Cell content samples were collected on April 13, 2023 showing improved results compared to the March 2023 discharge results.

Please do not hesitate to contact me with any questions.

Best regards,

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

cc: J. Manning, OCWA – Sr. Operations Manager
G. Redden, OCWA - General Manager
K. Lorente, OCWA- Regional Hub Manager
W. Henneberry, OCWA – Safety, Process & Compliance Mgr.
A. Hayter, City of Kawartha Lakes
B. Jackson, Water Supervisor (Acting), MECP Peterborough

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Operations Event Form

Project: Coboconk Lagoon
Location: Manhole located at the junction of Shadow Lake Rd. 57 and Hwy 35
Date: November 01, 2023

Nature of Event: (By-pass, spill, odor, noise etc…)

A spill occurred at the maintenance hole at the junction of Shadow Lake Rd 57 and Hwy 35 which contains an air relief valve.

Details of Event:

The fall discharge at the Coboconk Lagoons was scheduled to start on November 1, 2023; upon starting the discharge on November 01, 2023 at around 9:15 am the operator noticed that the maintenance hole located at the junction of Shadow Lake Rd 57 and Highway 35 was overflowing with effluent. The operator immediately shut off the pump and stopped effluent from flowing into the maintenance hole. The air relief valve malfunctioned which allowed the maintenance hole to fill/overflow onto the ground. The effluent pump was on for a short duration with an approximate volume of 1 m^3 of effluent being absorbed into the ground. After the maintenance hole was cleaned out, it was determined that the air relief valve needs to be replaced. The replacement valve has been ordered and is expected to arrive next week. Cell Contents samples were collected in anticipation of the fall discharge on October 23, 2023, the results are attached.

Call SAC: 1-800-268-6060

Time SAC notified: November 01, 2023 @ 10:15 am **SAC Incident Number**: 1-47LLLF

Name of Person at SAC: Peter

November 08, 2023 @ 08:54 am: Contacted SAC to update, spoke with Neil- Upon investigation the air relief valve needs to be replaced. The replacement valve has been ordered and is expected to be delivered early next week.

District Health Unit Notified (time): November 01, 2023- Messages left @ 10:08 am and 15:35 pm. Brittany Murcar sent a confirmation email that MOH received the notification of the spill.

Name of Person at Health Unit: Brittany Murcar

November 08, 2023 @ 09:00 am: Left a message with MOH providing an update with the status of the repair.

All Other Phone calls placed (Managers, Client, MECP, MOH): Owner- CKL, appropriate OCWA staff, MECP inspector-Brad Jackson

Volume of By-pass or Spill: Estimated ~1m³

Samples Taken? (BOD,TSS,Phos,NH3+NH4, e-coli): Samples collected on October 23, 2023 in anticipation of the fall discharge. See attached laboratory analysis.

Corrective Action Taken: Pump was shut off quickly which stopped the spill. A contractor was contacted to clean out the maintenance hole to allow access to the air relief valve. An air relief valve has been ordered and is expected to arrive early next week.

Prepared By: Christine Craig

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 120002353
Project : PO#017018

01-November-2023

OCWA-Kawartha (Coboconk Lagoon)
Attn : Christine Craig

1 Orde St.
Minden, ON
KOM 2K0, Canada

Phone: 705-286-1142
Fax:

Date Rec. : 25 October 2023
LR Report: **CA14626-OCT23**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Cell Cell-Cell Contents
Sample Date & Time					23-Oct-23 11:50
Temperature Upon Receipt [°C]	---	---	---	---	11.0
Biochemical Oxygen Demand (BOD5) [mg/L]	26-Oct-23	17:05	31-Oct-23	10:40	< 4
Total Suspended Solids [mg/L]	30-Oct-23	10:15	31-Oct-23	13:26	< 2
pH [No unit]	27-Oct-23	09:53	27-Oct-23	18:22	7.99
Phosphorus (total) [mg/L]	27-Oct-23	18:19	30-Oct-23	13:30	0.12
Total Kjeldahl Nitrogen [as N mg/L]	27-Oct-23	18:32	30-Oct-23	10:56	2.0
Temperature @ pH [°C]	27-Oct-23	09:53	27-Oct-23	18:23	20.5
Hydrogen Sulphide [mg/L]	31-Oct-23	14:31	01-Nov-23	09:56	< 0.02
Sulphide [mg/L]	31-Oct-23	14:31	01-Nov-23	09:56	< 0.02
E. Coli [cfu/100mL]	25-Oct-23	11:34	27-Oct-23	15:05	< 2

Note: Hydrogen Sulphide (H2S) results(s) reported below reporting limit based on corresponding Sulphide analysis.

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0003518957

Appendix VI

Sludge Quality

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 120002353
Project : PO#017018

29-April-2022

OCWA-Kawartha (Coboconk Lagoon)
Attn : Julie Preslie

Date Rec. : 22 April 2022
LR Report: **CA12934-APR22**

Copy: #1

1 Orde St.
Minden, ON
KOM 2K0, Canada

Phone: 705-286-1142
Fax:

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Bslq Bslq-Sludge
Sample Date & Time					21-Apr-22 08:00
Temperature Upon Receipt [°C]	---	---	---	---	10.0
Field pH [no unit]	---	---	---	---	6.96
Field Temperature [celcius]	---	---	---	---	7.3
Total Suspended Solids [mg/L]	26-Apr-22	09:36	27-Apr-22	12:25	17200
Total Solids [mg/L]	25-Apr-22	19:16	27-Apr-22	12:02	17100
Volatile Solids [mg/L]	25-Apr-22	19:16	27-Apr-22	12:02	9300
pH [pH Units]	26-Apr-22	11:20	26-Apr-22	12:48	7.33
Alkalinity [mg/L as CaCO3]	26-Apr-22	08:12	27-Apr-22	11:12	467
SpecificGravity	25-Apr-22	19:16	27-Apr-22	11:37	1.0
Total Kjeldahl Nitrogen [as N mg/L]	25-Apr-22	14:48	27-Apr-22	10:41	493
Ammonia+Ammonium (N) [as N mg/L]	25-Apr-22	12:57	26-Apr-22	11:01	57.1
Unionized Ammonia [mg/L as N]	25-Apr-22	12:57	28-Apr-22	15:49	0.078
Nitrite (as N) [mg/L]	26-Apr-22	17:54	29-Apr-22	11:40	< 0.2
Nitrate (as N) [mg/L]	26-Apr-22	17:54	29-Apr-22	11:40	< 0.3
Nitrate + Nitrite (as N) [mg/L]	26-Apr-22	17:54	29-Apr-22	11:40	< 0.3
Total Organic Carbon [%]	28-Apr-22	17:19	29-Apr-22	08:27	22.2
Aluminum [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	1900
Silver [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	< 0.03
Antimony [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	< 0.1
Arsenic [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	< 0.1
Barium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	6.2
Beryllium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	< 0.01
Boron [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.63
Calcium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	400
Cadmium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.020
Cobalt [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.05
Chromium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.41
Copper [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	9.7
Mercury [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.005
Iron [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	160
Potassium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	20

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 120002353

Project : PO#017018
LR Report : **CA12934-APR22**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Bslq Bslq-Sludge
Molybdenum [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.12
Magnesium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	60
Manganese [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	2.6
Sodium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	250
Nickel [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.24
Phosphorus (Total) [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	350
Lead [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.6
Silica [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	41
Strontium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	9.2
Selenium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	< 0.1
Thallium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	< 0.1
Titanium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	2.7
Vanadium [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	0.21
Zinc [mg/L]	28-Apr-22	11:27	29-Apr-22	09:27	13
E. Coli [cfu/1g dried wgt]	22-Apr-22	16:21	25-Apr-22	14:19	134503
E. Coli [cfu/100mL]	22-Apr-22	16:21	25-Apr-22	14:19	230000

Note: Metals and mercury were analyzed on the as-received sample.
Note: Provincial unionized ammonia calculated from field pH and temperature provided on the chain of custody form.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

Carrie Greenlaw
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Environment, Health & Safety

OnLine LIMS

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