ONTARIO CLEAN WATER AGENCY
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2023 Annual Performance Report for the North Cobalt Sewage Treatment Lagoon & Sewage Collection System

January 1, 2023 to December 31, 2023

PREPARED BY

Ontario Clean Water Agency
on behalf of the City of Temiskaming Shores

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Revision History

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0	March 8, 2024	I. Bruneau, PCT	C. Mongrain, ORO	Revision 0 issued for MECP Inspection
1	March 22, 2024	I. Bruneau, PCT	C. Mongrain, ORO	Corrected issue date of the ECA and included ECA amendment notices in the Executive Summary

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Executive Summary

The North Cobalt Sewage Treatment Lagoon is located at 543083 Proctors Road in the Township of Buck and serves the residence of South Haileybury (North Cobalt). The lagoon is designed to treat a daily average flow of 1200 m^3/day and a peak flow of 2900 m^3/day. It is classified as a Class 2 wastewater treatment system under Ontario Regulation 129/04 and operates under Environmental Compliance Approval (ECA) No. 3-0077-94-006 for Municipal and Private Sewage Works issued on March 8, 1994 and the following amendment notices issued on September 20, 1994, January 30, 1995, February 8, 1995 and December 7, 1995.

The North Cobalt Lagoon Sewage Collection System is a Class II wastewater collection system under Ontario Regulation 129/04 that follows the requirements of ECA No. 218-W601 for Municipal Sewage Collection Systems issued on October 27, 2023.

This report summarizes the requirements of each Approval and describes the operational performance of the system to ensure the production of quality effluent.

The North Cobalt Sewage Treatment Lagoon System operated well in 2023 producing a high quality effluent that met all effluent limits and objectives specified in the system's ECA

The system met the rated capacity limit having an annual average daily flow to the lagoon of 425 m^3, which is 35% of the rated capacity. The total volume of influent flow measured in 2023 was 155,216 m^3 compared to the effluent flow of 188,174 m^3.

There was one (1) spill and six (6) overflow events that occurred during the reporting period which are described in Section 10.

All requirements specified in the system's ECAs and any issues experienced at the facility are further explained throughout the report.

Introduction

Condition 17 of ECA No. 3-0077-94-006 for the North Cobalt Sewage Treatment Lagoon requires the Owner to prepare and submit a performance report to the Ministry of the Environment's District Manager on an annual basis within 90 days of the end of the reporting period, for the preceding calendar year. The report must be completed in accordance with this approval and contains, but is not limited to the following information outlined in the ECA:

- A summary of all monitoring and compliance reports submitted in the reporting period, including an overview of the success and adequacy of the sewage treatment program;
- A comprehensive interpretation of all monitoring data and analytical data collected relative to the works during the reporting period and a comparison to the effluent quality and quantity criteria described in sections 11 and 12;
- A summary of any effluent quality assurance or control measures undertaken during the reporting period;
- A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the works;
- A description of any operating problems encountered and corrective actions taken during the reporting period;
- A summary of any proposed alteration, extension or replacement in the process or operation of the works to be completed over the next reporting period which may require approval under the Ontario Water Resources Act;
- A tabulation of the volume of sludge generated in the reporting period and an outline of anticipated volumes to be generated over the next reporting period;
- An outline of the sludge handling methods and disposal areas to be utilized over the next reporting period;
- An evaluation of the calibration and maintenance procedures conducted on all monitoring equipment;
- An evaluation for the need for modifications to the works to improve performance and reliability and to minimize upsets and bypasses.

Condition 4.0(4.6) of ECA No. 218-W601 for the North Cobalt Lagoon Sewage Collection System requires the Owner to prepare and submit an annual performance report to the Ministry of the Environment's Director on or before March 31st of each year and covers a period from January 1st to December 31st of the preceding calendar year. This report must include, but is not limited to the following information;

- If applicable, includes 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;

- Includes a summary of any operating problems encountered and corrective actions taken;
- Includes 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;
- Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.
- Includes 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;
- Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including: dates, volumes and durations. If applicable, loadings for total suspended solids, BOD_5, total phosphorus, and total Kjeldahl nitrogen, and sampling results for *E.coli*, disinfection, if any and any adverse impact(s) and any corrective actions, if applicable;
- Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:
    a) 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.
    b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.
    c) An assessment of the effectiveness of each action taken.
    d) 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.
    e) Public reporting approach including proactive efforts.

The two reports have been merged into one and is presented as the 2023 Annual Performance Report. The report was prepared by the Ontario Clean Water Agency (OCWA) on behalf of the City of Temiskaming Shores and is based on information kept on record by OCWA.

1 System Description

Sewage System Name:	**North Cobalt Sewage Treatment Lagoon**
Sewage System Works Number:	110001382
Sewage System Address:	543083 Proctors Road, Part 13 & 14, Concession 2, Township of Buck, District of Timiskaming, ON
Sewage System Owner:	Corporation of the City of Temiskaming Shores
Sewage Treatment ECA:	3-0077-94-006, issued March 8, 1994
Sewage Collection ECA:	218-W601, issued October 27, 2023
Reporting Period:	January 1, 2023 to December 31, 2023

Capacity of Works:	1200 m^3/day annual average, 2900 m^3/day peak
Service Area:	Temiskaming Shores, subsection North Cobalt
Service Population:	980
Effluent Receiver:	Farr Creek
Major Process:	Three-celled Aerated, Phosphorus Removal Lagoon

The North Cobalt Sewage Treatment Lagoon serves the residents of North Cobalt (South Haileybury) and is designed to treat a daily average flow capacity of 1200 m^3/day and a peak flow of 2900 m^3/day. The system consists of three aerated facultative lagoons each having a capacity of 21,500 m^3. The lagoon continuously discharges to Farr Creek which eventually discharges to Lake Temiskaming.

The North Cobalt Lagoon system is a continuous discharge lagoon comprised of a grit removal facility, three aerated facultative lagoons and two sludge storage transfer lagoons. The control building contains a 27,200 L alum storage tank, air supply system, ultra-violet light disinfection system and Parshall flume for flow measurement. A 100 kW standby diesel generator set is available to supply power in emergency situations

The sewage treatment lagoon consists of the following;

Grit removal facility with manual bar screen consisting of three grit channels each 5m x 0.75m x 0.6m wide two of which are individually equipped with a v-notch weirs;

Aerated lagoon system with three cells in series each having a 0.86 hectare surface area, and a storage capacity of 19,100 m^3 at a nominal depth of 3.5 m. Each of the lagoon cells are equipped with fine bubble diffusers. The system is equipped with interconnecting sewers and chambers including a submersible sewage pump capable of delivering 13 L/s at 6.1 m TDH in Drain Chamber No. 3, and a 300 mm effluent discharge with a submerge outfall structure in Farr Creek. There

are two sludge storage cells with each cell having a capacity of 1500 m^3 at a nominal depth of three metres. Each cell is equipped with air diffusers, mixer and a common submersible sewage pump rated at 12.6 L/s at 8m TDH. In 2014, the lagoon's underdrain system was plugged and a pump was installed, which operates on level, to direct any underdrain wastewater to Cell No. 2.

Control Building housing the following;

- an ultra-violet disinfection system (Trojan UV 3000 B) comprised of two banks totaling 32 lamps with a nominal intensity of 11,000 mW/cm2 and 7.57 s retention time of 38.92 cm/s;
- a 27,200 L alum storage tank;
- an air supply system for the fine bubble diffusers consisting of three rotary positive blowers delivers air through a 150mm air header line to the diffusers in the lagoons cells;
- an air supply system of the sludge storage cells consisting of an air compressor, 1500 L receiver tank, particulate filter, oil filer and 75 mm air header line to the transfers cells;
- a Parshall Flume for measuring effluent flows to Farr Creek;
- a 100 kW diesel generator for back-up power

Alum Building houses two 1100 L alum feed tanks and feed lines for phosphorus removal. The building is located between Cell No. 1 and Cell No. 2 and the system feeds alum into Cell No. 2.

Sludge Storage Transfer Lagoons each have a capacity of 1500 m^3 at a nominal depth of 3 meters. The lagoons are currently not in use as sludge is not removed or managed at this time.

The North Cobalt sewage collection system consists of truck sewers, separate sewers, nominally separate sewers, forcemains and two (2) sewage pumping stations that direct sanitary sewage to the lagoon North Cobalt Sewage Treatment Lagoon. One station is located on Station Street and the other on Groom Drive.

Station Street SPS is located on Lot 10, Con 2 on Station Street in the community of North Cobalt.

The pumping station consists of a poured concrete wet well and two submersible pumps each capable of delivering sewage at a rate of 11.4 L/s at 14.6 meters TDH. It includes an overflow manhole equipped with an overflow pump, piping, valves, instrumentation, and mechanical/electrical equipment for the operation of the pumping station. The station is powered by an MCC (Motor Control Center) and fully controlled by a PLC SCADA system.

The wet well is equipped with a Milltronics level system as well as a back-up float system with a series of alarms. OCWA's remote monitoring system is used to monitor sewage levels and volumes.

The system has a flow meter and chlorine dosing system to measure and treat collection system overflows. The overflow discharge is to an Farr Creek that flows to Lake Temiskaming.

The station is equipped with a 25 kW standby diesel generator which is located inside the pump house building.

Groom Drive SPS is located south of Groom Drive at Queen Street in the community of North Cobalt.

The pumping station consists of a poured concrete wet well and two submersible pumps each capable of delivering sewage at a rate of 3.8 L/s at 7.4 meters TDH. The station is equipped with piping, valves, instrumentation, and mechanical/electrical equipment for the operation of the pumping station, is powered by an MCC and fully controlled by a PLC SCADA system.

The wet well is equipped with a Milltronics level system as well as a back-up float system with a series of alarms. OCWA's remote monitoring system is used to monitor sewage levels and pumping hours.

A 30 kW portable diesel generator is stored off-site at the Temiskaming Shores Public Works Garage to ensure its operation in the winter months.

2 Monitoring Program

2.1 Monitoring Program as Outlined in the Environmental Compliance Approval

Table 1: Analytical Parameters

BOD_5	Five Day Biochemical Oxygen Demand – is measured in an unfiltered sample; includes carbonaceous and nitrogenous oxygen demand. It refers to the amount of oxygen consumed by organic matter in a specific volume of water at a specific temperature over a 5 day period. High BOD_5 in effluent means a large quantity of oxygen was needed to break down the organic matter and identifies a large amount of organic matter in the effluent indicating inadequate treatment.
TSS	Total Suspended Solids – the dry weight of suspended particles that are not dissolved in water and can be filtered. TSS is composed of settleable solids and non-settleable solids depending on the size, shape and weight of the solid particles. Settable solids are large sized particles that tend to settle more rapidly in a given period of time.
TP	Total Phosphorus – a measure of all phosphorus found in a sample, whether it is dissolved or particulate. TP is commonly used to determine the health of water bodies. Excess TP stimulates algae and weed growth that may cause fluctuations in dissolved oxygen in the receiving waters.
TAN	Total Ammonia Nitrogen – the total amount of nitrogen in the forms of Ammonium (NH_4) and Ammonia (NH_3). Ammonia is one of several forms of

Table 1: Analytical Parameters

	nitrogen that exist in aquatic environments and can cause direct toxic effects on aquatic life. High levels of ammonia can corrode and damage critical pieces of infrastructure.
TKN	Total Kjeldahl Nitrogen – measures both total organic nitrogen and ammonium. Excess nitrogen in water bodies can lead to harmful algal blooms and other negative impacts on aquatic ecosystems.
NO_2-N	Nitrogen as Nitrite – can cause excessive algae and plant growth which can deplete oxygen of waterbodies resulting in the death of fish and other aquatic organisms.
NO_3-N	Nitrogen as Nitrate – nitrates are essential plant nutrients, but in excess amounts they can cause significant algae and plant growth and contribute to water quality problems.
E. coli	*Escherichia coli* – Thermally tolerant forms of Escherichia bacteria that can live in the intestines of humans and warm-blooded animals. There are hundreds of *E. coli* strains and most are relatively harmless, however a notorious exception is *E. coli* strain 0157:H7, an emerging pathogen that produces a powerful toxin and can cause severe illness. *E. coli* is used as the most widely adopted indicator of faecal pollution in water and wastewater.
Alkalinity	Alkalinity is an acid neutralizing agent that resists changes in pH. Wastewater systems which include biological processes function best at an optimal pH and alkalinity is needed to ensure pH remains in the optimal range.
pH	pH – expresses the degree or intensity of both acidic and alkaline reactions on a scale from 0 to 14 with 7 being neutral, number less than 7 signify increasingly greater acidic solutions, and numbers greater than 7 signify increasingly basic or alkaline reactions. Very high or very low pH levels can be corrosive to pipes, screening equipment and pumps, can damage biological processes and form undesirable toxic gases or heavy metals.

Table 2: Sampling Requirements for the Raw Sewage (Influent)

Parameter	Type of Sample	Minimum Frequency
BOD_5	24 hour composite	weekly
TSS	24 hour composite	weekly
TP	24 hour composite	weekly
TKN	24 hour composite	weekly
Alkalinity	24 hour composite	weekly

Table 3: Sampling Requirements for the Final Effluent

Parameter	Type of Sample	Minimum Frequency
BOD_5	24 hour composite	weekly
TSS	24 hour composite	weekly
TP	24 hour composite	weekly
TKN	24 hour composite	weekly
TAN (NH_3^- + NH_4 as N)	24 hour composite	weekly
NO_2-N	24 hour composite	weekly
NO_3-N	24 hour composite	weekly
Alkalinity	24 hour composite	weekly
pH	24 hour composite	weekly
Temperature	grab	weekly
E. coli	grab	weekly

3 Interpretation of Monitoring and Analytical Data

3.1 Influent Flow

The influent flow is a measurement based on the total volume of wastewater taken in each day. The system is equipped with flow meters installed on two of three grit channels at the head of the treatment works to measure the raw sewage into the lagoon.

The rated capacity of the North Cobalt Wastewater Lagoon is 1200 m^3/day (average daily flow). The average flow is defined as the total flow to the sewage works during the period of operation upon which the report is based, divided by the number of days in the period.

Compliance is achieved when the average daily influent flow does not exceed 1200 m^3/day or a peak design flow of 2900 m^3/day. The average daily flow for 2023 was 425 m^3/day which is 35% of the average rated capacity. This was the lowest annual average over the last 11 years. A peak flow of 3455 m^3/day was reached on April 11th during heavy rain and snow melt. This was the highest peak flow since 2015 (3752 m^3/day).

The total amount of sewage received by the lagoon in 2023 was 155,216 m^3.

Figure 1 compares the monthly influent flow rates recorded in 2023 to the rated capacity and peak capacity of the plant.

Flow trends are critical to assessing the adequacy of size of the treatment system. Figure 2 shows both the annual average and annual peak values for the last 11 years plotted against the rated capacity and peak flow capacity of the wastewater system.

3.1.1 Monthly Influent Flows

Table 4: Comparison of the Monthly Influent Flows to the Rated Capacity

2023	Total Influent Flow (m^3/d)	Maximum Influent Flow (m^3/d)	Average Daily Influent Flow (m^3/d)	% of the Avg. Day Rated Capacity (1200 m^3/d)
January	8957	679	289	24%
February	5736	474	205	17%
March	5733	225	185	15%
April	33,273	3455	1109	92%
May	17,254	3088	447	37%
June	5917	531	197	16%
July	8761	748	283	24%
August	7691	608	248	21%
September	15,352	3337	512	43%
October	23,437	2305	756	63%
November	14,583	1015	486	41%
December	8525	340	275	23%

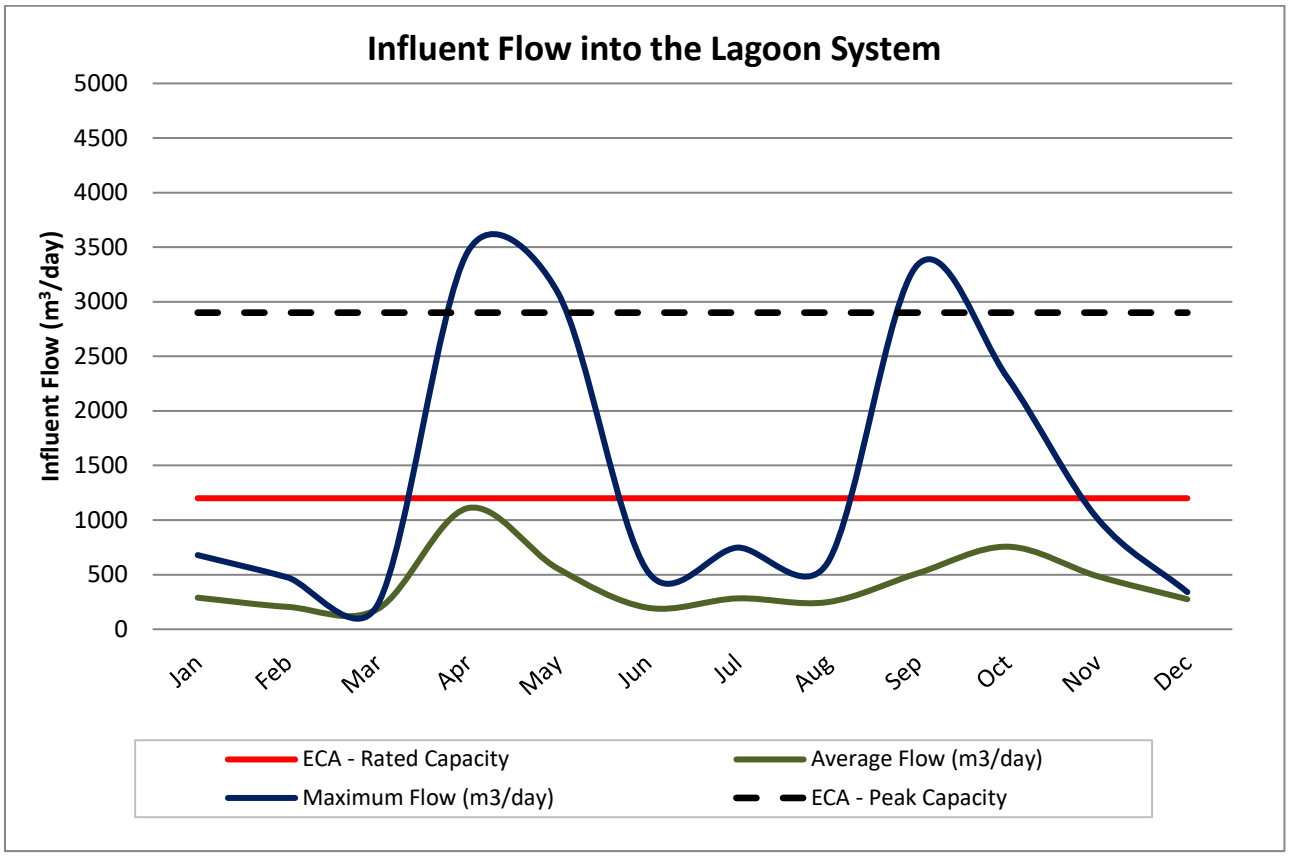


Figure 1 – 2023 Influent Flow into the North Cobalt Lagoon

3.1.2 Annual Influent Flows

Table 5: Comparison of the Annual Influent Flow to the Rated Capacity

Design Capacity (m^3/day)	1200	Maximum Flow Capacity (m^3/day)	2900
2023 Average Flow (m^3/day)	425	2023 Maximum Flow (m^3/day)	3455
Percent of Capacity (%)	35%	Percent of Capacity (%)	119%
Total volume of wastewater treated in 2023		155,216 m^3	

3.1.3 Historical Influent Flows

Table 6: Comparison of Historical Influent Flows (2013 to 2023)

Year	Total Influent Flow (m^3/d)	Maximum Influent Flow (m^3/d)	% Maximum of Peak Capacity (2900 m^3/d)	Average Day Flow (m^3/d)	% Average of Rated Capacity (1200 m^3/d)
2023	155,216	3455	119%	425	35%
2022	174,031	2818	97%	577	40%
2021	169,881	2408	83%	465	39%
2020	201,487	3083	106%	550	46%
2019	210,487	3068	106%	577	48%
2018	175,329	2545	88%	480	40%
2017	213,567	2455	85%	585	49%
2016	187,606	2972	102%	513	43%
2015	193,330	3752	129%	574	48%
2014	172,937	1983	68%	474	40%
2013	162,845	2379	82%	446	37%

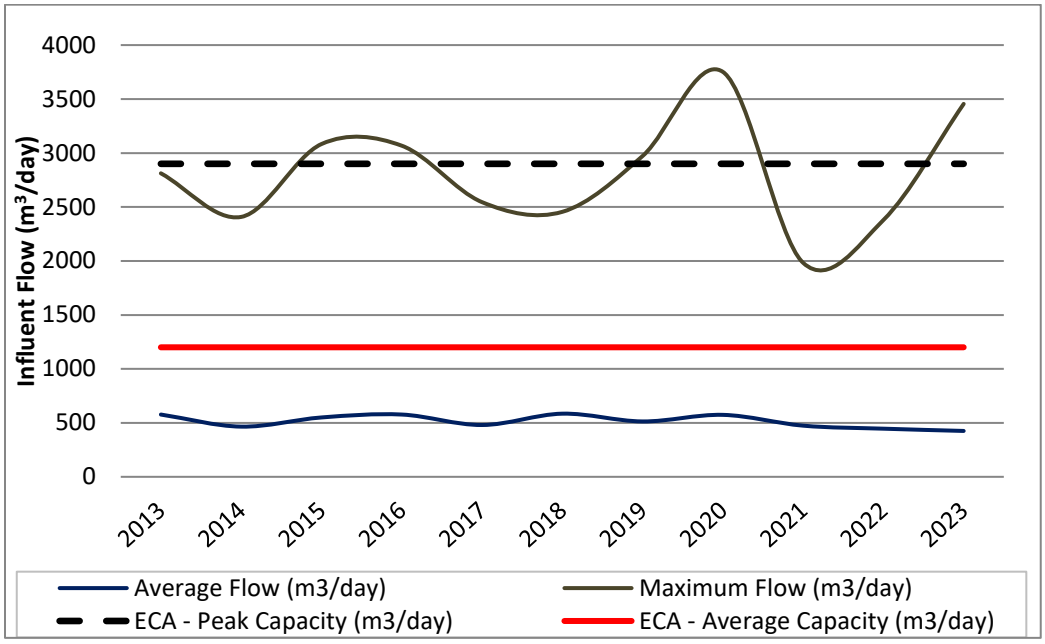


Figure 2 – Historical Influent Flow Trends (2013 to 2023)

3.2 Effluent Flows

The effluent flow is measured using a Parshall Flume located on the effluent discharge pipe to measure flows into Farr Creek.

3.3 Influent Verses Effluent Flows

The total volume of influent flow measured in 2023 was 155,216 compared to the effluent flow of 188,174 m^3 which is 18% higher than influent flow.

Table 7 and Figure 3 compare the 2023 influent flows to the effluent flows.

Table 7: Influent and Effluent Flow Comparison for 2023

2023	Influent Flow (m^3/month)	Effluent Flow (m^3/month)	Flow Difference (Effluent – Influent)	% Percent Difference
January	8957	9580	623	7.0%
February	5736	6172	436	7.6%
March	5733	5866	133	2.3%
April	33,273	43,161	9888	30%
May	17,254	24,552	7298	42%
June	5917	6223	306	5.2%
July	8761	11,790	3029	35%
August	7691	8248	557	7.2%
September	15,352	17,537	2185	4%
October	23,437	29,626	6189	26%
November	14,583	16,603	2020	14%
December	8525	8814	289	3.4%
TOTAL	**155,216**	**188,174**	**32,958**	**18%**

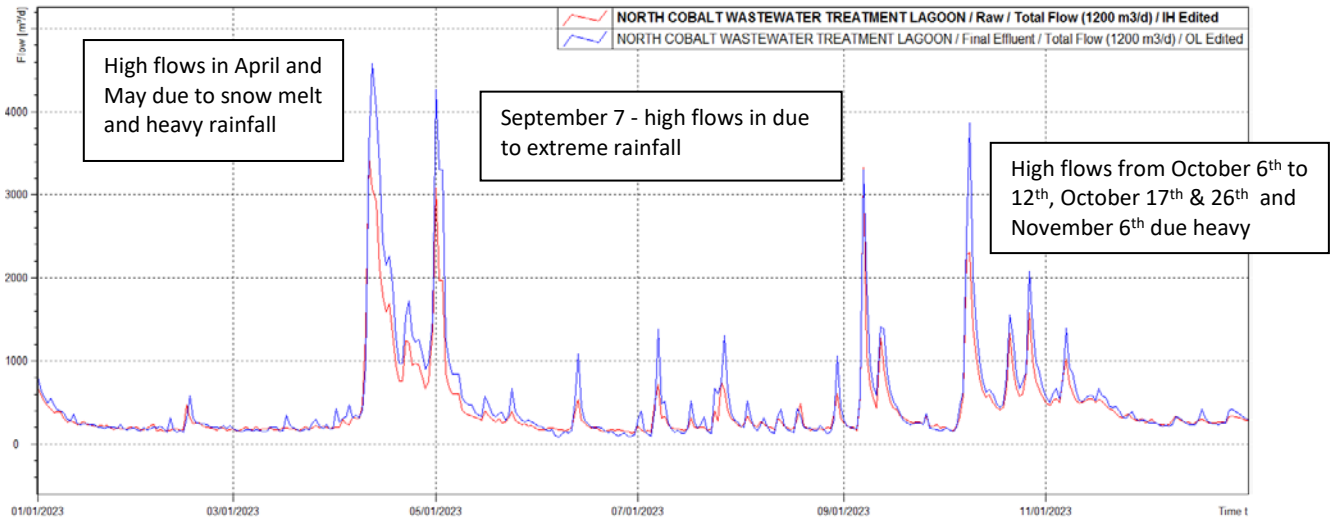


Figure 3 – Comparison of Influent and Effluent Flows (2023)

3.4 Influent (Raw Sewage) Quality

Influent samples are required to be collected on a weekly basis. This section summaries the annual average and annual maximum concentrations of analytical parameters for 2023. A summary of the monthly monitoring data is available in Appendix A.

Table 8: Influent Concentrations

Parameter	Annual Average	Annual Maximum
BOD_5 (mg/L)	< 151	670
TSS (mg/L)	192	1300
TP (mg/L)	3.97	17.0
TKN (mg/L)	29.9	71.3
Alkalinity (mg/L $CaCO_3$)	233	309

"<" means values include results that were less than the laboratory's method detection limit

3.4.1 Historical Trends of Influent Characteristics

The characteristics of the raw wastewater influence the design and efficacy of the wastewater treatment process. Influent data and trends for BOD_5, TSS, TP, TKN and Alkalinity for the last 11 years data is provided in Appendix B.

The trends show that the average BOD_5 concentration varied from 64 to 213 mg/L over the past 11 years with a maximum level of 2200 mg/L in 2018.

The average TSS concentration ranged from 58 to 328 with a maximum concentration of 3640 mg/L in 2021.

The average TP concentration varied slightly from 2.1 to 5.0 with a maximum concentration of 45 mg/L in 2018.

The average TKN concentration fluctuated from 18 to 532 with a maximum concentration of 191 mg/L in 2021.

The average alkalinity concentrations remained fairly consistent over the past 10 years.

3.5 Effluent Quality

The North Cobalt sewage effluent quality is based on the carbonaceous biochemical oxygen demand ($cBOD_5$), total suspended solids (TSS), total phosphorus (TP) and *E. coli* levels. In 2023, the lagoon produced a high quality effluent which met the compliance limits specified in the system's ECA. Summaries of the minimum and maximum monthly averages for the final effluent concentrations are shown in Table 9 along with the annual minimum and maximum pH and temperature results. The effluent loadings are shown in Table 10.

Table 9: Effluent Concentrations

Parameter	Monthly Average (minimum)	Monthly Average (maximum)	Compliance Limit (monthly average)	Exceedance
BOD_5 (mg/L)	< 1.1	4.8	25	No
TSS (mg/L)	< 1.6	12	25	No
TP (mg/L)	< 0.004	0.228	1.5	No
E.coli (cfu/100mL)	< 5	9	200 (*geomean)*	No
TKN (mg/L)	0.9	19	N/A	No
TAN (mg/L)	0.21	10	N/A	No
NO_3-N (mg/L)	0.90	2.63	N/A	No
NO_2-N (mg/L)	< 0.02	0.23	N/A	No
Alkalinity (mg/L)	24	139	N/A	No
Parameter	**Annual Minimum**	**Annual Maximum**	**Operation Guideline**	**Exceedance**
pH	7.48	8.53	6.0 to 9.5 (inclusive)	No
Temperature (°C)	0.5	25	N/A	No

"<" means values include results that were less than the laboratory's method detection limit

Table 10: Effluent Loadings

Parameter	Monthly Average (minimum)	Monthly Average (maximum)	Compliance Limit (monthly average)	Exceedance
BOD_5 (kg/d)	< 1.45	6.11	30	No
TSS (kg/d)	< 2.6	11	30	No
TP (kg/d)	< 0.030	0.330	1.8	No

Appendix A includes a Monthly Process Data Report which summarizes the effluent monitoring and analysis conducted at the facility during the reporting period.

3.6 Sewage Treatment Program Success and Adequacy

The Performance Summary shows the efficiency of the lagoon performance through pollutant removal rates from raw sewage through to the final effluent.

Table 11 demonstrates that the lagoon treatment process was very successful in decreasing the levels of BOD_5, TSS and TP and quite effective in reducing TKN from the influent, producing a high quality effluent.

Table 11: Performance Summary

Parameter	Influent (annual average)	Effluent (annual average)	% Removal
BOD_5 (mg/L)	< 151	< 2.8	98%
TSS (mg/L)	192	< 5.1	97%
TP (mg/L)	3.97	< 0.068	98%
TKN (mg/L)	29.9	7.0	77%

4 Effluent Quality Assurance and Control Measures Undertaken

The following activities are included in regular operator and supervisory activities to assure high level performance of the sewage treatment operations including high effluent quality and accurate flow monitoring:

- Operational staff have current and appropriate level of certification for the operation of the facility and continue to learn and achieve knowledge of the process and equipment Experienced staff has a high level of regulatory competence. New staff receives on-going training to achieve operational knowledge and regulatory competence.
- The pumping stations and lagoon site are inspected by a certified OCWA operator regularly during the work week.
- Certified operators conduct daily reviews of selected data from continuous monitoring equipment which is captured by a remote monitoring system.
- In-house tests; pH and temperature, are conducted by licensed operators for monitoring purposes using standard methods for Water and Wastewater.
- Samples are collected as required and analyzed by Testmark Laboratories located in Kirkland Lake, Ontario. Analysis of the samples is conducted in accordance with the Standard Council of Canada (SCC), in cooperation with the Canadian Association for Laboratory Accreditation Inc. (CALA). Quality control procedures are method specific and include laboratory duplicate samples, spiked blanks and spiked duplicates.
- A sampling system which includes an excel sample calendar, which is updated at the beginning of each year, and a chain of custody binder are used to ensure all samples are collected as per the requirements identified in the system's ECA.
- Operations and Compliance staff review facility round sheets and laboratory reports to monitor the routine operation of the treatment system and ensure compliance with the ECA.
- All process and laboratory data is logged in a process data management system.
- Routine maintenance is scheduled and tracked to completion using OCWA's Workplace Maintenance System (WMS). Instrumentation equipment is tested and maintained as per manufacturer's recommendations.
- Certified operators monitor chemical usage and make adjustments as required.
- Alum Sulphate is added to the lagoon to reduce total phosphorus levels and help settle solids.
- Any bypass, overflow or upset events that occur in the system are tested, monitored and reported to the local Health Unit and Spills Action Center (SAC) and local Health Unit.
- All flow and effluent quality data is reviewed by the Overall Responsible Operator and Compliance staff to identify any changes in concentrations and/or emerging trends. All non-compliances are reported to Ministry's Spills Action Center (SAC) and the local MECP inspector.

The Cobalt Lagoon has produced high quality effluent with no effluent or objective exceedances.

5 Efforts Made to Meet Effluent Objectives

The Effluent Design Objectives are those levels of performance which can be achieved by treatment processes treating normal strength municipal sewage under optimum conditions. A sewage treatment facility should be able to produce annual average effluent quality approximately equal to the Effluent Design Objectives, but should not exceed the Effluent Compliance Limits. The objectives are used to promote continuous improvement in the operations of the works and to trigger corrective action before environmental impairment occurs.

OCWA uses a number of best efforts to achieve the Effluent Objectives.

- Certified operational staff have a high level of process knowledge and regulatory proficiency.
- The mechanical elements in the facility are regularly inspected, well maintained and kept in good repair. OCWA uses a computerized maintenance management program which generates works orders to ensure maintenance of equipment is proactively performed.
- Raw wastewater and effluent samples are collected as required and analyzed by Testmark Laboratories, an accredited laboratory. OCWA reviews these results on a regular basis to confirm compliance with ECA objective and limits.
- In-house sampling and testing for selected operational parameters provides real-time results which are used to enhance process and operational performance.
- Operations, maintenance and emergency procedures are available to ensure facilities are operated in compliance with applicable legal instruments. Facility staff has access to a network of operational compliance and support experts at the region and corporate levels.
- A five year rolling recommended capital and major maintenance report is used to assist the Owner and OCWA with planning infrastructure needs for the short and long terms. A letter summarizing capital work recommendations a provided to the Owner each year for their approval.

The North Cobalt Lagoon met the monthly effluent objectives for BOD_5, TSS, and TP. A summary of results are provided in the tables below.

Table 12: Effluent Concentration Objectives

Parameter	Monthly Average (min to max)	Objective (monthly average)	Exceedance
BOD_5 (mg/L)	< 1.1 to 4.8	15	No
TSS (mg/L)	< 1.6 to 12	15	No
TP (mg/L)	< 0.004 to 0.228	1.0	No

Table 13: Effluent Loading Objectives

Parameter	Monthly Average (min to max)	Objective (monthly average)	Exceedance
BOD_5 (kg/d)	< 1.45 to 6.11	18	No
TSS (kg/d)	< 2.6 to 11	18	No
TP (kg/d)	< 0.030 to 0.330	1.2	No

6 Operating Problems & Corrective Actions

Operating problems encountered during 2023 are summarized below.

- The lagoon experienced algae growth in the warmer months which resulted in elevated TSS concentrations. Alum was injected into Cell No. 3, as well as Cell No. 2 to help reduce the growth and lower TSS levels.
- Station Street Sewage Pumping Station (SPS) – A spill occurred at the pumping station due to a faulty level transmitter which was replaced.
- Station Street SPS - Sodium hypochlorite pump was non-operational while the overflow pump was running. The outlet for the pump was broken and was replaced.
- Station Street SPS - Six (6) overflow events occurred during heavy rainfall and spring snow melt. Refer to Section 10 for further details.

7 Maintenance Procedures Performed on the Works

Routine maintenance schedules are entered in OCWA's computerized Workplace Management System (WMS). This is a comprehensive maintenance program that is based on a pro-active and preventive approach. This program includes but is not limited to running weekly, monthly, and annually checks as required or as recommended by manufacturer's instructions. All routine and preventative maintenance was conducted in 2023.

Significant maintenance that took place during 2023:

<u>North Cobalt Lagoon</u>

- Cleaned grit channels and manholes
- Removed No. 3 blower when bearings failed
- Repaired No. 2 blower outlet coupler and replaced filter intake
- Replaced on-line effluent pH probe,

- Replaced UV bulbs
- Replaced alum transfer pump

Station Street Sewage Pumping Station

- Replaced faulty level transmitter (LIT) with an upgraded unit.

Refer to Appendix C for a maintenance summary which includes preventative work, capital projects and emergency repairs.

8 Calibration & Maintenance of all Monitoring Equipment

Influent and effluent monitoring equipment is calibrated based on requirements of the system's ECA or manufactures recommendations. Flow meters are calibrated annually to ensure a required accuracy of +/- 5%. pH meters are calibrated to ensure an acceptable tolerance and accuracy as specified by the manufacturer.

Routine maintenance was conducted as scheduled by qualified Instrumentation Technicians during the reporting period. Refer to Table 12 for a summary of calibrations conducted in 2023.

Table 14: Calibration Summary

Instrument	Calibration Date	% Accuracy
Raw Flow Meter – Channel No. 1	August 23, 2023	98.8%
Raw Flow Meter – Channel No. 2	August 23, 2023	98.5%
Effluent Flow Meter	August 22, 2023	99.1%
Station St. SPS Overflow Meter	August 22, 2023	100%
pH Analyzer	July 12 & October 6, 2023	99 to 100 %
Portable pH Analyzer	Jan. 17, Apr. 12, Jul. 6 and Oct. 6, 2023	95 to 100%

9 Sludge Generation and Disposal

The systems ECA requires sludge volumes to be tabulated each year and anticipated volumes to be generated over the next reporting period.

No sludge was disposed of during this reporting period and it's anticipated that no sludge will be disposed of in 2024.

Sludge and water depths were measured in 2020, 2021 and during this reporting period on June 29, 2023. Sludge depths are trended and were estimated for year 2022. There is a decrease in the sludge volume compared to the previous years as shown in the following tables. The average sludge volume in 2023 was determined by using twelve sampling points in Cell 1 and Cell 2 and 10 sampling points in Cell 3. Measurements are taken regularly to ensure no excess sludge accumulation is taking place. It is anticipated that the sludge volume will remain approximately the same during future years.

Table 15: Sludge Volume Cell 1

Date	Sample Points	Average Depths (m)		Sludge Volume (m^3)	% Capacity
		Water	Sludge		
Oct. 8, 2020	6	3.2	0.37	3182	17%
Aug. 19, 2021	16	3.2	0.70	6020	32%
2022 (estimate)	-	-	0.49	4214	22%
Jun. 29, 2023	12	2.3	0.18	1548	8%

As per the Operations Manual: Operating depth = 3.5 m, Area = 8600 m2, Operating Capacity = 19,100 m3

Table 16: Sludge Volume Cell 2

Date	Sample Points	Average Depths (m)		Sludge Volume (m^3)	% Capacity
		Water	Sludge		
Oct. 8, 2020	9	3.5	0.31	2666	14%
Aug. 19, 2021	16	3.4	0.43	3698	19%
2022 (estimate)	-	-	0.37	3182	17%
Jun. 29, 2023	12	2.5	0.21	1806	9%

As per the Operations Manual: Operating depth = 3.5 m, Area = 8600 m2, Operating Capacity = 19,100 m3

Table 17: Sludge Volume Cell 3

Date	Sample Points	Average Depths (m)		Sludge Volume (m^3)	% Capacity
		Water	Sludge		
Oct. 6, 2020	9	3.5	0.11	946	5%
Aug. 19, 2021	16	3.4	0.44	3784	20%
2022 (estimate)	-	-	0.37	3182	17%

Date	Sample Points	Average Depths (m)		Sludge Volume (m^3)	% Capacity
		Water	Sludge		
Jun. 29, 2023	10	2.3	0.13	1118	6%

As per the Operations Manual: Operating depth = 3.5 m, Area = 8600 m2, Operating Capacity = 19,100 m3

10 Abnormal Discharge Events

10.1 Overflow, Bypass and Spill Events

Six (6) overflow events occurred at the Station Street (No. 2) sewage pumping station during the reporting period. The overflow events occurred during Spring snow melt or heavy periods of rainfall which caused the flow to exceed the station's capacity. The untreated wastewater was chlorinated and tested for BOD_5, TSS, TP, TKN and *E. coli* as required under condition 3.0(3.4)(3.4.1b) of the ECA.

One (1) spill occurred on February 17th at the Station Street sewage pumping station due to a level transmitter (LIT) fault caused by frost on the sensor. A review of the flow trend showed the spill lasted for a short duration (4 minutes). The LIT was replaced with a unit that performs better in colder weather.

The events were reported to the Ministry's Spills Action Center (SAC) and local Health Unit as per the collection system's ECA and to Environment Canada as required under the Federal Fisheries Act.

The table below presents a summary of the abnormal discharge events in 2023 and Appendix D provides details of the events and sample results.

Table 18: Summary of Abnormal Discharge Events in 2023

Date	Duration	Type	Cause	Adverse Impacts	Estimate Volume (m^3)
February 17	4 minutes	Spill	LIT fault/frost	None	2.5
April 11	7.2 hours	Overflow	Heavy snow melt	None	161
April 12	2.1 hours	Overflow	Rapid snow melt	None	13
April 13	7.1 hours	Overflow	Heavy snow melt	None	108
May 1	10.7 hours	Overflow	Heavy rainfall	None	253
September 7	7.8 hours	Overflow	Extreme rainfall	None	416
October 8	10 minutes	Overflow	Heavy rainfall	None	8.6

10.2 Efforts Made to Reduce System Overflows and Bypasses

The annual average daily influent flow into the lagoon is well below the rated capacity and overflows/bypasses/spills are very rare.

A review of historical data over the last 10 years (2013 to 2023) indicates that all abnormal discharge events occurred at the Station Street Sewage Pumping Station and discharged to a ditch next to the station, aka Mill Creek. Forty-two (42) overflow events occurred from 2013 to 2023 during heavy rains and snow melt.

In an effort to reduce and/or eliminate overflow, bypass and spill events and to confirm with Procedure F-5-1, the following are in place.

- Emergency backup generators are installed at the lagoon site and sewage pumping station.
- A SCADA system is used to accurately monitor the sewage network and an alarm system is in place at key points in the process and at the sewage pumping station to alert operators of any issues; power failures, high levels, equipment failures, loss of communication and intrusion.
- Regular routine maintenance is performed to help reduce overflows/bypasses/spills events. For example: monthly generator tests to ensure the generators will start during a power failure and equipment will continue to operate normally, monthly alarm testing and equipment maintenance as outlined in the Maintenance Summary found in Appendix C.
- Repairs to the collection system are done promptly as issues occur.
- A program is in place to prevent roof leaders and sump pumps from being connected with sanitary new builds.
- To more accurately measure and monitor overflow volumes, the Station Street pump station is equipped with a flow meter to measure flow during overflow events.

10.3 Summary of Alterations to the System to Reduce Overflows

There have been no projects done in 2023 to reduce overflows/bypasses/spills.

10.4 Public Notification

The system has a Public Notification Procedure to notify the public and downstream users that may be adversely affected in the event of an overflow, bypass or spill at the lagoon. Signage will be posted at publicly accessible points located near all collection system overflow outfall locations before May 21, 2025 as required under the ECA .

11 Complaints

No complaints were received during the reporting period.

12 Proposed Alterations to the Works

No major alterations to the system are planned for 2024.

APPENDIX A
Monthly Process Data Report

North Cobalt Wastewater Treatment Lagoon
2023 Monthly Process Data Report

INFLUENT	01/2023	02/2023	03/2023	04/2023	05/2023	06/2023	07/2023	08/2023	09/2023	10/2023	11/2023	12/2023	Total	Avg	Max	Min
Raw / Biochemical Oxygen Demand: BOD5 - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	600	260	240	150	< 670	316	220	160	120	190	< 140.0	220.0			670	
Mean Lab	230	178	184	87	< 308	165	135	112	78	80	< 59.4	177.5		< 151		
Min Lab	56	100	120	28	< 30	64	78	47	17	22	< 0.5	130.0			<	0.5
Raw / Total Suspended Solids: TSS - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	507	179	280	108	1300	450	178	175	152	193	442	325			1300	
Mean Lab	212	166	198	64	540	215	175	134	89	97	176	177		192		
Min Lab	57	143	146	25	40.5	71	168	74	47	13.5	16.5	90				13.5
Raw / Total Phosphorus: TP - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	9.90	6.62	7.19	2.78	17.0	6.92	4.91	5.35	5.36	4.31	3.61	4.72			17.0	
Mean Lab	5.04	5.20	4.84	1.50	6.40	4.98	3.97	4.21	3.05	1.97	2.51	3.48		3.97		
Min Lab	1.53	4.24	2.86	0.38	0.73	2.04	2.55	1.15	0.79	0.61	1.28	2.62				0.38
Raw / Total Kjeldahl Nitrogen: TKN - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	48.2	64.7	56.3	24.1	62.1	55.5	71.3	41.3	25.8	31.6	28.2	32.6			71.3	
Mean Lab	33.0	45.7	42.5	15.5	34.2	42.0	48.1	28.7	15.5	12.4	15.1	26.1		29.9		
Min Lab	15.3	32.9	33.4	7.0	6.0	21.4	39.1	7.5	3.6	2.9	8.2	19.9				2.9
Raw / Alkalinity (as CaCO3) - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	261	279	283	242	261	277	256	309	271	287	302	271			309	
Mean Lab	252	227	211	163	228	203	172	280	253	272	282	243		233		
Min Lab	232	186	164	128	198	36	27	241	230	238	269	227				27

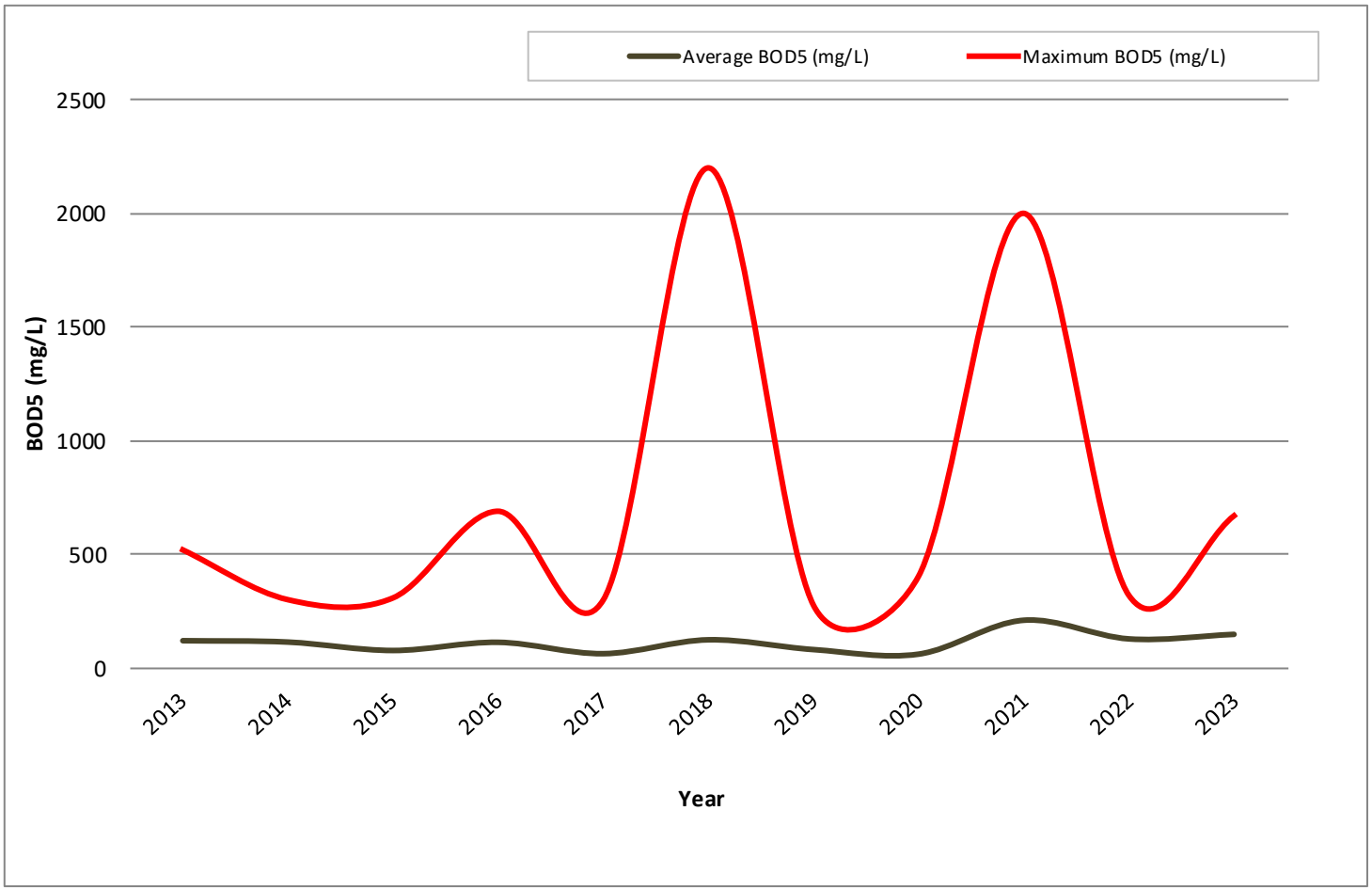
EFFLUENT	01/2023	02/2023	03/2023	04/2023	05/2023	06/2023	07/2023	08/2023	09/2023	10/2023	11/2023	12/2023	Total	Avg	Max	Min
Final Effluent / BOD5 (25 mg/L) - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	3.9	< 1.8	2.7	6.7	9.4	1.5	2.1	2.2	3	4.1	6.7	3.1			< 9.4	
Mean Lab	2.8	< 1.4	2.2	4.3	4.8	1.1	1.5	1.8	2.7	3.2	4.7	2.7		< 2.8		
Min Lab	2	< 1	1.9	2.1	1.4	0.5	1	1.2	2.5	1.8	3.7	2.3			<	0.5
Loading: BOD5 - Final Effluent kg/d	**0.858**	**< 0.314**	**0.424**	**6.11**	**3.82**	**0.223**	**0.551**	**0.474**	**1.58**	**3.06**	**2.62**	**0.768**		**< 1.45**	**6.11**	**0.223**
Final Effluent / TSS (25 mg/L-Monthly) - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	< 6.5	< 2.5	< 3.5	< 9.5	< 26.7	3.0	< 6.5	< 3.0	< 13.0	16.5	21.0	< 6.0			< 26.7	
Mean Lab	< 3.1	< 1.6	< 1.8	< 4.5	< 9.1	2.0	< 3.9	< 1.8	< 8.9	11.5	8.8	< 3.3		< 5.1		
Min Lab	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	< 1.0	< 1.0	1.0	5.5	4.5	< 1.0			<	1.0
Loading: TSS - Final Effluent kg/d	**< 0.966**	**< 0.358**	**< 0.341**	**< 6.47**	**< 7.24**	**0.415**	**< 1.47**	**< 0.479**	**< 5.19**	**11.0**	**4.87**	**< 0.945**		**< 2.61**	**11.0**	**0.341**
Final Effluent / Total Phosphorus: TP (1.5 mg/L) - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	0.11	0.053	0.25	0.477	0.319	< 0.006	0.027	0.022	0.085	0.103	0.155	0.028			< 0.477	
Mean Lab	0.083	0.04	0.085	0.228	0.12	< 0.004	0.019	0.019	0.05	0.074	0.063	0.024		< 0.068		
Min Lab	0.06	0.028	0.041	0.038	0.019	< 0.002	0.005	0.013	0.018	0.054	0.018	0.016			<	0.002
Loading: TP - Final Effluent kg/d	**0.026**	**0.009**	**0.016**	**0.329**	**0.095**	**< 0.001**	**0.007**	**0.005**	**0.029**	**0.071**	**0.035**	**0.007**		**< 0.030**	**0.330**	**0.001**
Final Effluent / E. Coli: (200 geomean) - cfu/100mL																
GMD	5	5	5	9	5	5	5	5	5	5	5	5				
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	< 5	< 5	< 5	< 65	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			< 65	
Mean Lab	< 5	< 5	< 5	< 20	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5		< 6		
Min Lab	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5			<	5
Final Effluent / Total Kjeldahl Nitrogen: TKN - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	10.2	15.5	16.9	24.6	9.3	64.6	4.7	5.4	1.1	2.1	1.7	2.2			64.6	
Mean Lab	8.4	11.5	12.5	15.5	5.9	18.8	4.0	3.6	0.9	1.2	1.4	1.8		7.0		
Min Lab	6.7	9.1	10.1	9.5	3.5	2.8	3.1	1.5	0.7	0.5	0.9	1.3				0.5
Final Effluent / Total Ammonia Nitrogen: NH3 + NH4+ as N - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	6.12	8.24	10.50	12.10	4.55	1.26	1.82	2.48	1.24	0.38	1.15	2.48			12.10	
Mean Lab	5.70	7.58	9.78	10.29	2.27	1.11	1.41	2.26	0.55	0.21	0.43	1.74		3.62		
Min Lab	4.86	6.74	9.00	8.28	1.30	1.00	1.21	1.95	0.28	0.07	0.07	1.10				0.07
Final Effluent / Nitrate as N: NO3-N - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	1.60	1.20	1.00	1.30	1.80	1.90	1.70	1.10	2.10	2.40	2.76	2.59			2.76	
Mean Lab	1.38	1.08	0.90	0.95	1.72	1.80	1.35	0.92	1.83	2.08	2.63	2.31		1.58		
Min Lab	1.20	1.00	0.80	0.70	1.60	1.70	1.10	0.70	1.60	1.70	2.52	2.01				0.70
Final Effluent / Nitrite as N: NO2-N - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	0.05	0.06	0.04	0.06	0.08	0.04	< 0.02	0.09	0.27	0.23	0.32	0.25			< 0.32	
Mean Lab	0.04	0.04	0.03	0.03	0.06	0.03	< 0.02	0.06	0.20	0.19	0.23	0.20		< 0.09		
Min Lab	0.03	0.03	0.02	0.01	0.03	0.01	< 0.01	0.02	0.11	0.10	0.16	0.13			<	0.01
Final Effluent / Alkalinity (as CaCO3) - mg/L																
Count Lab	4	4	5	4	5	4	4	5	4	4	5	4	52			
Max Lab	136	141	157	161	121	214	29	67	104	132	164	144			214	
Mean Lab	131	139	135	136	96	78	24	58	91	117	139	137		107		
Min Lab	125	138	111	109	67	20	17	45	69	94	130	127				17
Final Effluent / pH Field: Lab Upload (6.0 to 9.5) - ---																
Max IH	7.60	7.50	7.43	8.00	8.53	7.37	6.97	7.60	7.98	8.10	8.42	7.57			8.53	
Mean IH	7.40	7.43	7.31	7.42	8.03	7.01	6.85	7.40	7.79	7.83	7.70	7.48		7.48		
Min IH	6.98	7.40	6.86	6.87	7.11	6.70	6.70	7.20	7.58	7.45	7.33	7.43				6.70
Final Effluent / Temperature Field: Lab Upload - °C																
Max IH	2.5	1.6	5.8	6.3	19.8	22.6	25.0	22.0	22.9	18.7	6.2	10.3			25.0	
Mean IH	1.8	1.6	2.4	4.0	14.5	21.3	23.7	20.6	18.8	12.5	2.8	3.6		10.6		
Min IH	1.5	1.5	1.5	1.3	10.1	19.9	22.9	18.0	16.6	8.7	0.6	0.5				0.5

APPENDIX B
Historical Trends of Influent Characteristics

North Cobalt Sewage Treatment Lagoon
Influent Characteristics – Historical Results (2013 to 2023)

BOD5 – Five Day Biochemical Oxygen Demand

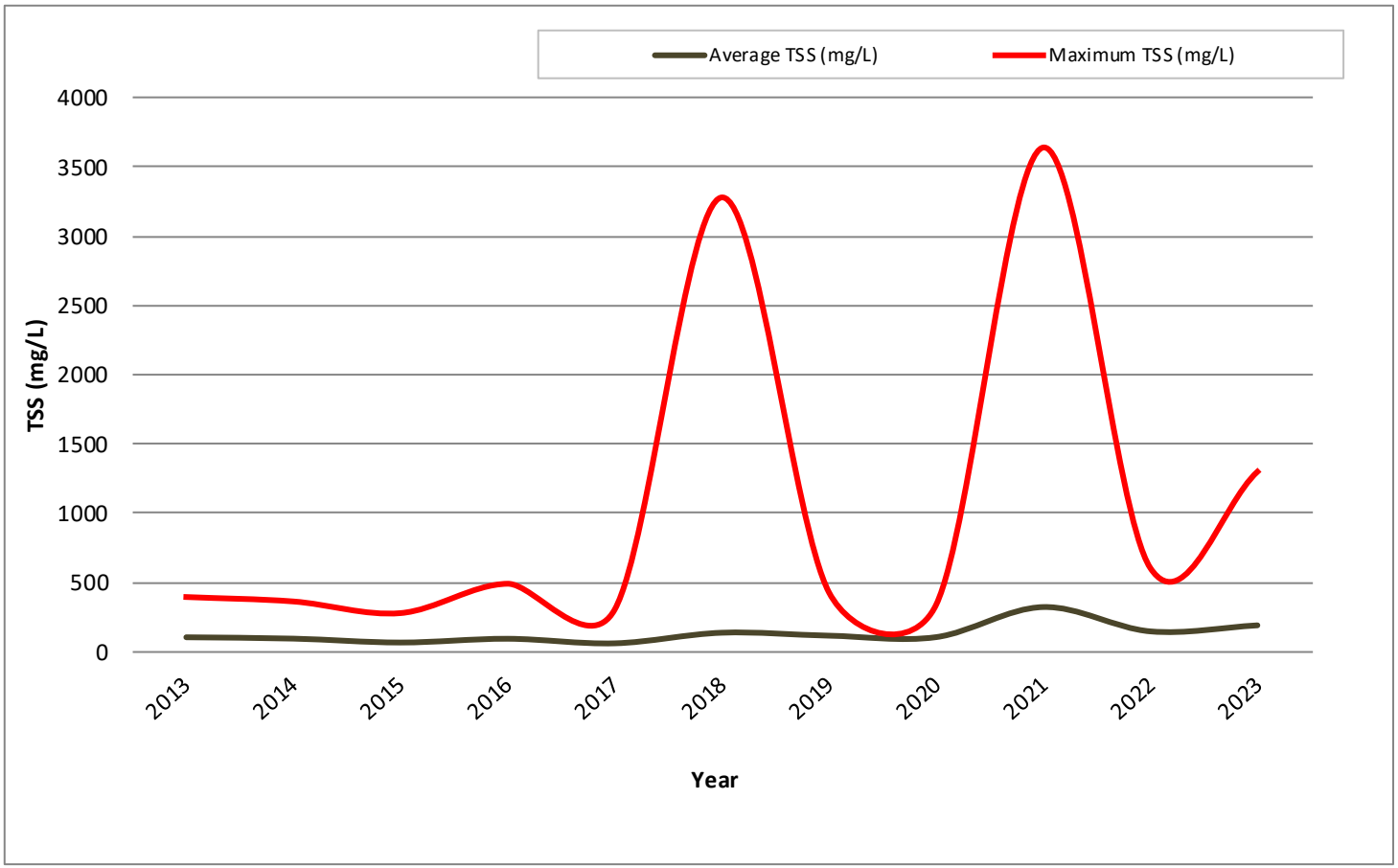
	2013	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***	***2023***
Average BOD5 (mg/L)	123	117	80	116	66	127	84	64	213	131	151
Maximum BOD5 (mg/L)	520	301	309	690	300	2200	276	405	2000	320	670



North Cobalt Sewage Treatment Lagoon
Influent Characteristics – Historical Results (2013 to 2023)

TSS – Total Suspended Solids

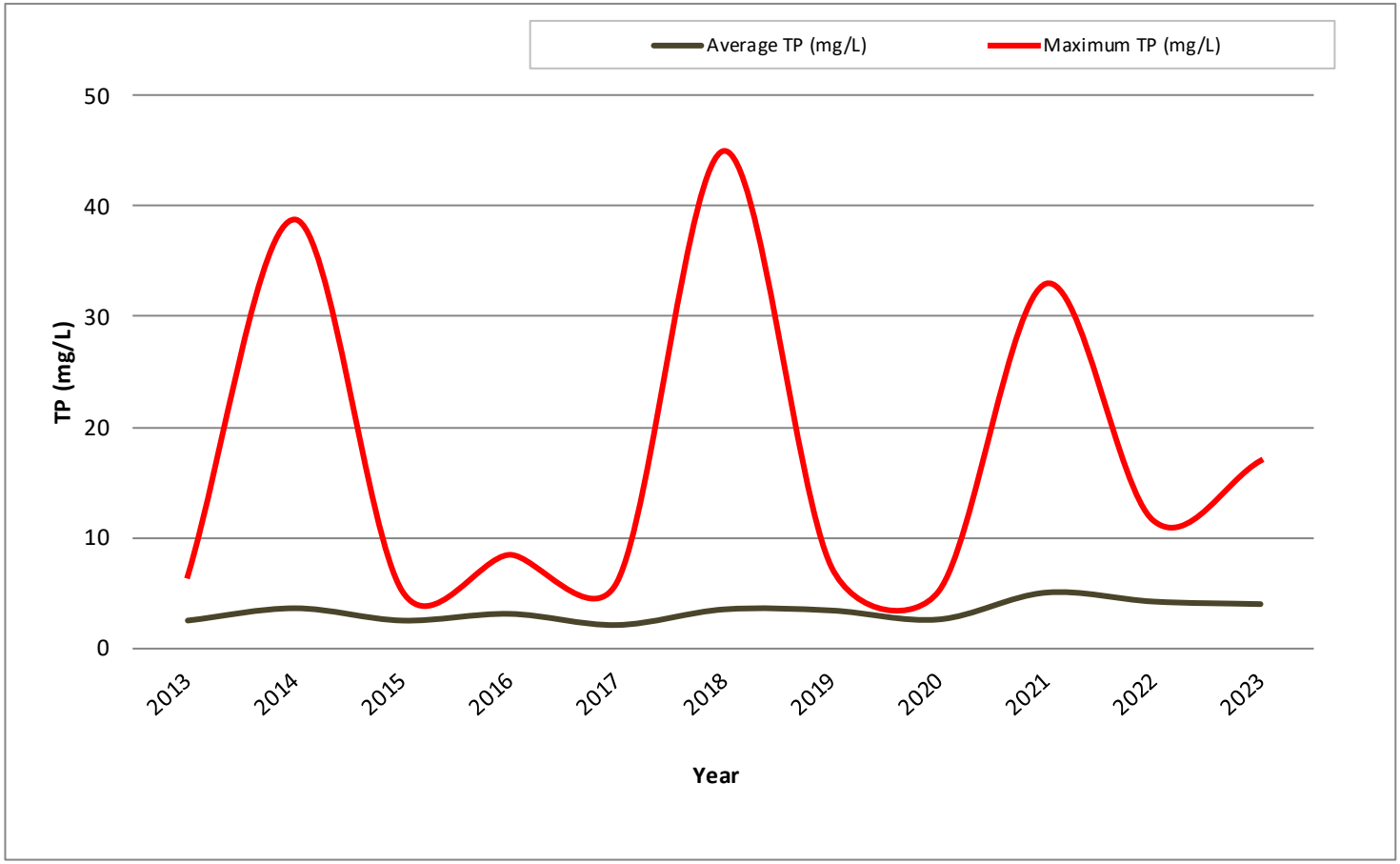
	2013	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***	***2023***
Average TSS (mg/L)	103	93	64	92	58	137	115	104	328	147	192
Maximum TSS (mg/L)	396	364	280	492	306	3280	430	339	3640	606	1300



North Cobalt Sewage Treatment Lagoon
Influent Characteristics – Historical Results (2013 to 2023)

TP - Total Phosphorus

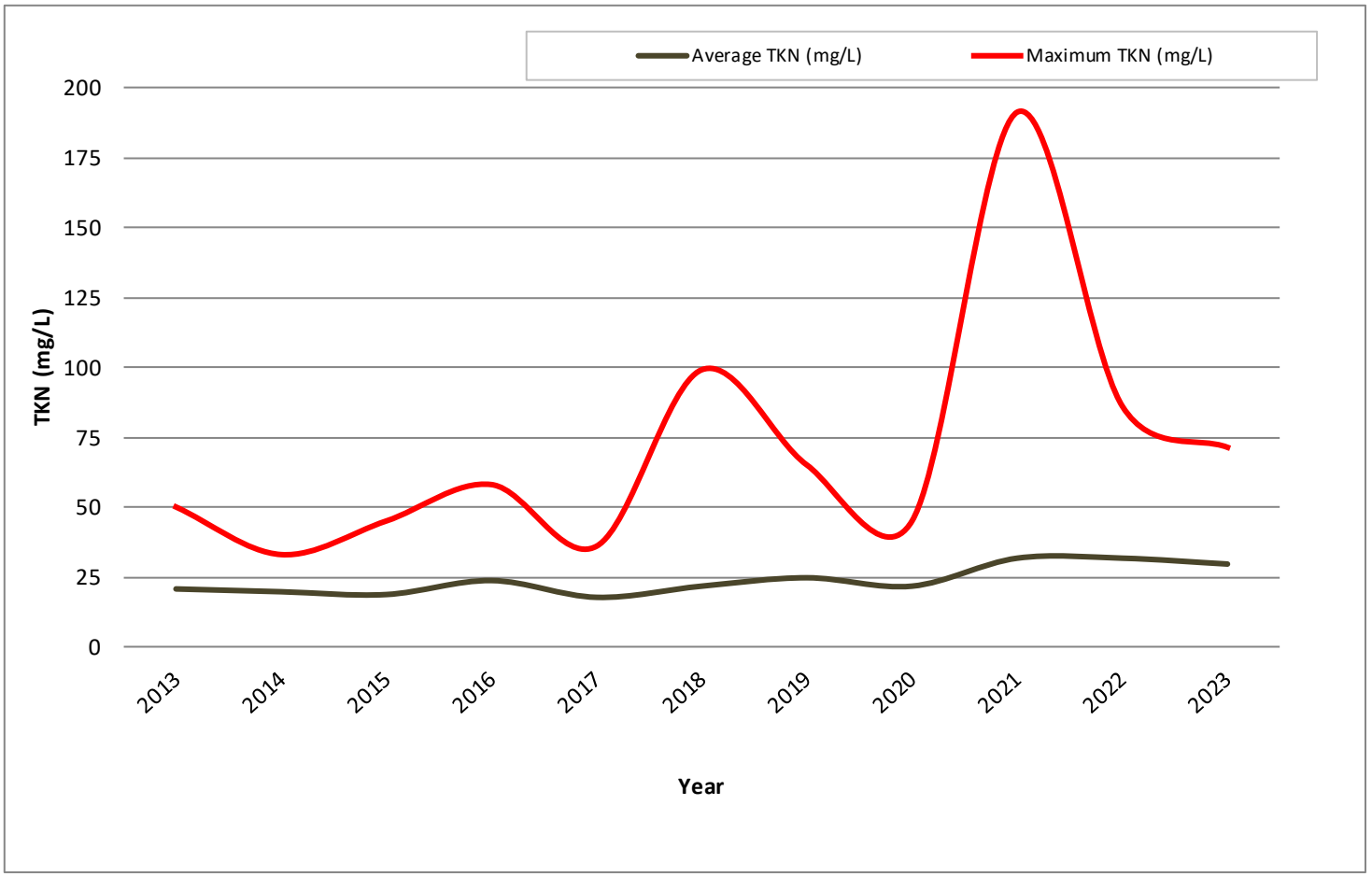
	2013	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***	***2023***
Average TP (mg/L)	2.5	3.6	2.5	3.1	2.1	3.5	3.4	2.6	5.0	4.2	4.0
Maximum TP (mg/L)	6.6	39	5.2	8.5	6.0	45	7.4	5.2	33	11.6	17.0



North Cobalt Sewage Treatment Lagoon
Influent Characteristics – Historical Results (2013 to 2023)

TKN – Total Kjeldahl Nitrogen

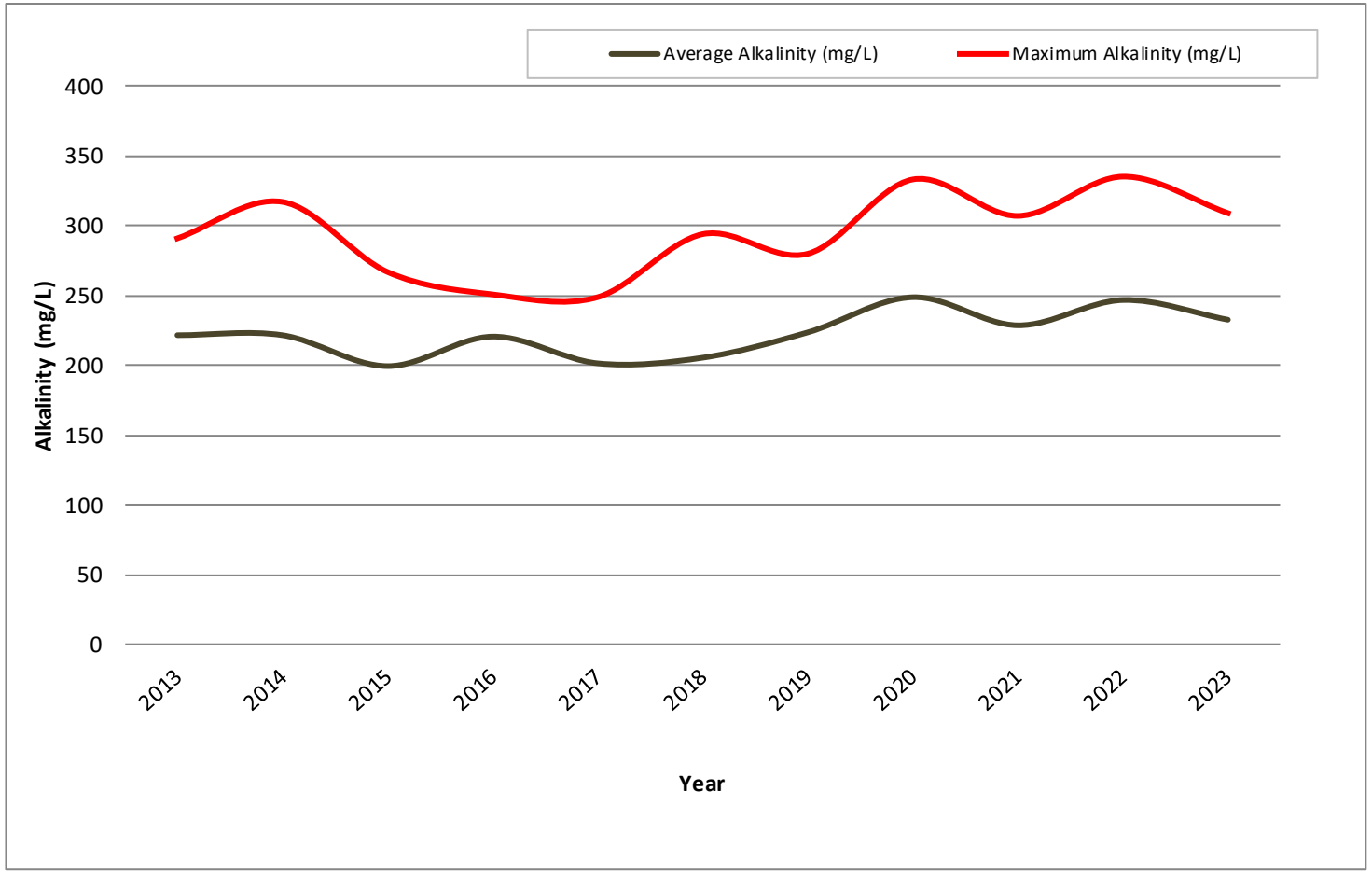
	2013	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***	***2023***
Average TKN (mg/L)	21	20	19	24	18	22	25	22	32	32	30
Maximum TKN (mg/L)	50	33	45	58	36	99	65	45	191	86	71



North Cobalt Sewage Treatment Lagoon
Influent Characteristics – Historical Results (2013 to 2023)

Alkalinity

	2013	***2014***	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***	***2021***	***2022***	***2023***
Average Alkalinity (mg/L)	222	222	200	221	202	206	224	249	229	247	233
Maximum Alkalinity (mg/L)	291	317	267	251	249	294	280	333	307	335	309



APPENDIX C
Maintenance Summary

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Workorder Summary Report

Report Start Date:	Jan 1, 2023 12:00 AM
Report End Date:	Dec 31, 2023 11:59 PM
Location:	5728*
Work Order Type:	CALL,CAP,CORR,EMER,OPER,PM
Work Order Class:	

				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3150168	0000060031	BLOWER CENTRIFUGAL 02	5728, North Cobalt Lagoon, Process, Secondary Treatment	PM	Refurbish/ Replace/Repair	1	YEARS	Blower Centrifugal 02 Inspection/ Service (1y) 5728	CLOSE	1/1/23 12:00 AM	2/17/23 12:45 PM	2/17/23 12:45 PM	Blower Check - Blower motor bearings bad electrician swapping out the motor belts and oil look good on blower
3150181	0000060029	BLOWER CENTRIFUGAL 03	5728, North Cobalt Lagoon, Process, Secondary Treatment	PM	Refurbish/ Replace/Repair	1	YEARS	Blower Centrifugal 03 Inspection/ Service (1y) 5728	CLOSE	1/1/23 12:00 AM	3/31/23 03:07 PM	3/31/23 03:07 PM	check - check oil belt and grease it
3150192	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	1/1/23 12:00 AM	1/23/23 02:24 PM	1/23/23 02:24 PM	ran - ran and record value on sheet
3150208	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	1/1/23 12:00 AM	1/24/23 02:03 PM	1/24/23 02:03 PM	ran - ran and record value on sheet
3151751			5728, North Cobalt Lagoon	PM	Compliance	1	YEARS	Facility Emergency Plan Review (1y) 5728	CLOSE	1/1/23 12:00 AM	4/17/23 06:56 AM	4/17/23 06:56 AM	Facility Emergency Plan Review (1y) 5728 - Review and updated FEP binder. Develop procedures and update contact list. Need to print. Facility Emergency Plan Review (1y) 5728 - Completed updated of the FEP binder. Went to office to print new procedures, but printer started making black streaks on the pages. Will go back and print when printer is repaired. Review and updated the Operations Manual. Print still to be done. Facility Emergency Plan Review (1y) 5728 - Print updated procedures for FEP binder
3151752			5728, North Cobalt Lagoon	PM	Health and Safety	1	YEARS	WHMIS/SDS/NSF Review and Update (1y) 5728	CLOSE	1/1/23 12:00 AM	2/13/23 12:43 PM	2/13/23 12:43 PM	
3152354	0000277366	SAMPLER RAW WEEKLY COMPOSITE	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	3	MONTHS	Sampler Raw Inspection (3m) 5728	CLOSE	1/1/23 12:00 AM	1/16/23 01:50 PM	1/16/23 01:50 PM	

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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Work Order Class:

				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3152372			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	1/1/23 12:00 AM	1/27/23 01:09 PM	1/27/23 01:09 PM	clean - pick up garbage
3155914	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	1/1/23 12:00 AM	1/26/23 07:45 AM	1/26/23 07:45 AM	clean - clean UV
3155917	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	1/1/23 12:00 AM	1/26/23 07:46 AM	1/26/23 07:46 AM	clean - clean UV
3155920	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	1/1/23 12:00 AM	1/27/23 01:10 PM	1/27/23 01:10 PM	check - check add test
3155926	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	1/1/23 12:00 AM	1/26/23 07:48 AM	1/26/23 07:48 AM	flush - flush pump and fix leak on pump outlet
3155932	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	1/1/23 12:00 AM	1/26/23 07:49 AM	1/26/23 07:49 AM	flush - flush pump
3155938	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	YEARS	Diesel Generator Genset PS2 Inspection/Functional Test (1y) 5728	CLOSE	1/1/23 12:00 AM	4/24/23 01:45 PM	4/24/23 01:45 PM	Completed by Contractor -
3155950	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	YEARS	Diesel Generator Genset North Cobalt Inspection/Functional Test (1y) 5728	CLOSE	1/1/23 12:00 AM	4/24/23 01:47 PM	4/24/23 01:47 PM	Completed by Contractor -
3155962	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	YEARS	Diesel Generator Genset Portable Unit PS3 Inspection/Functional Test (1y) 5728	CLOSE	1/1/23 12:00 AM	4/24/23 01:54 PM	4/24/23 01:54 PM	Completed every Second year will update Work order -
3155974	0000060020	TANK STORAGE WET WELL PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	6	MONTHS	Tank Wet Well PS3 Inspection (6m) 5728	CLOSE	1/1/23 12:00 AM	6/14/23 10:08 AM	6/14/23 10:08 AM	Check Pump Station for grease and gritt build up -
3162492	0000277318	ANALYZER PH LAB / PORTABLE SEWAGE LAGOONS	5728, North Cobalt Lagoon, Facility	PM	Inspection	3	MONTHS	ANALYZER PH SEWAGE LAGOON CALIBRATION (3M) 5726	CLOSE	1/1/23 12:00 AM	1/17/23 01:07 PM	1/17/23 01:07 PM	- Cleaned probe and calibrated meter using freshly made Hach 4.01 pH and 7.00 pH buffer solutions as per manufactures instructions. Verified calibration O.K. Refresh storage solution.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Workorder Summary Report

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Location: 5728*
Work Order Type: CALL,CAP,CORR,EMER,OPER,PM
Work Order Class:

				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3178970			5728, North Cobalt Station St Pumping Station	PM	Inspection	1	YEARS	ALARM PLANT #2 Station St. SPS ANNUAL TESTING (1Y) 5728	CLOSE	1/1/23 12:00 AM	9/28/23 03:43 PM	9/28/23 03:43 PM	- Dropped main breaker to test generator operation. Had to reset main breaker on inside of panel door to reset properly so the genset would transfer back. See attached for alarm testing.
3178973			5728, North Cobalt Groom Drive Pumping Station	PM	Inspection	1	YEARS	ALARM PLANT #3 GROOM SPS ANNUAL TESTING (1Y) 5728	CLOSE	1/1/23 12:00 AM	10/23/23 08:00 AM	10/23/23 08:00 AM	
3178976			5728, North Cobalt Lagoon	PM	Inspection	1	YEARS	ALARM PLANT NC LAGOON ANNUAL TESTING (1Y) 5728	COMP	1/1/23 12:00 AM	12/22/23 11:19 AM	12/22/23 11:19 AM	- See attached file
3200328			5728, North Cobalt Lagoon	OPER	Inspection	1	YEARS	Daily O&M Activities Wastewater Treatment (1y) 5728	COMP	1/1/23 12:00 AM	1/2/24 01:50 PM	1/2/24 01:50 PM	-Finish installation of pilot level control system at Station st. pumping station. Confined space entry with Bryce and Mark. Clean station and take trailer back to lagoon. - Inspect sampler operation. Suction line has been taken out of guide tube due to build up of grease. Sample line will have to be rerouted away from grease build up and positioned over in corner where the water flow keeps the corner clean.
3200333	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	1/1/23 12:00 AM	1/23/23 02:23 PM	1/23/23 02:23 PM	ran - ran and record value on sheet
3200349			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	1/1/23 12:00 AM	1/27/23 01:13 PM	1/27/23 01:13 PM	check - check all good
3205516			5728, North Cobalt Lagoon	CAP	Predictive Maintenance	0		North Cobalt Lagoon Chemicals 5728	COMP		1/5/24 10:10 AM	1/5/24 10:10 AM	
3207416	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	2/1/23 12:00 AM	2/16/23 02:33 PM	2/16/23 02:33 PM	ran - ran and record value on sheet
3207432	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	2/1/23 12:00 AM	2/8/23 07:56 AM	2/8/23 07:56 AM	ran - ran on manual and record value on sheet

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				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3208615			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	2/1/23 12:00 AM	2/24/23 11:54 AM	2/24/23 11:54 AM	clean - sweep floor shovel snow
3211038	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	2/1/23 12:00 AM	2/24/23 11:51 AM	2/24/23 11:51 AM	clean - clean UV
3211041	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	2/1/23 12:00 AM	2/24/23 11:52 AM	2/24/23 11:52 AM	clean - clean UV bulb
3211044	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	2/1/23 12:00 AM	2/16/23 02:34 PM	2/16/23 02:34 PM	check - check pump, running ok
3211050	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	2/1/23 12:00 AM	2/24/23 11:53 AM	2/24/23 11:53 AM	flush - cold flush pump
3211056	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	2/1/23 12:00 AM	2/24/23 11:53 AM	2/24/23 11:53 AM	flush - cold flush pump
3243109	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	2/1/23 12:00 AM	2/16/23 02:39 PM	2/16/23 02:39 PM	ran - ran and record value on sheet
3243126			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	2/1/23 12:00 AM	2/24/23 11:58 AM	2/24/23 11:58 AM	check - check all good

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				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3246212			5728, North Cobalt Station St Pumping Station	CALL	Refurbish/ Replace/Repair	0		Call for Major/ Critical alarm Station ST 5728	CLOSE		2/17/23 05:45 AM	2/17/23 07:30 AM	OverFlow alarm Station ST - Call for critical and major alarm Logged in remotely to see what the issue was and found both pumps on and bypass pump running. Reviewed trends and noticed wet well level jumped up to max level therefore indicating a false reading. I took the bypass pump out of service and put in remote manual so it won't run on false signals for the time being. Went to site and verified equipment and took samples for the over flow. Reported to sac and MOH and emailed EC and Ilona. Asked Chris to take a look at the station to make sure proper operation and he and I discussed maybe going the PT route to eliminate the issues of false readings due to either grease build up on the walls or frosting on the LIT head that hangs off the wall in the pit.
3246358	0000277423	METER LEVEL Wet Well #2 PS Station St. 5728	5728, North Cobalt Station St Pumping Station	EMER	Inspection	0		Level Meter Erratic Readings Station St. Pumping Station 5728	CLOSE		2/18/23 10:04 AM	2/18/23 10:04 AM	- Found level signal to have spiked causing the bypass pump to run for a minute. Checked LIT operation, seemed OK. Cleared snow and ice off of hatch and inspected well. No significant grease build up on wall or obstructions under transducer head. Unit did not spike anymore after this. Left bypass pump in Manual on SCADA system for the time being until melting season starts.

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				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3248186	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	3/1/23 12:00 AM	3/3/23 03:34 PM	3/3/23 03:34 PM	Genset Test at Station SPS - Completed genset test: checked oil, fuel, coolant and block heater. no faults displayed recorded running values on sheet
3248202	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	3/1/23 12:00 AM	3/31/23 03:53 PM	3/31/23 03:53 PM	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked oil, fuel, coolant, and block heater no faults displayed recorded running values on sheet
3249474			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	3/1/23 12:00 AM	3/31/23 02:44 PM	3/31/23 02:44 PM	Building and Grounds Maintenance (1m) 5728 - Building and grounds maintenance completed throughout the month: Cleaned washroom, removed garbage, swept floor; snow removal
3252446	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	3/1/23 12:00 AM	3/24/23 02:37 PM	3/24/23 02:37 PM	UV Light Reactor A Check (1m) 5728 -Lockout/tag out breaker A and removed bank from water source. Cleaned sleeves and replace burnt bulb with a new one. Also replace the sleeve because it broke.
3252449	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	3/1/23 12:00 AM	3/24/23 02:43 PM	3/24/23 02:43 PM	UV Light Reactor B Check (1m) 5728 - Locked out/tagged out breaker B and removed bank from water source and cleaned sleeves. Replace one burnt bulb with a new one.
3252452	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	3/1/23 12:00 AM	3/6/23 02:22 PM	3/6/23 02:22 PM	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728 -Visually checked hypo pump and tank. OK

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				WorkOrder		PM Schedule		Workorder Details					
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3252458	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	3/1/23 12:00 AM	3/13/23 01:44 PM	3/13/23 01:44 PM	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728 - Arrived on site to find pump 1 had faulted and I could not get it to start pumping again. Decided to try the spare pump that was on site. I hot flushed it and it work ok therefore I put in as primary pump. I will take apart the old pump and see what was the cause of the fault.
3252464	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	3/1/23 12:00 AM	3/24/23 02:48 PM	3/24/23 02:48 PM	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728 -Diaphragm Pump #2 is currently secondary pump and not in use. Hot flushed chemical pump. OK
3286992	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	3/1/23 12:00 AM	3/6/23 03:05 PM	3/6/23 03:05 PM	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728 - Completed genset test: visually checked oil, fuel, coolant and block heater. no faults displayed recorded running values on sheet
3287008			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	3/1/23 12:00 AM	3/31/23 02:39 PM	3/31/23 02:39 PM	TPM Inspection/Maintenance (1m) 5728 - Completed TPM: visually checked generator while completing genset test at NC Lagoon and Station SPS. visually checked blowers while running. OK

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				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3289177			5728, North Cobalt Station St Pumping Station	CAP	Refurbish/ Replace/Repair	0		Replace Faulty LIT #2 SPS 5728	CLOSE		5/15/23 02:39 PM	5/15/23 02:39 PM	Prepare Paperwork for Confined Space at Station St SPS -Prepare tailgate meeting and confined space paperwork for confined space entry at #2 SPS, Station Street to replace faulty LIT. Calibrate and bump test the atmospheric detector
3289380	0000060033	BLOWER CENTRIFUGAL 01	5728, North Cobalt Lagoon, Process, Secondary Treatment	PM	Refurbish/ Replace/Repair	1	YEARS	Blower Centrifugal 01 Inspection/ Service (1y) 5728	CLOSE	3/13/23 12:00 AM	3/31/23 03:08 PM	3/31/23 03:08 PM	check - grease and check oil and belt
3292248	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	4/1/23 12:00 AM	4/5/23 01:56 PM	4/5/23 01:56 PM	ran - ran and record value on sheet
3292264	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	4/1/23 12:00 AM	4/14/23 02:26 PM	4/14/23 02:26 PM	ran - ran manual and record value
3293690	0000277366	SAMPLER RAW WEEKLY COMPOSITE	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	3	MONTHS	Sampler Raw Inspection (3m) 5728	CLOSE	4/1/23 12:00 AM	5/1/23 08:56 AM	5/1/23 08:56 AM	
3293762			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	4/1/23 12:00 AM	5/4/23 02:52 PM	5/4/23 02:52 PM	clean - sweep floor
3297207	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	4/1/23 12:00 AM	4/22/23 08:21 AM	4/22/23 08:21 AM	clean - clean bulb and sensor
3297210	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	4/1/23 12:00 AM	4/22/23 08:22 AM	4/22/23 08:22 AM	clean - clean bulb and sensor
3297213	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	4/1/23 12:00 AM	4/19/23 02:59 PM	4/19/23 02:59 PM	check - check during overflow event ok
3297219	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	4/1/23 12:00 AM	4/19/23 03:00 PM	4/19/23 03:00 PM	flush - flush and check
3297225	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	4/1/23 12:00 AM	4/19/23 03:01 PM	4/19/23 03:01 PM	flush - flush and check

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Work Order Type:	CALL,CAP,CORR,EMER,OPER,PM
Work Order Class:	

				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3297231	0000060013	TANK STORAGE WET WELL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	6	MONTHS	Tank Wet Well PS2 Inspection (6m) 5728	CLOSE	4/1/23 12:00 AM	6/14/23 10:09 AM	6/14/23 10:09 AM	Clean pump station out with vac truck -
3303170	0000277318	ANALYZER PH LAB / PORTABLE SEWAGE LAGOONS	5728, North Cobalt Lagoon, Facility	PM	Inspection	3	MONTHS	ANALYZER PH SEWAGE LAGOON CALIBRATION (3M) 5726	CLOSE	4/1/23 12:00 AM	4/13/23 08:37 AM	4/13/23 08:37 AM	- Cleaned probe and calibrated meter using freshly made Hach 4.01 pH and 7.00 pH buffer solutions as per manufactures instructions. Verified calibration O.K. Refresh storage solution.
3337333	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	4/1/23 12:00 AM	4/5/23 01:59 PM	4/5/23 01:59 PM	ran - ran and record value on sheet
3337349			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	4/1/23 12:00 AM	5/4/23 02:52 PM	5/4/23 02:52 PM	check - check all good
3339594			5728, North Cobalt Station St Pumping Station	EMER	Refurbish/ Replace/Repair	0		Pump Chemical Fault Station St. Pump Station 5728	CLOSE		4/12/23 04:18 PM	4/12/23 04:18 PM	-Called by ORO to inspect the bypass hypo pump for non operation at while the bypass pump was running. Found the outlet for the pump to be destroyed and broken apart. Purchased a new outlet and replaced. Monitored pump operation when the bypass pump came back on. OK.
3342512	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	5/1/23 12:00 AM	6/2/23 08:52 AM	6/2/23 08:52 AM	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked fuel, oil, coolant and block heater recorded running values on sheet no faults displayed

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3342528	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	5/1/23 12:00 AM	6/2/23 08:54 AM	6/2/23 08:54 AM	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked fuel, oil, coolant and block heater no faults displayed recorded running values on sheet
3343788			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	5/1/23 12:00 AM	5/29/23 04:13 PM	5/29/23 04:13 PM	Building and Grounds Maintenance (1m) 5728 - Swept the floor in MCC, bathroom and hallway. Swept shop and washed floor when trailer was outside. Removed all garbage from site Cleaned toilet and sink. Walked around exterior facility. OK Alum building. OK
3346306	0000115987	LAGOON CELL 01	5728, North Cobalt Lagoon, Process, Primary Treatment	PM	Inspection	1	YEARS	Lagoon Cell 01 Inspection/Service (1m/6m/1y) 5728	CLOSE	5/1/23 12:00 AM	5/31/23 08:44 AM	5/31/23 08:44 AM	Check lagoon - all ok berms in good condition and good air pattern, Fencing could use some repair
3346316	0000115988	LAGOON CELL 02	5728, North Cobalt Lagoon, Process, Primary Treatment	PM	Inspection	1	MONTHS	Lagoon Cell 02 Inspection/Service (1m/6m/1y) 5728	CLOSE	5/1/23 12:00 AM	5/31/23 08:45 AM	5/31/23 08:45 AM	
3346326	0000115989	LAGOON CELL 03	5728, North Cobalt Lagoon, Process, Primary Treatment	PM	Inspection	1	MONTHS	Lagoon Cell 03 Inspection/Service (1m/6m/1y) 5728	CLOSE	5/1/23 12:00 AM	5/31/23 08:47 AM	5/31/23 08:47 AM	Check lagoon - Lagoon berm in good condition good air pattern, fencing could use some repair and parking lot drainage needed for spring melt to eliminate building flooding
3346336	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	5/1/23 12:00 AM	6/2/23 08:47 AM	6/2/23 08:47 AM	UV Light Reactor A Check (1m) 5728 -Hoisted UV banks and cleaned. ok
3346339	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	5/1/23 12:00 AM	6/2/23 08:51 AM	6/2/23 08:51 AM	UV Light Reactor B Check (1m) 5728 - Hoist UV bank and cleaned. OK

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3346342	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	5/1/23 12:00 AM	5/12/23 09:50 PM	5/12/23 09:50 PM	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728 - Filled hypo tank with water and requested more sodium hypochlorite pucks to be ordered. Visually checked pump. ok
3346348	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	5/1/23 12:00 AM	5/8/23 11:16 AM	5/8/23 11:16 AM	
3346354	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	5/1/23 12:00 AM	5/8/23 11:18 AM	5/8/23 11:18 AM	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728 - Hot flushed pump and changed fittings because it was leaking. Pump running ok. Currently being used to inject alum into crossover chamber.
3374826			5728, North Cobalt Station St Pumping Station	CALL	Compliance	0		Overflow Station St. Pumping Station 5728	CLOSE		5/1/23 08:37 AM	5/1/23 08:42 AM	
3382657	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	5/1/23 12:00 AM	5/8/23 11:21 AM	5/8/23 11:21 AM	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked oil, fuel, coolant and block heater no faults displayed recorded running values on sheet
3382673			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	5/1/23 12:00 AM	6/2/23 09:38 AM	6/2/23 09:38 AM	TPM Inspection/Maintenance (1m) 5728 - Completed TPM throughout the month: visually checked blowers. ok - No. 2 out of service Alum transfer pump ok

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3388031	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	6/1/23 12:00 AM	6/12/23 10:20 PM	6/12/23 10:20 PM	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked fuel, oil, coolant and block heater. ok no faults displayed recorded running values on sheet.
3388047	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	6/1/23 12:00 AM	7/5/23 08:56 AM	7/5/23 08:56 AM	
3389482			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	6/1/23 12:00 AM	6/30/23 08:12 AM	6/30/23 08:12 AM	
3392130	0000115987	LAGOON CELL 01	5728, North Cobalt Lagoon, Process, Primary Treatment	PM	Inspection	1	YEARS	Lagoon Cell 01 Inspection/Service (1m/6m/1y) 5728	CLOSE	6/1/23 12:00 AM	6/9/23 10:24 AM	6/9/23 10:24 AM	
3392140	0000115988	LAGOON CELL 02	5728, North Cobalt Lagoon, Process, Primary Treatment	PM	Inspection	1	MONTHS	Lagoon Cell 02 Inspection/Service (1m/6m/1y) 5728	CLOSE	6/1/23 12:00 AM	6/9/23 10:27 AM	6/9/23 10:27 AM	completed last month annual WO only -
3392150	0000115989	LAGOON CELL 03	5728, North Cobalt Lagoon, Process, Primary Treatment	PM	Inspection	1	MONTHS	Lagoon Cell 03 Inspection/Service (1m/6m/1y) 5728	CLOSE	6/1/23 12:00 AM	6/9/23 10:26 AM	6/9/23 10:26 AM	completed last month only an annual wo -
3392160	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	6/1/23 12:00 AM	6/28/23 08:49 AM	6/28/23 08:49 AM	clean - clean and check
3392163	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	6/1/23 12:00 AM	6/28/23 08:54 AM	6/28/23 08:54 AM	clean - clean and check
3392166	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Refurbish/ Replace/Repair	1	YEARS	UV Light Reactor A Check (1y) 5728	CLOSE	6/1/23 12:00 AM	6/28/23 08:55 AM	6/28/23 08:55 AM	check - check UV operation all light are on all ok
3392169	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Refurbish/ Replace/Repair	1	YEARS	UV Light Reactor B Check (1y) 5728	CLOSE	6/1/23 12:00 AM	6/28/23 09:00 AM	6/28/23 09:00 AM	check - check operation all light on all ok

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				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3392172	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	6/1/23 12:00 AM	6/12/23 10:22 PM	6/12/23 10:22 PM	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728 - Inspected hypo pump. ok Hypo tank. Ok
3392178	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	6/1/23 12:00 AM	6/6/23 03:56 PM	6/6/23 03:56 PM	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728 - Isolated pump and hot flushed through site glass. Completed draw down and pump is running at max due to high treated pH 250mL 01: 11.01
3392184	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	6/1/23 12:00 AM	6/12/23 09:40 PM	6/12/23 09:40 PM	
3430037	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	6/1/23 12:00 AM	6/12/23 08:34 PM	6/12/23 08:34 PM	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked oil, fuel, oil, coolant and block heater. ok no faults displayed recorded running values on sheet
3430053			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	6/1/23 12:00 AM	6/25/23 10:21 AM	6/25/23 10:21 AM	TPM Inspection/Maintenance (1m) 5728 - Throughout the month: Visually checked blowers AB2 and AB3. ok checked wetwell pumps at station SPS via SCADA Alum transfer pump. ok
3431833			5728, North Cobalt Lagoon	CAP	Refurbish/ Replace/Repair	0		Replacement PH Meter Probe 5728	CLOSE		8/3/23 07:35 AM	8/3/23 07:35 AM	Replace probe and calibrate -

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WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3431996	0000277468	ANALYZER PH Effluent	5728, North Cobalt Lagoon, Process	CORR	Refurbish/ Replace/Repair	0		pH Effluent Calibration 5728	CLOSE		6/8/23 08:40 AM	6/8/23 08:40 AM	- Called to investigate a high pH at NCL effluent. Found pH probe was out of the effluent water and dry. Cleaned probe, changed KCL solution and calibrated. Installed probe on a conduit stem to keep it in the water and not get hung up from high flows.
3436544	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	7/1/23 12:00 AM	7/27/23 07:51 AM	7/27/23 07:51 AM	ran - ran record value on sheet
3436560	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	7/1/23 12:00 AM	7/28/23 07:27 AM	7/28/23 07:27 AM	ran - ran for few minute to test running ok
3437483	0000060071	SAMPLER EFFLUENT FINAL WEEKLY COMPOSITE	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	YEARS	Sampler Effluent Inspection (1y) 5728	CLOSE	7/1/23 12:00 AM	9/28/23 09:50 AM	9/28/23 09:50 AM	- Perform annual maintenance on sampler. Take sample and check calibration. Sample volume was low so I changed peristaltic pump hose and cleaned rollers and drive. Re calibrated unit to 1000 ml. Verify program and set back to Auto operation.
3438230	0000277366	SAMPLER RAW WEEKLY COMPOSITE	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	3	MONTHS	Sampler Raw Inspection (3m) 5728	CLOSE	7/1/23 12:00 AM	9/28/23 08:09 AM	9/28/23 08:09 AM	- Sampler not working. Install a new sample line well in pit in a better location. Repair insulation on sample line and re secure in new well. Clean pickup strainer and put sampler back into operation.
3438246	0000060018	METER LEVEL PS3 WET WELL	5728, North Cobalt Groom Drive Pumping Station	PM	Calibration	1	YEARS	Meter Level PS3 Wet Well Inspection/Service (1y) 5728	CLOSE	7/1/23 12:00 AM	7/12/23 04:05 PM	7/12/23 04:05 PM	-Milltronics transducer face is 2030 mm from face to cement deck of hatch. Verified calibration by taking a physical measurement to liquid level, subtracting 2030 mm and comparing to meter reading. Transducer nut is almost rusted away, it will need a confined space entry to fix. Pumped well down with both pumps to flush line.

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3438274			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	7/1/23 12:00 AM	7/28/23 01:36 PM	7/28/23 01:36 PM	clean - pick up garbage
3441225	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	7/1/23 12:00 AM	7/27/23 07:53 AM	7/27/23 07:53 AM	clean - clean and check
3441228	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	7/1/23 12:00 AM	7/27/23 07:54 AM	7/27/23 07:54 AM	clean - clean and check
3441231	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	7/1/23 12:00 AM	7/27/23 08:25 AM	7/27/23 08:25 AM	check - test pump all good
3441237	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	7/1/23 12:00 AM	7/16/23 10:45 PM	7/16/23 10:45 PM	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728 - Hot flushed pump #1.
3441243	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	7/1/23 12:00 AM	7/16/23 10:46 PM	7/16/23 10:46 PM	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728 - Hot flushed pump #2
3441249	0000060020	TANK STORAGE WET WELL PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	6	MONTHS	Tank Wet Well PS3 Inspection (6m) 5728	CLOSE	7/1/23 12:00 AM	10/30/23 03:10 PM	10/30/23 03:10 PM	Wet well Inspection - No Major grease build up
3446338	0000277318	ANALYZER PH LAB / PORTABLE SEWAGE LAGOONS	5728, North Cobalt Lagoon, Facility	PM	Inspection	3	MONTHS	ANALYZER PH SEWAGE LAGOON CALIBRATION (3M) 5726	CLOSE	7/1/23 12:00 AM	7/7/23 01:22 PM	7/7/23 01:22 PM	- Cleaned probe and calibrated meter using freshly made Hach 4.01 pH and 7.00 pH buffer solutions as per manufactures instructions. Verified calibration O.K. Refresh storage solution.
3449566	0000293291	TRANSMITTER PRESSURE BLOWER CONTROL (0-20.0 PSI)	5728, North Cobalt Lagoon, Process	PM	Refurbish/ Replace/Repair	1	YEARS	TRANSMITTER PRESSURE CALIBRATION (1Y) 5728	CLOSE	7/1/23 12:00 AM	7/7/23 04:19 PM	7/7/23 04:19 PM	- Verified calibration of transmitter by applying pressure to input at 0, 25, 50, 75 and 100 % and observing mA output on meter and HMI. Unit needed no adjustment at this time.

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3454092	0000293294	TRANSMITTER PRESSURE DISTRIBUTION STATION SPS	5728, North Cobalt Station St Pumping Station	PM	Calibration	1	YEARS	TRANSMITTER PRESSURE CALIBRATION (1Y) 5728	CLOSE	7/1/23 12:00 AM	7/11/23 12:41 PM	7/11/23 12:41 PM	- Verified calibration of transmitter by applying pressure to input at 0, 25, 50, 75 and 100% and measuring mA output as per manufactures instructions. Verified reading on chart recorder.
3457893	0000293322	RECORDER DATA LOGGER NC LAGOON	5728, North Cobalt Lagoon, Process, Process Controls	PM	Calibration	1	YEARS	DATA LOGGER NC LAGOON CALIB / VERIF. (1Y) 5728	CLOSE	7/1/23 12:00 AM	7/12/23 04:55 PM	7/12/23 04:55 PM	-Verified calibration of all channels by comparing Datalogger display value to the value generated by Fluke processmeter at 0, 25, 50, 75 and 100 %.
3458070	0000293324	RECORDER DATA LOGGER SPS#2 STATION ST	5728, North Cobalt Station St Pumping Station	PM	Calibration	1	YEARS	DATA LOGGER SPS2 CALIBRATION (1Y) 5728	CLOSE	7/1/23 12:00 AM	7/11/23 12:54 PM	7/11/23 12:54 PM	-Verified calibration of all channels by comparing Datalogger display value to the desired display value generated by Fluke processmeter at 0, 25, 50, 75 and 100 %.
3472343	0000277468	ANALYZER PH Effluent	5728, North Cobalt Lagoon, Process	PM	Calibration	3	MONTHS	Analyzer pH Effluent Inspection (3m) 5728	CLOSE	7/1/23 12:00 AM	7/12/23 04:18 PM	7/12/23 04:18 PM	-Cleaned probe and calibrated meter using freshly made Hach 4.01 pH and 7.00 pH buffer solutions as per manufactures instructions. Verified calibration O.K. Calibrated temperature against an Fluke 80TK module and 787B processmeter.
3478581	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	7/1/23 12:00 AM	7/28/23 07:36 AM	7/28/23 07:36 AM	ran - ran and record value on sheet
3478597	0000115983	METER LEVEL ALUM	5728, North Cobalt Lagoon, Process, Process Controls	PM	Calibration	1	YEARS	Meter Level Alum Inspection/ Service (1y) 5728	CLOSE	7/1/23 12:00 AM	10/30/23 02:36 PM	10/30/23 02:36 PM	- Transducer face is 73 mm from bottom of white mounting plate. Measurement from bottomo of plate to liquid level was compared to LIT distance measurement.
3478602			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	7/1/23 12:00 AM	7/28/23 01:41 PM	7/28/23 01:41 PM	check - check all good

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Work Order Type:	CALL,CAP,CORR,EMER,OPER,PM
Work Order Class:	

				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3478991	0000277423	METER LEVEL Wet Well #2 PS Station St. 5728	5728, North Cobalt Station St Pumping Station	PM	Calibration	1	YEARS	Level Wet Well Verification Station St. (1y) 5728	CLOSE	7/2/23 12:00 AM	7/11/23 12:49 PM	7/11/23 12:49 PM	-Probe tip is 408 cm below red tape or top of conduit. Tape measure distance was 3540 mm from conduit top to liquid level giving a liquid height of 540 mm or 0.54m above probe empty level.
3481458	0000060065	METER FLOW EFFLUENT	5728, North Cobalt Lagoon, Process, Process Controls	PM	Calibration	1	YEARS	Meter Flow Lagoon Effluent Calibration (1y) 5728	CLOSE	7/12/23 12:00 AM	8/22/23 04:30 PM	8/22/23 04:30 PM	- Verified calibration by comparing ultrasonic "head " value (Parameter D1) and actual measurement with tape measure. Verified O.K.
3482001	0000277365	METER FLOW RAW	5728, North Cobalt Lagoon, Process, Process Controls	PM	Calibration	1	YEARS	Meter Flow Lagoon Raw Calibration (1y) 5728	CLOSE	7/15/23 12:00 AM	8/24/23 07:58 AM	8/24/23 07:58 AM	- Eliminate giant yellowjacket nest under transducer cover. Verified calibration by comparing ultrasonic measuring head "distance" value to tape measure distance from transducer face to liquid level.
3484705	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	8/1/23 12:00 AM	8/2/23 07:29 AM	8/2/23 07:29 AM	ran - ran and record value on sheet
3484721	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	8/1/23 12:00 AM	8/2/23 03:37 PM	8/2/23 03:37 PM	ran - ran and record value on sheet
3485967			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	8/1/23 12:00 AM	8/28/23 02:15 PM	8/28/23 02:15 PM	clean - sweep floor
3488430	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	8/1/23 12:00 AM	8/9/23 07:35 AM	8/9/23 07:35 AM	clean - clean with acid
3488433	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	8/1/23 12:00 AM	8/9/23 07:41 AM	8/9/23 07:41 AM	clean - clean with acid
3488436	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	8/1/23 12:00 AM	8/2/23 07:39 AM	8/2/23 07:39 AM	check - check pump ran ok

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3488442	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	8/1/23 12:00 AM	8/15/23 03:07 PM	8/15/23 03:07 PM	flush - flush pump
3488448	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	8/1/23 12:00 AM	8/15/23 03:18 PM	8/15/23 03:18 PM	flush - flush pump
3522022	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	8/1/23 12:00 AM	8/2/23 07:32 AM	8/2/23 07:32 AM	ran - ran and record value on sheet
3522038			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	8/1/23 12:00 AM	8/29/23 07:15 AM	8/29/23 07:15 AM	check - check all good
3524927			5728, North Cobalt Lagoon	CALL	Refurbish/ Replace/Repair	0		lost com. NC lagoon 5728	CLOSE		8/12/23 05:30 AM	8/12/23 06:30 AM	lost com. - lot com at lagoon reset radio on site
3524928			5728, North Cobalt Lagoon	CALL	Refurbish/ Replace/Repair	0		lost com. NC lagoon 5728	CLOSE		8/12/23 10:10 AM	8/12/23 10:45 AM	lost com. - lost com at lagoon reset radio on site
3525065			5728, North Cobalt Lagoon	CALL	Refurbish/ Replace/Repair	0		Loss Comm NC Lagoon 5728	CLOSE		8/12/23 10:30 AM	8/12/23 12:30 PM	Call From Claude -Claude called at 7 about low alum level at the shack in north cobalt. when he reviewed the trends the level dropped and came right back. this was due to a loss of communication to the shack, I instructed to him that the alum level alarm is to be disabled as that radio drops in and out often enough and its not a compliance issue. He then called back at 1030 about the loss of Comm for the North cobalt lagoon which would not re establish and also that alarm is disabled on the alarm list but still Called out. It kept calling every 10 minutes and couldn't get it to stop. I did some troubleshooting on the alarm and managed to get it to stop calling out and also claude was able to get the radio to reboot after power cycling it. I contacted programmer about the alarm calling out even though the alarm was disabled.

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				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3525697	0000277359	METER FLOW PS2 BYPASS	5728, North Cobalt Station St Pumping Station	PM	Calibration	1	YEARS	Meter Flow PS2 Bypass Calibration (1y) 5728	CLOSE	8/18/23 12:00 AM	8/22/23 04:36 PM	8/22/23 04:36 PM	- Verified flowmeter calibration by comparison with a portable transit time flowmeter. Setup on 4" pvc pipe connected to direct flow back into overflow chamber. Automatic chemical pump operated as it should and alarm system called out to operator as a Critical alarm.
3528193	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	9/1/23 12:00 AM	9/24/23 10:38 PM	9/24/23 10:38 PM	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked fuel, coolant, block heater and oil no faults displayed recorded running values on sheet
3528209	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	9/1/23 12:00 AM	9/28/23 01:42 PM	9/28/23 01:42 PM	Monthly Portable Generator Inspection/Testing -Checked for fuel, coolant and fuel level, Checked block heater operation. Ran for 15 minutes and recorded operational data on monthly checklist.
3529413			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	9/1/23 12:00 AM	10/3/23 03:28 PM	10/3/23 03:28 PM	Building and Grounds Maintenance (1m) 5728 - Cleaned facility
3532537	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	9/1/23 12:00 AM	9/29/23 03:57 PM	9/29/23 03:57 PM	Monthly UV Light Reactor Check Bank A - Cleaned all sleeves with bathroom cleaner and replaced three burned out bulbs. Returned to automatic operation.
3532540	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	9/1/23 12:00 AM	9/29/23 04:00 PM	9/29/23 04:00 PM	

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3532543	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	9/1/23 12:00 AM	9/24/23 10:07 PM	9/24/23 10:07 PM	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728 - Filled hypo tank with water and added calcium hypochlorite puck. Tank was 3/4 full due to an extreme rainfall event therefore topped up. Checked hypo chem pump. ok
3532549	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	9/1/23 12:00 AM	9/17/23 09:01 PM	9/17/23 09:01 PM	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728 - Hot flushed alum pump. Pump running ok
3532555	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	9/1/23 12:00 AM	9/17/23 09:02 PM	9/17/23 09:02 PM	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728 - Hot flushed alum pump. Pump running ok.
3570376	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	9/1/23 12:00 AM	9/17/23 09:06 PM	9/17/23 09:06 PM	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked fuel, coolant, block heater and oil. ok no faults displayed recorded running values on sheet
3570392			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	9/1/23 12:00 AM	10/3/23 03:48 PM	10/3/23 03:48 PM	TPM Inspection/Maintenance (1m) 5728 - Completed TPM checked blowers belt, and oil genset
3573341			5728, North Cobalt Lagoon, Facility, Power Generation	CALL	Refurbish/ Replace/Repair	0		lost pressure NC Lagoon 5728	CLOSE		9/13/23 05:00 PM	9/13/23 09:15 PM	lost of pressure - due to power outage blower trip reset on disconnect genset is running all good

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WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3576296	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	10/1/23 12:00 AM	10/30/23 08:09 AM	10/30/23 08:09 AM	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked oil, fuel, coolant and block heater no faults displayed recorded running values on sheet
3576312	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	CLOSE	10/1/23 12:00 AM	11/3/23 03:30 PM	11/3/23 03:30 PM	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked oil, fuel, coolant; block heater no faults displayed recorded running values on sheet
3577819	0000277366	SAMPLER RAW WEEKLY COMPOSITE	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	3	MONTHS	Sampler Raw Inspection (3m) 5728	CLOSE	10/1/23 12:00 AM	10/20/23 07:26 PM	10/20/23 07:26 PM	
3577846			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	CLOSE	10/1/23 12:00 AM	11/6/23 08:46 AM	11/6/23 08:46 AM	Building and Grounds Maintenance (1m) 5728 - Removed garbage from site Cleaned washroom Swept floor Checked facility interior and exterior. ok
3580996	0000115990	TANK GRIT CHANNELS 1	5728, North Cobalt Lagoon, Process, Headworks	PM	Refurbish/ Replace/Repair	1	YEARS	Channel Grit 01 Inspection (1y) 5728	COMP	10/1/23 12:00 AM	12/15/23 01:34 PM	12/15/23 01:34 PM	Cleaned grit channel -Cleaned grit channels with sucker truck cleaned grit channel -
3580998	0000115991	TANK GRIT CHANNELS 2	5728, North Cobalt Lagoon, Process, Headworks	PM	Refurbish/ Replace/Repair	1	YEARS	Channel Grit 02 Inspection (1y) 5728	COMP	10/1/23 12:00 AM	12/20/23 02:37 PM	12/20/23 02:37 PM	Cleaned grit channel -Cleaned grit channel with sucker truck cleaned grit channel - cleaned grit channel

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WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3581000	0000115992	TANK GRIT CHANNELS 3	5728, North Cobalt Lagoon, Process, Headworks	PM	Refurbish/ Replace/Repair	1	YEARS	Channel Grit 03 Inspection (1y) 5728	COMP	10/1/23 12:00 AM	12/15/23 01:37 PM	12/15/23 01:37 PM	Cleaned grit channel - Cleaned grit channel with sucker truck cleaned grit channel - cleaned grit channel
3581002	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	CLOSE	10/1/23 12:00 AM	11/3/23 03:24 PM	11/3/23 03:24 PM	UV Light Reactor A Check (1m) 5728 - Removed UVs from channel and cleaned sleeves and sensor with sulfuric acid.
3581005	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	CLOSE	10/1/23 12:00 AM	11/3/23 03:25 PM	11/3/23 03:25 PM	UV Light Reactor B Check (1m) 5728 - Removed UVs from channel and cleaned sleeves and sensor with sulfuric acid.
3581008	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	CLOSE	10/1/23 12:00 AM	10/30/23 07:50 AM	10/30/23 07:50 AM	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728 - Inspected hypo bypass pump. ok Inspected tank. ok
3581014	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	CLOSE	10/1/23 12:00 AM	10/27/23 03:18 PM	10/27/23 03:18 PM	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728 - Hot flushed alum pump. ok
3581020	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	CLOSE	10/1/23 12:00 AM	10/27/23 03:21 PM	10/27/23 03:21 PM	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728 - Hot flushed alum pump #2 and disconnected for the winter.
3581026	0000060013	TANK STORAGE WET WELL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	6	MONTHS	Tank Wet Well PS2 Inspection (6m) 5728	COMP	10/1/23 12:00 AM	12/20/23 02:39 PM	12/20/23 02:39 PM	Check wet well for Grease build up all ok -
3586762	0000277318	ANALYZER PH LAB / PORTABLE SEWAGE LAGOONS	5728, North Cobalt Lagoon, Facility	PM	Inspection	3	MONTHS	ANALYZER PH SEWAGE LAGOON CALIBRATION (3M) 5726	CLOSE	10/1/23 12:00 AM	10/7/23 05:18 PM	10/7/23 05:18 PM	- Cleaned probe and calibrated meter using freshly made Hach 4.01 pH and 7.00 pH buffer solutions as per manufactures instructions. Verified calibration O.K. Refresh storage solution.

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3612710	0000277468	ANALYZER PH Effluent	5728, North Cobalt Lagoon, Process	PM	Calibration	3	MONTHS	Analyzer pH Effluent Inspection (3m) 5728	CLOSE	10/1/23 12:00 AM	10/7/23 05:25 PM	10/7/23 05:25 PM	- Cleaned probe and calibrated meter using freshly made Hach 4.01 pH and 7.00 pH buffer solutions as per manufactures instructions. Verified calibration O.K.
3620003	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	10/1/23 12:00 AM	10/27/23 03:29 PM	10/27/23 03:29 PM	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked fuel, coolant, block heater, and oil. recorded running values on sheet noticed a fuel leak before the fuel filter. Called Bryce and he will notify the City to have a mechanic come inspect it.
3620019			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	CLOSE	10/1/23 12:00 AM	11/6/23 09:26 AM	11/6/23 09:26 AM	TPM Inspection/Maintenance (1m) 5728 - Completed TPM throughout the month: checked blowers checked pumps on data logger at Station SPS
3622425			5728, North Cobalt Station St Pumping Station	CALL	Compliance	0		North Cobalt Lagoon - Overflow Ref No. 1-3WXWHA - 5728	CLOSE		10/9/23 09:15 AM	10/9/23 10:00 AM	North Cobalt Lagoon - Overflow Ref No. 1-3WXWHA - 5728 - Terminated overflow. Called SAC and the MOH. Completed and submitted EI Report.
3622407			5728, North Cobalt Station St Pumping Station	CALL	Refurbish/ Replace/Repair	0		Hi Level Alarm Station St SPS Heavy Rain 5728	CLOSE		10/8/23 06:00 PM	10/8/23 11:45 PM	Call For Hi Level due to heavy rain - hi level both pumps running but loosing ground. bypass pump started took samples and reported to SAC and Health unit filled in report.

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3625303			5728, North Cobalt Station St Pumping Station	CALL	Refurbish/ Replace/Repair	0		Intrusion Alarm Station St 5728	CLOSE		10/28/23 12:15 AM	10/28/23 02:00 AM	Intrusion alarm Station St - Call For intrusion Alarm at station street. found the door to be not latched when I arrived, no signs of forced entry or damage to the Facility, Door must not have been latched when operators left. locked door and reset intrusion system
3625865	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	CLOSE	11/1/23 12:00 AM	11/6/23 08:35 AM	11/6/23 08:35 AM	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked fuel, oil, coolant and block heater no faults displayed recorded running values on sheet
3625881	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	COMP	11/1/23 12:00 AM	11/29/23 03:10 PM	11/29/23 03:10 PM	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728 - Completed genset test Completed circle check on generator before and during running Checked oil/fuel/block heater Record running values on monthly sheet No faults displayed
3627127			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	COMP	11/1/23 12:00 AM	12/3/23 10:31 AM	12/3/23 10:31 AM	Completed but no Log -
3629543	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	BUSCOMP	11/1/23 12:00 AM	11/20/23 07:31 AM	11/20/23 07:31 AM	UV Light Reactor A Check (1m) 5728 - Removed UV bank A from channel and cleaned sleeve and sensor. One bulb is burnt but there was no replacement therefore I notified Mark to order.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Workorder Summary Report

Report Start Date:	Jan 1, 2023 12:00 AM
Report End Date:	Dec 31, 2023 11:59 PM
Location:	5728*
Work Order Type:	CALL,CAP,CORR,EMER,OPER,PM
Work Order Class:	

				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3629546	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	COMP	11/1/23 12:00 AM	11/20/23 07:33 AM	11/20/23 07:33 AM	UV Light Reactor B Check (1m) 5728 - Removed UV bank A from channel and cleaned sleeve and sensor. One bulb is burnt but there was no replacement therefore I notified Mark to order.
3629549	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	COMP	11/1/23 12:00 AM	12/3/23 10:32 AM	12/3/23 10:32 AM	Completed but no Log -
3629555	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	COMP	11/1/23 12:00 AM	11/20/23 07:35 AM	11/20/23 07:35 AM	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728 - Hot flushed pump. Running ok
3629561	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	COMP	11/1/23 12:00 AM	11/20/23 07:36 AM	11/20/23 07:36 AM	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728 - Hot flushed pump. Pump is secondary
3661282	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	CLOSE	11/1/23 12:00 AM	11/6/23 08:39 AM	11/6/23 08:39 AM	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728 - Completed genset test: checked fuel, coolant, block heater and oil. The city mechanic has seen the fuel leak and ordered parts. no faults displayed recorded running values on sheet
3661298			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	COMP	11/1/23 12:00 AM	11/30/23 03:06 PM	11/30/23 03:06 PM	TPM Inspection/Maintenance (1m) 5728 - Completed TPM Checked blower for unusual noise. ok Rinse temporary alum sump pump Cleaned bar screen Checked Station SPS pump trends.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Workorder Summary Report

Report Start Date:	Jan 1, 2023 12:00 AM
Report End Date:	Dec 31, 2023 11:59 PM
Location:	5728*
Work Order Type:	CALL,CAP,CORR,EMER,OPER,PM
Work Order Class:	

				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3667152	0000060002	ENGINE DIESEL PS2	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728	COMP	12/1/23 12:00 AM	12/13/23 03:24 PM	12/13/23 03:24 PM	Diesel Generator PS2 Genset Inspection/Functional Test (1m) 5728 - Visual check for any noticeable issues. Checked fluid levels Checked for leaks Filled out check sheet
3667168	0000060053	ENGINE DIESEL PORTABLE UNIT PS3	5728, North Cobalt Groom Drive Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator PS3 Genset Inspection/Functional Test (1m) 5728	COMP	12/1/23 12:00 AM	12/3/23 10:39 AM	12/3/23 10:39 AM	Ran Genset with Danny -
3668387			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	Building and Grounds Maintenance (1m) 5728	COMP	12/1/23 12:00 AM	1/1/24 06:43 PM	1/1/24 06:43 PM	Building and Grounds Maintenance (1m) 5728 - Swept floors and washed floors with hot water Removed garbage when needed checked exterior and interior of facility for issues. ok Alum transfer pump. ok
3670737	0000277363	UV LIGHT A	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor A Check (1m) 5728	COMP	12/1/23 12:00 AM	12/20/23 03:29 PM	12/20/23 03:29 PM	
3670740	0000277364	UV LIGHT B	5728, North Cobalt Lagoon, Process, Disinfection	PM	Inspection	1	MONTHS	UV Light Reactor B Check (1m) 5728	COMP	12/1/23 12:00 AM	12/20/23 03:30 PM	12/20/23 03:30 PM	UV Light Reactor B Check (1m) 5728 - Inspected UV light B bank. Cleaned sleeves and sensor. Waiting on new stock of lamps to replace the burnt ones.
3670743	0000076339	PUMP DIAPHRAGM HYPO BYPASS	5728, North Cobalt Station St Pumping Station	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728	COMP	12/1/23 12:00 AM	12/26/23 07:18 AM	12/26/23 07:18 AM	Pump Diaphragm Hypo Bypass Inspection/Service (1m) 5728 - Inspected hypo bypass pump and hypo tank. ok
3670749	0000115984	PUMP DIAPHRAGM ALUM 1	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728	COMP	12/1/23 12:00 AM	12/11/23 07:31 AM	12/11/23 07:31 AM	Pump Diaphragm Alum 01 Inspection/Service (1m) 5728 - Hot flushed alum pump. Running check. ok

ONTARIO CLEAN WATER AGENCY
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Workorder Summary Report

Report Start Date:	Jan 1, 2023 12:00 AM
Report End Date:	Dec 31, 2023 11:59 PM
Location:	5728*
Work Order Type:	CALL,CAP,CORR,EMER,OPER,PM
Work Order Class:	

				WorkOrder		PM Schedule		Workorder Details					
WO #	Asset ID	Asset Description	Location Description	Type	Class	FEQ	Units	Work Order Description	Status	Schedule Start	Actual Start	Actual Finsh	WorkLog Detail
3670755	0000115985	PUMP DIAPHRAGM ALUM 2	5728, North Cobalt Lagoon, Process, Process Controls	PM	Refurbish/ Replace/Repair	1	MONTHS	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728	COMP	12/1/23 12:00 AM	12/11/23 07:32 AM	12/11/23 07:32 AM	Pump Diaphragm Alum 02 Inspection/Service (1m) 5728 - Hot flushed pump. Running check. ok
3702705	0000060036	ENGINE DIESEL NORTH COBALT	5728, North Cobalt Lagoon, Facility, Power Generation	PM	Refurbish/ Replace/Repair	1	MONTHS	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728	COMP	12/1/23 12:00 AM	12/13/23 03:26 PM	12/13/23 03:26 PM	Diesel Generator North Cobalt Genset Inspection/Functional Test (1m) 5728 - Visual check for any noticeable issues. Checked fluid levels Checked for leaks Filled out check sheet
3702721			5728, North Cobalt Lagoon	PM	Inspection	1	MONTHS	TPM Inspection/Maintenance (1m) 5728	COMP	12/1/23 12:00 AM	1/1/24 07:24 PM	1/1/24 07:24 PM	TPM Inspection/Maintenance (1m) 5728 - Alum transfer pump. ok GFI. ok Blowers. ok
3705167			5728, North Cobalt Lagoon	CAP	Refurbish/ Replace/Repair	0		Replacement UV Bulbs 5728	COMP		2/15/24 08:19 AM	2/15/24 08:19 AM	

APPENDIX D

Summary of Abnormal Discharge Events

North Cobalt Lagoon Sewage Collection System

Summary of Abnormal Discharge Events

Facility Works Number: **110001382**
Facility Owner: **City of Temiskaming Shores**
Facility Classification: **Class 2 Wastewater Treatment**
Receiver: **Farr Creek**
Service Population: **980**
Total Design Capacity: **1200.0 m3/day**
Period Being Reported: **01/2023 12/2023**

Station Name: **Station Street Pump Station (No. 2)**

								Concentrations					Loadings			
Date	Start Time (hh:mm)	Stop Time (hh:mm)	Duration (hr)	Type	Volume (m3)	Disinfection Provided	Reason	BOD5 (mg/L)	TSS (mg/L)	TP (mg/L)	TKN (mg/L)	E.Coli (cfu/100mL)	BOD5 (kg)	TSS (kg)	TP (kg)	TKN (kg)
17-Feb-23	5:48	5:52	0.1	Spill	2.5	Yes	Level transmitter faulted due to frost causing overflow pump to start-up for a short duration	1.6	15.5	0.065	1.5	<5	0.00	0.04	0.00	0.00
11-Apr-23	15:09	22:22	7.2	Overflow	161	Yes	Heavy snow melt	32	51	0.420	4.0	150,000	5	8	0.07	4
12-Apr-23	17:36	19:40	2.1	Overflow	13	Yes	Rapid snow melt & loss of alarms									
13-Apr-23							Sample collected after event	5.9	<1	0.281	5.5	15.00	0.08	0.01	0.00	0.01
13-Apr-23	14:07	21:15	7.1	Overflow	108	Yes	Heavy snow melt	12	14	0.164	2.8	58,000	1.25	1.46	0.02	0.30
01-May-23	3:23	14:02	10.7	Overflow	253	Yes	Heavy precipitation	4.0	13	0.208	1.5	52,000	1.01	3.16	0.05	0.38
07-Sep-23	0:01	8:04	7.8	Overflow	416	Yes	Extreme precipitation	5.4	21	0.296	0.7	41,000	2.20	8.70	0.12	0.29
08-Oct-23	21:09	21:19	0.2	Overflow	8.6	Yes	Heavy precipitation	2.9	5.5	0.192	1.1	4,200	0.03	0.05	0.00	0.01