



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Hensall Sewage Lagoons

2022 Annual Performance Report

Municipality of Bluewater

WW#11000926

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Section 1: Overview

The Hensall Sewage Lagoons System (Lagoons) is operated per Environmental Compliance Approval #3636-9B3NMA issued September 25th 2013. The treatment system is a Class 1 Wastewater Treatment facility and the collection system is Class 2 system.

The Lagoons are located on Lot 16 and 17, Concessions 1 & 2 in the Township of Hay; 39868 Rodgerville Road. The lagoon system's effluent is discharged into Black Creek.

The Hensall Sewage Lagoons system consists of:

1) The Waste Stabilization Pond

- Inlet structure to distribute raw sewage to Cell No. 1 and Cell No. 3 simultaneously while maintaining approximate equal liquid level in both cells.
- Transfer structures for Cell No. 1 and Cell No. 3 overflow to Cell No. 2 when top liquid level is reached; Cell No. 2 outflows to the outflow pipes junction manhole at rates based on consideration of the nitrification capacity of the intermittent sand filters.
- Outflow pipes from Cell No. 1 and Cell No. 3 bypassing Cell No. 2 available for use in emergency or maintenance situations only.

2) The Intermittent Sand Filters

- A wet well type filter pumping station equipped with two submersible pumps (one duty & one standby pump); each pump is rated at 121.2 L/s at 10.7 m TDH with a common discharge pipe to the distribution chamber.
- A distribution chamber with a flowmeter and two 300 mm diameter forcemains with a control valve chamber to the intermittent sand filters.
- Two intermittent sand filters, each having a surface area of 2,300 m² with fourteen 125 mm diameter surface distribution laterals from the forcemain and sixteen bottom collection laterals to a common 600 mm diameter gravity outlet sewer.

3) Ultraviolet Disinfection System

- The Ultraviolet Disinfection System was upgraded to include one contingent future ultraviolet disinfection system with a Peak Flow Rate of 242.3 L/s.

4) Effluent Outfall

The Effluent Outfall was upgraded to a 600 mm diameter outfall sewer pipe with a cascade outfall structure to Black Creek.

5) Phosphorus Removal System

The Phosphorus Removal System includes:

- One 27,000 L capacity phosphorus removal chemical storage tank and two metering pumps (one duty & one standby) each with a capacity of 119.6 L/h.
- All other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works.

Section 2: Monitoring Results

Raw Sewage Monitoring

The Hensall Lagoons treated 143,600.1 m³ of raw sewage in 2022. The daily average flow was 393.42 m³/ day, which was 40.14 % of the design capacity. The maximum daily flow was in February and was 2,460.72 m³/ day; this is 251.09 % of the design capacity. The design capacity for daily flow is 980 m³/ day; see chart 1a and 1b.

Chart 1a: Hensall Lagoons Average Daily Raw Sewage flows in 2022 compared to 2021 flows.

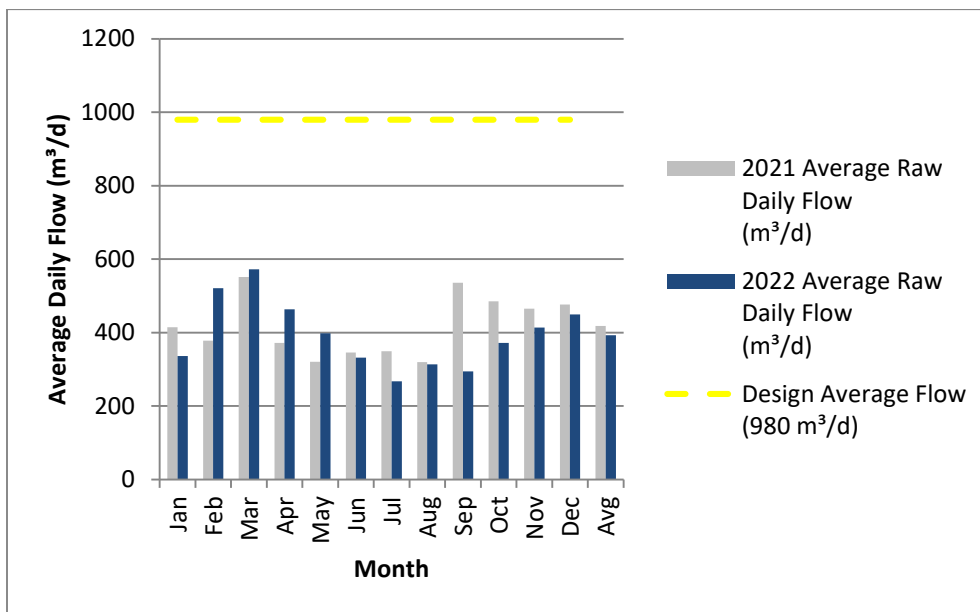
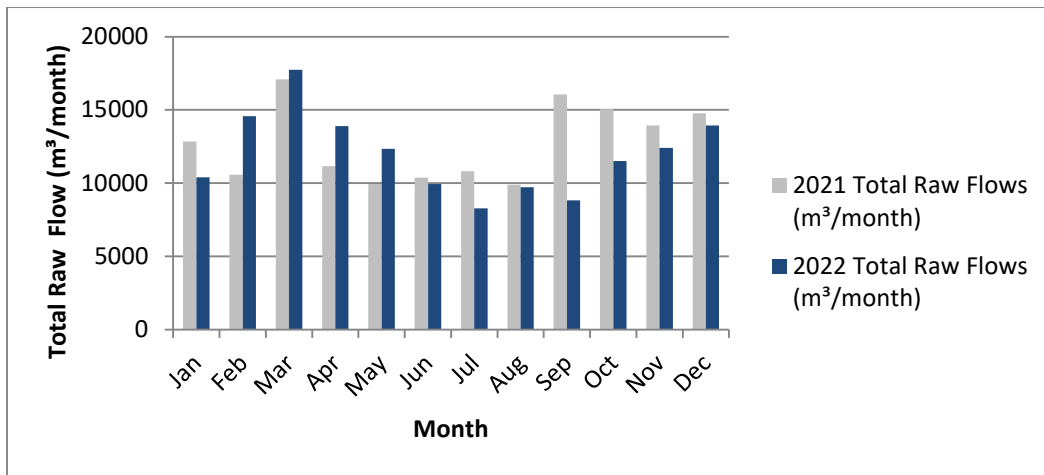


Chart 1b: Hensall Lagoons Total Raw Sewage flows in 2022 compared to 2021 flows.

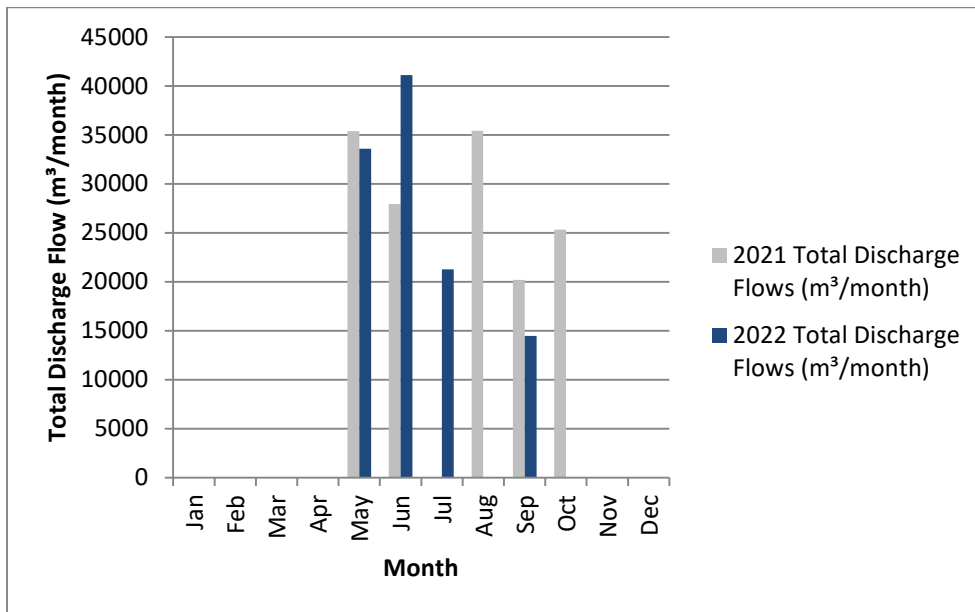


Raw sewage is monitored on a quarterly basis and tested for BOD5, Total Suspended Solids, Total Phosphorus and Total Kjeldahl Nitrogen. Results are found in Appendix A.

Effluent Monitoring

The total volume discharged in 2022 from the lagoon was 110,472.38 m³; see chart 2.

Chart 2: Hensall Lagoons Effluent Discharge Flows in 2022 compared to 2021 flows.



Sampling was completed twice weekly as required per ECA #3636-9B3NMA. The discharge effluent results were all compliant for the 2022 reporting period. Refer to Appendix A for flow and sampling summary.

Table 1. Effluent monthly average concentrations compared to the limits identified in the ECA.

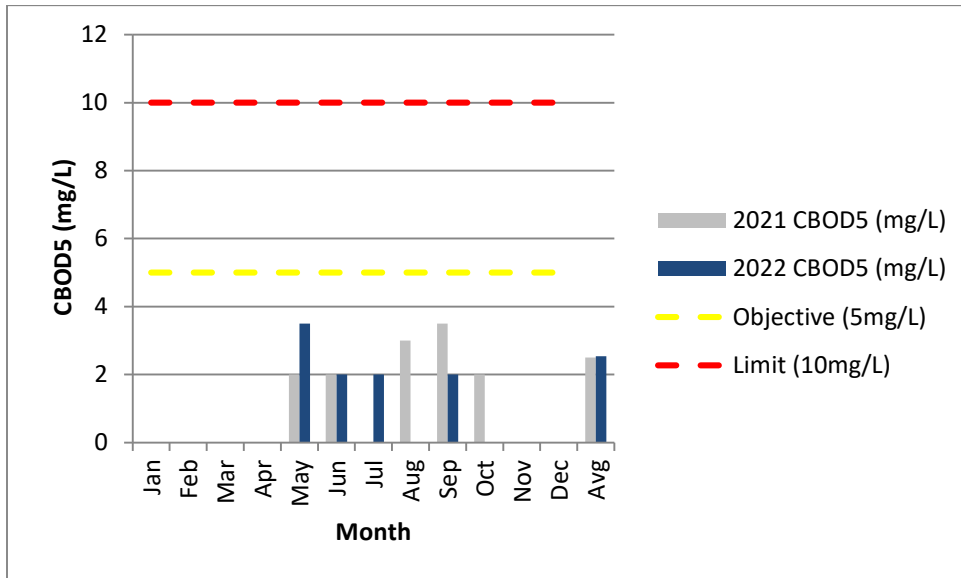
Effluent Parameter	Average Monthly Concentration	2022 Average Monthly Concentration Ranges	Number of Exceedances
CBOD5	10 mg/L	2.0 - 3.5 mg/L	0
Total Suspended Solids	10 mg/L	2.2 - 3.6 mg/L	0
Total Phosphorus	0.5 mg/L	0.21 - 0.24 mg/L	0
Total Ammonia Nitrogen	3.0 mg/L	0.1 - 0.2 mg/L	0
E. Coli	100 cfu/100 mL	1.0 - 20.9 cfu/100 mL	0
pH	maintained between 6.0 to 9.5, inclusive, at all times	Min. - Max. 6.73 - 7.72	0

Table 2. Effluent monthly average loadings compared to limits in the ECA.

Effluent Parameter	Average Monthly Loading Limit	2022 Average Waste Loading	Number of Exceedances
CBOD5	9.8 kg/d	1.0 kg/d	0
Total Suspended Solids	9.8 kg/d	1.1 kg/d	0
Total Phosphorus	0.49 kg/d	0.09 kg/L	0
Total Ammonia Nitrogen	2.94 kg/d	0.05 kg/L	0

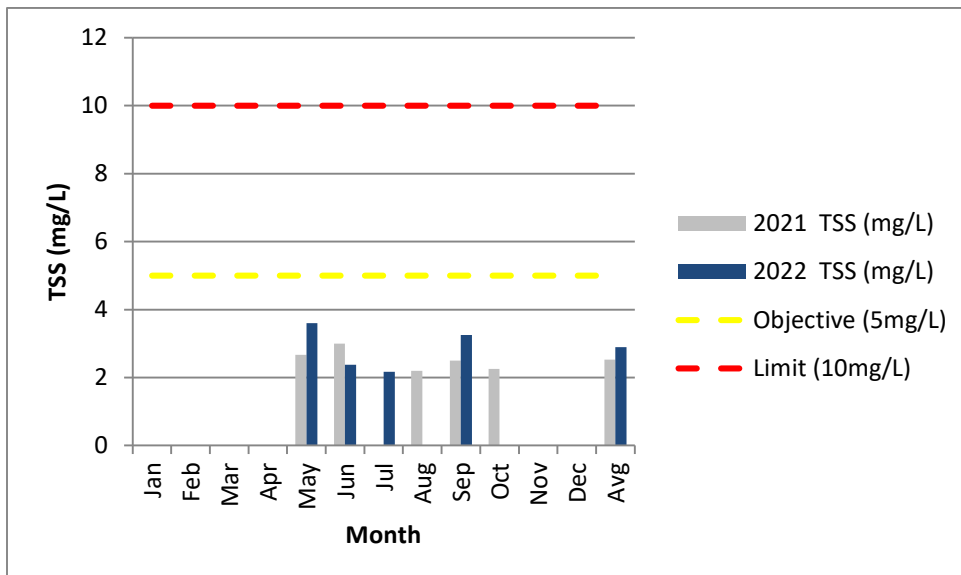
The effluent annual monthly average for Carbonaceous Biochemical Oxygen Demand (CBOD5) concentration was 2.54 mg/L with a maximum monthly concentration of 3.50 mg/L recorded for the month of May 2022; compliance limit is 10.0 mg/L, see chart 3. The effluent annual average waste loading for CBOD5 was 1.0 kg/day; compliance limit is 9.8 kg/day. Monthly CBOD results met ECA identified limit and objective values.

Chart 3: Hensall Lagoons Average Monthly Effluent Carbonaceous Biochemical Oxygen Demand (CBOD5) results for 2022 compared to 2021.



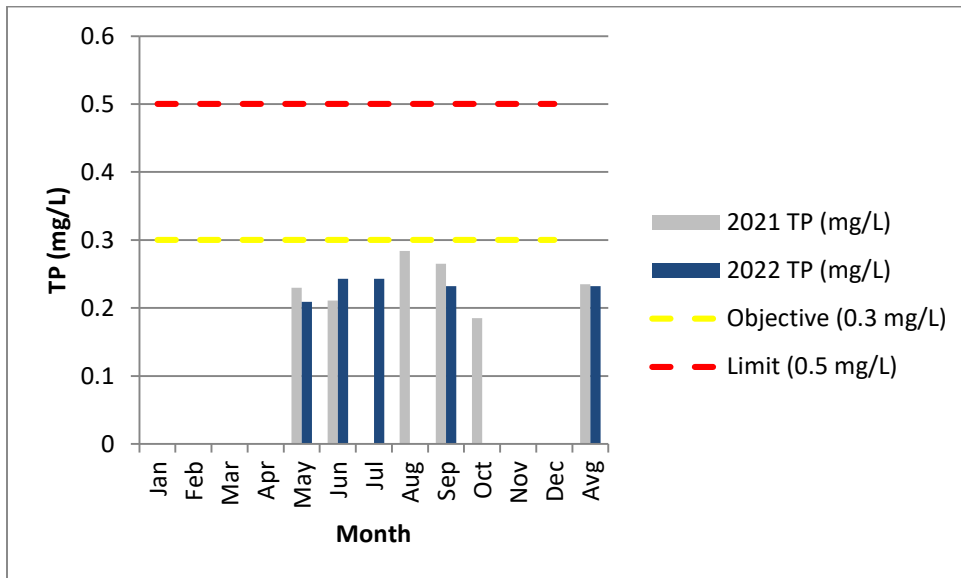
The effluent annual monthly average for Total Suspended Solids (TSS) concentration was 2.89 mg/L with a maximum monthly concentration of 3.6 mg/L recorded for the month of May 2022; compliance limit is 10.0 mg/L, see chart 4. The effluent annual average waste loading for Total Suspended Solids concentration was 1.14 kg/day; compliance limit is 9.8 kg/day. Monthly TSS results met ECA identified limit and objective values.

Chart 4: Hensall Lagoons Average Monthly Effluent Total Suspended Solids (TSS) results for 2022 compared to 2021.



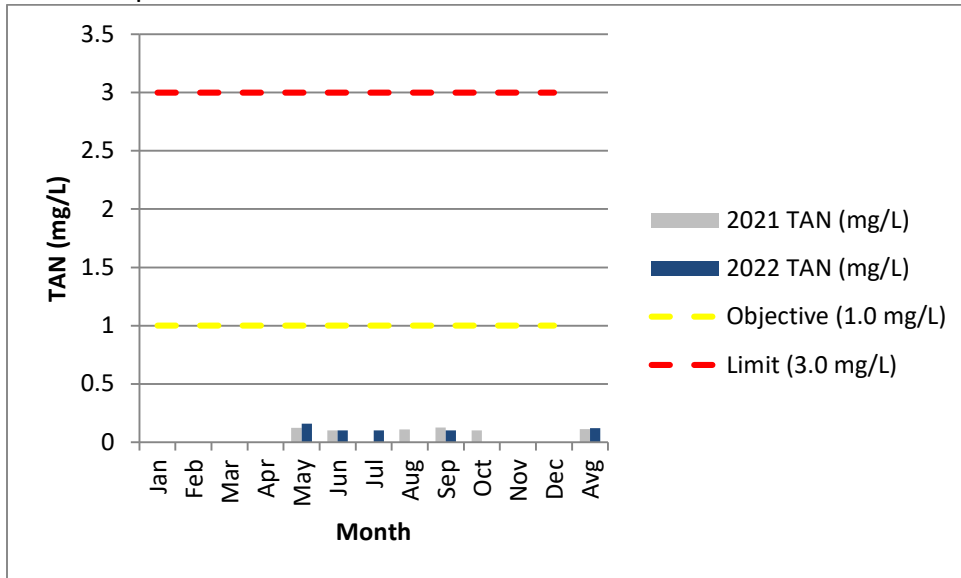
The effluent annual monthly average for Total Phosphorus (TP) concentration was 0.23 mg/L with a maximum monthly concentration of 0.24 mg/L recorded for the months of June and July 2022; compliance limit is 0.5 mg/L, see chart 5. The effluent annual average waste loading for Total Phosphorus was 0.09 kg/day; compliance limit is 0.49 kg/day. Monthly TP results met ECA identified limit and objective values.

Chart 5: Hensall Lagoons Average Monthly Effluent Total Phosphorus (TP) results for 2022 compared to 2021.



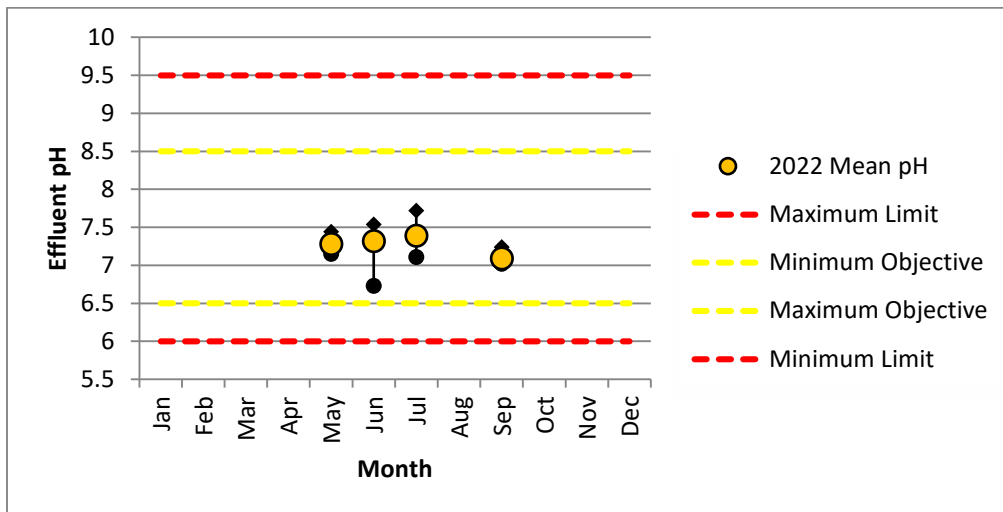
The effluent annual monthly average for Total Ammonia Nitrogen (TAN) concentration was 0.12 mg/L with a maximum monthly concentration of 0.16 mg/L recorded for the month of May 2022; compliance limit is 3.0 mg/L, see chart 6. The effluent annual average waste loading for Total Ammonia Nitrogen concentration was 0.05 kg/day; compliance limit is 2.94 kg/day. Monthly TAN results met ECA identified limit and objective values.

Chart 6: Hensall Lagoons Average Monthly Effluent Total Ammonia Nitrogen (TAN) results for 2022 compared to 2021.



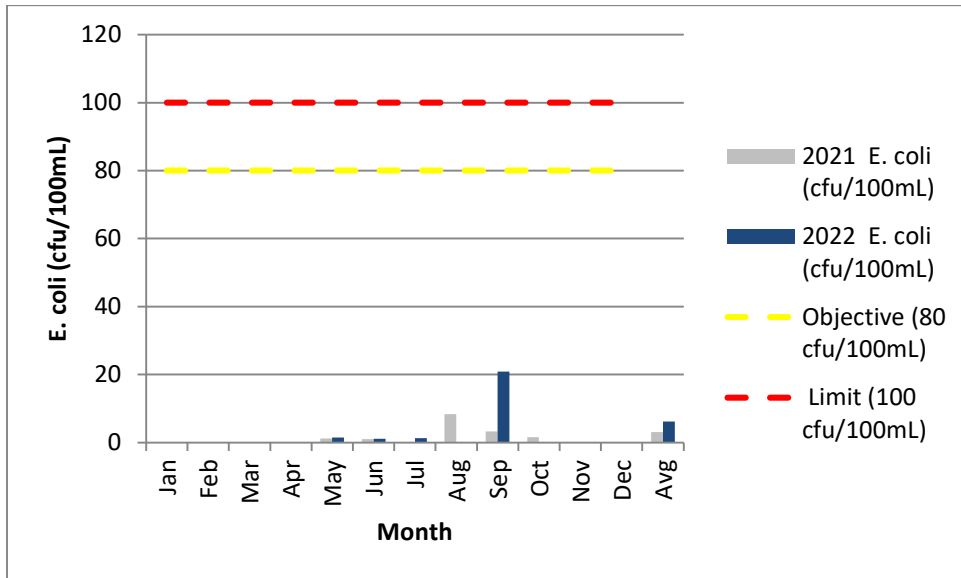
Effluent pH values ranged from 6.73 to 7.72 in 2022. The maximum pH of 7.72 was recorded in the month of July and the minimum pH of 6.73 was recorded in the month of June 2022, see chart 7. All pH results met ECA identified limit and objective values.

Chart 7: Hensall Lagoons Final Effluent pH results for 2022.



The bacteriological quality of the effluent was monitored and the E. coli Geometric Mean Density (GMD) did not exceed the compliance limit of 100 organisms per 100 ml of effluent discharged from the works throughout 2022, see Chart 8. Monthly E. coli GMD results met ECA identified limit and objective values.

Chart 8: Hensall Lagoons Final Effluent E. Coli Geometric Mean Density (GMD) results for 2022 compared to 2021.



The system is providing adequate treatment with discharge effluent results compliant with all identified Environmental Compliance Approval #3636-9B3NMA limits for the 2022 reporting period.

Section 3: Evaluation of E. coli Results

The bacteriological quality of the effluent was monitored and the geometric mean density of E. coli did not exceed the design objective of 80 organisms per 100 mL or the compliance limit of 100 organisms per 100 mL of effluent discharged from the works throughout 2022. The maximum monthly geometric mean density for E. coli was 20.9cfu/100mL; this value was recorded for the month of September 2022.

The E. coli geometric mean density compliance limit and design objective were not exceeded during this report period therefore showing no indication that the recommended implementation of the contingency ultraviolet disinfection system is required at this time under the current flow conditions and when at the full rated capacity.

Section 4: Operating Problems Encountered and Corrective Actions

The wet-wells were cleaned out on multiple occasions throughout the year; grease buildup in the wells must be removed to allow Miltronic recording devices and floats to function effectively.

Lagoon sand filters require regular maintenance to limit vegetative surface growth and assure efficient filtering.

Section 5: Summary of Maintenance

Regular-scheduled monthly preventative maintenance has been assigned and monitored using OCWA's Work Management System program (Maximo). Pierce Services is contracted to complete annual calibration services of all instrumentation for the Hensall Sewage Lagoon System; see Appendix B (attached).

Equipment preventive maintenance requirements are built into the regular work schedule and corrective maintenance work requests are added according to their priority and staff and contractor availability; see Appendix C (attached).

Additional unscheduled maintenance is completed as needed. Additional maintenance completed during 2022 included:

- Periodic wet well cleaning completed due to grease build-up;
- Alum pump repair, alum line flushing;
- Generator repaired;
- Sewage Pump Station, pump 2 electrical repairs completed;
- Filter bed maintenance completed as needed;
- Managed power interruption events;
- MCC panel inspections completed by electrician;
- Replaced smoke detector;
- Completed a sewer lateral repair on King Street.

Section 6: Summary of Effluent Quality Assurance

The effluent parameters specified in the Environmental Compliance Approval were analyzed by SGS Lakefield; SGS Lakefield is an accredited laboratory in Ontario.

The system is monitored on an on-going basis to ensure proper operations. System checks include well level checks, pump hour meter readings, testing of alarms and running generators to ensure all systems are operating effectively.

Annually a facility sampling schedule calendar is prepared and reviewed with operational staff; the sampling schedule calendar identifies sample collection dates to meet regulatory requirements of the Environmental Compliance Approval.

Operators are on-site a minimum of once per week monitoring the facility and twice a week during the discharge period to collect required samples.

The lab results are reviewed by the operators and the Process and Compliance Technician as they are received to ensure compliance. The Process and Compliance Technician reviews uploaded data and facility worksheets monthly.

Section 7: Summary of Calibrations

In 2022 flow meter calibrations were completed by Pierce Services and Solutions Inc. See Appendix B for calibration records.

Section 8: Summary of Objectives

The system design capacity daily flow is 980 m³/ day. The daily average flow for 2022 was 393.42 m³/ day; this value is 40.14 % of the design capacity. The maximum daily flow of 2,460.72 m³/ day was recorded for February 17, 2022; this flow value is 251.09 % of the design capacity and was related to area precipitation.

Table 3. Effluent monthly average concentrations compared to the ECA objectives.

Effluent Parameter	Average Monthly Concentration Objective	2022 Monthly Average Concentration Ranges	Number of exceedances
CBOD5	5.0 mg/L	2.0 - 3.5 mg/L	0
Total Suspended Solids	5.0 mg/L	2.2 - 3.6 mg/L	0
Total Phosphorus	0.3 mg/L	0.2 - 0.2 mg/L	0
Total Ammonia Nitrogen	1.0 mg/L	0.1 - 0.2 mg/L	0
E. Coli	80 cfu/100 mL	1 - 21 cfu/100 mL	0
pH	maintained between 6.5 to 8.5	6.7 - 7.7	0

Objectives were met consistently in 2022 for Carbonaceous Biochemical Oxygen Demand (CBOD), Total Suspended Solids (TSS), Total Phosphorus (TP), Total Ammonia Nitrogen (TAN), E. Coli Geometric Mean Density (GMD) and pH sampling.

Regular scheduled filter maintenance, alum dosage adjustment and effluent monitoring are completed by operational staff to strive and meet Environmental Compliance Approval design objectives.

Refer to charting found in Section 2 for a comparison of the monthly average results to the objectives.

Section 9: Sludge Generated and Disposal

No sludge was hauled from the Hensall Lagoon System in 2022. It is calculated that approximately 40 m³ of sludge was generated in the 2022 reporting period. It is anticipated that approximately 40 m³ of sludge will be generated during the next reporting period.

Section 10: Summary of Complaints

There were no complaints received during the 2022 reporting period.

Section 11: Summary of By-pass, Spill or Abnormal Discharge Events

One overflow event occurred in this report period, this occurred at the Richmond Street Sewage Pump Station on February 17, 2022. An estimated 108 m³ of raw sewage overflowed from the Richmond Street Sewage Pump Station, located at 178 Richmond Street West in Hensall. The pumping station has a designed overflow leading into the Boise Cascade drain. The overflow lasted for 3 hours and 7 minutes and was the result of a heavy rain storm in the area; all required notifications of the overflow event and sample collections were completed.

Section 12: Additional Information the Water Supervisor Required

The Environmental Compliance Approval #3636-9B3NMA issued September 25th 2013 requires that bypass and overflow reports be submitted to the Ministry's local office quarterly; reports were submitted as required.

Water Supervisor requested that future Annual Reports contain:

1) Flows and Laboratory Results

- a) a tabular listing of the daily flows,
- b) a tabular listing of the sample results.

Please see Appendix A.

2) Un-Ionized Ammonia

- a) a listing of the calculated un-ionized ammonia results (along with the corresponding pH and temperature measurements, and TAN results), and
- b) a discussion of the results relative to the applicable Provincial Water Quality Objective.

Please see Appendix A.

Final effluent sampling results show that the Ontario Water Quality Objective for unionized ammonia (0.02 mg/L) was consistently met in 2022

Appendix A: Flow and Monitoring Summary

5695 HENSALL WASTEWATER TREATMENT LAGOON 110000926

	1/ 2022	2/ 2022	3/ 2022	4/ 2022	5/ 2022	6/ 2022	7/ 2022	8/ 2022	9/ 2022	10/ 2022	11/ 2022	12/ 2022	<--Total-->	<--Avg-->	<--Max-->	<-Criteria-->
Flows																
Raw Flow: Total - Raw Sewage m³/d	10,405.58	14,584.07	17,743.50	13,893.81	12,343.54	9,941.57	8,278.59	9,712.21	8,828.16	11,520.43	12,415.08	13,933.55	143,600.09			0.00
Raw Flow: Avg - Raw Sewage m³/d	335.66	520.86	572.37	463.13	398.18	331.39	267.05	313.30	294.27	371.63	413.84	449.47		393.42		
Raw Flow: Max - Raw Sewage m³/d	395.99	2,460.72	1,075.50	795.78	795.25	530.78	374.52	796.34	812.64	971.53	782.43	1,966.64			2,460.72	0.00
Raw Flow: Count - Raw Sewage m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00			0.00
Eff. Flow: Total - Final Effluent m³/d	0.00	0.00	0.00	0.00	33,609.69	41,104.10	21,277.87	0.00	14,480.72	0.00	0.00	0.00	110,472.38			0.00
Eff. Flow: Avg - Final Effluent m³/d	0.00	0.00	0.00	0.00	1,120.32	1,370.14	1,063.89	0.00	1,316.43	0.00	0.00	0.00		1,213.98		
Eff. Flow: Max - Final Effluent m³/d	0.00	0.00	0.00	0.00	1,437.02	1,767.50	1,685.39	0.00	2,310.56	0.00	0.00	0.00			2,310.56	0.00
Eff Flow: Count - Final Effluent m³/d	0.00	0.00	0.00	0.00	30.00	30.00	20.00	0.00	11.00	0.00	0.00	0.00	91.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Final Effluent mg/L	0.00	0.00	0.00	0.00	< 3.50	< 2.00	< 2.00	0.00	< 2.00	0.00	0.00	0.00		< 2.54	< 3.50	
Eff: # of samples of cBOD5 - Final Effluent	0.00	0.00	0.00	0.00	10.00	8.00	6.00	0.00	4.00	0.00	0.00	0.00	28.00			0.00
Loading: cBOD5 - Final Effluent kg/d	0.000	0.000	0.000	0.000	< 3.921	< 2.740	< 2.128	0.000	< 2.633	0.000	0.000	0.000		< 2.86	< 3.92	0.000
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage mg/L	217.00	0.00	0.00	239.00	0.00	0.00	427.00	0.00	0.00	> 420.00	0.00	0.00		325.75	427.00	0.00
Raw: # of samples of BOD5 - Raw Sewage	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	4.00			0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	178.00	0.00	0.00	234.00	0.00	0.00	439.00	0.00	0.00	357.00	0.00	0.00		302.00	439.00	0.00
Raw: # of samples of TSS - Raw Sewage	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	4.00			0.00
Eff: Avg TSS - Final Effluent mg/L	0.00	0.00	0.00	0.00	< 3.60	< 2.38	< 2.17	0.00	< 3.25	0.00	0.00	0.00		< 2.89	< 3.60	
Eff: # of samples of TSS - Final Effluent	0.00	0.00	0.00	0.00	10.00	8.00	6.00	0.00	4.00	0.00	0.00	0.00	28.00			0.00
Loading: TSS - Final Effluent kg/d	0.000	0.000	0.000	0.000	< 4.033	< 3.254	< 2.305	0.000	< 4.278	0.000	0.000	0.000		< 3.47	< 4.28	0.000
Percent Removal: TSS - Raw Sewage %	0.00	0.00	0.00	0.00	0.00	0.00	99.51	0.00	0.00	0.00	0.00	0.00			99.51	0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	3.71	0.00	0.00	3.24	0.00	0.00	6.64	0.00	0.00	20.30	0.00	0.00		8.47	20.30	0.00
Raw: # of samples of TP - Raw Sewage	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	4.00			0.00
Eff: Avg TP - Final Effluent mg/L	0.00	0.00	0.00	0.00	0.21	0.24	0.24	0.00	0.23	0.00	0.00	0.00		0.23	0.24	

Eff: # of samples of TP - Final Effluent	0.00	0.00	0.00	0.00	10.00	8.00	6.00	0.00	4.00	0.00	0.00	0.00	28.00			0.00
Loading: TP - Final Effluent kg/d	0.000	0.000	0.000	0.000	0.234	0.332	0.259	0.000	0.306	0.000	0.000	0.000		0.28	0.33	0.000
Percent Removal: TP - Raw Sewage %	0.00	0.00	0.00	0.00	0.00	0.00	96.34	0.00	0.00	0.00	0.00	0.00			96.34	0.00

Nitrogen Series

Raw: Avg TKN - Raw Sewage mg/L	30.40	0.00	0.00	27.70	0.00	0.00	47.40	0.00	0.00	48.70	0.00	0.00		38.55	48.70	0.00
Raw: # of samples of TKN - Raw Sewage	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	4.00			0.00
Eff: Avg TAN - Final Effluent mg/L	0.00	0.00	0.00	0.00	< 0.16	< 0.10	< 0.10	0.00	< 0.10	0.00	0.00	0.00		< 0.12	< 0.16	
Eff: # of samples of TAN - Final Effluent	0.00	0.00	0.00	0.00	10.00	8.00	6.00	0.00	4.00	0.00	0.00	0.00	28.00			0.00
Loading: TAN - Final Effluent kg/d	0.000	0.000	0.000	0.000	< 0.179	< 0.137	< 0.106	0.000	< 0.132	0.000	0.000	0.000		< 0.14	< 0.18	0.000

Disinfection

Eff: GMD E. Coli - Final Effluent cfu/100mL	0.00	0.00	0.00	0.00	1.45	1.09	1.26	0.00	20.86	0.00	0.00	0.00				
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Appendix B: Calibration Reports



Pierce Services
& Solutions Inc.

519.820.4853 Fax 519.824.9402

Instrument Verification Sheet

Client Name: Ontario Clean Water Agency

Date: April 14, 2022

Equipment Description: Level Sensor

Assigned Number: Wet Well Level

Area Located: Hansall Well

Inventory Number: 156303

Instrument Data

Manufacturer: Milltronics

Model Number: MultiRanger Plus

Type: Ultrasonic

Serial Number: N/A

Range: 0 - 3.800 m

Accuracy: +/- 5%

Method Of Calibration: Standard Measurement

Application: Waste Water

Calibration Data

Input %	Input	As Found	As Left	Pass/Fail
	12.45 mA	2.007 m	2.007 m	Pass

Confirmed Run Mode:

Placed back in service:

Comments:



Checked By: Greg Pierce CCST

Signature: 



Alphabetical Parameter Listing Multiranger Plus

Tag # LIT 300 Reservoir Level Hensall
Date: April 14, 2022

#	Parameter	Value	#	Parameter	Value
P-0	Security	1954	P-50	OCM mA output	1
P-1	Units	1	P-51	OCM simulation	--
P-2	Mode of Measurement	1	P-52	Totalizer display factor	0
P-3	Empty Distance	4.000	P-53	Totalizer decimal point	2
P-4	Span	3.800	P-54	Low total	00.00
P-5	Blanking	0.300	P-55	High total	0000
P-6	Analog Output	2	P-56	Remote totalizer contact	0
P-7	Decimal Point	2	P-57	Flow sampler control	0
P-8	Relay 1, Function	0	P-58	Flow sampler control	1.000
P-9	Relay 1, Setpoint On	1.900	P-59	Time sampler control	--
P-10	Relay 1, Setpoint Off	1.950	P-60	Full Calibration	--
P-11	Relay 2, Function	1	P-61	Empty Calibration	--
P-12	Relay 2, Setpoint On	3.050	P-62	Measurement Offset	0.000
P-13	Relay 2, Setpoint Off	3.030	P-63	Sound Velocity at 20° C	344.1
P-14	Relay 3, Function	7	P-64	Velocity at P-65	338.9
P-15	Relay 3, Setpoint On	3.800	P-65	Air temperature	11 C
P-16	Relay 3, Setpoint Off	3.750	P-66	Maximum air temperature	33 C
P-17	Relay 4, Function	1	P-67	Minimum air temperature	-4 C
P-18	Relay 4, Setpoint On	1.500	P-68	Fill damping	10.00
P-19	Relay 4, Setpoint Off	1.700	P-69	Empty damping	10.00
P-20	Relay 5, Function	0	P-70	Process rate display	0.000
P-21	Relay 5, Setpoint On	--	P-71	Process rate filter	1
P-22	Relay 5, Setpoint Off	--	P-72	Fuzz filter	1
P-23	Transducer, Submersible	0	P-73	Agitator discrimination	1
P-24	Pump 1, hours	0.000	P-74	Fail-safe mode	3
P-25	Pump 2, hours	0.000	P-75	Fail-safe timer	1.000
P-26	Pump 3, hours	0.000	P-76	Reading	2.98
P-27	Pump 4, hours	0.000	P-77	Material level	2.983
P-28	Pump 5, hours	0.000	P-78	Space or distance	1.017
P-29	Pump, run on, interval	0.000	P-79	Scope displays	--
P-30	Pump, run off, duration	0	P-80	Echo confidence	1:20
P-31	Transducer	104	P-81	Confidence threshold long	10
P-32	DLD milliamp output	1	P-82	Confidence threshold long	5
P-33	Inflow/discharge totaling	1	P-83	Echo strength	96
P-34	Tank Shape	0	P-84	Noise	3:9
P-35	Tank dimension A	0.000	P-85	Algorithms	1
P-36	Tank dimension L	0.000	P-86	TVT curve	1
P-37	Convert display	1.000	P-87	Range extension	20
P-38	Display offset	0.000	P-88	Number of transmit pulses	4
P-39	Display reading options	0	P-89	Software version	1.22
P-40	Primary measuring device	1	P-90	Memory test	PASS
P-41	Flow rate time units	4	P-91	LCD,LED and relay test	PASS
P-42	OCM exponent	1.550	P-92	mA output test	16.56
P-43	Flume Dimensions	1.000	P-93	Temperature sensor test	181.0
P-45	Maximum head	3.800	P-94	Transmitter test	PASS
P-46	Maximum flow rate	1000	P-95	Programmer test	PASS
P-47	Auto zero	--	P-96	Watchdog reset test	PASS
P-48	OCM low head cutoff	5.000	P-97	Trim for 4 mA	220
P-49	OCM decimal point	2	P-98	Trim for 20 mA	3495
			P-99	Master reset	



**Pierce Services
& Solutions Inc.**

PO Box 26027
Guelph, ON N1E 6W1

Phone: 519.820.4853
Fax: 519.824.9402

Flowmeter Report

Verification: <input checked="" type="checkbox"/>	Calibration: <input type="checkbox"/>
Client: <u>OCWA Bluewater</u>	Location: <u>Hensall Lift Station</u>
Description: <u>Mag Flow Meter</u>	Date: <u>14-Apr-22</u>
Manufacturer: <u>Endress Hauser</u>	Checked By: <u>Greg Pierce</u>
Model: <u>Promag</u>	Serial No.: <u>JA02691600</u>
Inventory No.: <u>249166</u>	

Velocity	Input	As Found	As Left	Pass/Fail
0 m/s	0.00 l/s	0.00 l/s	0.00 l/s	Pass
1.99 m/s	37.11 l/s	37.11 l/s	37.11 l/s	Pass
5.65 m/s	100.00 l/s	100.00 l/s	100.00 l/s	Pass

Confirmed Run Mode: X Returned to service: X

Service Comments:

Flowmeter Information

Flow Unit: l/s
 Meter Size: 150 mm
 Pipe Material: Stainless Steel
 Liner Material: PU
 Range: 0-100 l/s
 Tag Number: FIT 100



Comments:

Verification of original calibration

Signature: _____

Greg Pierce, CCST



**Pierce Services
& Solutions Inc.**

PO Box 26027
Guelph, ON N1E 6W1

Phone: 519.820.4853
Fax: 519.824.9402

Flowmeter Report

Verification: X

Calibration:

Client: OCWA Bluewater
Description: Mag Flow Meter
Manufacturer: Endress Hauser
Model: Promag W
Inventory No.: _____

Location: Hensall Lagoons
Date: 14-Apr-22
Checked By: Greg Pierce
Serial No.: J6052B1600

Velocity	Input	As Found	As Left	Pass/Fail
0 m/s	0.00 l/s	0.00 l/s	0.00 l/s	Pass
42.38 m/s	42.27 l/s	42.27 l/s	42.27 l/s	Pass
2.83 m/s	200.00 l/s	200.00 l/s	200.00 l/s	Pass

Confirmed Run Mode: X

Returned to service: X

Service Comments:

Flowmeter Information

Flow Unit: l/s
Meter Size: 300 mm
Pipe Material: Stainless Steel
Liner Material: PU
Range: 0-200 l/s
Tag Number: FIT 100



Comments:

Verification of original calibration

Signature: _____

Greg Pierce, CCST

Appendix C: Work Order Summary

Workorder Summary Report

Report Start Date: Jan 1, 2022 12:00 AM

Report End Date: Dec 31, 2022 11:59 PM

Location: 5695,5695-WLHN,5695-WLHN-F,5695-WLHN-F-EF,5695-WLHN-F-HV,5695-WLHN-F-PG,5695-WLHN-P,5695-WLHN-P-HW,5695-WLHN-P-PC,5695-WLHN-P-PI,5695-WLHN-P-PT,5695-WLHN-P-ST

Work Order Type: 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
2591330	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	1/1/22 12:00 AM	1/18/22 03:49 PM	1/18/22 03:49 PM	generator running - • generator running alarm • all normal
2591870	0000249165	MCC	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Refurbish/ Replace/Repair	1	YEARS	MCC Hensall PS Insp/Service (1y/ 3y) 5695	CLOSE	1/1/22 12:00 AM	9/20/22 11:31 AM	9/20/22 11:31 AM	MCC Hensall PS Insp/Service (1y/ 3y) 5695 - • 1) Isolate the unit, open cabinet doors and visually inspect the MCC components. 2) Checked for loose connections and signs of overheating. 3) Manually operated all circuit breakers. 4) Inspected main contacts on all motor controllers. 5) Manually operated motor controllers to check for excessive binding. 6) Clean the cabinet with a soft brush, vacuum and lint free cloth. 7) Checked indicator lights. 8) Checked all fuses. 9) Inspected air filters 10) Checked cabinet door interlock.
2591873	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	1/1/22 12:00 AM	1/6/22 03:07 PM	1/6/22 03:07 PM	Alum room flood alarm test -

Workorder Summary Report

Report Start Date: Jan 1, 2022 12:00 AM

Report End Date: Dec 31, 2022 11:59 PM

Location: 5695,5695-WLHN,5695-WLHN-F,5695-WLHN-F-EF,5695-WLHN-F-HV,5695-WLHN-F-PG,5695-WLHN-P,5695-WLHN-P-HW,5695-WLHN-P-PC,5695-WLHN-P-PI,5695-WLHN-P-PT,5695-WLHN-P-ST

Work Order Type: 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
2592238	0000249187	MCC Hensall Lagoons	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Refurbish/Replace/Repair	1	YEARS	MCC Hensall Lagoons Insp/Service (1y/3y) 5695	CLOSE	1/1/22 12:00 AM	9/20/22 11:36 AM	9/20/22 11:36 AM	MCC Hensall Lagoons Insp/Service (1y/3y) 5695 - • 1) Isolated the unit, opened cabinet doors and visually inspected the MCC components. 2) Checked for loose connections and signs of overheating. 3) Manually operated all circuit breakers. 4) Inspected main contacts on all motor controllers. 5) Manually operated motor controllers to check for excessive binding. 6) Cleaned the cabinet with a soft brush, vacuum and lint free cloth. 7) Checked indicator lights. 8) Checked all fuses. 9) Inspected air filters 10) Checked cabinet door interlock

Workorder Summary Report

Report Start Date: Jan 1, 2022 12:00 AM

Report End Date: Dec 31, 2022 11:59 PM

Location: 5695,5695-WLHN,5695-WLHN-F,5695-WLHN-F-EF,5695-WLHN-F-HV,5695-WLHN-F-PG,5695-WLHN-P,5695-WLHN-P-HW,5695-WLHN-P-PC,5695-WLHN-P-PI,5695-WLHN-P-PT,5695-WLHN-P-ST

Work Order Type: 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
2612363			5695, Hensall WWL & CS	PM	Refurbish/Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	1/1/22 12:00 AM	1/18/22 03:46 PM	1/18/22 03:46 PM	monthly test - • run generator • for monthly test • recorded data • all normal
2644701	0000156286	PANEL ALARM/DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	2/1/22 12:00 AM	3/4/22 01:36 PM	3/4/22 01:36 PM	generator running alarm - • generator running alarm • running generator • monthly test • all normal
2645244	0000249176	PANEL ALARM/DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	2/1/22 12:00 AM	2/3/22 03:09 PM	2/3/22 03:09 PM	monthly test - • set off alum room flood alarm • for monthly test • all normal
2659831			5695, Hensall WWL & CS	PM	Refurbish/Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	2/1/22 12:00 AM	3/4/22 02:04 PM	3/4/22 02:04 PM	monthly test - • ran generator for monthly test • recorded data • generator in auto • all normal
2687019	0000156286	PANEL ALARM/DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	3/1/22 12:00 AM	3/8/22 04:10 PM	3/8/22 04:10 PM	monthly test - • received generator running alarm • while testing generator • for monthly test • all normal
2687487	0000249176	PANEL ALARM/DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	3/1/22 12:00 AM	3/11/22 08:19 AM	3/11/22 08:19 AM	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695 - tested float alarm called on call phone all normal

Workorder Summary Report

Report Start Date: Jan 1, 2022 12:00 AM

Report End Date: Dec 31, 2022 11:59 PM

Location: 5695,5695-WLHN,5695-WLHN-F,5695-WLHN-F-EF,5695-WLHN-F-HV,5695-WLHN-F-PG,5695-WLHN-P,5695-WLHN-P-HW,5695-WLHN-P-PC,5695-WLHN-P-PI,5695-WLHN-P-PT,5695-WLHN-P-ST

Work Order Type: 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
2687763			5695, Hensall WWL & CS	PM	Health and Safety	1	YEARS	OG15 Facility OHSA Inspection (1y) 5695	CLOSE	3/1/22 12:00 AM	7/26/22 10:27 AM	7/26/22 10:27 AM	OG15 Facility OHSA Inspection (1y) 5695 - -Completed February 2022 by operational staff -Inspection details uploaded onto OCWA shared drive
2703578			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	3/1/22 12:00 AM	3/8/22 04:12 PM	3/8/22 04:12 PM	monthly test - • ran generator for monthly test • recorded data • generator in auto • all normal
2725151			Hensall Wastewater Lagoon & Collection System	PM	Refurbish/ Replace/Repair	0		Greg Peirce troubleshooting Hensall Lagoon alum pump	CLOSE		3/21/22 08:49 AM	3/21/22 08:49 AM	- Greg Peirce troubleshooting Hensall Lagoon alum pump - Greg Perice on site with his electrician troubleshooting alum pump 1 why it wont run. His electrician determined that there was a relay fault with the pump so he had to reset under program setting.
2733708	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	4/1/22 12:00 AM	5/14/22 11:21 AM	5/14/22 11:21 AM	Completed by operator -
2734252	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	4/1/22 12:00 AM	4/12/22 03:49 PM	4/12/22 03:49 PM	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695 - town wide power flicker ups okay
2751300			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	4/1/22 12:00 AM	5/14/22 11:44 AM	5/14/22 11:44 AM	Completed by operator -
2761062			5695, Hensall WWL & CS	PM	Inspection	6	MONTHS	Air Valve Insp/Pump Out (6m) 5695	CLOSE	4/1/22 12:00 AM	5/14/22 11:49 AM	5/14/22 11:49 AM	Completed by operator -
2782732	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	5/1/22 12:00 AM	7/14/22 10:18 AM	7/14/22 10:18 AM	alarm - • generator running alarm

Workorder Summary Report

Report Start Date: Jan 1, 2022 12:00 AM

Report End Date: Dec 31, 2022 11:59 PM

Location: 5695,5695-WLHN,5695-WLHN-F,5695-WLHN-F-EF,5695-WLHN-F-HV,5695-WLHN-F-PG,5695-WLHN-P,5695-WLHN-P-HW,5695-WLHN-P-PC,5695-WLHN-P-PI,5695-WLHN-P-PT,5695-WLHN-P-ST

Work Order Type: 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
2783224	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	5/1/22 12:00 AM	5/9/22 03:34 PM	5/9/22 03:34 PM	monthly test - • set off alum room flood alarm • for monthly test
2799336			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	5/1/22 12:00 AM	5/30/22 04:56 PM	5/30/22 04:56 PM	monthly test - • ran generator • for monthly test • recorded data • generator in auto • all normal
2830198	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	6/1/22 12:00 AM	7/4/22 04:51 PM	7/4/22 04:51 PM	Alarm Dialer 01 Hensall PS Testing (1m) 5695 - tested alarm when running generator all normal
2830705	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	6/1/22 12:00 AM	7/4/22 04:53 PM	7/4/22 04:53 PM	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695 - tested hensall lagoon alarm all normal
2847813			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	6/1/22 12:00 AM	7/4/22 04:55 PM	7/4/22 04:55 PM	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695 - ran generator at hensall sps all normal
2880261	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	7/1/22 12:00 AM	7/30/22 09:39 AM	7/30/22 09:39 AM	Alarm Dialer 01 Hensall PS Testing (1m) 5695 - alarm test completed
2880746	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	7/1/22 12:00 AM	7/30/22 09:58 AM	7/30/22 09:58 AM	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695 - alarm test completed
2896612			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	7/1/22 12:00 AM	7/30/22 10:14 AM	7/30/22 10:14 AM	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695 - tested generator all normal
2928360	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	8/1/22 12:00 AM	9/2/22 02:55 PM	9/2/22 02:55 PM	Alarm Dialer 01 Hensall PS Testing (1m) 5695 - -Completed by Bennett Taylor when he ran generator for monthly testing August 2022

Workorder Summary Report

Report Start Date: Jan 1, 2022 12:00 AM

Report End Date: Dec 31, 2022 11:59 PM

Location: 5695,5695-WLHN,5695-WLHN-F,5695-WLHN-F-EF,5695-WLHN-F-HV,5695-WLHN-F-PG,5695-WLHN-P,5695-WLHN-P-HW,5695-WLHN-P-PC,5695-WLHN-P-PI,5695-WLHN-P-PT,5695-WLHN-P-ST

Work Order Type: 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
2928943	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	8/1/22 12:00 AM	9/2/22 02:56 PM	9/2/22 02:56 PM	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695 - -Completed by operator August 2022
2943445			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	8/1/22 12:00 AM	9/2/22 02:56 PM	9/2/22 02:56 PM	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695 - -Completed by Bennett Taylor August 2022
2974317	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	9/1/22 12:00 AM	9/19/22 11:21 AM	9/19/22 11:21 AM	Tested Low Pressure Alarm - All normal
2974884	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	9/1/22 12:00 AM	9/30/22 02:25 PM	9/30/22 02:25 PM	Tested Alum Room Flood Alarm - All Normal
2990773			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	YEARS	Engine Diesel Hensall Lift PS Insp/ Service (1y) 5695	CLOSE	9/1/22 12:00 AM	11/14/22 02:07 PM	11/14/22 02:07 PM	completed Nov 9 by Sommers -
2990812			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	9/1/22 12:00 AM	9/30/22 02:36 PM	9/30/22 02:36 PM	Tested Generator - All Normal
2991060			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	YEARS	Filter Sand 01 Insp/ Service (1y) 5695	CLOSE	9/1/22 12:00 AM	9/15/22 01:50 PM	9/15/22 01:50 PM	Inspection Complete -
2991063			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	YEARS	Filter Sand 02 Insp/ Service (1y) 5695	CLOSE	9/1/22 12:00 AM	9/15/22 01:51 PM	9/15/22 01:51 PM	Inspection Complete -
2991072			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	YEARS	Lagoon 01 Insp/Service (1y) 5695	CLOSE	9/1/22 12:00 AM	9/15/22 01:53 PM	9/15/22 01:53 PM	Inspection Complete -
2991075			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	YEARS	Lagoon 02 Insp/Service (1y) 5695	CLOSE	9/1/22 12:00 AM	9/15/22 01:54 PM	9/15/22 01:54 PM	Inspection Complete -
3024676	0000249167	METER LEVEL	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Calibration	1	YEARS	Meter Level Insp/Service (1y) 5695	CLOSE	4/1/22 12:00 AM	12/13/22 12:18 PM	12/13/22 12:18 PM	Completed by Pierce Services -
3024681	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	10/1/22 12:00 AM	10/20/22 10:24 AM	10/20/22 10:24 AM	Tested Power Fail alarm -
3024686	0000249179	PUMP SUBMERSIBLE 01 FILTER	5695, Hensall WWL & CS, Process, Secondary Treatment	PM	Refurbish/ Replace/Repair	1	YEARS	Pump Subm 01 Filter Hensall Lagoon Insp/Service (1y) 5695	CLOSE	10/1/22 12:00 AM	10/20/22 10:24 AM	10/20/22 10:24 AM	Visual Inspection Only -

Workorder Summary Report

Report Start Date: Jan 1, 2022 12:00 AM

Report End Date: Dec 31, 2022 11:59 PM

Location: 5695,5695-WLHN,5695-WLHN-F,5695-WLHN-F-EF,5695-WLHN-F-HV,5695-WLHN-F-PG,5695-WLHN-P,5695-WLHN-P-HW,5695-WLHN-P-PC,5695-WLHN-P-PI,5695-WLHN-P-PT,5695-WLHN-P-ST

Work Order Type: 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
3024695	0000121359	PUMP SUBMERSIBLE 01 WETWELL PS	5695, Hensall WWL & CS, Process, Headworks	PM	Refurbish/ Replace/Repair	1	YEARS	Pump Subm 01 Hensall Lift PS Insp/ Service (1y) 5695	CLOSE	10/1/22 12:00 AM	10/20/22 10:25 AM	10/20/22 10:25 AM	Visual Inspection Only -
3024704	0000249180	PUMP SUBMERSIBLE 02 FILTER	5695, Hensall WWL & CS, Process, Secondary Treatment	PM	Refurbish/ Replace/Repair	1	YEARS	Pump Subm 02 Hensall Lagoon Filter Insp/Service (1y) 5695	CLOSE	10/1/22 12:00 AM	10/20/22 10:26 AM	10/20/22 10:26 AM	Visual Inspection Only -
3024713	0000121360	PUMP SUBMERSIBLE 02 WETWELL PS	5695, Hensall WWL & CS, Process, Headworks	PM	Refurbish/ Replace/Repair	1	YEARS	Pump Subm 02 Hensall Lift PS Insp/ Service (1y) 5695	CLOSE	10/1/22 12:00 AM	10/20/22 10:26 AM	10/20/22 10:26 AM	Visual Inspection Only -
3025483	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	10/1/22 12:00 AM	10/20/22 10:43 AM	10/20/22 10:43 AM	Tested Alum Room Flood Alarm -
3040917			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	10/1/22 12:00 AM	10/20/22 10:52 AM	10/20/22 10:52 AM	Tested Generator -
3050614			5695, Hensall WWL & CS	PM	Inspection	6	MONTHS	Air Valve Insp/Pump Out (6m) 5695	CLOSE	10/1/22 12:00 AM	12/13/22 12:40 PM	12/13/22 12:40 PM	Pumped chambers - pumped chambers -
3073313	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	CLOSE	11/1/22 12:00 AM	11/15/22 11:46 AM	11/15/22 11:46 AM	Tested Power Failure alarm -
3073808	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	CLOSE	11/1/22 12:00 AM	11/15/22 01:17 PM	11/15/22 01:17 PM	Tested alum room flood alarm -
3087415			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	CLOSE	11/1/22 12:00 AM	11/15/22 02:03 PM	11/15/22 02:03 PM	Tested Generator -
3113575	0000156286	PANEL ALARM/ DIALER 01 PS	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall PS Testing (1m) 5695	COMP	12/1/22 12:00 AM	1/24/23 07:32 AM	1/24/23 07:32 AM	Tested alarm -
3114128	0000249176	PANEL ALARM/ DIALER 01	5695, Hensall WWL & CS, Process, Process Control & Monitoring	PM	Inspection	1	MONTHS	Alarm Dialer 01 Hensall LagoonTesting (1m) 5695	COMP	12/1/22 12:00 AM	1/24/23 09:20 AM	1/24/23 09:20 AM	Completed by operator -
3128528			5695, Hensall WWL & CS	PM	Refurbish/ Replace/Repair	1	MONTHS	Engine Diesel Hensall Lift PS Insp/ Test (1m) 5695	COMP	12/1/22 12:00 AM	1/24/23 09:39 AM	1/24/23 09:39 AM	Completed by operator -