Winchester Wastewater System

Sewage Works # 110001202

Annual Report

Prepared for: Township of North Dundas

Reporting Period of January 1st – December 31st 2024

Issued: March 28, 2025

Revision: 0

Operating Authority:

OCWA

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

This report has been prepared to meet the requirements set out in:

Document	Document #	Issue Date	Issue Number
Facility ECA	A-500-1199362894	October 13, 2023	1.0
ECA for Municipal Sewage Collection System	180-W601	October 27, 2022	1

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1 Revision History

Date	Rev#	Revisions
2025-03-28	0	Annual Report Issued

2 Operations and Compliance Reliability Indices

Compliance Event	# of Events
Environment Canada Inspections	0
Ministry of Environment Inspections	0
Ministry of Labour Inspections	0
Non-Compliance	1
Community Complaints	1
Spills	0
Overflows	0
Bypasses	0
Sewer Main Blockages	0

3 System Process Description

Winchester's wastewater system consists of a gravity fed sanitary sewage collection system, four pumping stations and a wastewater treatment lagoon. The main sewage pumping station is located on Ottawa Street and discharges directly to the lagoons. There are also two pumping stations located on Main Street and one on St. Lawrence Street which pump wastewater to the Ottawa St. SPS.

The Township of North Dundas initiated a Class Environmental Assessment of Winchester's wastewater treatment system in 2017 to address various operational challenges, such as hydraulic capacity, discharge constraints and treatment capabilities in order to ensure that increased wastewater flows from future growth can be effectively accommodated. To date, construction of the SAGR system commenced in 2023. The new treatment system is expected to be in operation and reach substantial completion in spring 2025.

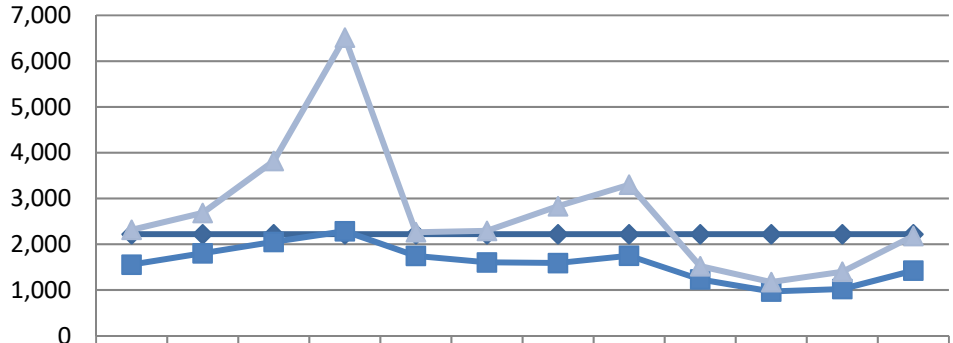
The wastewater treatment system consists of a seasonally discharged five cell lagoon system with a rated capacity of 2,220 m^3/d. The three primary facultative treatment cells are operated in parallel (Cells 1, 2 and 3). Wastewater flows from the primary cells to the polishing cell (Cell No. 4), and finally to the post-aeration cell (Cell No. 5). Aeration within Cell No. 5 is supplied by centrifugal air blowers to control odours and strip hydrogen sulphide (H_2S) prior to discharge. Aluminum sulphate is dosed continuously for phosphorus control as wastewater is pumped to the lagoons. Seasonal discharge of effluent from the lagoons is permitted at specified times during the spring and fall each year. Effluent is pumped from Cell No. 5 over a distance of 7.3 kilometers to an outlet in the South Nation River.

4 Wastewater System Flows

The hydraulic flows reaching the sewage lagoons in 2024 averaged 1585.9 m^3/day which represents 71.4% of the 2,220 m^3/day design capacity.

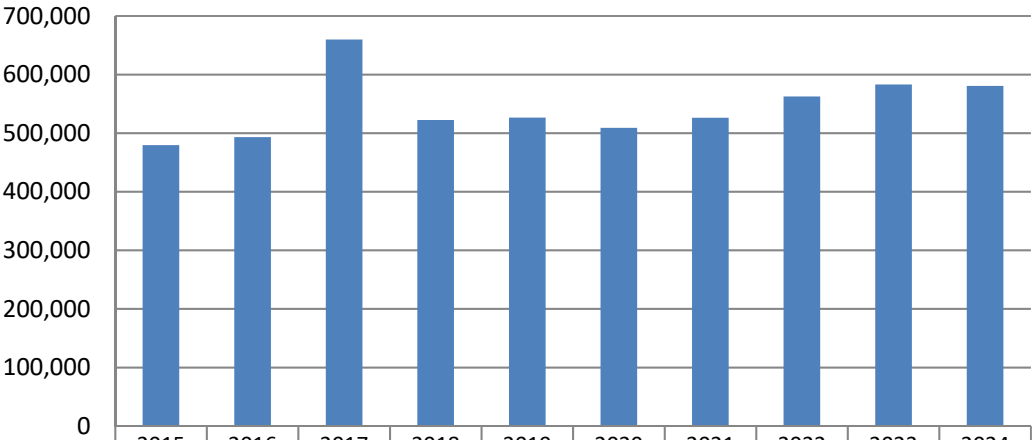
4.1 Raw Flows

2024 Raw Flows (m^3/d):



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design Capacity (m^3/d)	2220	2220	2220	2220	2220	2220	2220	2220	2220	2220	2220	2220
Avg Flow (m^3/d)	1,556	1,804	2,053	2,285	1,746	1,605	1,590	1,750	1,232	969	1,023	1,425
Max Flow (m^3/d)	2,316	2,684	3,819	6,515	2,263	2,293	2,831	3,301	1,521	1,175	1,400	2,181

Annual Raw Flow Comparison (m^3):



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Annual Flow (m^3)	479,407	493,104	659,787	522,507	526,483	508,868	526,193	562,461	582,970	580,436

4.2 Effluent Flow

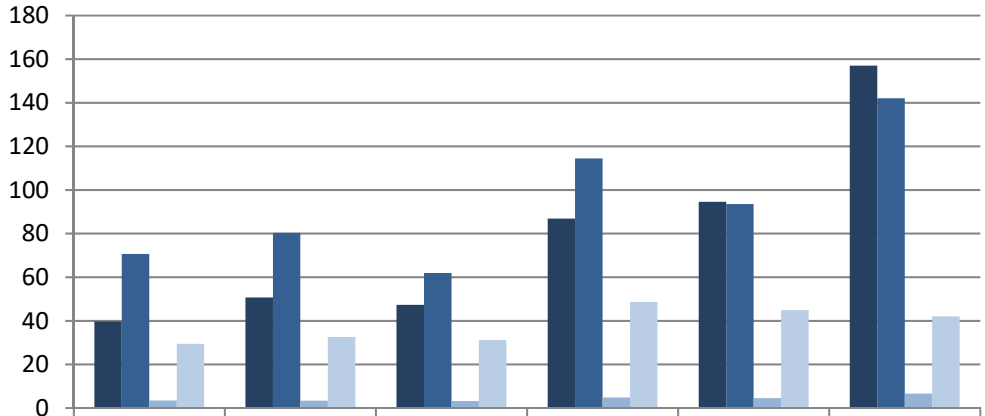
Discharge Period	Start Date	End Date	Volume Discharged (m^3)
Spring Discharge	March 7, 2024	March 28, 2024	229,452
Fall Discharge	November 1, 2024	December 01, 2024	337,553

		Total Flow Discharged	567,005

5 Raw Sewage Quality

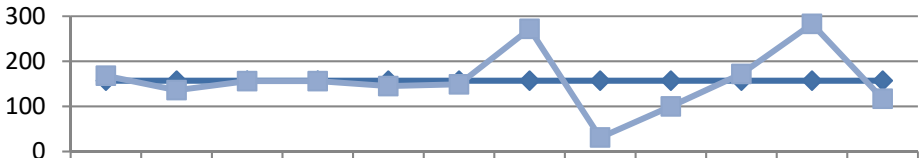
2024 monthly results are available in Appendix A – Performance Assessment Reports.

Annual Comparison (mg/L):



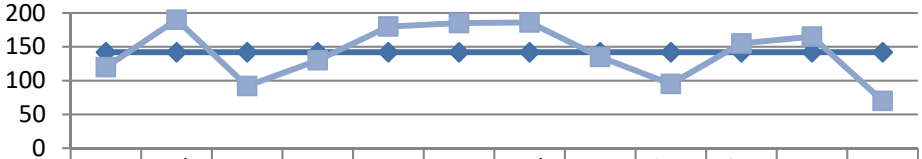
	2019	2020	2021	2022	2023	2024
BOD5 Annual Average	40	51	47	87	95	157
TSS Annual Average	71	80	62	114	94	142
TP Annual Average	3.4	3.4	3.2	4.9	4.5	6.6
TKN Annual Average	29	33	31	49	45	42

5.1 Biochemical Oxygen Demand (5-Day)



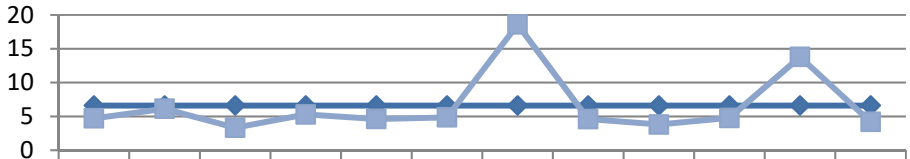
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Annual Average (mg/L)	157	157	157	157	157	157	157	157	157	157	157	157
Monthly Results (mg/L)	168	136	156	156	145	149	272	31	100	172	283	117

5.2 Total Suspended Solids



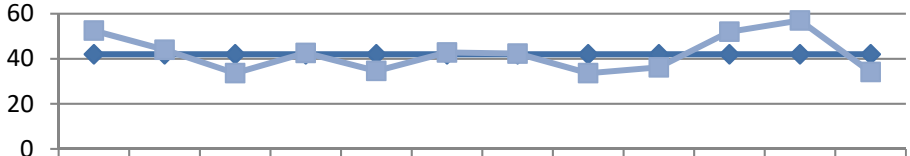
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Annual Average (mg/L)	142	142	142	142	142	142	142	142	142	142	142	142
Monthly Results (mg/L)	120	190	92	130	180	185	186	135	95	155	165	70

5.3 Total Phosphorus



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Annual Average (mg/L)	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Monthly Results (mg/L)	4.7	6.1	3.3	5.3	4.6	4.9	18.6	4.6	3.8	4.8	13.8	4.2

5.4 Total Kjeldahl Nitrogen



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Annual Average (mg/L)	42	42	42	42	42	42	42	42	42	42	42	42
Monthly Results (mg/L)	53	44	34	43	35	43	42	34	36	52	57	34

6 Effluent Quality

The results from the spring and fall discharge periods are tabulated below. Please refer to the Performance Reports in Appendix A and the 'Operational Issues' section of this report for further information.

6.1 Effluent Quality Assurance or Control Measures

This system is part of the Ontario Clean Water Agency's Nation Valley Cluster. The cluster is supported by the Eastern Regional Hub and corporate resources. Operational Services are provided by OCWA employees who work in the community. The system is operated to meet compliance with applicable regulations. The system has comprehensive manuals detailing operations, maintenance, instrumentation, and emergency procedures. All procedures are treated as active documents and are updated as required. These documents are also part of OCWA's Quality & Environmental Management System.

Effluent control measures include pre-discharge sampling and testing of lagoon cell contents prior to seasonal discharges. The samples are collected by OCWA's competent and licensed staff using approved methods and protocols for sampling including those specified in the Ministry's Procedure F-10-1 "*Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works*", the Ministry's publication "*Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater*" and the publication "*Standard Methods for the Examination of Water and Wastewater*".

All effluent samples collected during the reporting period to meet legislated sampling requirements were submitted to Caduceon Environmental Laboratories in Ottawa for analysis, with the exception of pH, temperature and unionized ammonia. Caduceon is accredited by the Canadian Association for Laboratory Accreditation (CALA). Accredited labs must meet strict provincial guidelines including an extensive quality assurance/quality control program. By choosing this laboratory, OCWA is ensuring appropriate control measures are undertaken during laboratory testing. The pH and temperature of samples are analyzed in the field at the time of sample collection by certified operators to ensure accuracy and precision of the results obtained. Un-ionized ammonia was calculated using the total ammonia nitrogen concentration, pH and temperature as required by the facility's ECA.

OCWA uses several computer systems which include:

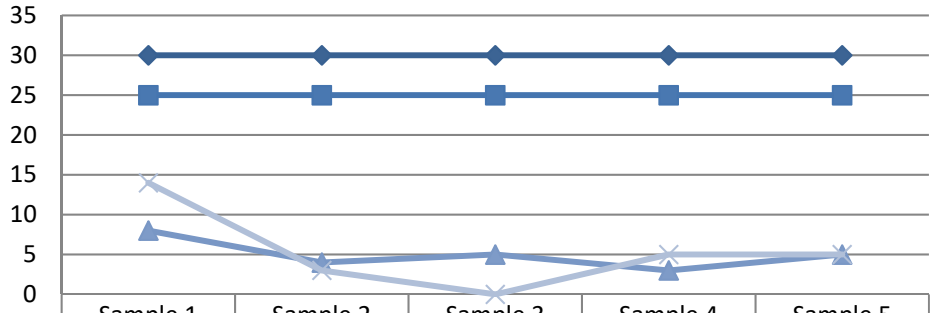
- Process Data Management (PDM)
  - This database consolidates all operational data from a variety of sources including field data, online instrumentation, and electronically uploaded lab test results for reporting, tracking and analysis.
- Maximo – OCWA's Work Management System (WMS)
  - This program is used to track and schedule maintenance activities for all equipment in the system. It is also used to assign specific operational tasks to staff.
- Wonderware (OUTPOST5)/SCADA
  - OCWA's SCADA system allows for process automation, process adjustments, data logging, trending review and remote alarming.

The operations team also has access to a network of compliance and process specialists to assist with process issues.

6.2 Carbonaceous Biochemical Oxygen Demand (5-Day)

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	5.0	25	N	30	N
Fall	6.75	25	N	30	N

Effluent $CBOD_5$ Results:



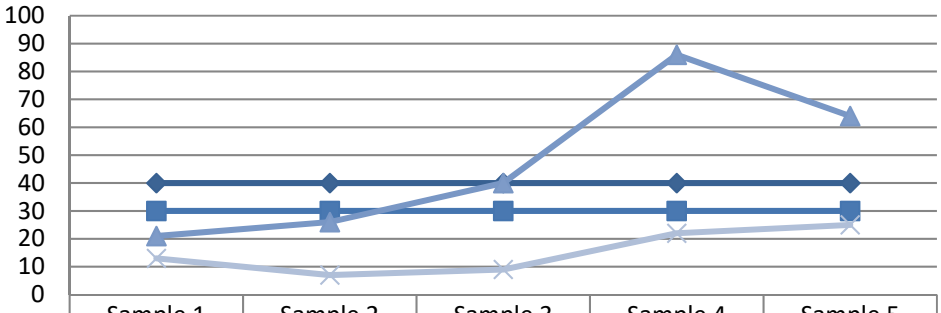
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Limit (mg/L)	30	30	30	30	30
Objective (mg/L)	25	25	25	25	25
Result - Spring (mg/L)	8	4	5	3	5
Result- Fall (mg/L)	14	3	0	5	5

6.3 Total Suspended Solids

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	47.4	30	Y*	40	Y*
Fall	15.2	30	N	40	N

**Please refer to the 'Operating Issues' section of this report for details.*

Effluent TSS Results:

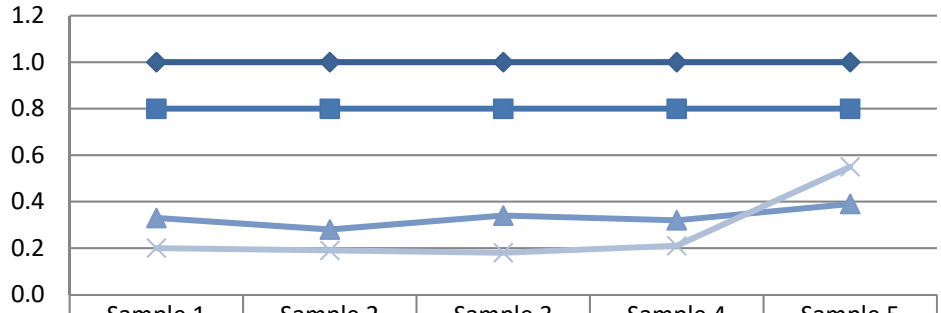


	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Limit (mg/L)	40	40	40	40	40
Objective (mg/L)	30	30	30	30	30
Result - Spring (mg/L)	21	26	40	86	64
Result - Fall (mg/L)	13	7	9	22	25

6.4 Total Phosphorus

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	0.33	0.8	N	1.0	N
Fall	0.27	0.8	N	1.0	N

Effluent TP Results:



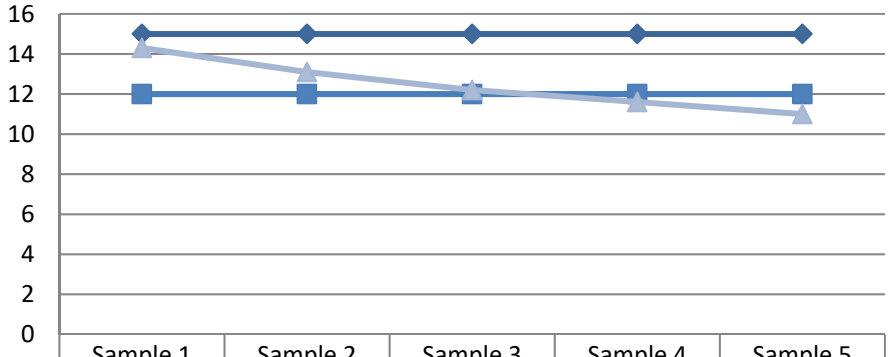
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Limit (mg/L)	1.0	1.0	1.0	1.0	1.0
Objective (mg/L)	0.8	0.8	0.8	0.8	0.8
Result - Spring (mg/L)	0.3	0.3	0.3	0.3	0.4
Result - Fall (mg/L)	0.2	0.19	0.18	0.21	0.55

6.5 Total Ammonia Nitrogen

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	12	12	N	15	N
Fall	3.89	4	N	7	N

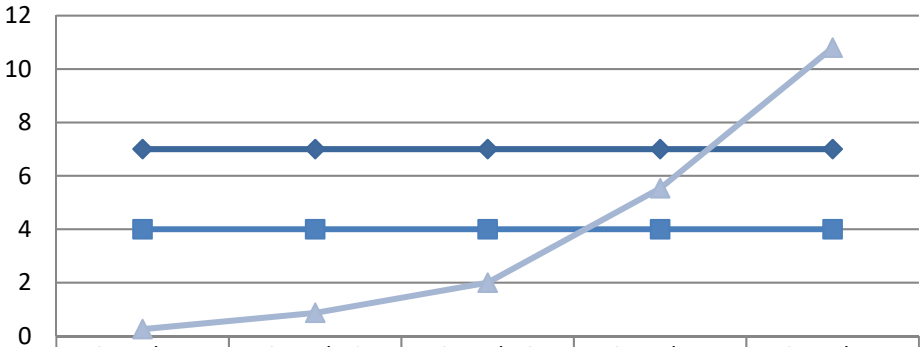
**Please refer to the 'Operating Issues' section of this report for details.*

Effluent TAN Results for Spring Discharge Period:



	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Limit - Spring (mg/L)	15	15	15	15	15
Objective - Spring (mg/L)	12	12	12	12	12
Result - Spring (mg/L)	14	13	12	12	11

Effluent TAN Results for Fall Discharge Period:



	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Limit - Fall (mg/L)	7	7	7	7	7
Objective - Fall (mg/L)	4	4	4	4	4
Result - Fall (mg/L)	0.3	0.9	2.0	5.5	10.8

6.6 Undissociated Hydrogen Sulphide

Discharge Period	Seasonal Average (mg/L)	Objective (mg/L)	Objective Exceedance (Y/N)	Limit (mg/L)	Limit Exceedance (Y/N)
Spring	Non-Detectable	Non-Detectable	N	0.02	N
Fall	0.0008	Non-Detectable	Y*	-	N

**Please refer to the 'Operating Issues' section of this report for details.*

Effluent Undissociated H_2S Results for Spring Discharge Period:

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Average
S^{2-} (mg/L)	<0.16	<0.16	<0.16	<0.40	<0.40	ND
pH	7.50	7.90	7.90	8.00	8.1	N/A
Temp	6.4	7.1	8.2	7.0	11.8	N/A
% Undissociated H_2S (from table)	35.61	17.8	17.0	14.65	10.3	N/A
Undissociated H_2S (mg/L)	ND	ND	ND	ND	ND	ND

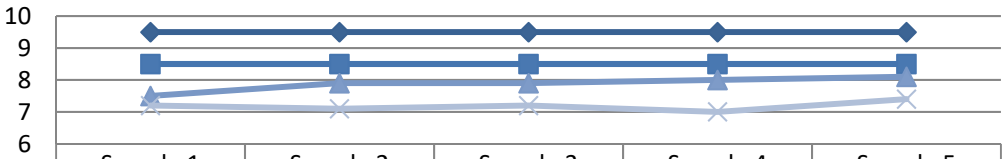
Effluent Undissociated H_2S Results for Fall Discharge Period:

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Average
S^{2-} (mg/L)	0.02	0.01	0.02	<0.40	<0.08	N/A
pH	7.2	7.1	7.2	7	7.4	N/A
Temp	13.1	11.9	8.4	5.9	1.9	N/A
% Undissociated H_2S (from table)	46.984	53.500	50.645	63.190	45.615	N/A
Undissociated H_2S (mg/L)	0.009	0.005	0.010	ND	ND	0.0083

6.7 pH

Discharge Period	Seasonal Average	Objective	Objective Exceedance (Y/N)	Limit	Limit Exceedance (Y/N)
Spring	7.88	6.5 – 8.5	N	6.0 – 9.5	N
Fall	7.2	6.5 – 8.1	N	6.0 – 9.5	N

Effluent pH Results:

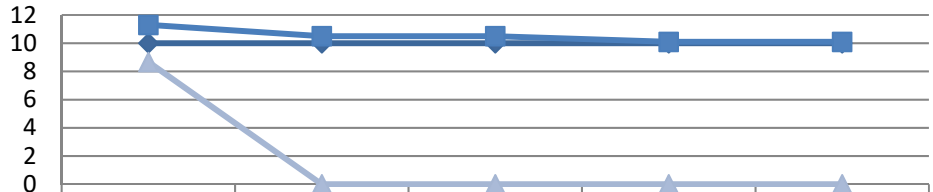


	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Top Limit	9.5	9.5	9.5	9.5	9.5
Top Objective	8.5	8.5	8.5	8.5	8.5
Result - Spring	7.5	7.9	7.9	8.0	8.1
Result - Fall	7.2	7.1	7.2	7	7.4

6.8 Dissolved Oxygen

Discharge Period	Seasonal Average Concentration (mg/L)	Objective (mg/L)	Limit (mg/L)	Compliant
Spring	5.9	n/a	10	Yes
Fall	1.74	n/a	n/a	n/a

Effluent D.O. Results:



	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Min. D.O. (mg/L)	10	10	10	10	10
Result (mg/L) - Spring	11.3	10.5	10.5	10.1	10.1
Result (mg/L) - Fall	8.7	0.0	0.0	0.0	0.0

**Note: Blowers not able to be operated for the fall discharge due to SAGR construction.*

7 Operating Issues

7.1 Effluent Quality Non-Compliance Summary

Date	Exceedance of	Limit	Value	Corrective Action
Spring Discharge	TSS Limit	40 mg/L	47.4 mg/L	The lagoon system is undergoing treatment upgrades with the construction of a new SAGR system. Cell #5 is currently offline for construction, a temporary aeration system was added to Cell #4, a new valve chamber between Cell #3 and Cell #4 was installed to prevent short-circuiting, and a discharge bypass was set up to temporarily discharge from Cell #4. Multiple steps have been taken to optimise effluent quality during construction but removing polishing Cell #5 from operation and having aeration in Cell #4 may have contributed to the TSS limit exceedance.

7.2 Summary of Abnormal Sewage Discharge Events

Abnormal discharge events include bypasses, overflows, and spills of sewage. No bypasses, overflows or spills of sewage occurred during the reporting period.

8 Maintenance

OCWA uses a risk-based preventative maintenance framework that ensures assets are maintained to manufacturer's and/or industry standards. Maintenance is completed using various tools and operational supports.

OCWA uses a Workplace Management System (WMS). WMS is a maintenance tracking system that can generate work orders as well as provide summaries of completed and scheduled work. During the year, the operating authority generates scheduled work orders on a planned frequency. This ensures routine and preventive maintenance is carried out. Emergency and capital repair maintenance is added to the system and completed as required.

Routine planned maintenance activities scheduled in WMS include:

- Inspecting, adjusting and calibrating process control equipment to ensure proper operation of sewage collection systems, pumps, chemical feeders, and all other equipment installed at the facilities.
- Carrying out a routine maintenance program including greasing and oiling as specified in the lubrication schedule.

Planned maintenance activities are communicated to the individuals responsible for completing the task through the issuance of WMS work orders. Work orders are generated automatically on a schedule based on the manufacturer's recommendations and/or site specific operational and maintenance needs, and are assigned directly to the appropriate operations personnel. Work orders are electronically completed in WMS by the person responsible for completing the task. Unplanned maintenance is carried out as needed.

Suggested capital projects and major maintenance recommendations are provided to the Township of North Dundas annually by OCWA. This list is developed the operations team and provides recommendations for facility components requiring upgrading or improvement.

8.1 Maintenance and Repair Summary

Description
- Performed routine sewer flushing & wet well cleanings - Performed CCTV inspection in collection system - Completed annual generator maintenance - Repaired fence at Ottawa St. SPS - Repaired broken sanitary lateral/ sewer main at 592 Main St. - Repaired maintenance access hole #253,254,263,76a,98,12,151,109,169,240,30 & 29 - Replaced radiator on generator at Ottawa St. SPS - Purchased 4" trash pump - Replace sump pumps at lagoon building - Replaced failed pump at St. Lawrence St. SPS - Replaced pressure transducer at Main St. SPS

8.2 Flow Meter Calibration and Maintenance

Location	Date of Calibration	Additional Maintenance
Lagoon Effluent Flow Meter	April 15, 2024	n/a

8.3 Authorized Alterations in Collection System

Work Order	Details	Significant Drinking Water Threat (Y/N)
None to Report		

8.4 Notice of Modifications

Date	Process	Modification	Status
Expected substantial completion in 2025	Wastewater Treatment	Construction of SAGR treatment system	Ongoing

9 Sludge Generation

Sludge depth is monitored periodically, and plans for sludge removal are made as required for optimal operation of the lagoon system. Sludge levels in all ponds were measured in 2020. The measurements were as follows:

Lagoon Cell	Sludge Depth
Cell 1	1’ – 2.5’
Cell 2	1’ – 2’
Cell 3	1’
Cell 4	6” – 2’
Cell 5	1” – 4 ”

9.1 Sludge Disposal Summary

Sludge from Cell 2 & Cell 3 was removed in the early 2000s. Sludge was removed from Cell 5 in 2023 and stored onsite to dry in geotubes. Sludge will be hauled to the municipal landfill (Boyne Road) once dried.

10 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
594 Main St.	12-May-2024	Sewer Back Up	Investigated complaint. Pipe had collapsed on Township side. Excavated to repair the lateral.

Appendix A – Performance Assessment Reports

WINCHESTER WASTEWATER PERFORMANCE ASSESSMENT-2024

MONTH	FLOWS						CBOD5			TOTAL SUSPENDED SOLIDS			PHOSPHORUS			TKN
	TOTAL FLOW m^3	AVG DAY FLOW m^3	MAX DAY FLOW m^3	EFFLUENT FLOW m^3	DISCHARGE DURATION (days)	Avg. Alum Dosage (mg/L)	AVG RAW BOD5 (mg/L)	AVG EFF CBOD5 (mg/L)	PERCENT REMOVAL (%)	AVG RAW TSS (mg/L)	AVG EFF TSS (mg/L)	PERCENT REMOVAL (%)	AVG RAW PHOS. (mg/L)	AVG EFF PHOS. (mg/L)	PERCENT REMOVAL (%)	AVG RAW TKN (mg/L)
JAN	48,250	1,556	2,316			103.9	168			120			4.71			52.5
FEB	52,319	1,804	2,684			103.4	136			190			6.13			44.0
MAR	63,638	2,053	3,819	229,452	22	104.2	156	5.0		92	47.4		3.32	0.33		33.6
APR	68,552	2,285	6,515			101.9	156			130			5.29			42.6
MAY	54,130	1,746	2,263			104.0	145			180			4.62			34.6
JUN	48,145	1,605	2,293			105.2	149			185			4.85			42.8
JUL	47,673	1,589	2,831			106.6	272			186			18.60			42.3
AUG	54,240	1,750	3,301			107.2	31			135			4.60			33.6
SEP	36,961	1,232	1,521			108.5	100			95			3.80			36.2
OCT	30,035	969	1,175			107.6	172			155			4.77			52.0
NOV	30,678	1,023	1,400	326,807	30	107.1	283	5.7		165	15.2		13.80	0.27		57.0
DEC	44,190	1,425	2,181	10,746	3	107.2	117	5.0		70	25.0		4.19	0.55		34.1
TOTAL	578,811		SPRING	229,452	22											
TOTAL			FALL	337,554	33											
AVG		1,586				105.6	157	5.2	96.7	142	31	77.9	6.56	0.30	95.4	42.1
MAX			6,515				283			190			18.60			57.0
CRITERIA		**2,220**		SPRING	**21**			**30**			**40**			**1**		
CRITERIA				FALL	**21**			**30**			**40**			**1**		

Note: PERCENT REMOVAL BASED ON 12 MONTHS OF RAW SEWAGE COMPOSITE SAMPLES

TOTAL LOADING	SPRING	FALL	TOTAL	ECA LIMIT
CBOD (kg)	1,147	2,278	**3,426**	**24,309**
SS (kg)	10,876	5,131	**16,007**	**32,412**
TP (kg)	76	90	**166**	**810.3**
NH_3 (kg)	2,854	1,314	**4,168**	**-**

PRE-DISCHARGE RESULTS – SPRING

	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5*	Comments
CBOD (mg/L)	<3	20	16	7	-	*Cell 5 not being discharged (under construction) H_2S, TP, *E.coli* sampled prior to discharge Dilution ratio as per operations manual
TSS (mg/L)	21	68	21	43	-	
TP (mg/L)	0.29	0.36	0.21	0.20	-	
NH_3 (mg/L)	12.10	11.00	13.3	5.1	-	
TKN (mg/L)	17.3	16.2	20.8	8.9	-	
H2S (mg/L)	<0.16	<0.40	<0.16	0.02	-	
E.coli (cfu/100 mL)	9	50	700	1	-	

PRE-DISCHARGE RESULTS - FALL

	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5*	Comments
CBOD (mg/L)	10	9	6	< 3.0	-	*Cell 5 not being discharged (under construction) H_2S, TP, *E.coli* sampled prior to discharge Dilution ratio as per operations manual
TSS (mg/L)	45	34	28	16	-	
TP (mg/L)	0.48	0.56	0.24	0.22	-	
NH_3 (mg/L)	12.60	12.70	0.54	0.60	-	
TKN (mg/L)	20.2	20.2	3.9	2.0	-	
H2S (mg/L)	<0.16 (3.)	<0.16 (3.)	<0.16 (3.)	<0.01	-	
E.coli (cfu/100 mL)	2100	9900	2300	190	-	

Appendix B – Details of Abnormal Sewage Discharge Events

Event Details Summary

Facility Bypass

Date	Location	Details	Volume (m³)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
None to report.								

Facility Overflow

Date	Location	Details	Volume (m³)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
None to report.								

Collection Overflow

Date	Location	Details	Volume (m³)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
None to report.								

Spills of Sewage

Date	Location	Details	Volume (m³)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
None to report.								

Collection System Monitoring Data

Event Date	Event Location	Volume (m³)	Parameter	mg/L	Source Loading (kg)	Any Adverse Impacts & Corrective Actions
			CBOD5 tested instead of BOD5			
			Total Suspended Solids			
			Total Phosphorus			
			Total Kjeldahl Nitrogen (TKN)			
			E.Coli			

Appendix C – ECA Annual Report Requirements

Facility ECA #A-500-1199362894 (issued October 13, 2023) **Section 11(4)**	**Section in Report**
6.a. A summary and interpretation of all Influent, monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;	Wastewater System Flows Raw Sewage Quality Appendix A
6.b. A summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;	Wastewater System Flows Effluent Quality Appendix A
4.c. A summary of all operating issues encountered and corrective actions taken;	Operating Issues
4.d. A summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;	Maintenance
4.e. A summary of any effluent quality assurance or control measures undertaken;	Effluent Quality
4.f. A summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;	Maintenance
4.g. A summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations: a. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality; b. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;	Wastewater System Flows Effluent Quality Operating Issues
4.h. A tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed and a tabulation of the measured volume of sludge accumulated in the lagoon cells in five year intervals and the estimated volume in the interim years and when sludge was disposed of during the reporting period, a summary of disposal locations and volumes of sludge disposed at each location;	Sludge Generation
4.i. A summary of any complaints received and any steps taken to address the complaints;	Summary of Complaints
4.j. A summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;	Operating Issues Appendix B
4.k. A summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification;	Maintenance
4.l. A summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted;	Maintenance Operating Issues
4.m. Any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es) / equipment groups in the Proposed Works;	Maintenance Operating Issues

Collection ECA #180-W601 **Schedule E**	
4.6.3 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.	Operating Issues
4.6.4 Includes a summary of any operating problems encountered and corrective actions taken.	Operating Issues

Collection ECA #180-W601 **Schedule E**	
4.6.5 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.	Maintenance
4.6.6 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.	Summary of Complaints
4.6.7 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.	Maintenance
4.6.8 Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including: a) Dates; b) Volumes and durations; c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli; d) Disinfection, if any; and e) Any adverse impact(s) and any corrective actions, if applicable.	Operating Issues Appendix B
4.6.9 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.	Maintenance Operating Issues