



Wingham Sewage Treatment Plant

2025 Annual Report

PREPARED BY

Veolia Water
130 Wallace St.
Walkerton, On
N0G 2V0

TO

Township of North Huron,
274 Josephine St,
Wingham, ON
N0G 2W0

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Wingham STP ECA #1040-9HAN94 issued May 30, 2014 and #3557-7UNPUR (Aug 11, 2009-Air) & (CLI ECA 090-W601)

The Following is a summary and discussion of the 2025 Wingham Sewage treatment plant operation and summary of compliance limits as set forth in the Wingham STP ECA 1040-9HAN94 Issued May 30 2014.

The Rated Capacity of the Treatment Unit is 3,400m³ average daily flow

Based on Raw Sewage Flows, the 2025 annual average daily flow was 1902m³/day which represents 56% of the 3400m³/day capacity. The maximum Peak flow of 10,270m³ occurred in April which represents 302% of the capacity.

Bypass Events

There were no bypass or overflow events that occurred during 2025 from the Wingham sewage treatment plant

Compliance Limits

The plant consistently removed 97.6% Biological Oxygen demand, 96.4% total suspended solids, 92.2% phosphorus and 96.0% total kjeldahl nitrogen which is well within the range of removals for a secondary sewage plant and consistent with previous yearly operations.

Operational Problems

There were no major operational issues to note during the 2025 operating year. A backup power generator was installed in September 2025 - will help with the issue of minor electrical fixes of equipment failures due to power outages.

Maintenance

Routine maintenance was performed throughout the year, such as:

- Oil changes in gear drives/boxes
- Cleaning UV lights
- Generator Runs
- Cleaning bar screens

Quality Control Monitoring

Monitoring includes an online dissolved oxygen sensor which indicates loading and raw sewage quality, aeration basin solids content and proper operations of the aerators. Secondary clarifiers effluent is monitored for dissolved phosphorus to determine adequate ferric chloride dosage in aeration basins as well as general clarity and surface debris which indicates proper solids removal. Adequate solids return to the aeration and wasting rates.

1 raw sewage flowmeter at Josephine SPS and 1 raw sewage flow meter at Hutton Heights SPS measure the flow going to the treatment plant and are used to base dosages and treatment plant capacity. The final effluent flow meter measures flow to the UV lights and does not represent the hydraulic loading of the plant but rather is a sum of the flow through the plant and any lagoon discharge. Results of monitoring activities can be viewed on the monthly spreadsheets.

Calibration and Maintenance

There are three flowmeters, raw sewage (one at each pumping station) and the final effluent discharge volumes. The flowmeters are calibrated yearly. This year the Josephine St. pumping station raw sewage, Hutton Heights pump station raw sewage and Wingham sewage treatment plant final effluent were calibrated by Advanced meter Services. The pH analyzer is calibrated monthly and recorded in the log books as well as ClearTech calibrates the analyzer on an annual basis. The certificates for AMS and ClearTech are stored at the PUC Office.

Efforts to meet effluent objectives

As described in the quality control monitoring section, analytic and visual parameters are used as indicators of process efficiency and should fall within the critical control points. A summary of these values was developed and is in the Wingham sewage treatment facility operations manual for reference and historically have been adequate to maintain compliance.

Biosolids Generated

Approximately 34m³ were removed from aeration cell 1+2 (West) in 2025 and sent to the lagoon. A total of approximately 603m³ of sludge went into the lagoon in 2025 (including what was removed from the aeration cell). We would estimate approximately 714m³ will go into the lagoon for 2026. Our estimate for 2026 is based on a 1% increase in flows from the new pumping station. Estimating the solids volume in a lagoon situation is very difficult when there are no terms of reference for the % solids concentration. Many factors go into the volume such as how well the sludge compacts, water depth in the lagoon, temperature, wind action, solids quality, etc.

Complaints

There were no complaints received as results of the operation of the sewage treatment facility.

List Of Tables

Table 1 – Data Summary 2025

Table 2 – Compliance Summary 2025

Table 3 – Sludge Metal Calculations

Table 4 – Bypass and Overflow Results

Wingham Sewage Treatment Plant Annual Report
For the 2025 Operating Year

Table 1 – Data Summary 2025

Flows Incoming	January	February	March	April	May	June	July	August	September	October	November	December	Total (m3)	Avg (m3)	Max (m3)	% Cap
Flows	50636.81	39069.29	12482.863	10449.528	55347.64	44668.71	39252.095	36,058.73	36483	42430.4	48654.82	72138.98	694064.695	1902	12482.863	55.9
Average	1633	1395	4027	3483	1785	1489	1266	1163	1177	1369	1570	2327				
Max/d	2544	1822	9888	10270	2448	1980	1532	1664	1734	2300	1915.25	5906			10270	
Raw Sewage														Avg	Max.	%Removal
BOD	59	71	28	35	95	106	98	109	125	153	154	62		91	154	97.6
SS	45	48	41	38	55	93	188	122	142	207	179	68		102	207	96.4
Alkalinity	368	326	290	312	320	329	350	363	355	303	355	335				
TP	2	1.73	0.76	1	1	2	2	3	3	2	3	2		1.90	3.10	92.2
TKN	13	19.45	8.75	9	15	19	20	24	25	20	26	19		18.08	25.90	96.0
pH	7.52	7.55	7.61	7.71	7.69	7.75	7.61	7.67	7.81	7.52	7.39	7.34		7.59	7.81	
Final Effluent																
E. Coli	35	5	28	9	4	0	14.80	53	40	18	1	72		23.42	71.98	
CBOD	2.0	2.0	2.0	4	2	3	2.00	2.00	2.00	2	2	2		2.21	3.50	
SS	2.0	4.0	2.0	13	4	5	2.00	2.50	2.50	2	3	3		3.69	13.00	
Alkalinity	227	131	244	221	194	177	153.50	160.50	147.00	68	225	226		181.01	243.50	
Ammonia	0.10	0.10	0.10	0.2	0.4	0.6	0.37	0.56	0.25	0.25	0.27	0		0.28	0.56	
TKN	0.50	0.55	0.75	1.40	1.00	0.65	0.60	0.60	0.60	0.50	0.70	1		0.73	1.40	
TP	0.20	0.23	0.13	0.42	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0		0.15	0.42	
NO2	0.05	0.13	0.09	5.52	0.06	0.03	0.03	0.05	0.04	0.04	0.03	0		0.51	5.52	
NO3	17.10	18.80	9.78	8.14	16.60	16.65	15.40	23	22	23	16	14		16.63	23.20	
pH	7.48	7.33	7.56	7.62	7.44	7.85	7.74	7.40	7.35	7.38	7.49	7.58		7.52	7.85	
H2S>	0.02	-	-	-	-	0.02	0.02	-	-	0.02	-	-		0.02	0.02	

Wingham Sewage Treatment Plant Annual Report
For the 2025 Operating Year

Table 2 – Compliance Summary 2025

Yellow highlights are Objectives not limits												
	January	February	March	April	May	June	July	August	September	October	November	December
Max/day m3	2544	1822	9888	10270	2448	1980	1532	1598	1734	2300	1888	5906
Av Day Flow	3400											
Actual	1629	1390	4020	3478	1772	1485	1262	1158	1212	1364	1618	2386
Comp. Y/N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y
CBOD&TSS	15											
CBOD	2.0	2.0	2.0	3.5	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
TSS	2.0	4.0	2.0	13.0	3.5	4.5	2.0	2.5	2.5	2.0	3.0	3.3
Loading Kg	51											
CBOD Kg	3.26	2.78	8.04	12.17	3.54	4.46	2.52	2.32	2.42	2.73	3.24	4.77
TSS Kg	3.26	5.56	8.04	45.22	6.20	6.68	2.52	2.89	3.03	2.73	4.85	7.95
Comp. Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Tot P	0.5											
Actual	0.20	0.23	0.13	0.42	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
TP Load Kg	1.7											
Act. TP Kg	0.32	0.32	0.52	1.44	0.18	0.15	0.13	0.12	0.12	0.14	0.16	0.24
Comp. Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
H2S	0											
Actual(<)	0.02	-	-	-	-	0.02	0.02	-	-	0.02	-	-
Comp. Y/N	Y	-	-	-	-	Y	Y	-	-	Y	-	-

Wingham Sewage Treatment Plant Annual Report
For the 2025 Operating Year

pH	6.5 - 9.0											
Min	7.25	7.17	7.30	7.50	7.36	7.33	7.49	7.03	7.06	7.25	7.39	7.10
Max	7.58	7.47	7.89	8.06	7.53	8.65	8.33	8.24	8.01	7.63	7.59	7.68
Average	7.48	7.33	7.56	7.62	7.44	7.85	7.74	7.40	7.35	7.38	7.49	7.58
Comp. Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

E. Coli	200											
Actual GMD	35	5	28	9	4	0	15	53	40	18	1	72
Comp. Y/N	Yes											

NH 3&4	3	3	3	0.8	3	3						
Actual	0.10	0.10	0.10	0.23	0.36	0.55	0.37	0.56	0.25	0.25	0.27	0.27
NH 3&4 Load/d	0.16	0.14	0.40	0.80	0.64	0.82	0.47	0.64	0.30	0.34	0.43	0.65
Limit kg/d	10.7	10.7	10.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	10.7	10.7
Comp. Y/N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

NH 3	0.02											
Actual	0.000	0.000	0.001	0.000	0.001	0.011	0.003	0.001	0.001	0.000	0.000	0.001
Comp. Y/N	Yes											

Wingham Sewage Treatment Plant Annual Report
For the 2025 Operating Year

Table 3 – Sludge Metals Calculations

Quarterly Metals Calculations Report 2025							
Parameter Date	Jan 14-25	Apr 8-25	Jul 15-25	Oct 7-25	Average		
Total Solids	9690	10400	10300	3210	10,130.00		
TKN	550	617	437	150	534.67		
NH 3&4	7	5.7	5.2	2.4	5.97		
NO2	< 3	< 3	< 3	< 3	3.00		
NO3	< 3	< 3	< 3	19	3.00		
NO2+NO3	< 3	< 3	< 3	19	3.00		
Arsenic	< 0.1	< 0.1	< 0.1	< 0.1	0.10		
Cadmium	0.005	< 0.005	0.005	< 0.005	0.01		
Cobalt	0.0262	0.02	0.03	0.01	0.03		
Chromium	0.475	0.36	0.54	0.21	0.46		
Copper	3.86	3.4	4.3	1.4	3.85		
Mercury	0.003	0.003	0.004	0.002	0.00		
Potassium	34.1	39	25	15	32.70		
Molybdenum	0.0979	0.08	0.07	< 0.05	0.08		
Nickel	0.21	0.18	0.24	0.1	0.21		
Phosphorous	173	171	212	62	185.33		
Lead	0.164	0.2	0.2	< 0.1	0.19		
Selenium	< 0.1	< 0.1	< 0.1	< 0.1	0.10		
Zinc	4.27	4	5	1	4.42		
Ecoli DW	950258	2326538	1015728	2139252	1,430,841.33		
Ecoli /100 ml	920800	2419600	1046200	686700	1,462,200.00		

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Report Completed by: Veolia Water

For More information please contact:

Scott Gowan, Project Manager

Veolia Water Canada, Inc.

130 Wallace St PO Box 220, Walkerton On, N0G 2V0

Tel 1-519-881-1474

scott.gowan@veolia.com

www.veoliawaterna.com