

## **Williamsburg Wastewater Treatment System** **2017 Annual Performance Report**

Williamsburg's sewage lagoon is a Class I wastewater treatment system owned and operated by the Municipality of South Dundas. The system consists of two sewage pumping stations which transport raw sewage along a forcemain to a two cell waste stabilization pond with annual discharge to the McMartin Drain.

### **Flow Summary:**

The hydraulic flows reaching the lagoons in 2017 were an average of 338 m<sup>3</sup>/day which represents 88% of the 383 m<sup>3</sup>/day design capacity. Please see the attached 2017 Performance Assessment Report for detailed flow information.

The total volume of the spring discharge was 75,223 m<sup>3</sup>. There were no exceedances of the effluent limits prescribed the Certificate of Approval. The seasonal average concentration of CBOD<sub>5</sub> in the effluent was 7.8 mg/L, which was less than the limit of 30 mg/L; the concentration of total suspended solids was 22.7 mg/L, which was less than the limit of 30 mg/L; and the concentration of hydrogen sulphide was 0.04 mg/L. Please see the attached Lagoon Performance Assessment Report for detailed results.

### **Operational Issues/Corrective Actions:**

- No operational issues were encountered during the reporting period.

### **Major Maintenance Summary:**

- Both wet wells were cleaned by Capital Steam in 2017
- SPS raw sewage flow meter was calibrated in November 2017

### **Community Complaints:**

None to report.

### **Bypasses, Spills or Other Abnormal Discharge Events:**

There were no by-passes, spills or other abnormal discharge events during the reporting period.

## MUNICIPALITY OF SOUTH DUNDAS PERFORMANCE ASSESSMENT REPORT

**PROJECT:** WILLIAMSBURG SEWAGE  
**WORKS NUM.:** 3-0456-84-887  
**DESCRIPTION:** A TWO CELL LAGOON HAVING A TOTAL SURFACE AREA OF 7.1 HA

**YEAR:** 2017  
**WATER COURSE:** MCMARTIN DRAIN  
**DESIGN CAPACITY:** 383 m<sup>3</sup>/day

MONTH	FLOWS					BIOCHEMICAL O <sub>2</sub> DEMAND			SUSPENDED SOLIDS			PHOSPHORUS			TKN
	Total Flow m <sup>3</sup>	Avg Day Flow m <sup>3</sup>	Max Day Flow m <sup>3</sup>	Effluent Flow m <sup>3</sup>	Discharge Duration (days)	Avg Raw BOD (mg/L)	Avg Eff BOD (mg/L)	Percent Removal	Avg Raw SS (mg/L)	Avg Eff SS (mg/L)	Percent Removal	Avg Raw PHOS. (mg/L)	Avg Eff PHOS. (mg/L)	Percent Removal	Avg Raw TKN
JAN	9808	316	422			110			116			2.25			13.9
FEB	8533	305	739			159			178			3.16			25.4
MAR	10915	352	614			34			72			0.70			4.0
APR	14731	491	972	75,223	11	36	7.8		33	22.7		0.86	0.98		8.2
MAY	14288	461	1019			102			140			3.35			14.5
JUN	9727	324	526			21			28			1.28			12.0
JUL	14910	481	1100			90			72			0.28			2.7
AUG	8199	264	355			122			92			1.76			18.1
SEPT	4268	142	345			85			176			3.20			20.3
OCT	6646	214	1128			404			420			11.10			54.7
NOV	13081	436	751			46			55			1.55			13.6
DEC	8179	264	416			152			112			2.59			20.9
TOTAL	123,285			75,223	11										
AVG		338				113	7.8	93.1	125	22.7	81.8	2.67	0.98	63.3	17.4
MAX			1128			404			420			11.1			
CRITERIA		<b>383</b>					<b>30</b>			<b>30</b>					

COMPLIANCE		YES					YES			YES					
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**COMMENTS:** PERCENT REMOVAL BASED ON 12 MONTHS OF RAW COMPOSITE SAMPLES

**MUNICIPALITY OF SOUTH DUNDAS  
LAGOON PERFORMANCE ASSESSMENT REPORT**

**PROJECT:** WILLIAMSBURG LAGOON  
**WORKS NUM.:** 3-0456-84-887  
**DESCRIPTION:** A TWO CELL LAGOON HAVING A TOTAL SURFACE AREA OF 7.1 HA

**YEAR:** 2017  
**WATER COURSE:** MCMARTIN DRAIN  
**DESIGN CAPACITY:** 383 m<sup>3</sup>/day

	SAMPLE RESULTS	75,223 m <sup>3</sup>							C of A Limit*
		DATE	11-Apr	13-Apr	18-Apr	19-Apr	20-Apr	21-Apr	
<b>Minimum 2x per Week Sample Collection</b>	BOD (mg/L)	14	11	13	<3	<3	<3	7.8	<b>30</b>
	SS (mg/L)	28	17	82	<3	3	<3	22.7	<b>30</b>
	TP (mg/L)	1.83	1.77	1.82	0.15	0.17	0.15	0.98	
	NH <sub>3</sub> (mg/L)	6.02	6.35	5.58	0.1	0.07	0.04	3.03	
	NO <sub>2</sub> (mg/L)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
	NO <sub>3</sub> (mg/L)	0.3	0.2	0.2	<0.1	<0.1	<0.1		
	TKN (mg/L)	9.43	9.41	9.96	0.82	0.94	1.04		
	S2- (mg/L)	0.04	0.04	0.13	0.02	<0.01	<0.01		

\* Discharge between March 15 & April 21

pH	7.53	7.55	7.61	7.8	8.24	8.24
Temp	9.2	9.6	9.7	12.7	13.2	16.1
S2- (mg/L)	0.04	0.04	0.13	0.02	<0.01	<0.01
%	33.6	28.3	28.0	18.2	8.1	7.5
undissociated H2S	0.013	0.011	0.036	0.004	ND	ND

EFFLUENT FLOW	
DATE	Flow (m <sup>3</sup> /d)
11-Apr	3634
12-Apr	3,635
13-Apr	8,986
14-Apr	5,352
15-Apr	5,352
16-Apr	5,352
17-Apr	5,352
18-Apr	8,427
19-Apr	11,368
20-Apr	13,029
21-Apr	4,736