



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

**TOBERMORY**  
**SEWAGE LAGOON**

Annual Report  
January 1 to December 31, 2014

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March 31, 2015

Ministry of the Environment  
Third Floor  
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Owen Sound, ON  
N4K 0A5

Attention: John Ritchie, Water Compliance Supervisor

Subject: Tobermory Sewage Treatment System  
Lot 49, Concession 1, Former township of St. Edmonds,  
Municipality of Northern Bruce Peninsula, ON

Certificate of Approval (C of A) # 3-0046-93-006 dated February 24, 1993.

The Ontario Clean Water Agency entered into an operation and maintenance agreement for the Tobermory Sewage Works with the Municipality of Northern Bruce Peninsula, which took effect July 1<sup>st</sup> 2009.

The enclosed 2014 Report for the above referenced facility summarizes the performance and related activities from January 1<sup>st</sup> 2014 through December 31<sup>st</sup> 2014 in accordance with C of A # 3-0046-93-006; Condition 15 a) through i).

**Table 1: Monitoring Program as per above-referenced C of A**

Source	Parameter	Frequency	Method
<b>Influent</b>	Flow (m <sup>3</sup> )	Daily	Flow Meter
<b>Secondary Aeration Cell Effluent</b>	BOD <sub>5</sub> , SS, TP, TKN, NH <sub>3</sub> +NH <sub>4</sub> (N), Nitrate, Nitrite	Monthly – March, June, July, August and October	External Analysis
<b>Aeration Cells</b>	pH, Dissolved Oxygen	Weekly	In-House
<b>Ground Water Wells</b>	Alkalinity, Conductivity, Free Ammonia, Phenols, pH, Chloride, Sulphate, Nitrite, Magnesium, Iron, Nitrate, Calcium, Hardness, Sodium, DOC, Organic Nitrogen, TKN, Dissolved Reactive Phosphorous *, Total P * * = Shallow Wells Only	All thirty – Spring (May) & Fall (October)  Limited – Summer (August) OW-6S, OW-6I, OW-6D, OW-7S, OW-9S, OW-9I, OW-9D, OW-10S, OW-11S, OW-12S	External Analysis
<b>Ground Water Wells</b>	Aluminum, Barium, Cadmium, Chromium, Copper, Lead, Manganese, Zinc	Every Three Years – Fall (October)	External Analysis

### **Project Description**

The Tobermory Sewage Works System in the Municipality of Northern Bruce Peninsula (formerly Township of St. Edmunds) comprises a wastewater treatment plant and one sewage pumping station. The wastewater generated within the collection area of Tobermory is collected into the sewer system and pumped to the wastewater treatment plant by way of 150 mm forcemain. The wastewater treatment plant consists of two aerated cells, one storage cell, two exfiltration ponds and one overflow cell.

The wastewater treatment plant contains two (2) aerated lagoons. The capacity of aeration cells #1 and #2 is 10,800 m<sup>3</sup> each. The aeration provided is tapered coarse bubble, diffused aeration. The aeration Cell #2 has a quiescent settling zone to permit effluent clarification. The effluent from the aeration Cell #2 can be recycled to aeration Cell #1 can be transferred to storage Cell #1 for winter storage, or can be transferred to the exfiltration Cells #2 or 3 during summer operations. The exfiltration cells have a combined minimum rated capacity of 317m<sup>3</sup>/day, and each cell has approximately 13,750 m<sup>2</sup> of surface area.

To provide coarse bubble diffused aeration for the two aerated cells, the plant is provided with one duty and two standby blowers, each rated with a firm capacity of 193 L/sec at approximately 38 kPa.

The sewage pumping station, which is also called Little Tub Harbour Pumping Station, is located near the harbour, and has two submersible pumps each rated at 17.0 L/sec capacity at 50.5 m TDH. The wet well has a normal operating volume of 5.7 m<sup>3</sup>. Due to its location near the harbour, the sewage pumping station wet well is provided with an odour control activated carbon adsorption unit having a capacity of 188.8 L/sec, for adsorbing hydrogen sulphide gas emissions from the wet well. The pumping station is also provided with a 150-kW diesel generator set for providing emergency power for the sewage pumps.

### **Plant Facts**

Facility:	Sewage Treatment Lagoon	Plant Classification:	WWT II
Design Capacity:	625 m <sup>3</sup> /day	Works Number:	120001577
Average Daily Flow:	208.42 m <sup>3</sup> (2014)	Organization Code:	1132
Receiving Water:	None		
Certificates of Approval:	3-0046-93-006 8-1063-94-006 (Air)		

### **Plant Performance & Effluent Quality**

**Table 2: Aeration Cell Effluent Objectives**

Effluent Objectives from Certificate of Analysis	
Parameter	Average Monthly Concentration (mg/L)
BOD <sub>5</sub>	50
Suspended Solids	50

**Table 3: Aeration Cell Effluent Lab Results**

Month	BOD	SS	Total P	NH <sub>3</sub> + NH <sub>4</sub> (N)	TKN	Nitrite	Nitrate
March	5	6	7.16	33.4	30.9	0.04	2.87
June	11	30	5.14	1.5	2.8	0.17	1.26
July	8	22	5.33	11.6	12.6	0.20	2.90
August	13	33	11.9	41.8	59.6	0.12	0.13
September	22	30	7.38	43.5	42.7	3.52	0.63
October	41	12	3.99	21.1	23.9	0.89	2.41

The Tobermory Sewage Works had no effluent objective exceedances in 2014.

From January-December 2014, sample analyses were conducted by an accredited laboratory, SGS Lakefield Research. Weekly pH, Dissolved Oxygen and temperature readings in the aeration cells were conducted in-house by trained operations staff at the treatment plant using standard methods.

**Table 4: Aeration Cell In-House Monitoring**

Month	Cell #1 pH		Cell #1 DO		Cell #2 pH		Cell #2 DO	
	Min	Max	Min	Max	Min	Max	Min	Max
May	7.74	7.96	6.34	9.56	7.58	7.93	5.52	8.59
June	7.74	7.82	5.56	7.56	7.52	8.03	6.16	7.81
July	7.79	7.94	3.70	9.49	7.68	7.79	3.48	5.14
August	7.52	7.67	0.21	4.07	7.65	7.92	3.17	5.42
September	7.64	7.81	4.80	7.54	7.79	7.96	4.26	7.45

## Flows

**Table 2: 2014 Daily Raw Flow Data**

Month	Average Day Flow (m <sup>3</sup> )
January	75.32
February	35.93
March	45.84
April	180.57
May	182.26
June	220.93
July	329.68
August	360.87
September	278.67
October	259.39
November	328.53
December	203.00
Average	208.42

Detailed Flow data is summarized in Appendix A.

The total flow treated for January 1<sup>st</sup> through December 31<sup>st</sup> 2014 was 76,414 m<sup>3</sup>. The average daily flow of 208.42 m<sup>3</sup> per day was 33.35 % of the design capacity. The maximum average daily flow for this time period was 360.88 m<sup>3</sup> which was recorded in August 2014.

In addition a total of 3,895.91 m<sup>3</sup> of hauled sewage/septage was treated by the plant in 2014. Detailed hauled sewage/septage data is summarized in Appendix B.

### **Groundwater Sampling Program**

The complete and limited groundwater sampling of all on-site observation wells was completed in the Spring (May), Summer (August) and Fall (October) of 2014. There were no spring samples for monitoring well OW8-S, fall samples for monitoring well OW8-S, OW2-S and OW6-S, or summer samples for monitoring well OW6-S as the groundwater wells were dry at the time of sampling.

See Appendix C for Summary of groundwater sampling.

### **Sludge Management**

There was no sludge removed from the facility in 2014.

### **Bypassing and Abnormal Conditions**

There were no bypasses in 2014.

### **Maintenance and Calibration Activities**

Regular and preventative maintenance activities are scheduled and completed on a monthly basis on all equipment at the plant and pumping station through OCWA's Workplace Management System.

Infrastructure improvements/replacements in 2014 included:

- Repairs required to Aeration Plant heaters
- Replaced battery for SPS generator; purchase switch & LED module for blower.

The flow metering device located in the sewage lift station was calibrated by Flowmetrix on May 21, 2014 as part of the Ontario Clean Water Agency, West Highlands Hub's regular routine third party calibration schedule.

The Calibration Report is located in Appendix D

## **Summary**

The Tobermory Sewage Lagoons provided effective wastewater treatment in 2014. The average daily flow from January 1<sup>st</sup> to December 31<sup>st</sup> 2014 was 208.42 m<sup>3</sup> per day, or approximately 33.35 % of the plant's rated design capacity average summer flow of 625m<sup>3</sup> per day.

# **APPENDIX A**

## **Plant Performance Summary Report**

**2014**



**Ontario Clean Water Agency**  
**From: 01/01/2014 to**

Report extracted 03/09/2015 14:03

Facility: [1132] TOBERMORY WASTEWATER TREATMENT FACILITY

Works: [1132] TOBERMORY WASTEWATER TREATMENT FACILITY

	01/2014	02/2014	03/2014	04/2014	05/2014	06/2014	07/2014	08/2014	09/2014	10/2014	11/2014	12/2014	<--Total-->	<--Avg.-->	<--Max.-->
<b>Flows:</b>															
Raw Flow: Total - Raw Sewage (m <sup>3</sup> /d)	2335.01	1006.04	1421.04	5417.10	5650.00	6628.00	10220.00	11187.00	8360.00	8041.00	9856.00	6293.00	76414.193		
Raw Flow: Avg - Raw Sewage (m <sup>3</sup> /d)	75.323	35.930	45.840	180.570	182.258	220.933	329.677	360.871	278.667	259.387	328.533	203.000		208.416	
Raw Flow: Max - Raw Sewage (m <sup>3</sup> /d)	75.323	35.930	45.840	180.570	182.260	220.940	329.680	360.880	278.670	259.600	328.540	203.000			360.880

# **APPENDIX B**

## **Summary of Hauled Sewage Data**

**2014**

2014 - Hauled Sewage in cubic meters

	January	February	March	April	May	June	July	August	September	October	November	December	TOTAL
Bruce Peninsula Septic Service	14.09	9.09	14.23	50.14	11.50	5.57	13.55	29.68	11.00	69.78	66.28	46.87	<b>341.78</b>
Scott Septic Pumping				20.46	179.12	491.43	1001.05	1188.35	441.88	134.56	20.91		<b>3477.76</b>
Mountain Trout Camp						10.91	27.28	21.82	16.36				<b>76.37</b>
<b>Total</b>	<b>14.09</b>	<b>9.09</b>	<b>14.23</b>	<b>70.60</b>	<b>190.62</b>	<b>507.91</b>	<b>1041.88</b>	<b>1239.85</b>	<b>469.24</b>	<b>204.34</b>	<b>87.19</b>	<b>46.87</b>	<b>3895.91</b>

# **APPENDIX C**

## **Summary of Groundwater Sampling**

**2014**

Observation Well Ground Water Sampling Program in Spring (May)

Well #	Chloride mg/L	Sulphate mg/L	Nitrite as N mg/L	Nitrate as N mg/L	Nitrite + Nitrate as N mg/L	Hardness mg/L as CaCO <sub>3</sub>	Magnesium mg/L	Calcium mg/L	Iron mg/L	Sodium mg/L	Phosphorous mg/L	Alkalinity mg/L as CaCO <sub>3</sub>	Conductivity uS/cm	pH	Organic Nitrogen mg/L	TKN mg/L	NH <sub>3</sub> + NH <sub>4</sub> mg/L	Phenolics mg/L	DOC mg/L	Diss. Reactive Phos. mg/L
OW6-S	0.7	4.2	< 0.03	< 0.06	< 0.06	249	28.9	52.1	0.008	0.58	0.08	250	454	8.06	0.15	< 0.5	< 0.1	< 0.002	2.2	< 0.03
OW6-D	3.2	5.8	< 0.03	< 0.06	< 0.06	236	22.8	57.0	0.043	14.60	0.04	282	513	8.29	< 0.05	< 0.5	0.1	< 0.002	4.0	< 0.03
OW6-I	2.9	9.6	< 0.03	< 0.06	< 0.06	327	31.1	79.8	0.327	6.12	< 0.03	331	603	8.22	< 0.05	< 0.5	< 0.1	< 0.002	1.5	< 0.03
OW5-S	27.0	9.2	< 0.03	< 0.06	< 0.06	207	14.0	59.9	0.198	21.00	0.29	238	606	8.23	0.12	< 0.5	< 0.1	< 0.002	4.0	0.04
OW5-I	120.0	32.0	< 0.03	< 0.06	< 0.06	276	19.3	78.9	0.034	70.90	0.05	290	932	8.23	0.17	< 0.5	< 0.1	< 0.002	3.3	< 0.03
OW5-D	120.0	32.0	< 0.03	< 0.06	< 0.06	279	20.3	78.4	0.07	70.10	0.07	294	922	8.19	0.05	< 0.5	< 0.1	< 0.002	3.2	< 0.03
OW2-S	0.6	1.9	< 0.03	< 0.06	< 0.06	286	20.8	80.3	0.018	0.56	0.16	306	548	8.28	0.05	< 0.5	< 0.1	< 0.002	1.9	< 0.03
OW2-I	2.8	1.9	< 0.03	0.16	0.16	332	30.1	83.4	0.614	19.60	0.24	377	659	8.23	< 0.05	2.0	2.1	< 0.002	2.2	< 0.03
OW2-D	1.2	19.0	< 0.03	< 0.06	< 0.06	229	22.4	55.0	0.097	17.80	0.05	267	505	8.25	< 0.05	< 0.5	< 0.1	< 0.002	1.4	< 0.03
OW12-S	67.0	18.0	< 0.03	1.93	1.93	326	21.4	95.3	0.142	57.00	< 0.03	359	694	8.11	0.05	< 0.5	< 0.1	< 0.002	2.2	< 0.03
OW55	0.9	6.4	< 0.03	0.47	0.47	409	20.9	129.0	0.251	0.78	< 0.03	394	723	7.70	0.15	< 0.5	< 0.1	< 0.002	3.0	< 0.03
OW56	0.6	2.2	< 0.03	0.23	0.23	174	16.4	42.7	0.022	0.31	< 0.03	233	422	8.26	< 0.05	< 0.5	< 0.1	< 0.002	1.9	< 0.03
OW57	1.0	5.4	< 0.03	0.53	0.53	411	31.3	113.0	0.018	0.64	< 0.03	428	739	8.19	0.08	< 0.5	< 0.1	< 0.002	5.6	< 0.03
OW60	74.0	26.0	< 0.03	1.24	1.24	360	26.3	101.0	0.203	39.60	6.61	358	890	8.15	< 0.05	< 0.5	1.0	< 0.002	1.8	0.06
OW61	61.0	29.0	< 0.03	0.43	0.43	305	26.5	78.6	0.012	28.50	< 0.03	307	787	8.17	0.08	< 0.5	< 0.1	< 0.002	1.4	< 0.03
OW8-I	4.1	14.0	< 0.03	< 0.06	< 0.06	268	25.4	65.4	0.107	2.28	0.06	268	510	8.26	< 0.05	< 0.5	0.1	< 0.002	< 1	< 0.03
OW8-D	4.8	15.0	< 0.03	< 0.06	< 0.06	283	26.3	69.9	0.186	1.68	< 0.03	277	528	8.31	< 0.05	< 0.5	< 0.1	0.002	< 1	0.06
OW9-S	2.8	6.2	< 0.03	< 0.06	< 0.06	239	21.0	61.2	0.039	1.01	0.12	229	423	8.28	0.14	< 0.5	< 0.1	< 0.002	1.1	< 0.03
OW9-I	2.2	20.0	< 0.03	< 0.06	< 0.06	241	23.1	58.4	0.085	8.67	< 0.03	261	500	8.40	< 0.05	< 0.5	0.1	0.002	< 1	< 0.03
OW9-D	0.9	13.0	< 0.03	< 0.06	< 0.06	222	22.6	51.9	0.05	2.92	0.04	238	454	8.34	< 0.05	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW1-I	1.5	6.0	< 0.03	0.08	0.08	341	27.4	91.5	0.199	9.62	0.66	334	591	8.20	< 0.05	< 0.5	< 0.1	< 0.002	1.7	0.51
OW1-D	2.1	10.0	< 0.03	< 0.06	< 0.06	271	25.8	65.9	0.17	2.59	0.17	285	512	8.30	< 0.05	< 0.5	0.1	< 0.002	< 1	< 0.03
OW11-S	2.1	14.0	< 0.03	1.74	1.74	301	25.9	77.8	0.012	1.04	< 0.03	309	579	8.28	< 0.05	< 0.5	< 0.1	< 0.002	1.3	< 0.03
OW10-S	1.0	14.0	< 0.03	< 0.06	< 0.06	210	20.2	50.9	0.074	2.91	0.35	215	413	8.38	< 0.05	< 0.5	0.1	< 0.002	3.6	< 0.03
OW-7-S	1.5	9.3	< 0.03	< 0.06	< 0.06	217	17.0	58.9	0.058	0.72	0.13	223	418	8.19	< 0.05	< 0.5	0.1	< 0.002	2.6	< 0.03
OW-8-S	DRY																			

**Observation Well Ground Water Sampling Program in Summer (August)**

Well #	Chloride mg/L	Sulphate mg/L	Nitrite as N mg/L	Nitrate as N mg/L	Nitrite + Nitrate as N mg/L	Hardness mg/L as CaCO3	Magnesium mg/L	Calcium mg/L	Iron mg/L	Sodium mg/L	Phosphorous mg/L	Alkalinity mg/L as CaCO3	Conductivity uS/cm	pH	Organic Nitrogen mg/L	TKN mg/L	NH3 + NH4 mg/L	Phenolics mg/L	DOC mg/L	Diss. Reactive Phos. mg/L
OW6-S	DRY																			
OW6-D	3.1	6.7	< 0.03	< 0.06	< 0.06	236	22.3	57.8	0.006	11.4	< 0.009	266	515	8.14	0.23	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW6-I	3.9	11	< 0.03	< 0.06	< 0.06	307	28.8	75.3	0.095	4.98	< 0.009	326	623	8.02	< 0.05	< 0.5	< 0.1	< 0.002	1.5	< 0.03
OW7-S	2.1	11	< 0.03	< 0.06	< 0.06	278	21.2	76.5	0.29	0.79	0.019	251	481	8.23	< 0.05	< 0.5	< 0.1	< 0.002	1.6	< 0.03
OW9-S	4.1	8.9	< 0.03	< 0.06	< 0.06	258	21.6	67.6	0.006	0.91	< 0.009	242	472	7.98	0.21	< 0.5	< 0.1	< 0.002	1.3	< 0.03
OW9-I	3.2	21	< 0.03	< 0.06	< 0.06	220	21.3	53.2	0.008	9.23	< 0.009	246	490	8.08	< 0.05	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW9-D	1.2	14	< 0.03	< 0.06	< 0.06	219	21.7	51.9	0.005	3.01	< 0.009	217	438	8.16	< 0.05	< 0.5	< 0.1	< 0.002	1.1	< 0.03
OW10-S	1.3	16	< 0.03	< 0.06	< 0.06	202	18.7	50.2	0.032	2.59	< 0.009	207	407	7.99	< 0.05	< 0.5	< 0.1	< 0.002	2.9	< 0.03
OW11-S	1.6	14	< 0.03	1.32	1.32	308	25.7	80.9	< 0.003	1.03	< 0.009	286	557	8.07	0.21	< 0.5	< 0.1	< 0.002	1.5	< 0.03
OW12-S	64	23	< 0.03	0.95	0.95	282	18.3	83	< 0.003	30.9	< 0.009	259	687	7.9	0.48	< 0.5	< 0.1	< 0.002	2	< 0.03

## Observation Well Ground Water Sampling Program in Fall (October)

Well #	Chloride mg/L	Sulphate mg/L	Nitrite as N mg/L	Nitrate as N mg/L	Nitrite + Nitrate as N mg/L	Hardness mg/L as CaCO3	Magnesium mg/L	Calcium mg/L	Iron mg/L	Sodium mg/L	Phosphorous mg/L	Alkalinity mg/L as CaCO3	Conductivity uS/cm	pH	Organic Nitrogen mg/L	TKN mg/L	NH3 + NH4 mg/L	Phenolics mg/L	DOC mg/L	Diss. Reactive Phos. mg/L
OW5-S	89	23	0.04	0.06	0.1	277	20.6	76.9	1.41	48.6	0.027	235	759	8.03	< 0.05	< 0.5	0.3	< 0.002	1.7	< 0.03
OW5-I	140	32	0.07	0.29	0.36	272	18.6	78.3	0.083	82.5	0.012	249	952	8.05	0.11	< 0.5	0.1	< 0.002	2.9	< 0.03
OW5-D	120	31	< 0.03	< 0.06	< 0.06	280	19.9	79.3	0.065	75.9	< 0.009	249	948	8.03	0.12	< 0.5	< 0.1	< 0.002	3.2	< 0.03
OW9-D	0.9	15	< 0.03	< 0.06	< 0.06	232	23.3	54.3	0.021	2.85	< 0.009	215	444	8.15	< 0.05	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW9-I	4.5	28	< 0.03	< 0.06	< 0.06	245	23.2	59.8	0.027	8.46	< 0.009	238	498	8.04	< 0.05	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW9-S	9.1	12	< 0.03	< 0.06	< 0.06	287	24.2	74.9	0.042	1.19	< 0.009	266	518	8.05	< 0.05	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW8-I	3.9	14	< 0.03	0.08	0.08	270	25.7	65.9	0.037	3.02	< 0.009	252	513	8.04	< 0.05	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW8-D	4.9	15	< 0.03	< 0.06	< 0.06	286	26.3	71.1	0.01	1.6	< 0.009	256	526	8.14	< 0.05	< 0.5	< 0.1	< 0.002	1.5	< 0.03
OW10-S	1.3	15	< 0.03	< 0.06	< 0.06	244	21.8	61.9	1.06	2.86	0.069	205	416	8.14	< 0.05	< 0.5	< 0.1	< 0.002	2.6	0.05
OW11-S	1.5	13	< 0.03	1.46	1.46	308	26.2	80.3	0.015	1.05	< 0.009	277	556	8.12	< 0.05	< 0.5	< 0.1	< 0.002	2	< 0.03
OW12-S	43	20	< 0.03	0.68	0.68	304	22.1	85.2	0.032	23.1	< 0.009	269	685	7.97	0.27	< 0.5	< 0.1	< 0.002	1.2	< 0.03
OW1-D	2.2	11	< 0.03	< 0.06	< 0.06	280	26.5	68.3	0.336	2.53	0.038	261	517	8.21	0.06	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW1-I	1.9	6.7	< 0.03	0.06	0.06	360	29.4	95.9	0.154	3.93	0.461	341	648	8.01	0.07	< 0.5	< 0.1	< 0.002	< 1	0.36
OW-6S	DRY																			
OW-6D	4.6	9.9	< 0.03	< 0.06	< 0.06	254	24.3	61.6	0.057	12.2	< 0.009	256	512	8.09	< 0.05	< 0.5	0.1	< 0.002	< 1	< 0.03
OW-6I	3.1	11	< 0.03	< 0.06	< 0.06	329	31.3	80.3	0.163	8.78	< 0.009	317	623	7.96	< 0.05	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW-57	1	7.3	< 0.03	0.4	0.4	417	32	114	0.005	0.8	< 0.009	421	794	7.87	< 0.05	< 0.5	< 0.1	< 0.002	2.4	< 0.03
OW-56	1	1.5	< 0.03	< 0.06	< 0.06	303	21.5	86	11	1.09	0.155	354	669	7.97	1.58	7.4	5.8	0.175	4	< 0.03
OW-2S	DRY																			
OW-2I	2.1	7.3	< 0.03	0.2	0.2	364	32.5	92.4	0.235	3.37	0.038	348	671	8.05	< 0.05	0.6	0.5	< 0.002	4.2	< 0.03
OW-2D	1.2	19	< 0.03	< 0.06	< 0.06	239	24.1	55.9	0.368	16.7	0.013	245	502	8.15	0.06	< 0.5	< 0.1	< 0.002	1	0.04
OW-55	0.7	7	< 0.03	< 0.06	< 0.06	409	20.6	130	0.067	0.85	< 0.009	412	764	7.84	0.13	< 0.5	0.2	< 0.002	2	< 0.03
OW-7-S	0.8	6.3	< 0.03	< 0.06	< 0.06	290	25.7	73.6	0.041	0.85	< 0.009	303	571	8.21	0.13	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW-60	130	32	< 0.03	0.16	0.16	351	25.8	98.1	0.128	61.9	0.049	300	1000	7.71	0.13	< 0.5	< 0.1	< 0.002	< 1	< 0.03
OW-61	64	31	< 0.03	0.15	0.15	350	30.2	90.4	0.611	28.7	0.022	292	808	7.92	0.1	< 0.5	< 0.1	< 0.002	1.2	< 0.03
OW-8-S	DRY																			

# **APPENDIX D**

## **Calibration Reports**

**2014**



# F&P (ABB) Mag-Meter

## Verification/ Calibration Report



Customer: OCWA - West Highlands  
 Contact: Leo Paul Frigault  
 Cluster Manager  
 519-379-2225

WESTERN OFFICE  
 212 Terrence Avenue  
 Dorchester, Ontario  
 N0L 1G3  
 t: 519-870-FLOW (3569)  
 f: 519-268-3459  
 e: stacey@flowmetrix.ca

EASTERN OFFICE  
 1602 Old Wooler Road  
 Wooler, Ontario  
 K0K 3J0  
 t: 416-779-1458  
 f: 613-398-0284  
 e: caris@flowmetrix.ca

www.flowmetrix.ca

Test Performed By: Paris Machuk  
 Field Representative

### AS FOUND CERTIFICATION

Plant ID	Tobermory	Date of Verification	21-May-14
Meter ID	Sewage Lift Station	Calibration Frequency	Annual
FIT ID	n/a	Date of Next Verification	May 15
Client Tag	n/a		
GPS Coordinates	N45 15.319 & W81 39.874		

### FORWARD FLOW DIRECTION

#### Converter Details

Manufacturer: Fisher & Porter  
 Model: 50XM  
 Converter S/N: 9312030479  
 Fuse: On board

#### Totalizer Information

As Found: 807691 m3  
 As Left: 807704 m3  
 Difference: 13 m3

#### Programming Parameters

Diameter (DN): mm 150  
 Full-Scale Flow: lps 25

#### Verification Instruments

F&P Flow Tube Simulator: F&P-1  
 Fluke 787 Process Meter: DMM-3  
 Stop Watch: 1/100 th second

#### Test Criteria

Forward Flow Direction Test: Yes  
 Allowable % Error: 5

Max. Flow @ 10.0 m/s 169 lps

Display Accuracy Verified: Yes  
 Current Output Verified: Yes  
 Totalizer Accuracy Verified: Yes

AS FOUND FLOW TUBE SIMULATION*	0	25	50	75	100	% F.S. Flow
Display	0.00	3.7	7.4	11.1	14.8	% Max. Flow
MUT (As Found)	0.175	6.385	12.580	18.810	25.040	lps
MUT (Error)**	n/a	2.16	0.64	0.32	0.16	lps
Current O/P	4.000	8.000	12.000	16.000	20.000	%
MUT (As Found)	4.098	8.076	12.036	16.028	20.014	mA
MUT (Error)**	2.45	0.95	0.30	0.17	0.07	mA
Totalizer						%
Test Volume					25.00	lps
Time					3	m3
Calc. Flowrate					120.53	Seconds
% Error					24.89	lps
					-0.44	%

\* All values are for "As Found" values. If the values are not within acceptable limits an "As Left" Certificate will be issued unless otherwise noted.

### RESULTS

	Avg. % Error	PASS/FAIL
Display	0.82	PASS
Current O/P	0.37	PASS
Totalizer	-0.44	PASS

This record only validates the operational integrity and accuracy verification results of the Secondary flow converter ONLY!!! This is not a complete calibration of the entire flow meter whereby, this verification does not validate the integrity of the primary measurement device using a comparative technique or traceable standard.