



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

## **2020 Client Monthly Operations Report**

**Lambton Area Water Supply System**

**January 31, 2020**

## Facility Description

Facility Name:	Lambton Area Water Supply System
Facility Type:	Municipal
Classification:	Class 4 Water Treatment Class 4 Water Distribution
Title Holder:	Municipality
Operation Status:	OCWA
Sr. Operations Manager:	Mark Harris (519) 344-7429 Ext. 251
Business Development Manager:	Susan Budden
Capacity (m3/d):	181844
Service Area:	City of Sarnia, Village of Point Edward, Township of St. Clair, Township of Warwick-Watford, Municipality of Lambton Shores, Town of Plympton-Wyoming
Service Population:	104,162
In service Date:	1975

## Operational Description

The Lambton WTP is a direct filtration surface water facility consisting of chemically assisted filtration with disinfection. The facility consists of an intake system (and alternate intake), a low lift pump station, a treatment system and distribution pumping system situated in the City of Sarnia. Water is drawn into the plant (a zebra mussel system is available as needed) and screened at the surge wells (pre-disinfection is utilized). Water flows to the pump wells where a total of 4 vertical turbine pumps are located and used as needed which pump to a discharge header. Coagulant is added, flashed mixed (PAC is also applied at this location when needed) the raw water is then flocculated (Polymer is added at the flocculation trains as needed) and diverted to filtration (10 dual media filters). The gravity fed filter effluents combine into two clear wells where sodium hypochlorite is injected. To maximize the contact time the water is diverted to the two baffled reservoirs (in series). Six vertical turbine pumps are available for supplying the distribution demand as needed. The entire water treatment system is continuously monitored (via SCADA) with continuous on-line analyzers equipped throughout the processes. The utility serves a large part of Lambton County and has over 250 kilometers of pipeline of various sizes and materials. There is also the East Lambton Booster Station with 9,000 cubic meters of storage capacity which is remotely monitored and controlled from the Lambton WTP via SCADA. During the 1997 calendar year the West Lambton Pumping Station, with the largest above ground water storage in the province with a capacity of 90,000m<sup>3</sup>, was brought on-line. This pumping station is also remotely monitored and controlled from Lambton WTP via SCADA. The LAWSS distribution system has 5 towers/elevated tanks that the utility monitors via SCADA. In 2007 the Residual Management System (RMS) which treats backwash effluent was brought on-line.

## Treatment Process

Pre-treatment Chemicals:	Prechlorination (sodium hypochlorite); Zebra mussel control
Coagulation/Flocculation:	Aluminum Sulphate (Clar+Ion A7)
Filtration:	Dual Media; Filter Aid polymer
Disinfection Method:	Sodium hypochlorite
Post Treatment Chemical Addition:	Fluoride
Waste Residue Management:	Filter backwash effluent is treated by an Actiflo system.
Waste effluent/residue Disposal:	Sludge is hauled to Sarnia WPCP on a needed basis.

## Inspections

January: None

## Maintenance, Operations & Distribution Works Summary 2020

### Maintenance

January:

Date	(P)reventative Capital Major Mtc (C)orrective	Description
Jan 2	C	Replaced one UPS battery and reset UPS at East Lambton Pumping Station.
Jan 2	P	Completed monthly inspection of water treatment plant compressors.
Jan 6	C	ESA inspection corrective actions at East Lambton Pumping Station are completed.
Jan 6	P	Completed monthly inspection on emergency eyewash and safety showers.
Jan 7	C	Repaired leak on Filter #8 surface wash valve near the air relief valve.
Jan 7	P	Completed monthly calibration on West Lambton Pumping Station chlorine analyzers.
Jan 7	P	Pumped out HFS and diesel containment areas.
Jan 7-9	C	Installing 2 heaters in basement at West Lambton Pumping Station.
Jan 8	P	Calibrated lab pH probe.
Jan 9	C	Repaired leak on Filter #10 surface wash valve.
Jan 10	P	Completed annual inspection on PRV for Forest and Watford Pumps 1 and 2 at East Lambton Pumping Station.

Jan 10	<b>P</b>	Completed monthly inspection on vacuum priming system at East Lambton Pumping Station.
Jan 10	<b>P</b>	Completed three year inspection on PRV for fill valve at East Lambton Pumping Station.
Jan 13	<b>P</b>	Completed monthly inspection of travelling screens at the water treatment plant.
Jan 14	<b>C</b>	Replaced SCADA computer at East Lambton Pumping Station.
Jan 15-16	<b>C</b>	Updating SCADA computer at East Lambton Pumping Station.
Jan 15-16	<b>P</b>	Completed monthly inspection of all Floc gear drives at the water treatment plant.
Jan 16	<b>P</b>	Tested generators at West Lambton Pumping Station.
Jan 20	<b>Capital</b>	With Experteers in regards to radio project at Indian Rd Tower and West Lambton Pumping Station.
Jan 21	<b>C</b>	Replaced UPS batteries at East Lambton Pumping Station.
Jan 21	<b>Capital</b>	With Experteers as part of radio project at Port Lambton and East and West Lambton Pumping Station.
Jan 21-22	<b>C</b>	Restore PLC at West Lambton Pumping Station.
Jan 22	<b>Capital</b>	With Experteers as part of the radio project at Wyoming Pit, Forest and Watford.
Jan 23	<b>P</b>	Conducted monthly polymer system test at the water treatment plant.
Jan 23	<b>P</b>	Tested generators at the water treatment plant.
Jan 24	<b>P</b>	Completed monthly calibration of all turbidity meters at the water treatment plant.
Jan 27-28	<b>C</b>	Drying out turbidity meter emitters due to moisture issues.
Jan 28	<b>C</b>	Investigated Filter #1 high turbidity issues. Did not see any issues with media. Backwashed filter in manual mode. Turbidity returned to normal.
Jan 28	<b>P</b>	Completed monthly calibration on lab turbidity meter.
Jan 29	<b>P</b>	Completed monthly calibration of portable chlorine analyzers.
Jan 29	<b>P</b>	Completed monthly calibration and maintenance of online fluoride analyzer.
Jan 29	<b>P</b>	Completed monthly maintenance on streaming current meters at the water treatment plant.
Jan 29	<b>P</b>	Completed monthly maintenance on turbidity meters in the Residual Management System.

## Operations and Compliance

### January:

Jan 3	Pre chlorine pump air lock failed. Pump and panel were reset.
Jan 4	Pre chlorine pump #3 air lock failed. Pump and panel were reset.
Jan 5	Pumps 1 and 5 at West Lambton Pumping Station tested.
Jan 8	Made adjustments to SCADA/PLC Failure Contingency.
Jan 8	Resampled late bacteriological samples.
Jan 9	Pre chlorine pump #3 air lock failed. Pump and panel were reset.
Jan 13	Pre chlorine pump air lock failed. Pump and panel were reset.
Jan 16	Annual and Annual Summary Reports completed and sent to Clinton for approval.
Jan 16	Tested chlorine residual from Residual Management System effluent. No issues.
Jan 19	Pre chlorine pump #3 air lock failed. Pump and panel were reset.
Jan 21	West Lambton Pumping Station out during radio project work.
Jan 21	Chlorine pump fault at East Lambton Pumping Station. Pump and panel were reset.
Jan 22	Pumped out chamber on Venetian and tested chlorine residual from chamber as part of reservoir repair work preparation.
Jan 23	Taking residuals from Sandy Lane Apartments in preparation of reservoir repair work.
Jan 24	Filter #1 out of service due to high turbidity after backwash.
Jan 25	Calibrated lab pH probe.
Jan 26	Ran Pump #1 at West Lambton Pumping Station.
Jan 27	THM/HAA quarterly samples taken.
Jan 27	Pre chlorine pump #1 air lock failed. Pump and panel were reset.
Jan 28	Filter #1 returned to service after turbidity reached normal levels.
Jan 28-29	Conducted quarterly test of critical alarms.
Jan 28	Chlorine pump fault at East Lambton Pumping Station due to air lock. Pump and panel were reset.
Jan 29	Pre chlorine pump #3 air lock failed. Pump and panel were reset.

## Distribution

### January:

Jan 6	Check PRV chamber at Sombra and the hydrant at 3966 St Clair Parkway.
Jan 8	Onsite for third party on Confederation Line in Plympton-Wyoming.
Jan 11	After hours emergency locate #2020030010 at 1492 Venetian Blvd.
Jan 20	Site meet for directional bore at Bickford and Greenfield.
Jan 21	Inspecting chamber in preparation for site meet at chamber on Fleming and Lakeshore.
Jan 22	After hours emergency locate #2020046277.
Jan 22	Onsite for third party work on Indian Rd and Plank Rd.
Jan 23	Site meet at Lakeshore and Fleming in regards to future fiber optic cable.
Jan 24	On site for third party work on Fleming for exposure of LAWSS watermain.

Jan 24	Investigated a service leak in Plympton-Wyoming.
Jan 25	Isolating Nova Moore watermain for Nova work.
Jan 26	After hours emergency locate on Michigan Ave.
Jan 29	Site meet at Fleming Rd in regards to future work in Plympton-Wyoming.

## Call Outs 2020

**January:** January 1 due to a UPS fault at East Lambton Pumping Station.

## One Call Utility Locates

These numbers represent the number of locate notifications that were cleared from LAWSS assets

Number of Locates/Month

YEAR	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2019	69	62	104	164	189	149	182	153	121	148	81	50
2020	57											

## RMS Sludge Haulage

These numbers represent total monthly amounts of sludge produced by the Residual Management System and hauled to Sarnia WPCP

Amount of sludge produced per month in m<sup>3</sup>

YEAR	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2019	236	158	237	236	216	158	313	237	160	160	159	163
2020	241											

## Required Monthly Reports

**Monthly System Flows-** see separate attached summary report

**Workplace Management System Reports** – see separate attached reports

**Performance Data and Compliance** – See separate attached report

## **Required Financial Reports**

**Quarterly Financial Summary** –Q4 was due January 30, 2020. Q1 due April 30, 2020.

**Semi-Annual “Schedule G” Reconcilable Commodities Report** – Was due January 30, 2020. Next due July 30, 2020.

## Health & Safety Work Order Summary by Facility

Start Date: 2020-01-01

End Date: 2020-01-31

Hub: Lambton

Cluster	ORG ID	Facility ID	Health and Safety					Closure Rate		
			Initiated	Approved	Completed	Total Labor Hrs	Total Cost \$	Target	Actual	Variance
LAWSS (133000)	Lambton Area Water Treatment Plant (5544)	5544, East Lambton Distribution (5544-WDEL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, East Lambton PS (5544-WPEL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Forrest Standpipe (5544-WDFS)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Indian Road Tower (5544-WDIR)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	4	4	3	5.75	260.25	85.00%	75.00%	10.00%
		5544, Port Lambton Standpipe (5544-WDPL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Watford Standpipe (5544-WDWF)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, West Lambton Booster Stn (5544-WPWL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, West ST.Clair Distribution (5544-WDWS)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		Lambton Area Water Treatment Plant (5544)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		Total			4	4	3	5.75	260.25	85.00%

Key Column	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%



Work Order Summary by Facility

Start Date: 2020-01-01  
End Date: 2020-01-31  
Hub: Lambton

Key Col	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%

			Corrective Maintenance					Emergency Maintenance					Call Back				
			Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$
LAWSS (133000)	Lambton Area Water Treatment Plant (5544)	5544, East Lambton Distribution (5544-WDEL)	0	0	0	0	0	0	0	0	0	0	1	1	1	10	3499.61
		5544, East Lambton PS (5544-WPEL)	1	1	0	9	381.78	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area RMS (5544-WWLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area WTP (5544-WTLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, West Lambton Booster Stn (5544-WPWL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, West ST.Clair Distribution (5544-WDWS)	2	2	0	8	459.76	0	0	0	0	0	0	0	0	0	0
		Lambton Area Water Treatment Plant (5544)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total			3	3	0	17	841.54	0	0	0	0.00	0.00	1	1	1	10.00	3499.61

0  
0

Work Order Summary by Facility

Start Date: 2020-01-01  
End Date: 2020-01-31  
Hub: Lambton

Key Col	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%

			Preventive Maintenance					Operational					Capital/Project Work					Closure Rate		
			Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Target	Actual	Variance
LAWSS (133000)	Lambton Area Water Treatment Plant (5544)	5544, East Lambton Distribution (5544-WDEL)	2	2	0	0	0	4	4	4	2.25	80.85	0	0	0	0	0	85%	71.42%	13.57%
		5544, East Lambton PS (5544-WPEL)	10	10	9	7.25	384.99	2	2	2	6.75	277.03	0	0	0	0	0	85%	84.61%	0.384%
		5544, Lambton Area RMS (5544-WWLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area WTP (5544-WTLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, West Lambton Booster Stn (5544-WPWL)	2	2	2	5	230.34	2	2	2	2.5	100.31	0	0	0	0	0	85%	100%	-15.0%
		5544, West ST.Clair Distribution (5544-WDWS)	38	38	27	107	4854.47	13	13	12	1635	48421.49	4	4	2	23	1007.64	85%	73.58%	11.41%
		Lambton Area Water Treatment Plant (5544)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
Grand Total			52	52	38	119.25	5469.8	21	21	20	1646.5	48879.68	4	4	2	23	1007.64	85%	100%	-15.0%

0  
0

Ontario Clean Water Agency  
Time Series Info Report

Report extracted 02/11/2020 10:25

From:

01/01/2020 to 31/01/2020

Facility Org Number: 5544  
Facility Works Number: 210000906  
Facility Name: LAMBTON AREA WATER SUPPLY SYSTEM (LAWSS)  
Facility Owner: Local Services Board: LAMBTON AREA WATER SUPPLY SYSTEM  
Facility Classification: Class 4 Water Treatment  
Receiver:  
Service Population: 100000.0  
Total Design Capacity: 181844.0 m3/day

	01/2020	Total	Avg	Max	Min							
Coagulation/Floculation / Coagulant Dosage-Calculated - mg/L												
Max IH	26.437			26.437								
Mean IH	20.802		20.802									
Min IH	15.602				15.602							
Coagulation/Floculation / Coagulant Used - kg												
Max IH	1241.6			1241.6								
Mean IH	964.129		964.129									
Min IH	691.2				691.2							
Total IH	29888	29888										
Coagulation/Floculation / Coagulant Volume Used - m³												
Max IH	0.97			0.97								
Mean IH	0.753		0.753									
Min IH	0.54				0.54							
Total IH	23350	23350										
DW THM Data / Trihalomethane: Total - µg/l												
Max Lab	31			31								
Mean Lab	29.667		29.667									
Min Lab	28				28							
East Lambton Booster Station / Cl Residual: Inlet Free - mg/L												
Max OL	1.49			1.49								
Mean OL	1.359		1.359									
Min OL	0				0							
Filter Backwash / Backwash Volume - m³												
Max IH	2988			2988								
Mean IH	2017.581		2017.581									
Min IH	1208				1208							
HFS / Fluoride Dosage - mg/L												
Max IH	0.63			0.63								
Mean IH	0.55		0.55									
Min IH	0.477				0.477							

HFS / Fluoride Used - l													
Max IH	88.823				88.823								
Mean IH	83.185			83.185									
Min IH	68.766					68.766							
Total IH	2578.73	2578.73											
HFS / HFS (kg) - kg													
Max IH	108.364				108.364								
Mean IH	101.486			101.486									
Min IH	83.895					83.895							
Total IH	3146.051	3146.051											
HFS / Treated Water Fluoride Residual - mg/L													
Max OL	2				2								
Mean OL	0.544			0.544									
Min OL	0					0							
Post Disinfection / Chlorine Dosage - mg/L													
Max IH	2.078				2.078								
Mean IH	1.449			1.449									
Min IH	0.822					0.822							
Post Disinfection / Hypochlorite Dosage - mg/L													
Max IH	17.316				17.316								
Mean IH	12.072			12.072									
Min IH	6.854					6.854							
Post Disinfection / Hypochlorite Used - kg													
Max IH	777.85				777.85								
Mean IH	559.262			559.262									
Min IH	254.975					254.975							
Total IH	17337.13	17337.13											
Post Disinfection / Hypochlorite Volume-Total - m³													
Max IH	0.662				0.662								
Mean IH	0.476			0.476									
Min IH	0.217					0.217							
Total IH	14755	14755											
Post Disinfection / Station 7 Cl Residual: Free - mg/L													
Max OL	5				5								
Mean OL	1.608			1.608									
Min OL	0					0							
Raw Water / Background - cfu/100mL													
Max Lab	10				10								
Mean Lab	2.5			2.5									
Min Lab	0					0							
Raw Water / Conductivity - µS/cm													
Max IH	223.4				223.4								
Mean IH	220.597			220.597									
Min IH	217.1					217.1							
Raw Water / E. Coli: EC - cfu/100mL													
Max Lab	0				0								

Mean Lab		0		0						
Min Lab		0				0				
Raw Water / Raw Flow Daily - m³/d										
Max IH		51462			51462					
Mean IH		46223.13		46223.13						
Min IH		37203				37203				
Raw Water / Raw Flow Rate - l/s										
Max IH		595.62			595.62					
Mean IH		534.99		534.99						
Min IH		430.59				430.59				
Raw Water / Raw Water Turbidity - NTU										
Max OL		14			14					
Mean OL		2.445		2.445						
Min OL		0.26				0.26				
Raw Water / Raw Water pH - ---										
Max IH		8.27			8.27					
Mean IH		8.114		8.114						
Min IH		8.02				8.02				
Raw Water / Temperature - °C										
Max IH		10			10					
Mean IH		7.466		7.466						
Min IH		5.5				5.5				
Raw Water / Total Coliform: TC - cfu/100mL										
Max Lab		0			0					
Mean Lab		0		0						
Min Lab		0				0				
Treated Water / Background - cfu/100mL										
Max Lab		0			0					
Mean Lab		0		0						
Min Lab		0				0				
Treated Water / E. Coli: EC - cfu/100mL										
Max Lab		0			0					
Mean Lab		0		0						
Min Lab		0				0				
Treated Water / Electrical Consumption - kWh										
Total IH		1060323	1060323							
Treated Water / Flow: Total of All Sources - m³/d										
Max IH		48147			48147					
Mean IH		44815.48		44815.48						
Min IH		37737				37737				
Total IH		1389280	1389280							
Treated Water / HPC - cfu/mL										
Max Lab	<	10		<	10					
Mean Lab	<	10	<	10						
Min Lab	<	10				<	10			
Treated Water / Total Coliform: TC - cfu/100mL										

[illegible]