



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

2020 Client Monthly Operations Report

Lambton Area Water Supply System

May 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 90,000m³, 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

May: None

Maintenance, Operations & Distribution Works Summary 2020

Maintenance

May:

Date	(P)reventative Capital Major Mtc (C)orrective	Description
May 1	P	Conducted monthly inspection of eyewash and emergency shower stations.
May 1	P	Completed semi-annual inspection of west raw water conduit ball valve.
May 1	P	Completed annual inspection of Raw Water butterfly valve 13 and 14.
May 1	P	Completed annual inspection of HL pump 8 discharge valve.
May 1	C	Replaced ceiling tile in admin area.
May 4	P	Completed semi-annual inspection of all low lift pumps.
May 4	P	Completed annual inspection of check valves 2 and 5 in the low lift pump room.
May 5	C	Repaired gate valve directly before grit pump.
May 5	P	Completed six month inspection on centrifugal pumps at East Lambton Pumping Station.
May 5	P	Completed monthly maintenance on chlorine analyzers at West Lambton Pumping Station.
May 5	P	Completed monthly maintenance on Station 1, 3 and 7 turbidity meters.
May 5	P	Conducted monthly inspection of vacuum priming system at East Lambton Pumping Station.

May 5	P	Completed monthly test of alarm dialer system at West Lambton Pumping Station.
May 6	C	Rotork in to look at Filter #6 filter to waste not hitting closed set point.
May 6	P	Cleaned out lamellas and removed anthracite from Actiflo #1.
May 6-8	P	Annual inspection on chlorine analyzers completed.
May 7	P	Cleaned out lamellas and removed anthracite from Actiflo #2.
May 7	C	Installed new sump pump in meter chamber 10 in Plympton-Wyoming.
May 8	P	Completed monthly inspection of water treatment plant compressors.
May 8	P	Tested alarm dialers at the water treatment plant.
May 8	P	Completed monthly check of elevator.
May 8	P	Completed semi-annual inspection of all high lift pumps.
May 11	P	Conducted semi-annual inspection of surface wash pump.
May 11	P	Completed monthly inspection of all filter effluent turbidity meters.
May 11-12	P	Completed monthly inspection of pH probes at the water treatment plant.
May 11-12	P	Completed monthly inspection of travelling screens.
May 12	P	Cleaned out sludge thickener in the Residual Management System.
May 12	P	Completed monthly inspection of Residual Management turbidity sensors.
May 12	P	Completed monthly inspection of streaming current meters.
May 12	P	Completed monthly inspection of lab turbidity meter.
May 12	P	Completed monthly inspection of fluoride analyzer.
May 13	P	Tested polymer system at the water treatment plant.
May 13	P	Tested alarm dialers at East Lambton Pumping Station.
May 13	C	Repaired broken latch on gate at East Lambton Pumping Station.
May 13	Capital	Installed power at Wyoming Pit in preparation for capital radio project.
May 13	P	Completed monthly inspection of flocculators.
May 13	P	Tested generators at East and West Lambton Pumping Station.
May 14 and 19	Capital	Ainsworth in to do TSSA inspection on the generator system at the water treatment plant as part of the generator capital project.
May 19	P	Tested generators at the water treatment plant.
May 19	P	Completed monthly inspection of chlorine analyzer at East Lambton Pumping Station.
May 20	C	Repaired exhaust system on generator 2 at the water treatment plant. Work was passed during TSSA inspection.
May 20	Capital	Radio project meeting with LAWSS GM, WSP and Experteers.

May 20	P	Tested generator at East Lambton Pumping Station.
May 21	P	Tested generator at West Lambton Pumping Station.
May 21	P	Reset power at Wyoming Pit.
May 22	Capital	Meeting with LAWSS GM and WSP in regards to East Lambton Pumping Station radio upgrade and West Lambton Pumping Station valve replacement.
May 25	C	Replaced GFI and cleaned limit switch at Wyoming Pit.
May 25	C	Cleaned strainer on inlet valve at East Lambton Pumping Station.
May 26	P	Completed monthly maintenance on pocket chlorine testers.
May 27	Capital	Tested running East Lambton Pumping Station in hand in regards to capital radio project upgrade.
May 27	Major Mtc	Completed install of hydrant at 6622 London Line.
May 27	C	Adjusted chlorine inlet lines at East Lambton Pumping Station in order to help prevent air locks.
May 28	Capital	Standard operating procedure created for the operation of East Lambton Pumping Station in hand in response to radio project upgrade.
May 28	C	Ainsworth in to repair main hot water tank at the water treatment plant.
May 28	C	Repaired Filter #10 air relief valve.
May 29	C	Repaired leak on Filter #10 surface wash water feed line
May 29	Capital	Meeting in regards to capital radio project.
May 29	Capital	Watford and Port Lambton Towers being inspected by CIMA.

Operations and Compliance

May:

May 1	Filter #9 failed to return to service automatically. Filter was manually returned to service.
May 2	Pre chlorine pump faulted with P+ alarm. Pump and panel was reset.
May 2	South clearwell chlorine pump faulted with P+ alarm. Pumps and panel was reset.
May 3	Power outage at West Lambton Pumping Station. Generators started with no issues.
May 4	Quarterly THM, HAA and nitrate/nitrite samples taken. Annual schedule 23-24 taken. 60 month sodium sample taken.
May 5	Pre chlorine pump faulted with P+ alarm. Pump and panel was reset.
May 6	Low lift Pump #3 contactor failed twice before starting.
May 7	Pre chlorine pumps 2 and 3 faulted with P+ alarm. Pumps and panel were reset.
May 9	South clearwell chlorine pump #2 faulted with P+ alarm. Pump and panel was reset.
May 10	Pre chlorine pump faulted with P+ alarm. Pump and panel was reset.
May 10	South clearwell chlorine pump faulted with P+ alarm. Pump and panel was reset.
May 11	Completed and sent out THM and HAA reports.

May 13	Tested East Lambton Pumping Station door alarm.
May 13	Operated Pumps 1 and 5 at West Lambton Pumping Station.
May 13	Checked WSIB certificates of contractors used at LAWSS.
May 13	Installed PAC bag but not running system.
May 14	OCWA's QEMS policy has been reviewed and no changes were needed.
May 14	Pre chlorine pumps 1 and 2 faulted with P+ alarm. Pumps and panel were reset.
May 14	South clearwell chlorine pump 1 and 2 faulted with P+ alarm. Pumps and panel were reset.
May 19	Diesel generator #2 out of service due to TSSA inspection finding of a leaking exhaust.
May 19	Tested Indian Rd and Port Lambton intruder alarms.
May 20	Low lift Pump #3 contactor failed before starting.
May 20	Generator #2 back in service after repairs to exhaust and TSSA inspection.
May 20	Pre chlorine pumps 1 and 2 faulted with P+ alarm. Pumps and panel were reset.
May 25	Modified Critical Shortage of Staff Contingency to reflect issues related to COVID 19.
May 25	Updated Lambton contact list.
May 26	Completed review of Critical Shortage of Staff Contingency test in regards to COVID 19.
May 27	Watford pumping system placed into recirculation mode in response to the hydrant installation on London Line.
May 27	Pre chlorine pumps 2 and 3 faulted with P+ alarm. Pumps and panel were reset
May 28	South clearwell chlorine pump 2 faulted with P+ alarm. Pump and panel were reset.

Distribution

May:

May 1	Site visit on Front St in regards to Bluewater Power installing power poles.
May 5	Onsite for prep meeting in regards to hydrant work on Lakeshore and Townsend.
May 5	Onsite for third party work for Canatara Park borehole testing near LAWSS watermain.
May 7	Valve operations and chamber checks on Zion Line in Watford.
May 8	Onsite for third party work for Canatara Park borehole testing near LAWSS watermain.
May 11	Onsite for third party work with TW Johnstone for drilling near LAWSS watermain on Confederation Line in Wyoming.
May 12	Emergency hydrant repair for hydrant 172 on Townsend and Lakeshore.
May 13	Onsite for third party work with TW Johnstone for drilling near LAWSS watermain on Confederation Line in Wyoming.
May 13	Valve operations and chamber checks in St Clair Township and on Confederation Line in Plympton-Wyoming.

May 20	Valve operations and chamber check on Confederation Line and London Line.
May 21	Opened emergency interconnect at the Nova Corunna site. Interconnect was opened for approximately 4 hours.
May 22	Onsite for culvert work done near LAWSS watermain in St Clair Township.
May 25	Onsite for culvert work done near LAWSS watermain in St Clair Township.
May 26	Hydrant flushing in Point Edward and City of Sarnia.
May 29	Meter read.

Call Outs 2020

May: Call out May 18th for faulting of both sodium hypochlorite pumps at East Lambton Pumping Station. Pumps and panel were reset.

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	54	107	131	165							

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 m³

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	228	231	240	230							

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 – Q2 due July 30, 2020.

Semi-Annual “Schedule G” Reconcilable Commodities Report – Due July 30, 2020.

Health & Safety Work Order Summary by Facility

Start Date: 2020-05-01

End Date: 2020-05-31

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	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)	2	2	2	5.00	185.55	85.00%	100.00%	-15.00%
		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)	1	1	1	1.00	37.79	85.00%	100.00%	-15.00%
		Lambton Area Water Treatment Plant (5544)	1	1	1	1.50	87.07	85.00%	100.00%	-15.00%
Total			4	4	4	7.50	310.41	85.00%	100.00%	-15.00%

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

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Health & Safety Work Order Summary by Facility

Start Date: 2020-01-01

End Date: 2020-05-31

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	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)	19	19	18	32.00	1307.53	85.00%	94.74%	-9.74%
		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.Claire Distribution (5544-WDWS)	4	4	4	4.00	151.16	85.00%	100.00%	-15.00%
		Lambton Area Water Treatment Plant (5544)	3	3	3	4.50	218.76	85.00%	100.00%	-15.00%
		Total			26	26	25	40.50	1677.45	85.00%

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

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Work Order Summary by Facility

Start Date: 2020-05-01
End Date: 2020-05-31
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)	1	1	0	11.5	481.2	1	1	1	13.25	545.45	0	0	0	0	0
		5544, East Lambton PS (5544-WPEL)	3	3	3	17.5	740.9	0	0	0	0	0	1	1	1	8	527.2
		5544, Forrest Standpipe (5544-WDFS)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Indian Road Tower (5544-WDIR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area RMS (5544-WWLA)	1	1	1	12	524.88	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area WTP (5544-WTLA)	6	6	6	23.5	4383.16	0	0	0	0	0	0	0	0	0	0
		5544, Port Lambton Standpipe (5544-WDPL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Watford Standpipe (5544-WDWF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, West Lambton Booster Strn (5544-WPWL)	1	1	1	4	148.44	0	0	0	0	0	0	0	0	0	0
		5544, West ST.Clair Distribution (5544-WDWS)	1	1	0	22.5	1073.26	0	0	0	0	0	0	0	0	0	0
		Lambton Area Water Treatment Plant (5544)	2	2	2	6	1771.58	0	0	0	0	0	0	0	0	0	0
Grand Total			15	15	13	97	9123.42	1	1	1	13.25	545.45	1	1	1	8.00	527.20

Work Order Summary by Facility

Start Date: 2020-05-01
End Date: 2020-05-31
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)	0	0	0	0	0	4	4	4	18.25	696.48	1	1	0	17.25	707.39	85%	83.33%	1.666%
		5544, East Lambton PS (5544-WPEL)	9	9	8	9	366.64	3	3	3	28.5	1303.36	0	0	0	0	0	85%	93.75%	-8.75%
		5544, Forrest Standpipe (5544-WDFS)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, Indian Road Tower (5544-WDIR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area RMS (5544-WWLA)	5	5	4	26	1232.35	2	2	2	7	327.95	0	0	0	0	0	85%	87.5%	-2.50%
		5544, Lambton Area WTP (5544-WTLA)	42	42	34	99.5	3922.07	10	10	10	1514.5	41166.72	0	0	0	0	0	85%	86.20%	-1.20%
		5544, Port Lambton Standpipe (5544-WDPL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, Watford Standpipe (5544-WDWF)	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)	6	6	3	4	159.9	2	2	2	5.5	219.55	0	0	0	0	0	85%	66.66%	18.33%
		5544, West ST.Clair Distribution (5544-WDWS)	0	0	0	0	0	3	3	3	9.75	440.83	0	0	0	0	0	85%	75%	9.999%
		Lambton Area Water Treatment Plant (5544)	1	1	1	1.5	87.07	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
Grand Total			63	63	50	140	5768.03	24	24	24	1583.5	44154.89	1	1	0	17.25	707.39	85%	100%	-15.0%

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Work Order Summary by Facility

Start Date: 2020-01-01
End Date: 2020-05-31
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)	133000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, East Lambton Distribution (5544-WDEL)	3	3	2	30.75	1321.87	1	1	1	13.25	545.45	2	2	2	16	3764.87
		5544, East Lambton PS (5544-WPEL)	4	4	4	26.5	1122.68	0	0	0	0	0	1	1	1	8	527.2
		5544, Forrest Standpipe (5544-WDFS)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Indian Road Tower (5544-WDIR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area RMS (5544-WWLA)	2	2	2	13.5	580.55	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area WTP (5544-WTLA)	18	18	13	178.75	12148.94	0	0	0	0	0	1	1	1	4	197.7
		5544, Port Lambton Standpipe (5544-WDPL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Watford Standpipe (5544-WDWF)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, West Lambton Booster Strn (5544-WPWL)	3	3	3	14	578.13	0	0	0	0	0	0	0	0	0	0
		5544, West ST.Clair Distribution (5544-WDWS)	2	2	0	22.5	1073.26	0	0	0	0	0	1	1	1	6	211.62
Grand Total			32	32	24	286	16825.43	1	1	1	13.25	545.45	5	5	5	34.00	4701.39

Work Order Summary by Facility

Start Date: 2020-01-01
End Date: 2020-05-31
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)	133000	0	0	0	0	0	0	0	0	0	1	1	0	115	6718.38	85%	100%	-15.0%	
		5544, East Lambton Distribution (5544-WDEL)	6	6	0	0	0	20	20	20	56	2114.83	1	1	0	17.25	707.39	85%	78.12%	6.874%
		5544, East Lambton PS (5544-WPEL)	31	31	29	42.25	2035.34	11	11	11	58.75	2436.64	0	0	0	0	0	85%	95.74%	-10.7%
		5544, Forrest Standpipe (5544-WDFS)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, Indian Road Tower (5544-WDIR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area RMS (5544-WWLA)	13	13	12	42	1987.5	10	10	10	26.5	1061.95	0	0	0	0	0	85%	96%	-10.9%
		5544, Lambton Area WTP (5544-WTLA)	183	183	165	522.75	22372.58	66	66	63	7872.25	226295.1	4	4	2	23	17209.88	85%	90.29%	-5.29%
		5544, Port Lambton Standpipe (5544-WDPL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, Watford Standpipe (5544-WDWF)	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)	45	45	33	48.5	2167.74	10	10	10	78.75	3811.55	0	0	0	0	0	85%	79.31%	5.689%
		5544, West ST.Clair Distribution (5544-WDWS)	3	3	0	0	0	15	15	14	37.75	1579.58	1	1	0	10.5	651.94	85%	71.42%	13.57%
Grand Total			281	281	239	655.5	28563.16	132	132	128	8130	237299.6	7	7	2	165.75	25287.59	85%	100%	-15.0%

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**Ontario Clean Water Agency
Time Series Info Report**

Report extracted 06/08/2020 08:34

From: 01/01/2020 to 31/05/2020

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	02/2020	03/2020	04/2020	05/2020	Total	Avg	Max	Min
Coagulation/Floculation / Coagulant Dosage-Calculated - mg/L									
Max IH	26.437	30.355	29.818	28.267	27.141			30.355	
Mean IH	20.802	24.673	25.189	23.287	21.491		23.066		
Min IH	15.602	20.415	20.129	16.333	16.002				15.602
Coagulation/Floculation / Coagulant Used - kg									
Max IH	1241.6	1459.2	1638.4	1190.4	1459.2			1638.4	
Mean IH	964.129	1110.069	1104.103	979.2	1063.226		1043.705		
Min IH	691.2	870.4	793.6	780.8	832				691.2
Total IH	29888	32192	34227.2	29376	32960	158643.2			
Coagulation/Floculation / Coagulant Volume Used - m³									
Max IH	0.97	1.14	1.28	0.93	1.14			1.28	
Mean IH	0.753	0.867	0.863	0.765	0.831		0.815		
Min IH	0.54	0.68	0.62	0.61	0.65				0.54
Total IH	23350	25150	26740	22950	25750	123940			
DW / Trihalomethane: Total - µg/l									
Max Lab	31				39			39	
Mean Lab	29.667				34.667		32.167		
Min Lab	28				28				28
East Lambton Booster Station / Cl Residual: Inlet Free - mg/L									
Max OL	1.49	1.49	1.83	1.63	1.58			1.83	
Mean OL	1.359	1.372	1.434	1.424	1.419		1.401		
Min OL	0	0	0	0	0				0
Filter Backwash / Backwash Volume - m³									
Max IH	2988	4208	3666	2702	2716			4208	
Mean IH	2017.581	2051.793	2001.742	1775.2	1903.613		1949.796		
Min IH	1208	1200	0	602	1204				0
HFS / Fluoride Dosage - mg/L									
Max IH	0.63	0.633	0.647	0.645	0.685			0.685	
Mean IH	0.55	0.556	0.555	0.554	0.551		0.553		
Min IH	0.477	0.516	0.433	0.491	0.41				0.41
HFS / Fluoride Used - l									
Max IH	88.823	94.553	91.689	88.823	120.341			120.341	
Mean IH	83.185	82.796	81.437	77.934	90.587		83.228		
Min IH	68.766	77.361	63.295	68.762	71.631				63.295
Total IH	2578.73	2401.087	2524.546	2338.016	2808.208	12650.59			
HFS / HFS (kg) - kg									
Max IH	108.364	115.355	111.86	108.364	146.816			146.816	
Mean IH	101.486	101.011	99.353	95.079	110.517		101.538		
Min IH	83.895	94.38	77.22	83.89	87.39				77.22
Total IH	3146.051	2929.326	3079.946	2852.38	3426.014	15433.72			
HFS / Treated Water Fluoride Residual - mg/L									
Max OL	2	0.81	0.92	0.8	0.81			2	
Mean OL	0.544	0.63	0.692	0.666	0.673		0.641		
Min OL	0	0.23	0.51	0.55	0.56				0
Post Disinfection / Chlorine Dosage - mg/L									
Max IH	2.078	1.897	2.157	2.232	2.063			2.232	
Mean IH	1.449	1.561	1.676	1.599	1.618		1.581		
Min IH	0.822	1.03	1.288	0.933	1.134				0.822
Post Disinfection / Hypochlorite Dosage - mg/L									
Max IH	17.316	15.809	17.977	18.596	17.191			18.596	
Mean IH	12.072	13.011	13.971	13.325	13.483		13.174		
Min IH	6.854	8.586	10.733	7.779	9.447				6.854
Post Disinfection / Hypochlorite Used - kg									
Max IH	777.85	680.325	1083.35	707.35	1025.775			1083.35	
Mean IH	559.262	585.231	615.927	560.867	672.782		599.242		

Min IH	254.975	358.375	440.625	420.65	425.35				254.975
Total IH	17337.13	16971.7	19093.75	16826	20856.25	91084.83			
Post Disinfection / Hypochlorite Volume-Total - m³									
Max IH	0.662	0.579	0.922	0.602	0.873			0.922	
Mean IH	0.476	0.498	0.524	0.477	0.573		0.51		
Min IH	0.217	0.305	0.375	0.358	0.362				0.217
Total IH	14755	14444	16250	14320	17750	77519			
Post Disinfection / Station 7 Cl Residual: Free - mg/L									
Max OL	5	1.75	3.1	1.84	1.85			5	
Mean OL	1.608	1.636	1.816	1.664	1.662		1.677		
Min OL	0	1.45	1.45	0	1.4				0
Raw Water / Background - cfu/100mL									
Max Lab	10	5	0	0	11			11	
Mean Lab	2.5	1.25	0	0	2.75		1.238		
Min Lab	0	0	0	0	0				0
Raw Water / Conductivity - µS/cm									
Max IH	223.4	235.2	231.1	229.8	244.9			244.9	
Mean IH	220.597	226.503	222.677	222.918	227.515		224.017		
Min IH	217.1	217.6	217.8	218.65	176.9				176.9
Raw Water / E. Coli: EC - cfu/100mL									
Max Lab	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0		0		
Min Lab	0	0	0	0	0				0
Raw Water / Raw Flow Daily - m³/d									
Max IH	51462	49347	68210	54076	68792			68792	
Mean IH	46223.13	45011.1	43968.16	42331.93	49718.13		45476.79		
Min IH	37203	38233	26615	30479	41407				26615
Raw Water / Raw Flow Rate - l/s									
Max IH	595.62	571.15	789.47	600.16	796.2			796.2	
Mean IH	534.99	523.03	508.89	482.67	575.45		525.31		
Min IH	430.59	442.51	308.04	352.77	479.24				308.04
Raw Water / Raw Water Turbidity - NTU									
Max OL	14	11.4	23	6.6	3.4			23	
Mean OL	2.445	3.495	3.194	1.747	1.714		2.519		
Min OL	0.26	0.51	0.587	0.41	0.65				0.26
Raw Water / Raw Water pH - ---									
Max IH	8.27	8.16	8.13	8.16	8.29			8.29	
Mean IH	8.114	8.051	8.051	8.065	8.153		8.087		
Min IH	8.02	7.98	7.96	7.9	8.03				7.9
Raw Water / Temperature - °C									
Max IH	10	8	12	11.7	14			14	
Mean IH	7.466	6.083	9.203	9.432	11.392		8.745		
Min IH	5.5	3	5.9	6.87	8.025				3
Raw Water / Total Coliform: TC - cfu/100mL									
Max Lab	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0		0		
Min Lab	0	0	0	0	0				0
Treated Water / Background - cfu/100mL									
Max Lab	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0		0		
Min Lab	0	0	0	0	0				0
Treated Water / E. Coli: EC - cfu/100mL									
Max Lab	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0		0		
Min Lab	0	0	0	0	0				0
Treated Water / Electrical Consumption - kWh									
Total IH	1060323	1063396	1033647	1058808	936374.9	5152549			
Treated Water / Flow: Total of All Sources - m³/d									
Max IH	48147	47888	47433	45327	65796			65796	
Mean IH	44815.48	44078.86	43484.03	41675.97	48893.58		44615.47		
Min IH	37737	38449	35292	38147	38491				35292
Total IH	1389280	1278287	1348005	1250279	1515701	6781552			
Treated Water / HPC - cfu/mL									
Max Lab	< 10	< 40	< 10	< 10	< 10			< 40	
Mean Lab	< 10	< 17.5	< 10	< 10	< 10		< 11.429		
Min Lab	< 10	< 10	< 10	< 10	< 10				< 10
Treated Water / Total Coliform: TC - cfu/100mL									
Max Lab	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0		0		
Min Lab	0	0	0	0	0				0
Treated Water / Turbidity - NTU									
Max OL	0.094	0.11	0.741	0.1	0.089			0.741	

Mean OL	0.069	0.069	0.082	0.072	0.069		0.072		
Min OL	0.052	0.052	0.048	0.05	0.05				0.048
West Lambton Booster Station / Cl Residual: Outlet Free - mg/L									
Max OL	4.98	1.88	2.22	2.26	1.84			4.98	
Mean OL	1.666	1.694	1.735	1.63	1.626		1.67		
Min OL	0	0	0	0	0				0
Zebra Mussel Control / Chlorine Dosage - mg/L									
Max IH	1.251	1.294	1.283	1.49	1.292			1.49	
Mean IH	1.057	1.137	1.143	1.125	1.091		1.11		
Min IH	0.972	0.971	1.039	0.83	0.829				0.829
Zebra Mussel Control / Cl Residual: Free - mg/L									
Max IH	0.66	0.67	0.71	0.71	0.68			0.71	
Mean IH	0.597	0.599	0.634	0.61	0.627		0.614		
Min IH	0.46	0.44	0.51	0.42	0.43				0.42
Zebra Mussel Control / Cl Residual: Total - mg/L									
Max IH	0.84	0.82	0.86	0.83	0.84			0.86	
Mean IH	0.759	0.754	0.785	0.746	0.756		0.76		
Min IH	0.61	0.6	0.67	0.53	0.52				0.52
Zebra Mussel Control / Hypochlorite Dosage - mg/L									
Max IH	10.423	10.787	10.696	12.413	10.77			12.413	
Mean IH	8.812	9.472	9.521	9.375	9.095		9.252		
Min IH	8.102	8.095	8.656	6.916	6.906				6.906
Zebra Mussel Control / Hypochlorite Used - kg									
Max IH	470	492.325	667.4	504.075	635.675			667.4	
Mean IH	407.081	425.512	418.262	393.938	451.882		419.421		
Min IH	339.575	358.375	278.475	312.55	323.125				278.475
Total IH	12619.5	12339.85	12966.13	11818.15	14008.35	63751.98			
Zebra Mussel Control / Hypochlorite Volume-Total-1 - m³									
Max IH	0.4	0.419	0.568	0.429	0.541			0.568	
Mean IH	0.346	0.362	0.356	0.335	0.385		0.357		
Min IH	0.289	0.305	0.237	0.266	0.275				0.237
Total IH	10740	10502	11035	10058	11922	54257			
Filter Backwash / Backwash Volume - m³									
Total IH	62545	59502	62054	53256	59012	296369			