



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Tri County Drinking Water System Operations Report Third Quarter 2022

Ontario Clean Water Agency, Southwest Region
Sam Smith, Sr. Operations Manager
Date: October 13, 2022

Facility Description

Facility Name:	Tri-County Drinking Water System
Regional Manager:	Dale LeBritton (519) 476-5898
Sr. Operations Manager:	Sam Smith (226) 377-1540
Business Development Manager:	Robin Trepanier (519) 791-2922
Facility Type:	Municipal
Classification:	Class 2 Water Distribution, Class 2 Water Treatment
Title Holder:	Municipality

Service Information

Area(s) Serviced:	West Elgin, Dutton/Dunwich, Southwest Middlesex, Newbury and Bothwell
Population Serviced:	9,985
No. of Connections:	
Water Meters:	Commercial / Residential
In Service Date:	2009

Capacity Information

Total Design Capacity:	12.160 (1000 m ³ /day)
Total Annual Flow:	1,381 (1000 m ³ /year)
Average Day Flow:	3.770 (1000 m ³ /day)
Maximum Day Flow:	5.380 (1000 m ³ /day)

Operational Description

Water treatment with intake in Lake Erie, 4 low lift pumps, lifting up to the treatment plant. Membrane filtration followed by injection with Sodium Hypochlorite for primary disinfection and into the 2 Storage Tanks. Pumping to tower & distribution system with 4 high lift pumps.

SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

There were no compliance issues to report during the first quarter.

SECOND QUARTER:

There were no compliance issues to report during the second quarter.

THIRD QUARTER:

There were no compliance issues to report during the third quarter.

SECTION 2: INSPECTIONS

FIRST QUARTER:

The report for the MECP inspection that was conducted on December 23rd, 2021 was received on March 22nd, 2022. The inspection had questions covering the following topics: Source, Capacity Assessment, Treatment Processes, Operations Manuals, Logbooks, Certification and Training, Water Quality Monitoring, Reporting & Corrective Actions, and Treatment Process Monitoring. The inspection rating has not yet been received however, there were no non-compliances with regulatory requirements identified during the inspection.

SECOND QUARTER:

There was no Ministry of Environment, Conservation and Parks (MECP) or MOL inspections conducted during the second quarter.

The final inspection rating was received from the MECP on April 13th, 2022. The Tri-County DWS received a final inspection rating of 100%.

THIRD QUARTER:

Notification was provided to the MECP and the Health Unit on September 2nd, 2022 to advise them of the yellow water event being experienced at the Tri-County WTP due to elevated levels of iron and manganese in the raw water source. No further action was required.

There were no Ministry of Environment, Conservation and Parks (MECP) or MOL inspections conducted during the third quarter.

SECTION 3: QEMS UPDATE

FIRST QUARTER:

In December 2020, the Ministry proposed administrative updates to the Director's Directions to reflect current practice in municipal residential drinking water systems and improvements in technology that have occurred since the directions were first published in 2007. Based on the Ministry's proposal and feedback received from the public, the Director's Directions were updated in May 2021. On March 3rd, 2022 the Tri-County Drinking Water System Schedule C (Subject System Description Form) was updated. Additionally, on March 16th, 2022 OP-05 Documents and Records Control and OP-05A Documents and Records Control Locations were updated to reflect the revisions made to the Director's Direction- Minimum Requirements for Operational plans.

The Essential/Emergency Service and Supply Contact List was updated by the QEMS Representative on February 28th, 2022 as several changes were required prior to the annual review.

SECOND QUARTER:

There were no QEMS updates this quarter.

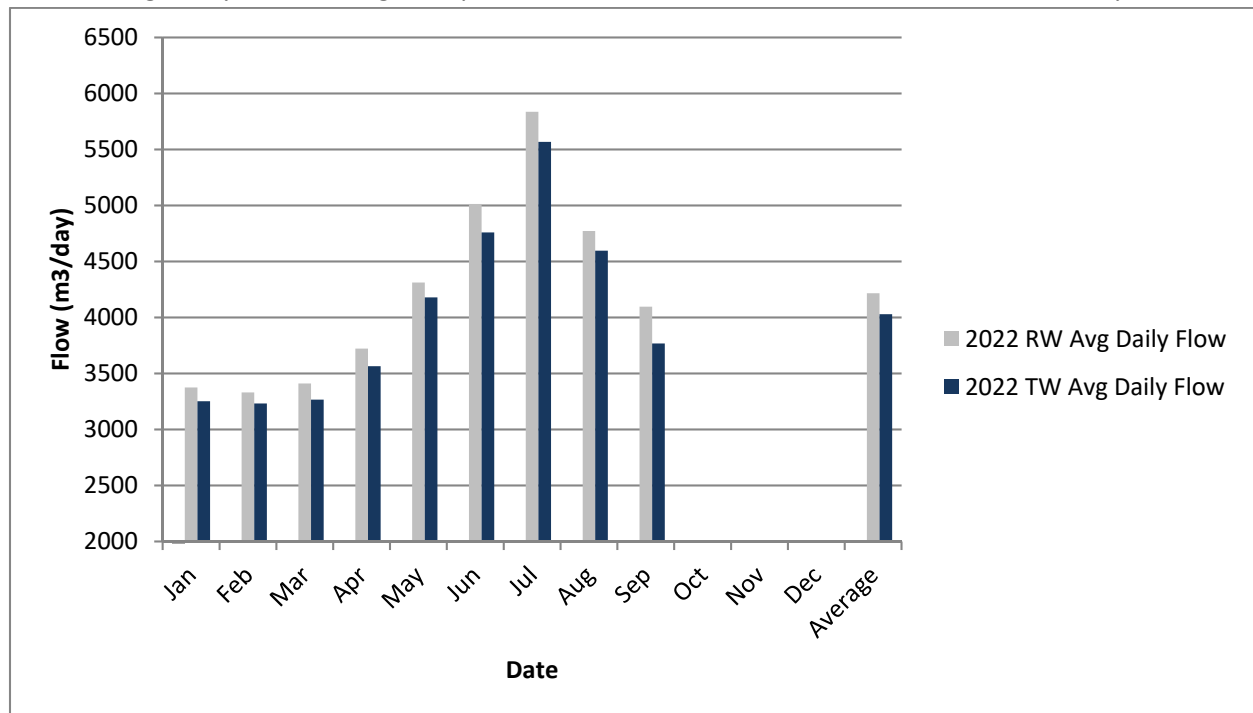
THIRD QUARTER:

The Essential/Emergency Service and Supply Contact List was updated on September 14th, 2022. Changes were made to Client Contacts as well as OCWA Staff. The list is currently in its 31st revision.

SECTION 4: PERFORMANCE ASSESSMENT REPORT

The Tri-County Drinking Water System is currently operating at 95.5% efficiency with the water taken from Lake Erie that is treated and sent to the distribution systems. Chart 1 below shows the raw water takings compared to the treated water distributed to the distribution system so far in 2022.

Chart 1: Average daily water takings compared to treated water distributed to the distribution system



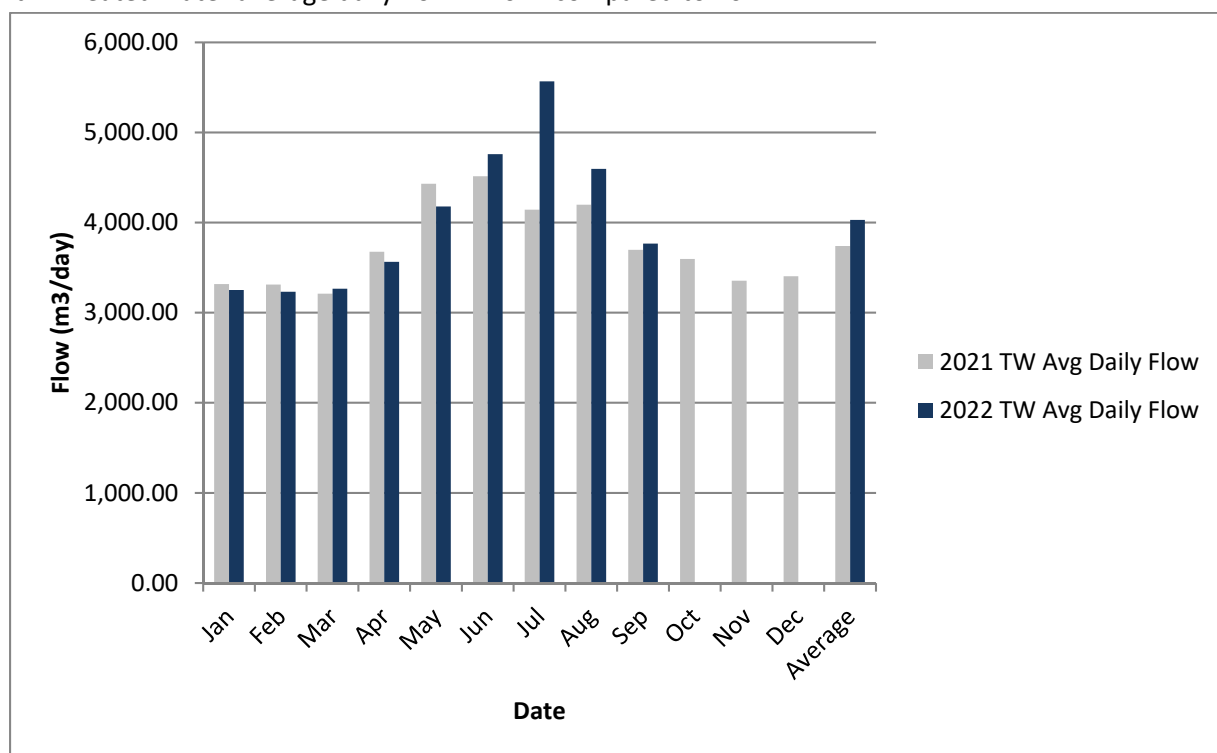
Raw water is sampled on a weekly basis and tested for E. coli and Total coliforms as per regulatory requirements. There are no limits identified in the regulations for E. coli and total coliform found in the raw water source. Table 1 below identifies the sample results for the first quarter.

Table 1: Raw water sample results 2022

	# Samples	E. Coli Range (cfu/100mL)	Total Coliform Range (cfu/100mL)
January	5	<10 – <100	10 – 500
February	4	<10 – <100	130 – 32000
March	4	<100 – <100	<100 – 300
April	4	<2 – <100	100 – 148
May	5	<2 – <100	<2 – 1300
June	4	<2 – <100	0 – <100
July	4	0 – <100	0 – <100
August	5	<2 – <10	<2 – <10
September	4	<2 – <100	<2 – <100

The raw water is treated through membrane filtration and chlorine disinfection. The treated water is distributed to the systems it serves through the high lift pumps. The average daily treated water sent to the distribution so far in 2022 is 4,029.4 m³/d. The average treated water flow in the third quarter of 2022 is up 13.5% when compared against the average daily flow in the third quarter of 2021. The Tri-County Drinking Water System is currently at 33.1% of its rated capacity. Chart 2 below depicts the treated water flow for 2022 compared to 2021 average daily flows.

Chart 2: Treated water average daily flow in 2022 compared to 2021



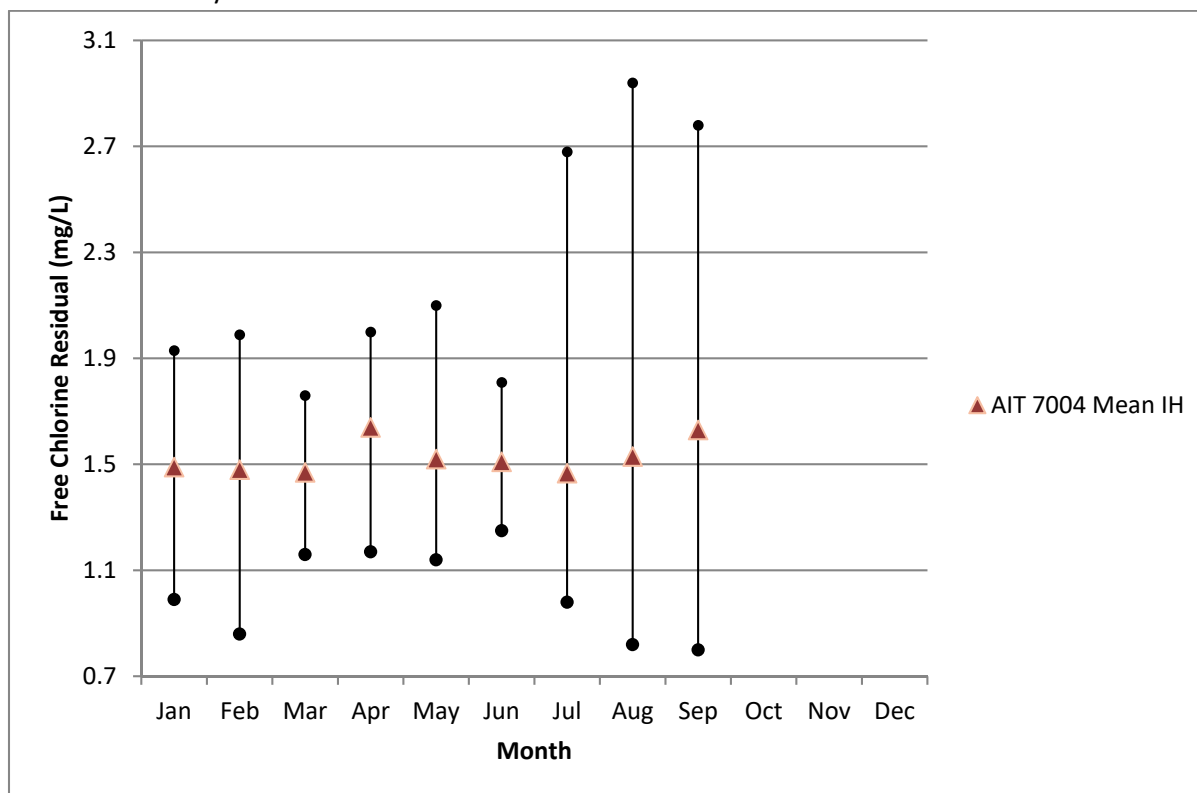
To ensure inactivation of viruses, bacteria and microorganisms the membrane filtration system is required to meet performance criteria for filtered water turbidity of less than or equal to 0.1 NTU in 99% of the measurements each month. The Tri-County Water Treatment Plant has met all regulatory requirements for inactivation so far in 2022. During the month of September, filter performance was affected by the yellow water event. Table 2 below shows the performance of each filter rack and the overall filter rack performance.

Table 2: Filter Rack Performance in 2022

	Rack 1 % Readings <0.1ntu	Rack 2 % Readings <0.1ntu	Rack 3 % Readings <0.1ntu	Rack 4 % Readings <0.1ntu	Overall Filter Performance (% readings <0.1ntu)
January	100.00	100.00	100.00	100.00	100.00
February	100.00	100.00	100.00	99.90	99.98
March	100.00	100.00	100.00	99.80	99.95
April	100.00	100.00	100.00	100.00	100.00
May	100.00	100.00	100.00	99.90	99.98
June	100.00	100.00	100.00	99.90	99.98
July	100.00	100.00	100.00	99.80	99.95
August	100.00	100.00	100.00	99.80	99.95
September	99.80	99.90	99.60	98.40	99.42

Along with turbidity, chlorine residuals are monitored throughout the treatment process by continuous online free chlorine analyzers. Residuals are maintained in order to provide adequate primary disinfection to meet inactivation of viruses, bacteria and microorganisms. The chlorine also provides adequate residuals in the distribution systems the treatment plant serves (secondary disinfection). Chart 3 below provides the online minimum, maximum and average readings of free chlorine provided to the distribution systems. All results have met regulatory requirements. Values ranged in August and September due to the yellow water events and an increase in chlorine demand.

Chart 3: Distribution System Free Chlorine Residuals



On a weekly basis the treated water is tested for E. coli, Total Coliforms and heterotrophic plate count (HPC). The limit for Total Coliform and E. coli is zero. There is no limit specified for heterotrophic plate count (HPC) as this is an operational guide to initiate an action plan if HPC results are continuously high. Table 3 below shows the number of samples taken each month along with the range of results. All samples have met regulatory requirements.

Table 3: Treated water sample results for 2022.

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	HPC (cfu/100mL)
January	5	0 - 0	0 - 0	<10 – <10
February	4	0 - 0	0 - 0	<10 – <10
March	5	0 - 0	0 - 0	<10 – <10
April	4	0 - 0	0 - 0	<10 – <10
May	5	0 - 0	0 - 0	<10 – <10
June	4	0 - 0	0 - 0	<10 – <10
July	4	0 - 0	0 - 0	<10 – <10
August	5	0 - 0	0 - 0	<10 – <10
September	4	0 - 0	0 - 0	<10 – <10

The transmission main (distribution system) is sampled on a weekly basis at two locations for E. coli, Total Coliforms and heterotrophic plate count (HPC) to meet regulatory requirements. As with the treated water the limit for Total Coliform and E. coli is zero, heterotrophic plate count (HPC) doesn't have a limit. This is an operational guide to initiate an action plan if HPC results are continuously high. Table 4 below shows the number of samples taken each month along with the range of results.

Table 4: Distribution system sample results for 2022.

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	HPC (cfu/100mL)
January	10	0 - 0	0 - 0	<10 – <10
February	9*	0 - 0	0 - 0	<10 – <10
March	9*	0 - 0	0 - 0	<10 – <10
April	8	0 - 0	0 - 0	<10 – <10
May	10	0 - 0	0 - 0	<10 – <10
June	9**	0 - 0	0 - 0	<10 – <10
July	8	0 - 0	0 - 0	<10 – <10
August	10	0 - 0	0 - 0	<10 – <10
September	8	0 - 0	0 - 0	<10 – <10

*additional samples collected after replacement of valves in Eagle East chamber

** additional sample collected after altitude valve repair

On a quarterly basis trihalomethanes are tested at two locations in the system. The first location is at the treatment plant prior to the water leaving the facility. The second location is at the end of the system, at the West Lorne Standpipe. Sampling from both locations provides information on how the THMs are forming in the system with retention time. There is an issue with elevated THMs in the distribution systems that the Tri-County Drinking Water System provides water to. Table 5 below provides the running average quarterly results; the running average limit for THMs is 100µg/L. All results are within regulatory requirements. However, THMs increase with increased retention time therefore THMs in the distribution system the WTP serves can be much higher, even reaching the regulatory limit.

Table 5: Trihalomethane sampling results.

	Limit (µg/L)	Treated Water THM Result (µg/L)	West Lorne Standpipe THM Result (µg/L)
October 2021		62	90
January 2022		15	26
April 2022		21	32
July 2022		19	22
Running Average	100	29.25	42.5

On a quarterly basis Haloacetic Acids (HAAs) are tested as per regulatory requirements. They are sampled at two locations in the system. The first location is at the treatment plant prior to the water leaving the facility. The second location is at the end of the system, at the West Lorne Standpipe. Sampling from both locations provides information on how the HAAs are forming in the system with retention time. Table 6 below provides the current running average quarterly results; the running average limit for HAAs is 80µg/L. All results are within regulatory requirements.

Table 6: Haloacetic Acid sampling results.

	Limit (µg/L)	Treated Water HAA Result (µg/L)	West Lorne Standpipe HAA Result (µg/L)
October 2021		27.2	40.3
January 2022		5.9	15.3
April 2022		13.3	21.9
July 2022		6.9	14.9
Running Average	80	13.3	23.1

SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

There were no Health & Safety issues identified during the first quarter.

SECOND QUARTER:

There were no Health & Safety issues identified during the second quarter.

THIRD QUARTER:

There were no Health & Safety issues identified during the third quarter.

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY

- 04: Gerber onsite to fix small pressure relief valve drip leak connected to boiler system.
- 07: LAVO onsite to deliver sodium hypochlorite.
- 11: Farmington onsite to repair broken 1/4" copper line on pilot system.
- 11: Farmington on site to fix 1" double back flow preventer for the boiler system as it has a small leak.
- 12: Air Liquide delivered new CO2 tank.
- 18: Gerber onsite to install switch for tracer wires on both storage tanks.
- 19: Installed new UPS for Silver Clay chamber.
- 26: Air Liquide delivered CO2.

FEBRUARY

- 01: Air Liquide technician arrived to inspect CO2 system issue. He determined that the regulator within the Accu-Trol Manifold Control box has failed. Arranged for technicians to come and repair the issue tomorrow afternoon. Notified ORO. CO2 system is remaining offline.
- 02: Air Liquide onsite to replace CO2 regulator. Air Liquide bypassed the Accu-Trol Manifold Control box with a pressure regulator. Set line pressure to 40 psi. Tested and appears to work well. Will leave CO2 system offline tonight until tomorrow when we can run the CO2 system and monitor throughout the day. Discussed with ORO.
- 03: ASL Roteq on site to finish work on LLP 1040 and to remove LLP 1020

04: ASL Roteq onsite to continue removing LLP 1020
 04: Eramosa onsite to pull data from PLC.
 04: Dielco onsite to take measurements for low lift long line intake valve replacement.
 09: Air Liquide on site to replace CO2 regulator. Sean from Air Liquide replaced the regulator with a larger one, but found it to still leak by very slowly during testing. He spoke with his boss and will be back this afternoon to install a two-step regulator system. Notified SOM.
 09: Air Liquide delivered new CO2 tank.
 10: Nevro onsite for Eagle East Chamber valve and flow meter replacement. Capital Projects manager held tailgate meeting.
 11: SCG on site at Eagle East to wire flowmeter.
 11: Eramosa onsite to set up temporary SCADA computer.
 14: FloChem onsite to deliver 1 tote of captor 1 tote of NaOH. 1 tote citric acid
 15: Sean from Air Liquid on site to work on Co2 system.
 22: Ontario compressor onsite to perform annual maintenance on compressor A and B.
 23: ASL Roteq onsite to return and install LLP-1040
 24: ASL Roteq onsite to continue installation of serviced low lift pump LLP-1040.
 25: Gerber on site to take measurements for new high lift VFD and new low lift VFD
 25: Brian Kurtz Trucking onsite to deliver chemical. 1 tote of Citric Acid and 1 tote of Sodium Hydroxide.

MARCH

02: Southwest Mechanical onsite to replace Co2 solenoid valve.
 02: Gerber on site to connect low lift pump LLP-1040 and wire up new CO2 system solenoid valve.
 03: Nevro onsite for Eagle East Chamber outlet valve replacement.
 03: ASL Roteq on site to finish work on LLP 1040 and to remove LLP 1020.
 04: ASL Roteq onsite to continue removing LLP 1020.
 04: Eramosa onsite to pull data from PLC.
 04: Dielco onsite to take measurements for low lift long line intake valve replacement.
 09: Air Liquide delivered new CO2 tank.
 11: Venture Automations onsite to change out Rack 3 1/4" air lines.
 15: Martins onsite to perform forklift inspection.
 16: Manitoulin onsite to deliver Cl gas.
 16: Air liquid onsite to deliver CO2.
 21: Flowmetrix onsite for annual flowmeter calibrations and storage tank milltronics calibrations.
 22: Flowmetrix onsite to calibrate flow meters and temperature gauge at LL and flow meters in transmission mains.
 24: Flowmetrix onsite to continue flow meter calibrations.
 30: Eramosa onsite to perform work on the temporary SCADA laptop as we are unable to access Excel.
 30: Air liquid onsite to deliver new CO2 tank.

SECOND QUARTER:

APRIL

01: Devine Flow Solutions (Cla-Val) onsite to replace o-rings in stems on both distribution PRVs.
 11: Gerber onsite for preliminary work for new high lift and low lift VFD installations.
 13: Gerber onsite to continue preliminary work for future high lift and low lift VFD installations.
 13: Hetek onsite to calibrate CO2 gas detector.
 14: Watech on site to replace light on top of standpipe.
 14: Air Liquide delivered new CO2 tank.
 20: Gerber at Marsh chamber working on electrical upgrades.
 22: Gerber onsite to perform preliminary work for VFD's
 25: Gerber onsite to change emergency exit signage at low lift building as well as carry on with preliminary work for future high lift VFDs.

- 26: Paris from SCG on site to replace bleed block valves on racks and complete output pressure transmitter calibrations.
- 26: Air Liquide delivered new CO2 tank.
- 29: Earl Ross Inc. onsite installing new loading dock at chlorine gas building at the low lifts.
- 29: Gerber onsite to continue with preliminary work for future high lift VFDs.

MAY

- 02: Gerber onsite to continue with preliminary work for future high lift and low lift VFDs.
- 05: Gerber onsite to replace batteries in PALL CP-3000 UPS.
- 09: Air liquid delivered CO2 tank.
- 13: Southwest Mechanical onsite to fix exhaust fan at Low Lift.
- 13: Lavo onsite to deliver bulk Cl. See chemical receiving form for more details.
- 13: NFTC onsite to inspect fibre optics between WTP and low lifts.
- 18: Air liquid delivered CO2.
- 18: Gerber onsite for preliminary work leading up the the high lift VFD installation next week.
- 24: PALL onsite for annual health check.
- 25: PALL onsite to continue annual health check.
- 25: Eramosa onsite to assist Gerber with new VFD programming on high lift pump HLP-7030 and low lift pump LLP-1040.
- 25: Gerber onsite to wire up and install new VFDs on high lift pump HLP-7030, and low lift pump LLP-1040.
- 25: Rack 4 smart positioner on FCV-3483 LCD was not working. Replaced smart positioner and calibrated unit.
- 26: Ontario Compressor onsite for routine preventative maintenance
- 26: Eramosa onsite to program new VFD to be installed today on low lift pump LLP-1040.
- 26: Gerber onsite to install and wire new VFD to be installed today on low lift pump LLP-1040.
- 27: Ontario Compressor onsite to perform PM on compressor A and replace the filter o-ring in compressor B.
- 30: Gerber onsite working on preparations for next future VFDs to go on a high lift and low lift pump.
- 30: ASL Roteq onsite to fix packing on low lift pump LLP-1040, and inspect noise coming from low lift pump LLP-1030.
- 31: Gerber onsite working on preparations for next future VFDs to go on a high lift and low lift pump

JUNE

- 01: Trojan onsite for annual UV servicing. They are to replace sleeves and bulbs in UV2, and perform an inspection/cleaning on UV1.
- 01: Gerber onsite for quarterly HVAC servicing.
- 01: Air Liquide delivered new CO2 tank.
- 01: Trojan Replaced bulbs in UV 2.
- 03: ASL Roteq onsite to perform vibration tests on low lift pump LLP-1030
- 06: Farmington onsite to replace check valve on 1" hydraulic check line on Wallacetown distribution.
- 09: Gerber onsite at the Marsh chamber working on electrical upgrades.
- 10: Southwest Mechanical onsite to replace broken exhaust fan in low lift chlorine building.
- 14: Gerber onsite to inspect faulted process drain pump PDP-9020.
- 14: Gerber onsite to wire up the new VFD on high lift pump HLP-7010.
- 14: Franklin Empire onsite to inspect process drain chamber milltronics unit.
- 15: Eramosa onsite to program new VFD on high lift pump HLP-7010.
- 15: Gerber onsite to finish wiring new VFD on high lift pump HLP-7010, and wire up new VFD on low lift pump LLP-1010.
- 15: Air Liquide delivered CO2.
- 21: Deilco onsite to change bolts on long line intake valve.
- 22: Dielco onsite to continue changing bolts on long line intake valve.
- 22: Gerber onsite at Marsh chamber to repair electrical cabinet door locking mechanism.
- 22: Gerber onsite to replace line reactor in the recently installed high lift pump HLP-7010 VFD.

- 23: Pratik from Eramosa worked with operator over the phone to troubleshoot the high lift pump HLP-7010 issue of switching to next pump after running for about 1 minute.
- 23: Air Liquide delivered CO2.
- 24: Gerber onsite to troubleshoot burning smell coming from new HLP-7010 VFD box.
- 24: Gerber onsite at low lift building to replace the warrantied low lift pump LLP-1030 VFD drive.
- 28: Bell onsite to troubleshoot phone line issue.
- 29: Farmington onsite for replacement of West Lorne Standpipe altitude valve.
- 30: Alberts generator onsite for yearly service of WTP generator and LL generator.
- 30: RMB onsite to fix issues we are having with phones.

THIRD QUARTER:

JULY

- 05: SCG Flowmetrix onsite to replace low lift chlorine gas sensors.1: Gerber onsite for quarterly HVAC servicing.
- 05: Chubb onsite for annual fire system inspection.
- 05: Gerber onsite to assist with low lift chlorine gas sensor replacement.
- 07: SCG Flowmetrix onsite at low lift building to finish installation of new Cl gas sensors.
- 14: Concorde delivered Boresaver powder from Ability Pump & Equipment for Super CIP membrane cleanings.
- 14: Flowmetrix onsite to install new Cl gas sensor in Cl building basement.
- 20: Air Liquide delivered new CO2.
- 21: Keith Douglas Services onsite for backflow preventer testing/inspections.
- 26: RMB onsite to change hard drive on phones.

AUGUST

- 02: Air Liquid deliver CO2
- 09: Syntec on-site to replace pilot system on altitude valve.
- 10: Lavo onsite for sodium hypochlorite delivery.
- 10: Air Liquide delivered CO2.
- 12: Farmington onsite to replace Wallacetown dist. PRV-7051 1" check valve.
- 15: ASL Roteq onsite to install serviced low lift pump LLP-1020.
- 16: ASL Roteq onsite to finish work at Low Lift..
- 17: Brian from Gerber Electric onsite to wire LLP-1020 and to test turbidity outputs on all racks with Niru from PALL.
- 16: ASL Roteq onsite for vibration testing on LLP-1020.
- 18: Nemanja from OCWA onsite to install new data collection panel.
- 18: Pinchin LTD onsite for mold inspection at Old High Lift building.
- 18: Air liquid delivered CO2
- 31: Manitoulin onsite to deliver Cl gas.
- 31: Air liquid delivered co2

SEPTEMBER

- 02: Ontario Compressor arrived to take a look at some minor oil leaks in the compressors
- 07: Ontario compressor on site for service/inspection.
- 14: Air liquid delivered Co2.
- 15: Gerber electric onsite for yearly inspection and maintenance on AC units, heaters, hot water heaters and boilers.
- 15: Niru from PALL currently on the PALL computer helping trouble shoot issue with rack 2 disabling after IT.
- 22: Ontario Compressor Onsite for maintenance.
- 23: Southwest mechanical onsite for Low Lift gate repair.
- 28: Levitt safety onsite for fit testing.

SECTION 7: ALARM SUMMARY

FIRST QUARTER:

JANUARY

- 07: Received call from Spectrums that they had received a call from Ryan from Dutton Township about an eagle meter alarm arrived at plant and checked SCADA Every thing seemed to be running ok. Wallacetown tower at 9.31 m changed set point to start feeding water to Wallacetown arrived at eagle east chamber and opened the chamber up floor seemed fairly dry and could not see any thing causing problems monitored for 10 minutes
- 11: PIT 1028 (pressure transmitter for west train) was maxed out at 1033.88 kPa. Line ended up freezing causing a blockage in the line. Insulated the line afterwards.
- 15: Received call from spectrum for now normal alarm. Arrived at plant and observed no alarm from dialer screen. Below SCADA in alarm screen, possible Data Historian Failure alarm was observed. Reviewed trending, appears there is no loss of data. Verified dialer in electrical room is on, as "norm" and "net2" are both present on the dialer. Plant is currently making water, storage tanks are currently at 9.28m and 9.36m. West Lorne Standpipe currently at 35.23m, Wallacetown Tower currently at 9.37m. Completed plant walk through, all appears to be normal. Notified ORO.
- 23: Received alarm call from Spectrum for Possible Data Historian Fault. Tried to log onto remote SCADA, but could not connect, likely due to computer running slow. Computer was not frozen upon arrive, and the historian fault had cleared itself. Wallacetown dist. train was running during event, while West Lorne Standpipe dist. train and the low lifts were not running. Checked historian data and we lost data for 8min. Notified ORO. Will ask Eramosa to pull raw data from PLC on Monday.
- 31: Received call from Spectrums for communications fault 1 logged onto remote SCADA and seen the historian was in fault called on call tech at Eramosa. Technician from Eramosa called back and texted communicating that the historian has been reset. We requested to get the raw data sent for the time the historian was in fault.

FEBRUARY

- 07: Received call from Spectrums for communications is off, historian faulted SCADA computer not responding and not opening any tabs. Called ORO and was instructed to restart the HMI. After computer rebooted it was running fine. We lost data for 11 minutes, will contact Eramosa in the morning for the raw data we lost.
- 08: Received alarm call from answering service for Communications Net 1 alarm. Tried logging onto SCADA remotely but it would not load, likely due to computer freezing. Historian was still in fault. High lift pump was feeding West Lorne Standpipe but had just started up. Confirmed on trending that high lift and low lift pumps were off at the time of the historian fault. Reviewed historian data and we had lost data for 5 min. Will request back up data from Eramosa in the morning. Shut down high lift pump to West Lorne Standpipe in preparation to reboot the SCADA computer.
- 09: Received call from Spectrums for communications is off. Turned SCADA monitor on and historian fault banner was on for about 30 seconds then it came out of fault. The plant was on during the fault. After checking historian, we lost 20 minutes of data. Will contact Eramosa in the morning for the raw data.
- 09: Received call from Spectrums for communications is off historian fault arrived on site historian was in fault. Began to restart computer, the computer came back online. Started to check historian for lost data during the historian fault for 22 minutes and 3 minutes during computer restart. Will call Eramosa in the morning for the raw data. Monitored SCADA for 10 minutes everything appears to be ok. Prepared to leave for home.
- 09: Received call from Spectrums for communications is off. Arrived at plant, historian came out of fault. Lost data for 29 minutes called ORO to tell him the data loses are getting worse. ORO suggested I call Eramosa. Eramosa called me back and I asked them to reset the historian. Plant seems to be running fine. Preparing to leave for home. Eramosa will call when historian is reset. Discussed with ORO. Eramosa called confirming that they have reset the historian.

- 09: Received call from Spectrums for communications is off. Arrived onsite and historian was in fault. Restarted the computer. Computer came back online, going to check historian for lost data. Lost data for 84 minutes while historian was in fault and 3 while the computer restarted. Eramosa resetting the historian. Did not stop the system from losing data. It only stopped when I arrived at the plant and turned the monitor on. Monitored plant and it seems to be running fine.
- 10: Received call from Spectrums for communications is off arrived on site historian was already out of fault. Lost data for 64 minutes stayed onsite for the rest of the night as these alarms kept coming out 02:51 received alarm for communications is off. Lost data for 91minutes. Received alarm for communications is off. Lost data for 23 minutes. Will contact Eramosa to receive raw data. Received alarm for communications is off. Lost data for 6 minutes. Will contact Eramosa to receive raw data. Received alarm for communications is off. lost data for 16 minutes. Will contact Eramosa to receive raw data.
- 10: Received alarm call from answering service for Possible Data Historian Fault. Checked remote SCADA but could not connect likely due to computer being frozen. Checked SCADA computer and it was out of the historian fault state. Computer currently seems okay and not slow. Checked historian data and we lost data for 36min. Low lift and High lift pumps were off during this time. Notified ORO. Will contact Eramosa for the raw data tomorrow morning.
- 10: Received alarm call from answering service for possible data historian fault. Checked remote SCADA but could not connect likely due to computer being frozen. Checked SCADA computer and it was out of the historian fault state. Checked historian data and we lost data for 56min. High lift pump was feeding Wallacetown tower during this time. Notified ORO. Will contact Eramosa for the raw data tomorrow morning. Operator now staying onsite for the rest of the night to deal with alarms coming in. Received alarm call from answering service for possible data historian fault. Checked SCADA computer and the screen would not turn on. Tried pressing the power button on the computer and the screen turned on. Historian was out of alarm state when the screen turned on. High lift pump was feeding the Wallacetown tower during this time. Checked historian data and we lost data for 11min. Will contact Eramosa for the raw data tomorrow. Notified ORO and I will call Eramosa's 24/7 support helpline. Spoke with Neil from Eramosa. He said there wasn't anything he could do to solve the historian fault alarm frequency issue for tonight. He said the only thing he could do would be to reset the historian, but this has been tried many times recently with no positive effect. Neil will relay to his bosses in the morning about our increased frequency in historian faults. Rebooted SCADA computer to try and help reduce historian fault frequency. Shut down high lift pump that was feeding the Wallacetown tower prior to shutdown. After the reboot, checked historian data and we lost 3 min of data. Will contact Eramosa for the raw data in the morning.
- 11: Received alarm call from answering service for possible data historian fault. Received alarm call from answering service for possible data historian fault. Received alarm call from answering service for possible data historian fault. 02:55 Received alarm call from answering service for possible data historian fault. 04:06 Received alarm call from answering service for possible data historian fault. 04:45 Received alarm call from answering service for possible data historian fault. 05:25 Received alarm call from answering service for possible data historian fault. 06:37 Received alarm call from answering service for possible data historian fault. 07:16 Received alarm call from answering service for possible data historian fault.
- 27: Received call from Spectrum for discharge chlorine analyzer. Logged onto SCADA and observed AIT-7004 chlorine to be at 0.99ppm. West Lorne Tower was at 33.03m. High lift pumps turned on when tower is to hit 33.0m. Once high lift pumps started, the residual at AIT-7004 increased to 1.10pm. Residual at AIT-7001 reading 1.19ppm. High lift pumps currently sending water to West Lorne Standpipe and Wallacetown Tower. Will continue to monitor remotely. Arrived onsite, started high lift pumps to West Lorne Standpipe and verified residuals at AIT-7001 and AIT-7004. AIT-7001 currently reading 1.30ppm and AIT-7004 currently reading 1.31ppm. West Lorne Standpipe at 34.82m, Wallacetown at 10.88m, storage tanks at 7.82m and 7.94m. Completed plant walk through, all appears to be working well.

MARCH

- 04: Received alarm call for Wallacetown tower communication loss. Tried logging onto remote SCADA but could not connect to VPN. Started preparing to leave for the TCWTP. High lift was on feeding Wallacetown tower. Upon arrival, saw that the SCADA screen was blank, as well as the PALL screen on the PALL computer. Began trying to look in PLC panel for issues. Checked the historian data and found it was not recording. Notified ORO and shut down high lift pump, and placed the racks in Idle to prevent plant from starting up. Waiting on a call back from Eramosa. Tried unplugging equipment plugged into UPS in network room and comms returned to both the SCADA and PALL computers in control room. Checked historian data and it is recording again. It was not recording for 130min. Contacted Eramosa to send over the raw data for this time period. Issue may have occurred due to a suspected power flicker. Will continue to monitor. Notified ORO and PCT.
- 07: Received alarm call from Spectrum for West Lorne Standpipe LO level alarm. Logged onto remote SCADA and saw the level was at 28.60m. Observed the high lift pumps cycling taking turns turning on and then off as PRV-7061 was failing to open. Changed the standpipe start set-point down from 33m to 26m to prevent the high lift pumps deadheading. Started preparing to leave for site. Cycled power to valve PRV-7061. Changed standpipe start set-point back from 26m to 33m and valve PRV-7061 started opening normally upon high lift start-up. Will continue to monitor. Observed standpipe fill for 40min and PRV-7061 appears to be working fine.

SECOND QUARTER:

APRIL

- 12: Received alarm call from Spectrum for high lift and low lift faults. Logged onto remote SCADA and saw high lift pumps 1, 2, and 3 faulted, as well as low lift pumps 1, 2 and 4 faulted out. Acknowledged alarm and cleared faults. No other issues appear present. Due to suspected power flicker. Started up high lift and plant and will continue to monitor.
- 14: Received alarm call from Spectrum for WTP intrusion. Upon entry into foyer, the alarm system was going off and the display screen on the alarm system read Front Door. The front doors were 100% closed and locked upon arrival, but there are very high winds in the area and the door may have been propped open millimeters by strong gusts of wind which could still have tripped the sensors.
- 14: Received alarm from Spectrum for low lift pump fault. Logged onto remote SCADA and saw low lift pump LLP-1010 and high lift pump HLP-7030 had both faulted out. Low lift pumps 3 and 4 were running. Clicked the fault reset button for the low lifts and high lifts and acknowledged the alarm. Low lift pump LLP-1040 and high lift pump HLP-7040 were on. Placed LLP-1010 and HLP-7030 into duty 1 and will monitor. Watched both faulted out pumps run for 30min and no issues arose. Issue believed to be due to power flicker caused by high winds in area. Wind gusts are currently at 59km/hr on weather network.
- 19: Received alarm call from Spectrum for filtrate storage tank fault. Logged onto remote SCADA and saw a high lift pump to West Lorne was running, the duty storage tank level was in LO level at 6.30m and no low lift pump was running. Low Lift PLC to PALL Communications Failure came out of alarm state on its own, likely a communications blip. Reset low lift pumps and attended site. Two low lift pumps were on and running okay upon arrival.

MAY

- 29: Received call from Spectrum for filtrate storage tank full. Duty storage tank 6010 level was 6.45 m. LLP 1030 was in fault, and LLP 1010 was running. West Lorne train had finished filling and was at 35.15 m and Wallacetown was currently filling and was at 9.69 m. Placed rack 4 into FF to help plant fill faster. Acknowledged and reset alarms on SCADA and went to reset VFD for LLP 1030. Plant filling and all appears ok. Will continue to monitor remotely.

JUNE

- 07: Received call from spectrum for Channel 23, chemical containment flood at 20:20. Day operator cleaned floor in chemical room and water leaked into the containment causing alarm.
- 14: Received alarm call from Spectrum for WTP generator running.
- 30: Received call from Spectrum for Filtrate Storage Tank Fault.

THIRD QUARTER:

JULY

- 04: Received alarm call from Spectrum for filtrate storage tank low level. Due to heavy water usage due to heat today, as well as having the low lift pump VFD speeds slightly reduced due to high membrane pressures trains are off and two low lift pumps are on, the plant should catch up
- 20: Received call from Spectrum for discharge chlorine analyzer fault. turned on high lift pump to start filling the tower, chlorine then returned to a higher residual.
- 21: Received call from Spectrum for discharge chlorine fault. Turned on high lift pump to start filling the tower, chlorine then returned to a higher residual.
- 21: Received call from Spectrum for generator running. Logged onto SCADA and observed from dialer that generator was running. Generator now off. Most likely due to a power flicker. Will continue to monitor remotely.

AUGUST

- 07: Received alarm call from Spectrum for all systems critical failure. Logged onto remote SCADA and observed the low lifts were shut down. Gerber replaced blown fuse.
- 18: Received alarm call from Spectrum for UV1 fault. Logged onto remote SCADA and saw the duty switched to UV2 and it was running. Plant seemed to be running okay.
- 19: Received alarm call from Spectrum for UV1 fault now normal. UV1 alarm suspected to be for Ethernet Comms Failure alarm. Disabled UV1 fault alarm for the weekend and will look at next week.
- 21: Received alarm call from Spectrum for dist. Cl analyzer LO Cl alarm. Logged onto remote SCADA and saw West Lorne train had shut down recently, and dist. Cl analyzer AIT-7004 was reading 0.98-0.99mg/L. Started up Wallacetown dist. train and reading rose to around 1.16mg/L.
- 25: Farmington onsite to change check valve with new Cla-Val spring assisted check valve on 1" hydraulic line on PRV-7051.
- 28: Received alarm call for UV reactor 2 fault. racks were disabled along with various other equipment throughout plant. the rfp, rf, and xrp due to power flicker
- 28: Received call for PALL critical process failure. Acknowledged alarm on compressor A and manually turned on compressor B. Compressor B now in duty and compressor A in standby.
- 30: Received call from Spectrum for suction header chlorine. Residual after high lifts at AIT-7004 currently at 2.16ppm. Will continue to monitor remotely.
- 31: Received call from Spectrum for discharge chlorine alarm at 22:37 and 23:09. Logged onto SCADA and observed chlorine residual at AIT-2 to be 0.91ppm. Adjusted LO and LOLO set-points at AIT-7004 so high lift pumps would start.

SEPTEMBER

- 01: Received water treatment plant low chlorine alarm. Turned on high lift pumps and started sending water to West Lorne standpipe. Residual started to climb and is currently at 1.31ppm.
- 01: Received call for all systems critical failure due to high turbidity. Opened PALL screen. Rack one was disabled due to high turbidity and rack four was in RFR. Placed rack four into forward flow and started filtering. Waited for rack one turbidity to decrease and placed into forward flow.
- 04: Received call from Spectrum for discharge chlorine analyzer fault. Obtained grab sample from AIT 7001 and AIT7004 and calibrated.

- 06: Received alarm call from Spectrum for distribution Cl analyzer AIT-7004 LOLO Cl. Started flushing dist. line in plant from 1/2" sample port. Opened up hydrant #9 from West Elgin Distribution. Started flushing at hydrant 1 from West Elgin Distribution, now tested 1.34mg/L.
- 08: Received alarm call from Spectrum for Dist. Cl Analyzer LO Cl alarm. Started high lift pump to Wallacetown and the dist. reading rose up to 1.42mg/L
- 09: Received call from Spectrums for UV1 fault. Had to replace bulb inn UV 2
- 10: Received alarm from Spectrums for Pall system critical failure due to power flicker. Reset generator and the plant is back on normal power. Watched plant run for about 10 minutes then left site. Reset pumps and UV and plant is now working normally.
- 11: Received alarm for low discharge chlorine. arrived onsite. cl was backup to 1.22. tested 1.48. Calibrated unit.
- 11: Received alarm for Pall critical shutdown alarm. Due to high turbidity. Rack 2 had shutdown due to high turbidity and the alarm was for too few racks. Started the plant. Once flow started going through the other racks, rack 2 turbidity came down and I was able to place it into FF. Watched plant run for about 10 minutes and every thing was working well, left site.
- 19: Received alarm call from Spectrum for pre-Chlor analyzer fault. Decreased pre-Chlor speed coefficient multiplier set-point down from 1.60 to 1.50. Dosage is still higher due to elevated levels of Fe and Mn in the raw water.
- 22: Received alarm call from Spectrum for all systems critical failure. Due to high turbidity. Dueto high Fe/Mn and the start of the yellow water event
- 24: Received alarm call from Spectrum for hi hi pre-chlor analyzer decreased pre-chlor speed coefficient multiplier set-point down from 1.75 to 1.60. Increased Cl hypo dosage set-point up from 2.10 to 2.15 due to decreasing Cl in distribution. Alarm due to running the pre-chlor system higher to combat high levels of Fe/Mn in raw water.
- 25: Received alarm call from Spectrum for West Lorne Standpipe comms failure. UPS had a battery alarm on it and was not holding a charge. Unplugged UPS and plugged equipment cord into a receptacle in the electrical cabinet. Comms are now restored to the standpipe.
- 26: Received call for high chlorine at distribution alarm. Decreased chlorine residual set-point from 1.95ppm down to 1.90ppm
- 27: Received call from Spectrum for discharge chlorine hi his coincides with the high lifts turning off.
- 28: Received call from Spectrum for discharge chlorine lo lo or hi hi. residual at AIT-7004 was 2.35ppm and no longer in alarm. High lift pumps were shutting down. Acknowledged alarm and started pumps back up to send water to West Lorne standpipe. Adjusted chlorine set-point down from 1.85ppm to 1.80ppm.

SECTION 8: COMMUNITY COMPLAINTS & CONCERNS

FIRST QUARTER:

No complaints or concerns this quarter.

SECOND QUARTER:

No complaints or concerns this quarter.

THIRD QUARTER:

On September 2nd, 2022 multiple complaints were received as a result of the yellow water being produced at the Tri-County WTP. The yellow water was caused by elevated levels of iron and manganese in the raw water source.

On September 29th, 2022 a complaint was received from a resident who was concerned about water quality and colour. The Senior Operations Manager followed up with the resident and provided details about the conditions in Lake Erie and the cause of the coloured water.