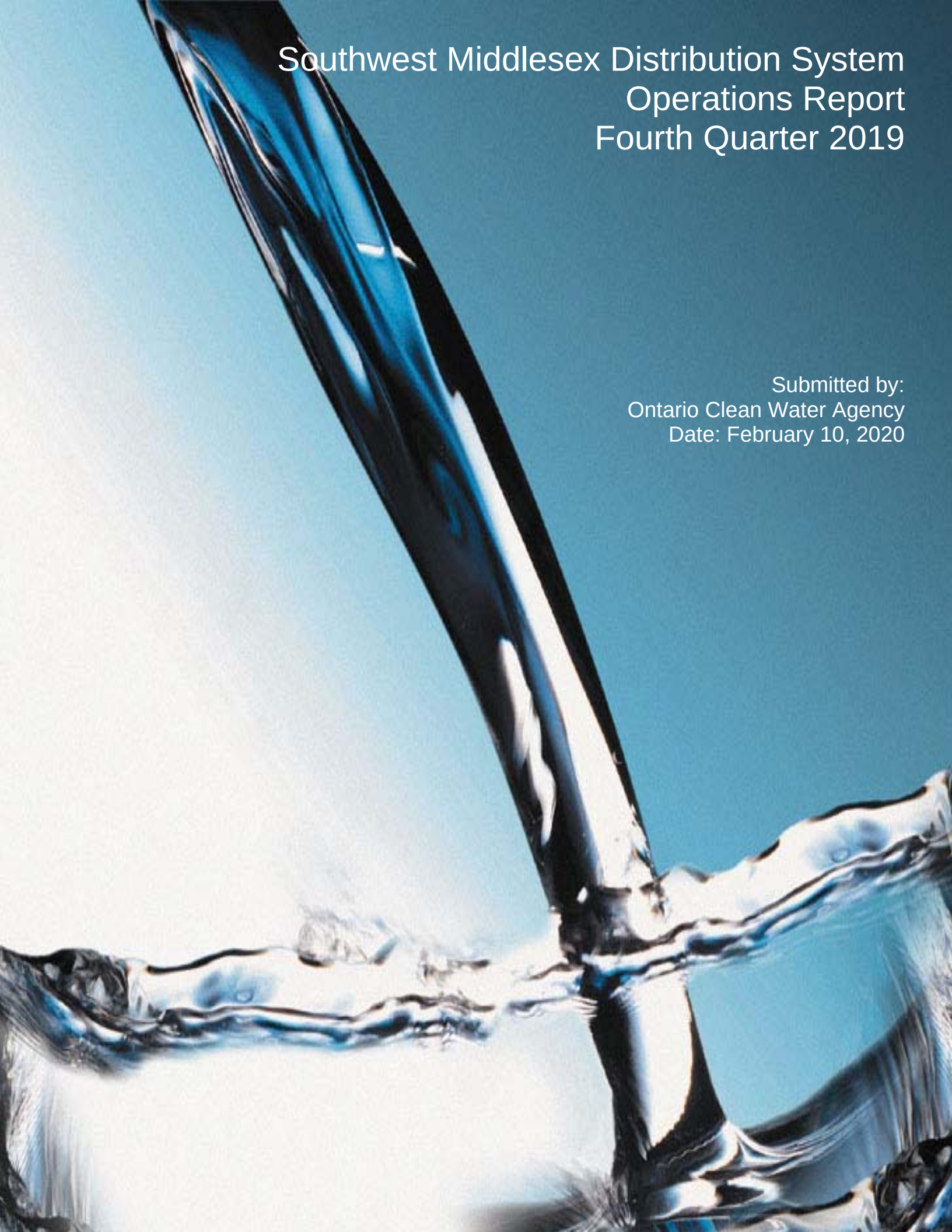

Southwest Middlesex Distribution System Operations Report Fourth Quarter 2019

Submitted by:
Ontario Clean Water Agency
Date: February 10, 2020

Facility Description

Facility Name:	Southwest Middlesex Distribution System
Regional Manager:	Dale LeBritton (519) 476-5898
Senior Operations Manager:	Sam Smith (226) 377-1540
Account Manager:	Susan Budden (519) 318-3271
Facility Type:	Municipal
Classification:	Class 3 Water Distribution
Drinking Water System Category:	Large Municipal Residential
Title Holder:	Municipality

Service Information

Area(s) Serviced:	Glencoe, Melbourne, Appin, Wardsville, Rural SWM, Newbury, Bothwell
Population Serviced:	6,000

Operational Description:

The Southwest Middlesex Distribution System's water originates from the Tri-County Drinking Water System. The System services the communities of Melbourne, Appin, Glencoe and Wardsville within the municipality and two other systems outside of the municipality, the Newbury Water Distribution Works and the Bothwell Distribution System. In addition to the water mains, valves, and fire hydrants, the Southwest Middlesex Distribution System consists of the Southwest Middlesex Reservoir, Glencoe Tower and Melbourne Standpipe with re-chlorination capabilities at each of these facilities.

SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

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

SECOND QUARTER:

Received AWQI on a sample submitted on June 24th at the reservoir with the result NDOGN. All resampling was ok.

THIRD QUARTER:

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

FOURTH QUARTER:

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

SECTION 2: INSPECTIONS

FIRST QUARTER:

There were no MECP or MOL inspections for the first quarter.

SECOND QUARTER:

There were no MECP or MOL inspections for the second quarter.

THIRD QUARTER:

There was an unannounced MECP inspection on September 26th by Meghan Morgan. The MECP Inspection Report has not been received yet.

FOURTH QUARTER:

The third quarter inspection report was received Nov 11, 2019 with an inspection rating of 93.54%. Non-compliance was given for the secondary disinfectant residual not being measured as required for the distribution system. Residuals were taken at re-chlorination stations which were found to be non-compliant as per the regulations. Modifications to sample locations were made and no further actions were required.

SECTION 3: QEMS UPDATE

FIRST QUARTER:

On March 20, 2019 an external systems audit took place by Sandra Tavares of SAI Global. 0 con-conformities were found and 2 opportunities for improvement. The onsite verification audit to take place in April.

SECOND QUARTER:

On April 18th, 2019 the onsite verification audit took place with Sandra Tavares of SAI Global. There were two OFI's identified and one minor non-conformance. On June 18th the minor non-conformance was completed and signed off by the auditor.

THIRD QUARTER:

The Internal Audit is scheduled to be completed November 15th by Cindy Sigurdson. The Management Review will be scheduled in the fourth quarter.

FOURTH QUARTER:

The internal Audit by Cindy Sigurdson took place November 14, 2019. 0 Non-Conformances and 21 OFI's were found.

SECTION 4: PERFORMANCE ASSESSMENT REPORT

All sampling and testing met regulatory requirements with O. Reg. 170/03 in 2019 so far. The table below shows the number of samples taken each month along with the range of results. 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 results are continuously high in an area. Samples are normally taken at six different locations throughout the distribution system each week.

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	# Samples	HPC (cfu/100mL)
January	30	0 - 0	0 - 0	15	<10 – <10
February	26	0 - 0	0 - 0	14	<10 – 70
March	24	0 - 0	0 - 0	12	<10 - <10
April	30	0 - 0	0 - 0	15	<10 - <10
May	24	0 - 0	0 - 0	12	<10 - 100
June	30	0 - NDOGN	0 - NDOGN	18	<10 - 1650
July	30	0 - 0	0 - 0	15	<10 – 30
August	25	0 - 0	0 - 0	13	<10 – 2000
September	30	0 - 0	0 - 0	15	<10 - 70
October	24	0 - 0	0 - 0	12	<10 - 40
November	24	0 - 0	0 - 0	12	<10 - <10
December	30	0 - 0	0 - 0	15	<10 - <10

Trihalomethanes are sampled on a quarterly basis at two locations in the distribution system. The first location is the Southwest Middlesex Reservoir and the second location is the Melbourne Standpipe. The Melbourne Standpipe sample results are sampled as required by O. Reg 170/03 at a location where there is likely to have elevated potential for the formation of trihalomethanes. The sample from the SWM Reservoir is taken in order to compare the results. The table below shows the running average along with the quarterly results thus far for each location.

	Limit (□g/L)	THM Result SWM Reservoir (□g/L)	THM Result Melbourne Standpipe (□g/L)
January 2019	-	30	69
April 2019	-	32	54
July 2019		37	54
October 2019		74	128
Current Running Average	100	43.25	76.25
2018 Average	100	41.75	81.75

Haloacetic Acids (HAAs) are now sampled on a quarterly basis as per O. Reg. 170/03. The limit for HAAs is 80ug/L. This limit is not enforced until 2020.

	Limit (□g/L)	HAA Result SWM Reservoir (□g/L)	HAA Result Melbourne Standpipe (□g/L)
January 2019	-	17.4	37.4
April 2019	-	16.7	29.5
July 2019	-	17.9	27.8
October 2019	-	36.9	64.4
Current Running Average	80	22.22	39.78
2018 Average	80	20.25	29.7

Schedule 15.1 of O. Reg. 170/03 requires sampling for lead. The system is on reduced sampling and therefore now only requires distribution samples to be taken for alkalinity and pH. Every third year lead is included in this sampling. The table below shows the results in 2019.

	# Samples	pH	Alkalinity (mg/L)	Lead (mg/L)
February	3	7.62-7.83	98 – 101	-
July	3	8.08-8.20	94 - 98	-

Chlorine residuals are monitored by continuous monitoring analyzers at the three different locations in the system: Southwest Middlesex Reservoir, Glencoe Tower and Melbourne Standpipe. As well, two times per week chlorine residuals are obtained as grab samples to meet requirements of O. Reg. 170/03. Routine flushing of the system occurs in the spring and fall along with monthly flushing of dead end watermains in order to maintain adequate residuals throughout the entire distribution system.

SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

There were no hazards identified during this quarter.

SECOND QUARTER:

There were no hazards identified during this quarter.

THIRD QUARTER:

There were no hazards identified during this quarter.

FOURTH QUARTER:

There were no hazards identified during this quarter.

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY:

08: Installed new backup UPS at Glencoe Tower.
10: Turned on new water service at 195 King Street.
22: Commissioned new 6" water main on Tanya Street.
23: Completed disinfection of 6" water main on Tanya Street; collected samples. Samples came back all clear.
30: Eramosa fixed Excel data issues off site for 72 hour checks; Excel data sheet now functioning properly.
31: Backup UPS at Melbourne standpipe faulted due to cold temperatures. Found space heater no longer functioning. Operator replaced heater and UPS returned to proper operation.

FEBRUARY:

03: On site at Appin valve chamber; plugged Appin valve backed up into open valve at 20:44p.m (February 1 – 3).
04: Glencoe tower inlet chlorine analyzer- pH probe not working correctly causing high pH and chlorine read-out. PH probe placed in manual, monitored chlorine read-out.
05: Installed new water main on Tanya St.
14: Turned off water service at 09:05a.m at 234 Victoria St. Operator confirmed with contractor repairing shut off inside the house that the water service was off. Operator turned water service back on at 11:25am and confirmed with contractor that the house had water.

MARCH:

05: Gerber and Nevtro on site repairing booster pumps at SWM Reservoir.
11: Turned water service on at 133 Mill St. Arrived on site at 07:55, turned water service off for home owner to repair shut off valve inside the house. Turned water service back on after repair, verified with home owner.
12: Turned water service on at 242 South St. Arrived on site at 14:50, turned water service on and verified with contractor and inspector.
27: Turned water service on at 121 Mill St. Arrived on site at 08:00, turned water service on at 08:30, confirmed with resident now has water.
28: Arrive at 08:45 to shut off water service at 230 Main St. Confirmed with plumber that the water service was turned off. Turned water service back on at 09:30 as requested by plumber, confirmed with plumber at 230 Main St has running water.
29: Arrived at 194 McKellar St. at 15:00 to cut head off curb stop due to seized nut on the curb stop. Turned water service off and replace curb stop.

SECOND QUARTER:

APRIL:

11: Gerber Electric on site to replace solenoid valve.
12: 111 Roe St.; water service turned on at 11:00.
12: 150 Ontario St.: water service turn on at 13:00.
25: On site with Eramosa for removal of SCADA computer at reservoir for maintenance.
25: Flowmetrix on site to calibrate flow meters at all distribution facilities.
26: Located water service and turned water service on for the residents of 1762 Longwoods Road at 13:30.

MAY:

15: Turned water service off at 173 Ewen St.
21: Pierce Solutions on site to install pressure transducer.
30: Tested pumps at reservoir. Confirmed all systems were normal and began pumping from reservoir instead of West Elgin Standpipe. Glencoe reservoir is back online.

JUNE:
04: Gerber Electric on site to troubleshoot pump issues at Glencoe Reservoir
11: Melbourne Standpipe drained and offline for rehabilitation project
19: Completed valve replacement in Glencoe at corner of Currie and Mill Street.

THIRD QUARTER:

JULY:
08: Dosing pump air locked at reservoir; pump cleared
12: Working on chlorine system at reservoir; new diaphragm installed in pump
19: New chlorine pump installed at reservoir
31: Commissioning on Melbourne Standpipe began

AUGUST:
14: Electrolyte added to analyzer Chlorine probe at Reservoir
14: Melbourne Standpipe put back in service
20: Dead end flushing began
23: New Chlorine analyzer installed by Gerber Electric
24: Reservoir Pump selection changed to pump directly from WL standpipe to increase chlorine residual in system
28: Dead end flushing completed
28: Pump duties rotated; chlorine dosing fixed and operating

SEPTEMBER:
09: Pump 3B at reservoir faulted; main breaker reset and put back into operation
30: SWM Distribution System Flushing began

FOURTH QUARTER:

OCTOBER:
04: Valve turning to provide more pressure to distribution system north of Glendon Drive.
10: Chlorine delivery to reservoir.
11: Water service turned back on at 21877 Hagerty Road.
16: Hydrant turned on at Parkhouse and Main for pressure testing of temporary water main. Temporary main commissioned, super-chlorinated, then sampled.
17: Second set of bacti samples taken from temporary water main
25: Chlorine pump at reservoir air locked; pump cleared and back in operation
29: Chlorine injectors at all facilities pulled and inspected; cleaned and reinstalled. All UPS devices tested. SCADA alarm checks also completed.
30: Backflow preventer installed on hydrant at Parkhouse and Main for contractors to perform swabbing of new main to prepare for super chlorination.

NOVEMBER:
04: Completed filling of new water main for super chlorination. All readings and data filled in on commissioning form.
05: Completed super chlorination of new water mains. De-chlorinated both new water mains; discharge was less than 0.02 mg/L for chlorine residual. Continued to flush, and then collected bacteria samples to be sent for analysis.
06: Flushed new water mains 16 hours after previous bacteria samples. Collected samples from Montrose and Bute Street for analysis.
11: On site to run valve and monitor tie in at Main Street and Parkhouse Drive. After throttling valves, unable to isolate section of water main. Extra lines not shown on map are connected to water main being taken out;

Notified Sam Smith. Project was shut down until Senior Operations Manager and municipality could investigate issues.
12: Installed new Sodium Hypochlorite pump at SWM Reservoir.
14: Turned water service on at 6565 Longwoods Road.
14: On site for Main Street water main tie in. Tie in completed. All parts cleaned with 12 percent sodium hypochlorite solution. Lines flushed after installation.
19: Eramosa on site to fix communication issues with Glencoe tower and Appin valve.
20: Eramosa and Gerber Electric on site installing new alarm dialer. Tested all alarms with Eramosa to ensure proper operation.
22: Changed chlorine set-point at Glencoe tower to 1.25 mg/L.

DECEMBER:
03: Lowered chlorine residual set point to 1.20 mg/Lon chlorine analyzer as requested by senior operations manager Sam Smith
05: Cleaned housing on chlorine analyzers throughout Southwest Middlesex
12: Replaced leaking hose on booster pump, replaced ½" ball valve and installed new faucet and 3" nipple
23: Best contractors on site to look into installation of new flowmeter at reservoir
23: Flushed Bute Street water main for 30 minutes
24: Turned water service off at 140 Mckellar Street; confirmed with home owner that water service is off
31: Currie on site for backflow preventer inspection.

SECTION 7: ALARM SUMMARY

FIRST QUARTER:

JANUARY:
06: Hydrant alarm; operator on site, alarm was hydrant used for a fire and inspections of the fire hydrant needed to be completed. Operator found hydrant barrel full of water, pumped hydrant barrel dry. Hydrant is now normal.
20: 21911 Springfield Rd. page for "no water at residence". Operator contacted customer to confirm the situation and inspected standpipe to ensure it was an isolated location. Upon inspection of the residence, operator determined that line was frozen outside of home. Recommended that resident have the line buried, as it was exposed. Resident was able to thaw line with hairdryer.

FEBRUARY:
03: Received page at 09:28, a concerned neighbor discovered a service leak at 130 Wellington St. Operator arrived on site at 10:00 and found a leak on home owner's side of the curb stop. Located curb stop and found a boat parked over the curb stop, contacted homeowner at 10:15 and waited for his arrival. Homeowner arrived at 10:40. Homeowner turned the water off inside his home and ensured he did not need his curb stop off.
03: Received page at 19:28 at the residence of 96 Butelmain St., Glencoe. Arrived on site at 20:00 for frozen water service; thawed service line with steamer the following morning.

MARCH:
31: Paged at 01:32 for chlorine high level; 5.00ppm. Power flicker caused pumps to shut down, quickly causing chlorine high level. Once operator arrived on site chlorine level was no longer in high level (1.35 ppm), all systems were now normal.

SECOND QUARTER:

APRIL:
There were no alarms to report his month.

MAY:
14: Received page for Glencoe Tower at 19:37. Operator arrived on site at 20:20; all was normal upon arrival. Could not see what alarm was due to work being completed on SCADA computer.
26: Received page for Glencoe Tower at 12:17 for chlorine alarm; chlorine was 0.56 mg/L on trending. Operator flushed analyzer and chlorine returned to normal

JUNE:
01: Received call for both a booster fault as well as Glencoe Tower being at low level. Operator arrived on site, but pumps would not reset. Operator had to put pumps in hand mode. Pump 3b began working and Glencoe tower began filling.
03: Received page for Glencoe Reservoir; chlorine reached 5.00mg/L due to pumps stopping. Once pumps began, chlorine level returned to normal.
04: Received page at 01:30 for Glencoe tower low level alarm. Operator arrived on site at 01:30 to find booster pump 3B and 2B faulted. Operator started pump 2B in hand mode and Glencoe Tower level reached 5.2 m and was filling.
05: Received page at 00:07. Operator arrived on site to find outlet chlorine analyzer in HIHI chlorine level. Chlorine reached 4.00mg/L on SCADA, but chlorine was normal upon arrival.

THIRD QUARTER:
JULY:
10: Call in for Glencoe Reservoir Low Chlorine, booster pumps started to allow outlet flow from reservoir and to analyzer
27: Call in for Glencoe tower Low Chlorine, booster pumps stopped to allow outlet flow from tower

AUGUST:
07: Call in for Glencoe tower Low Chlorine caused by chlorine pump issue. Booster pumps stopped to allow outlet flow from tower and chlorine pump at tower to start dosing.
15: Call in for Glencoe tower Low Chlorine, booster pumps stopped to allow outlet flow from tower
21: Call in for Glencoe tower Low Chlorine, booster pumps stopped to allow outlet flow from tower
22: Call in for Glencoe tower Low Chlorine, booster pumps stopped to allow outlet flow from tower
29: Call in for Glencoe tower Low Chlorine, booster pumps stopped to allow outlet flow from tower

SEPTEMBER:
07: Call in for Glencoe Reservoir Low Chlorine, analyzer residual checked and adjusted. Issue caused by air locked dosing pumps. Pumps cleared, back in operations.
15: Call in for Glencoe Tower Low Chlorine, issue cause by lack of flow, Boosters turned off to allow flow through tower.
21: Call in for Glencoe Tower High chlorine alarm, chlorine spiked to 3.77mg/L; already returned to normal range when operator arrived on site.
22: Call in for general alarm to reservoir; multiple issues caused by power failure. Power restored at 0300.
29: Call in for Glencoe Tower Low Chlorine; issue cause by lack of flow. Boosters turned off to allow flow through tower.

FOURTH QUARTER:
OCTOBER:
01: Glencoe Tower Low Chlorine; issue caused by lack of flow through outlet pipe while tower was filling. Booster pumps were turned off to allow flow through the tower.
10: Emergency Locate; Hydro One replacing pole at 6300 Glendon Drive.
19: Reservoir High Level alarm; Power flicker caused singer valve to malfunction and not close at the proper set point. Gerber Electric called in to diagnosed and repair electrical components of singer valve.

NOVEMBER:
No alarms this month.

DECEMBER:
21: Emergency Shut Off at 34 McMaster Place; once on site, resident had managed to turn water off from inside and it was not required to have the water shut off at the road.

SECTION 8: COMMUNITY COMPLAINTS & CONCERNS

FIRST QUARTER:

JANUARY:
31: Frozen water service line at 22893 Melbourne Rd. When operator arrived on site homeowners had running water again.

SECOND QUARTER:

No complaints or concerns this quarter.

THIRD QUARTER:

No complaints or concerns this quarter.

FOURTH QUARTER:

NOVEMBER:
20: Flushed dead ends at Montrose and Bute Street after multiple complaints of cloudy water. Issue was caused by air trapped in new section of water main; issue resolved.

DECEMBER:
09: Flushed hydrant at dead end on Bute Street after complaints about air in line. Flushed main for 30 minutes; will continue to do weekly as requested by Sam Smith.