



UNION WATER SUPPLY SYSTEM SUMMARY REPORT 2024

Made under Schedule 22 of Ontario Regulation 170/03, a regulation made under the Safe Drinking Water Act, 2002

EXPLANATION

Schedule 22 of Ontario Regulation 170/03, a regulation made under the Safe Drinking Water Act, 2002 requires that a large municipal residential drinking-water system that is owned by a municipality, municipal board or municipal corporation must provide to its councillors or board members a Summary Report on various aspects of the system before March 31st of the following year. The Union Water Supply System is classed as a large municipal residential drinking-water system and is therefore subject to Schedule 22.

THE SUMMARY REPORT MUST CONTAIN THE FOLLOWING:

- Requirements of the Safe Drinking Water Act, 2002 that the system failed to meet during 2024
- Any requirements of the regulations made under the Safe Drinking Water Act, 2002 that the system failed to meet in 2024
- Any condition of the drinking-water system's drinking water works permit or municipal drinking water license that the system failed to meet during 2024
- Any order that the system failed to meet in 2024, the duration of any such failure and any measures that were taken to correct such failure.
- A summary of the quantities and flow rates of water supplied by the drinking-water system by monthly average and maximum daily flow rates and instantaneous peak flow rates.
- A comparison of actual flow rates with rated capacity and flow rates in the systems approval

A drinking-water system that supplies water to another drinking water system must provide a copy of the Summary Report to that system's owner by March 31st of the year following the year covered in the Summary Report.

The sections below detail the occasions on which the Union Water Supply System (UWSS) and the connected municipal water systems failed to meet the requirements of the Safe Drinking Water Act 2002, associated regulations, system approvals and provincial officer orders in 2024.

UNION WATER SUPPLY SYSTEM (UWSS)

The following provides details of occurrences where the UWSS was not in compliance with the requirements of the Safe Drinking Water Act 2002, associated regulations, system approvals and provincial officer orders.

Non-Compliance Item:

There were seven (7) instances of non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Union Water Supply System:

- Low Pressure Event – July 25th, 2024. Pressure below 20 psi recorded entering the Cottam Booster Station (CBS).
- Six (6) notifications received that UWSS has a non-compliance with their Municipal Drinking Water License (MDWL), wherein their total chlorine residual for the lagoon discharge was running above the MDWL Performance Limit. UWSS retained Associated Engineering (AE) to design a dechlorination system that will resolve this issue. The MECP is satisfied with UWSS retention of AE to complete this upgrade for dechlorination. This project is expected to be completed by June 2025

LEAMINGTON WATER DISTRIBUTION SYSTEM

Non-Compliance Item:

There was one (1) instance of non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Leamington Distribution System that is supplied by the Union Water Supply System.

- July 3rd, 2024 – 20 total coliforms from a July 2nd Bacteriological sample at SS-L-03, resampling took place

KINGSVILLE WATER DISTRIBUTION SYSTEM

Non-Compliance Item:

There was one (1) instance of non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Kingsville Distribution System that is supplied by the Union Water Supply System.

- July 25th, 2024 – low pressure event where psi was less than 20psi, Bacteriological samples were taken, and pressure was restored

ESSEX WATER DISTRIBUTION SYSTEM

Non-Compliance Item:

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Essex Distribution System that is supplied by the Union Water Supply System.

LAKESHORE WATER DISTRIBUTION SYSTEM

Non-Compliance Item:

There was one (1) instance of non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Lakeshore Distribution System that is supplied by the Union Water Supply System.

- May 30th, 2024 – illegal hookup to a fire hydrant, upstream and downstream sampling took place following the event.

SUMMARY OF THE QUANTITIES

The following sections provide information regarding the Union Water Supply System's Permit to Take Water, issued under Ontario Regulation 387/04 and Drinking Water License issued under the Safe Drinking Water Act, 2002. Information includes the following:

- Flow Rates of Water
- Monthly Average
- Maximum Daily Flows
- Daily Instantaneous Peak Flow Rates

PERMIT TO TAKE WATER

The Union Water Supply System operated under Permit to Take Water (PTTW) Number 0816-9T9SVT, which expires January 31st, 2025, but has been extended to July 31st, 2025. The PTTW has the following flow conditions

- Maximum Allowable Amount Taken per Minute (Litres/Min) 113,650
- Maximum Allowable Amount Taken Per Day (Litres/Day) 163,656,000

The maximum amounts of raw water taken during 2024 (see Table 1 below) are as follows:

- Maximum Amount Taken per Minute in 2024 (Litres/Min) 91,068
- Maximum Amount Taken Per Day in 2024 (Litres/Day) 102,063,300

The system did not exceed the PTTW limits in 2024.

DRINKING WATER LICENSE

The UWSS operates under Municipal Drinking Water Licence 041-101; issue Number 7 which has been issued for the period July 18, 2021 to July 17, 2024. The Certificate of Approval and licence had the following condition:

- The drinking water system shall not be operated to exceed 124,588 m³/d (27.4 MIGD) on any calendar day, conveyed from the treatment system to the distribution system.
- The maximum daily volume of water pumped into the distribution system was 95,075m³ (20.914 MIGD).

Tables 1A through 3B below provide the monthly average, maximum and peak flows for raw and treated water for the Union Water Supply System.

TABLE 1A						
2024 RAW WATER TAKING FROM LAKE ERIE IN METRIC UNITS						
	Maximum Allowed Flow Rate (m3/Day)	Average Flow (m3/Day)	Maximum Flow (m3/Day)	Maximum Flow (Litres/Day)	Maximum Allowed Flow Rate (Litres/Minute)	Peak Flow (Litres/Minute)
January	163,656	50,400	61,408	61,408,430	113,650	70,170
February	163,656	57,621	65,856	65,855,910	113,650	76,870
March	163,656	66,204	82,008	82,007,550	113,650	75,162
April	163,656	64,416	73,515	73,515,090	113,650	70,842
May	163,656	74,298	96,443	96,442,780	113,650	84,627
June	163,656	83,920	102,063	102,063,300	113,650	91,068
July	163,656	84,589	97,151	97,150,590	113,650	83,428
August	163,656	83,727	98,589	98,588,530	113,650	81,674
September	163,656	77,961	91,781	91,781,470	113,650	78,480
October	163,656	62,949	86,808	86,807,560	113,650	75,419
November	163,656	51,710	60,567	60,567,130	113,650	55,647
December	163,656	40,742	46,555	46,554,660	113,650	72,510

TABLE 1B						
2024 RAW WATER TAKING FROM LAKE ERIE IN IMPERIAL UNITS						
	Maximum Allowed Flow Rate (MGD)	Average Flow (MGD)	Maximum Flow (MGD)	Maximum Allowed Flow Rate (Gallons/Minute)	Peak Flow (Gallons/Minute)	
January	36.00	11.09	13.51	25,000	15,435	
February	36.00	12.67	14.49	25,000	16,909	
March	36.00	14.56	18.04	25,000	16,533	
April	36.00	14.17	16.17	25,000	15,583	
May	36.00	16.34	21.21	25,000	18,615	
June	36.00	18.46	22.45	25,000	20,032	
July	36.00	18.61	21.37	25,000	18,352	
August	36.00	18.42	21.69	25,000	17,966	
September	36.00	17.15	20.19	25,000	17,263	
October	36.00	13.85	19.09	25,000	16,590	
November	36.00	11.37	13.32	25,000	12,241	
December	36.00	8.96	10.24	25,000	15,950	

TABLE 2A

2024 TREATED WATER FLOW INTO DISTRIBUTION SYSTEM IN METRIC UNITS

		Maximum Allowed Flow Rate (m3/Day)	Average Daily Flow (m3/Day)	Maximum Daily Flow (m3/Day)	Peak Instantaneous Flow (Litres/Second)	
	January	124,588	47,835	54,441	988	
	February	124,588	54,614	63,420	1,826	
	March	124,588	59,354	69,819	1,801	
	April	124,588	62,679	72,589	1,743	
	May	124,588	71,616	94,478	1,696	
	June	124,588	78,126	95,078	1,757	
	July	124,588	77,777	89,850	1,671	
	August	124,588	73,850	85,768	1,535	
	September	124,588	69,844	80,706	1,579	
	October	124,588	55,635	70,223	1,326	
	November	124,588	42,295	48,311	1,162	
	December	124,588	40,742	46,555	1,209	

TABLE 2B

2024 TREATED WATER FLOW INTO DISTRIBUTION SYSTEM IN IMPERIAL UNITS

		Maximum Allowed Flow Rate (MGD)	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)	Peak Instantaneous Flow (Gallons/Second)	
	January	27.4	10.52	11.98	217	
	February	27.4	12.01	13.95	402	
	March	27.4	13.06	15.36	396	
	April	27.4	13.79	15.97	383	
	May	27.4	15.76	20.79	373	
	June	27.4	17.19	20.92	387	
	July	27.4	17.11	19.77	368	
	August	27.4	16.25	18.87	338	
	September	27.4	15.37	17.76	347	
	October	27.4	12.24	15.45	292	
	November	27.4	9.31	10.63	255	
	December	27.4	8.96	10.24	266	

TABLE 3A

2024 TREATED FLOW TO LOCAL MUNICIPALITIES IN METRIC UNITS

	<u><i>Leamington</i></u>		<u><i>Kingsville</i></u>		<u><i>Essex</i></u>		<u><i>Lakeshore</i></u>	
	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)
January	734,275	23,686	621,950	20,063	69,004	2,226	54,962	1,773
February	803,485	27,706	662,547	22,846	68,988	2,379	50,825	1,753
March	1,028,586	33,180	828,092	26,713	70,658	2,279	50,753	1,637
April	1,017,954	33,932	626,962	20,899	62,844	2,095	46,629	1,554
May	1,308,994	42,226	774,594	24,987	83,759	2,702	60,060	1,937
June	1,292,728	43,091	809,738	26,991	85,274	2,842	49,967	1,666
July	1,429,064	46,099	952,107	30,713	97,656	3,150	56,825	1,833
August	1,233,438	39,788	865,920	27,933	81,937	2,643	48,854	1,576
September	1,195,486	39,850	918,476	30,616	84,107	2,804	50,683	1,689
October	929,640	29,988	636,040	20,517	71,149	2,295	43,632	1,407
November	721,139	24,038	418,111	13,937	68,988	2,300	37,898	1,263
December	771,162	24,876	416,625	13,440	85,245	2,750	45,249	1,460
Total	12,465,951	34,038	8,531,162	23,305	929,609	2,539	596,337	1,629

TABLE 3B
2024 TREATED FLOW TO LOCAL MUNICIPALITIES IN IMPERIAL UNITS

	<u><i>Leamington</i></u>		<u><i>Kingsville</i></u>		<u><i>Essex</i></u>		<u><i>Lakeshore</i></u>	
	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)
January	161,517,920	5.21	136,809,874	4.41	15,178,758	0.49	12,089,950	0.39
February	176,741,991	6.09	145,739,966	5.03	15,175,239	0.52	11,179,937	0.39
March	226,257,289	7.30	182,154,775	5.88	15,542,587	0.50	11,164,099	0.36
April	223,918,576	7.46	137,912,360	4.60	13,823,747	0.46	10,256,946	0.34
May	287,938,426	9.29	170,386,860	5.50	18,424,404	0.59	13,211,353	0.43
June	284,360,406	9.48	178,117,459	5.94	18,757,658	0.63	10,991,203	0.37
July	314,350,134	10.14	209,434,261	6.76	21,481,317	0.69	12,499,753	0.40
August	271,318,430	8.75	190,475,771	6.14	18,023,620	0.58	10,746,378	0.35
September	262,970,157	8.77	202,036,475	6.73	18,500,954	0.62	11,148,701	0.37
October	204,492,212	6.60	139,909,241	4.51	15,650,592	0.50	9,597,698	0.31
November	158,628,404	5.29	91,971,562	3.07	15,175,239	0.51	8,336,395	0.28
December	169,631,925	5.47	91,644,688	2.96	18,751,279	0.60	9,953,389	0.32
Total	2,742,125,871	7.49	1,876,593,292	5.13	204,485,393	0.56	131,175,802	0.36