

Annual Report

FOR

LAKEFIELD DRINKING WATER SYSTEM

PERIOD: January 1, 2024 – December 31, 2024



February 28, 2025

MECP Drinking Water System Number: 220000488

Drinking-Water System Number:	220000488
Drinking-Water System Name:	Lakefield Drinking Water System
Drinking-Water System Owner:	Township of Selwyn
Drinking-Water System Category:	WT Class 2 & WD Class 2
Period being reported:	January 1, 2024 to December 31, 2024

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <p>Township of Selwyn 1310 Centre Line Selwyn, ON K9J 6X5 www.selwyntownship.ca</p>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: Not applicable</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Not applicable</p> <p>Number of Interested Authorities you report to: Not applicable</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Not applicable</p>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Not applicable

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Not applicable

Indicate how you notified system users that your annual report is available, and is free of charge.

- ☒ Public access/notice via the web
- ☒ Public access/notice via Government Office
- ☐ Public access/notice via a newspaper
- ☐ Public access/notice via Public Request
- ☐ Public access/notice via a Public Library
- ☐ Public access/notice via other method - Social Media

Describe your Drinking-Water System

The Lakefield Water Treatment Plant and distribution system was operated by PUG Services Corp. under contract with the Township of Selwyn from January 1, 2024 – June 30, 2024. From July 1, 2024 – December 31, 2024 the Lakefield Drinking Water System was operated by the Township of Selwyn. The Lakefield drinking water system generally consists of five elements:

1) Raw Water Source

The source of raw (untreated) water for Lakefield's drinking water is the Otonabee River. The Otonabee River water is of good quality and can be described as a moderately coloured water of low turbidity. The river water temperature ranges from 0°C (winter) to approximately 29°C (summer). The raw river water is a surface water supply, which means that raw water always requires full treatment at the Lakefield Water Treatment Plant to make it safe for drinking.

The river water quality is monitored by staff at the plant as well as the Otonabee Region Conservation Authority (ORCA) and the Peterborough County-City Health Unit (beaches only). The watershed is protected by planning and approvals processes through the Township of Selwyn and ORCA. Since 1998, ORCA has monitored water quality in the Otonabee watershed under the Watershed 2000 Program and the Provincial Water Quality Monitoring Network.

2) Water Treatment Plant

The Lakefield plant is located at 13 Water Street North and consists of intake piping from the Otonabee River, a low lift pumping system located within the water treatment plant, a treatment plant employing the process of chemical coagulation, ballasted flocculation/sedimentation (Actiflo®), dual media filtration (anthracite and sand) and disinfection via sodium hypochlorite. The filters have a capacity of 3,700 m³/d. Each low lift pump is specified to be capable of 35 L/second. The Actiflo® units have a capacity of 4,500 m³/d. The plant has a two-celled baffled clearwell with a total capacity of approximately 1,000 m³, and a high lift pumping facility discharging to the distribution system. There is a washwater surge tank and a wastewater clarifier to treat all clarifier and filter washwater discharges.

3) Water Storage Tanks & Reservoirs

Water storage provides a supplemental supply during times of increased water demand and in emergencies such as firefighting. Treated water is stored at two distribution system reservoirs. The Standpipe is located at 121 Strickland Street, providing 2,700 m³ total volume and 900 m³ effective volume. This reservoir is currently not in service. The Elevated Tank is located at 3362 Lakefield Road, providing 2,750 m³ total volume and 2,750 m³ effective volume.

4) Water Pumping Stations

The distribution system is currently operating as one (1) pressure zone but has the capability to operate as two (2) individual pressure zones. Water supply is pumped directly from the high lift pumping facility at the plant to serve most of Lakefield. There is one water booster pumping station at the corner of Strickland Street and Rolliston Street, which pumps water from the lower pressure zone to the higher pressure zone. This pump station has not been in service since October 2019.

5) Water Distribution Piping System

The water distribution system consists of approximately 22,000 metres of underground pipes (water mains), 110 hydrants and 1,100 individual water services.

List all water treatment chemicals used over this reporting period

- Clarion A3 Alum (Aluminum Sulphate + Sulfuric acid)
- Sodium Hypochlorite (Chlorine)
- Sodium thiosulfate (de-chlorination washwater)
- Caustic Soda 25%
- Hydrex 3613 polymer

Were any significant expenses incurred to?

- ☐ Install required equipment
☒ Repair required equipment
☒ Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

- Strickland Street watermain replacement
- Electrical breaker replacement at water treatment plant
- Vehicle and various equipment costs incurred related to transition of operating authority

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre*

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
	None				

*Under O Reg 170/03 section 17-13 sodium is reportable to the Medical Officer of Health when test result exceeds 20 mg/l.

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	54	0 – overgrown	0 – overgrown	---	---
Treated	53	0-0	0-0	54	0-2
Distribution	184	0-0	0-0	78	0-16

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity	8760	0.03 – 0.92	NTU
Chlorine	8760	0.88 – 2.57	mg/L
Fluoride (If the DWS provides fluoridation)			

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
Tested by SGS laboratories	Suspended Solids waste process	Weekly	9.0 Annual Average	mg/L

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	September 12	0.6 <MDL	µg/L	No
Arsenic	September 12	0.2 <MDL	µg/L	No
Barium	September 12	25.4	µg/L	No
Boron	September 12	9	µg/L	No
Cadmium	September 12	0.003 <MDL	µg/L	No
Chromium	September 12	0.23	µg/L	No
Mercury	September 12	0.01 <MDL	µg/L	No
Selenium	September 12	0.04 <MDL	µg/L	No
Sodium	February 6	16.3	mg/L	No
Uranium	September 12	0.006	µg/L	No
Fluoride	February 6	0.06 <MDL	mg/L	No

Nitrite	Feb 6 May 14 Sept 10 Dec 11	0.003<MDL 0.003<MDL 0.003<MDL 0.003<MDL	mg/L	No
Nitrate	Feb 16 May 14 Sept 10 Dec 11	0.190 0.202 0.039 0.031	mg/L	No

Summary of lead testing under Schedule 15.1 during this reporting period

Location Type	Number of Samples Required	Range of Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Private Plumbing	exempt	n/a	µg/L	0
Plumbing Public	exempt	n/a	µg/L	0
Distribution	4	0.01<MDL - 0.06	µg/L	0

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Sept 12	0.02<MDL	µg/L	No
Atrazine + N-dealkylated metabolites	Sept 12	0.01<MDL	µg/L	No
Atrazine	Sept 12	0.01	µg/L	No
Azinphos-methyl	Sept 12	0.05<MDL	µg/L	No
Benzene	Sept 12	0.32<MDL	µg/L	No
Benzo(a)pyrene	Sept 12	0.004<MDL	µg/L	No
Bromoxynil	Sept 12	0.33<MDL	µg/L	No
Carbaryl	Sept 12	0.05<MDL	µg/L	No
Carbofuran	Sept 12	0.01<MDL	µg/L	No
Carbon Tetrachloride	Sept 12	0.17<MDL	µg/L	No
Chlorpyrifos	Sept 12	0.02<MDL	µg/L	No
Diazinon	Sept 12	0.02<MDL	µg/L	No
Dicamba	Sept 12	0.20<MDL	µg/L	No
1,2-Dichlorobenzene	Sept 12	0.41<MDL	µg/L	No
1,4-Dichlorobenzene	Sept 12	0.36<MDL	µg/L	No
1,2-Dichloroethane	Sept 12	0.35<MDL	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Sept 12	0.33<MDL	µg/L	No
Dichloromethane	Sept 12	0.35<MDL	µg/L	No
2-4 Dichlorophenol	Sept 12	0.15<MDL	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Sept 12	0.19<MDL	µg/L	No
Diclofop-methyl	Sept 12	0.40<MDL	µg/L	No
Dimethoate	Sept 12	0.06<MDL	µg/L	No
Diquat	Sept 12	1<MDL	µg/L	No
Diuron	Sept 12	0.03<MDL	µg/L	No
Glyphosate	Sept 12	1<MDL	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
HAA (NOTE: show latest annual average)	Average	57.9	µg/L	No
Malathion	Sept 12	0.02<MDL	µg/L	No
2-Methyl-4-chlorophenoxyacetic acid MCPA	Sept 12	0.00012 <MDL	µg/L	No
Metolachlor	Sept 12	0.01<MDL	µg/L	No
Metribuzin	Sept 12	0.02<MDL	µg/L	No
Monochlorobenzene	Sept 12	0.3<MDL	µg/L	No
Paraquat	Sept 12	1<MDL	µg/L	No
Pentachlorophenol	Sept 12	0.15<MDL	µg/L	No
Phorate	Sept 12	0.01<MDL		
Picloram	Sept 12	1<MDL	µg/L	No
Polychlorinated Biphenyls(PCB)	Sept 12	0.04<MDL	µg/L	No
Prometryne	Sept 12	0.03<MDL	µg/L	No
Simazine	Sept 12	0.01<MDL	µg/L	No
THM (NOTE: show latest annual average)	Average	67.5	µg/L	No
Terbufos	Sept 12	0.01<MDL	µg/L	No
Tetrachloroethylene	Sept 12	0.35<MDL	µg/L	No
2,3,4,6-Tetrachlorophenol	Sept 12	0.20<MDL	µg/L	No
Triallate	Sept 12	0.01<MDL	µg/L	No
Trichloroethylene	Sept 12	0.44<MDL	µg/L	No
2,4,6-Trichlorophenol	Sept 12	0.25<MDL	µg/L	No
Trifluralin	Sept 12	0.02<MDL	µg/L	No
Vinyl Chloride	Sept 12	0.17<MDL	µg/L	No

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
none			