

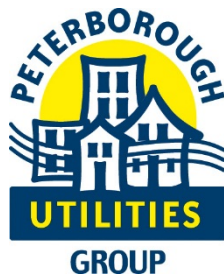
PUG SERVICES CORP.

Annual Report

FOR

LAKEFIELD WATERWORKS

PERIOD: January 1, 2020 – December 31, 2020



January 20, 2021
MECP Waterworks # 220000488

Drinking-Water System Number:	220000488
Drinking-Water System Name:	Lakefield Water Treatment Plant
Drinking-Water System Owner:	Township of Selwyn
Drinking-Water System Category:	WT Class 2
Period being reported:	January 1, 2020 to December 31, 2020

<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.selwynthownship.ca</p>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
None	

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?

Yes [] No [] N/A

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 Bill Stuffers

Describe your Drinking-Water System

The Lakefield Water Treatment Plant and distribution system is operated by PUG Services Corp. under contract with the Township of Selwyn.

Lakefield municipal 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 required full treatment at the Lakefield Water Treatment Plant to make it drinkable or potable.

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 an intake 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 and disinfection. The filters and low lifts have a capacity of 3,700 m³/d. The Actiflo[®] units have a capacity of 4,500 m³/d. The plant has a two-celled baffled clearwell with a total capacity of 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 high water demand and in emergencies such as firefighting. Treated water is stored at two distribution system reservoirs.

The Standpipe is located at 121 Strickland St., providing 2700 m³ total volume and 900 m³ effective volume. Currently this is off-line

The Elevated tank located at 3362 Lakefield Rd., providing 2750 m³ total volume and 2750 m³ effective volume.

4) Water Pumping Stations

There are two individual pressure zones in Lakefield. Water supply is pumped directly from the highlift 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. The pump station was taken off-line, as of 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

Alum (Aluminum Sulphate)
Sodium Hypochlorite (Chlorine)
MagnaFloc LT22S& LT22 Polymer
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

- Replaced sodium hypochlorite tank
- Installation of sand re-circulation pump
- Cleaned up Polymer room (paint peeling), new SS shelf & plumbing
- Surge suppression for low voltage WTP milltronics
- Power monitoring through SCADA

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					

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	52	0-28	0-1580	---	---
Treated	52	0-0	0-0	52	0-6
Distribution	232	0-0	0-0	52	0-104

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 – 0.36	NTU
Chlorine	8760	1.36 – 2.20	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
Nov 30, 2005	Suspended Solids waste process	3 times monthly	8 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	Aug 18	0.11	µg/L	No
Arsenic	Aug 18	0.2 <MDL	µg/L	No
Barium	Aug 18	30.3	µg/L	No
Boron	Aug 18	14	µg/L	No
Cadmium	Aug 18	0.003<MDL	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Chromium	Aug 18	0.17	µg/L	No
Mercury	Aug 18	0.01 <MDL	µg/L	No
Selenium	Aug 18	0.05	µg/L	No
Sodium	Aug 18	19.0	mg/L	No
Uranium	Aug 18	0.006	µg/L	No
Fluoride	Aug 18	0.06	mg/L	No
Nitrite	Feb 12	0.003<MDL	mg/L	No
	May 13	0.003<MDL		
	Aug 18	0.003<MDL		
	Nov 17	0.003<MDL		
Nitrate	Feb 12	0.356	mg/L	No
	May 13	0.242		
	Aug 18	0.068		
	Nov 17	0.030		

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	4	0.08 – 0.16	µg/L	0
Plumbing Public	0*	n/a	µg/L	0
Distribution	4	<0.04 - 0.33	µg/L	0

*The Lakefield Municipal Water System was granted relief from regulatory lead sampling in Schedule 15.1 of O. Reg. 170/03, as described in Schedule D of the Municipal Drinking Water Licence #149-102, Issue #6, dated January 25th, 2019.

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	Aug 18	0.02<MDL	µg/L	No
Atrazine + N-dealkylated metabolites	Aug 18	0.01<MDL	µg/L	No
Atrazine	Aug 18	0.01<MDL	µg/L	No
Azinphos-methyl	Aug 18	0.05<MDL	µg/L	No
Benzene	Aug 18	0.32<MDL	µg/L	No
Benzo(a)pyrene	Aug 18	0.004<MDL	µg/L	No
Bromoxynil	Aug 18	0.33<MDL	µg/L	No
Carbaryl	Aug 18	0.05<MDL	µg/L	No
Carbofuran	Aug 18	0.01<MDL	µg/L	No
Carbon Tetrachloride	Aug 18	0.17<MDL	µg/L	No
Chlorpyrifos	Aug 18	0.02<MDL	µg/L	No
Diazinon	Aug 18	0.02<MDL	µg/L	No
Dicamba	Aug 18	0.20<MDL	µg/L	No
1,2-Dichlorobenzene	Aug 18	0.41<MDL	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,4-Dichlorobenzene	Aug 18	0.36<MDL	µg/L	No
1,2-Dichloroethane	Aug 18	0.35<MDL	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Aug 18	0.33<MDL	µg/L	No
Dichloromethane	Aug 18	0.35<MDL	µg/L	No
2-4 Dichlorophenol	Aug 18	0.15<MDL	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug 18	0.19<MDL	µg/L	No
Diclofop-methyl	Aug 18	0.40<MDL	µg/L	No
Dimethoate	Aug 18	0.06<MDL	µg/L	No
Diquat	Aug 18	1<MDL	µg/L	No
Diuron	Aug 18	0.03<MDL	µg/L	No
Glyphosate	Aug 18	1<MDL	µg/L	No
HAA (NOTE: show latest annual average)	Average	50.2	µg/L	No
Malathion	Aug 18	0.02<MDL	µg/L	No
2-Methyl-4-chlorophenoxyacetic acid MCPA	Aug 18	0.00012 <MDL	µg/L	No
Metolachlor	Aug 18	0.01<MDL	µg/L	No
Metribuzin	Aug 18	0.02<MDL	µg/L	No
Monochlorobenzene	Aug 18	0.30<MDL	µg/L	No
Paraquat	Aug 18	1<MDL	µg/L	No
Pentachlorophenol	Aug 18	0.15<MDL	µg/L	No
Phorate	Aug 18	0.01<MDL		
Picloram	Aug 18	1<MDL	µg/L	No
Polychlorinated Biphenyls(PCB)	Aug 18	0.04<MDL	µg/L	No
Prometryne	Aug 18	0.03<MDL	µg/L	No
Simazine	Aug 18	0.01<MDL	µg/L	No
THM (NOTE: show latest annual average)	Average	71	µg/L	No
Terbufos	Aug 18	0.01<MDL	µg/L	No
Tetrachloroethylene	Aug 18	0.35<MDL	µg/L	No
2,3,4,6-Tetrachlorophenol	Aug 18	0.20<MDL	µg/L	No
Triallate	Aug 18	0.01<MDL	µg/L	No
Trichloroethylene	Aug 18	0.44<MDL	µg/L	No
2,4,6-Trichlorophenol	Aug 18	0.25<MDL	µg/L	No
Trifluralin	Aug 18	0.02<MDL	µg/L	No
Vinyl Chloride	Aug 18	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
Sodium	15.2	mg/L	Feb 12
	16.1		May 13
	19.5		Aug 18
	15.2		Nov 17