

# 2018 Section 11 Annual Report

## Terrace Bay Drinking-Water System

February 2019

Prepared by the



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

## Section 11 ANNUAL REPORT

<b>Drinking-Water System Number:</b>	250001769
<b>Drinking-Water System Name:</b>	Terrace Bay Water Treatment Plant
<b>Drinking-Water System Owner:</b>	The Corporation of the Township of Terrace Bay
<b>Drinking-Water System Category:</b>	Large Municipal Residential Drinking Water-System
<b>Period being reported:</b>	January 1 – December 31, 2018

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></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 [ ] No [ X ]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Township of Terrace Bay 1 Selkirk Ave. P.O. Box 40 Terrace Bay, ON POT 2W0</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served:  <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div> </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:  <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div> </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>
--	---

**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
N/A	N/A

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 [ ]



## Ontario Drinking-Water Systems Regulation O. Reg. 170/03

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 – Community Television Channel

### Describe your Drinking-Water System

The raw water intake for the low lift pumping station is located in Jackfish Channel on Lake Superior. The intake line is a 170 m long, 300 mm diameter line located 75 m west of the intake for Terrace Bay Pulp.

The low lift-pump station houses three pumps and is located approximately 50 m west of the mill pump house. The water is pumped to the Terrace Bay Water Treatment Plant via a 250 mm diameter pipe 2.5 km long.

There are 4 identical standby ground water wells located adjacent to the low lift pump station for emergency situations. Each well is 250 mm in diameter, 17 m deep and equipped with a submersible pump. The stand by wells discharge into the wet well of the low lift pump station.

The low lift pump station has a 150 kW propane powered generator for emergency standby power and is located as a stand alone unit in a weather proof enclosure.

#### **Water Treatment Plant:**

Raw water entering the plant is directed to four (4) slow sand filter units, each with a 1.2 m thickness of filter sand; 600 mm gravel and perforated pipe under drain system. Filtered water then passes through two (2) ultraviolet disinfection units (one duty, one standby) providing a minimum ultraviolet dosage of 40 millijoules/cm<sup>2</sup> at a peak flow rate of 45 L/s. UV water entering the reservoir feed pipe is injected with a sodium hypochlorite solution.

In July 2013, a phosphate blend corrosion inhibitor feed system was installed and commissioned. The system consists of two chemical metering pumps, storage drum, feed tubing and injection point to inject Carus 8600 for corrosion control.

Chlorinated water is then directed to an underground 5193 m<sup>3</sup> concrete reservoir, consisting of 4 interconnecting chambers, with baffles, providing chlorine contact time.

There is a 480 kW propane generator, providing emergency standby power for the water treatment plant, disinfection process and high lift pumps; this allows for the production and distribution of potable water during a power loss.



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

List all water treatment chemicals used over this reporting period

- |   |
|---|
| <ul style="list-style-type: none"> <li>- Sodium Hypochlorite</li> <li>- Carus 8600</li> </ul> |
|---|

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

Install	Repair	Replace	Description	Expense
		X	Filter media	\$47,000
		X	Chemical pump	\$8,000
		X	Wet Well Pump Reactor at Pump House	\$2,300
	X		HVAC	\$5,000
		X	PLC - CPU's at WTP and Pump House	\$25,000

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
11-Oct-18	Physical / Chemical – Lead	10.7, 11.1, 20.4, 14.1, 14.6	ug/L	-	-
05-Nov-18	Other Observation – Watermain leak required localized water outage to complete repairs, affecting all of Southridge Crescent – 35 houses and part of Terrace heights – 8 houses	-	-	Two (2) sets of bacteriological samples taken, disinfection restored, flushed main and boil water advisory issued. Chlorine residual measured at 1.14mg/L.	09-Nov-18



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

06-Dec-18	Physical/Chemical – Pressure loss for new connection affecting one seasonal building (Golf Club House), which is closed for the season.	-	-	Pressure restored and system flushed. Chlorine residual 1.16mg/L. Precautionary boil water advisory posted at building by the Township. MOH directed for bacteriological sampling to commence after the weekend. No urgency due to no occupancy.	14-Dec-18
-----------	---	---	---	--	-----------

**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	<1 - 4	<1 - 41	N/A	N/A
Treated	52	0	0	50	0 – 2
Distribution	115	0	0 - 1	50	0 - 115

**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 #)
<b>Turbidity</b>		
Raw	246	0.07 – 3.18 NTU
Filter #1	8760	0.00 – 10.01 NTU
Filter #2	8760	0.00 – 0.12 NTU
Filter #3	8760	0.00 – 0.10 NTU
Filter #4	8760	0.00 – 0.26 NTU
<b>Chlorine</b>		
Treated	8760	0.38 – 1.88 mg/L
Distribution	363	0.16 – 1.49 mg/L
<b>Fluoride</b> (If the DWS provides fluoridation)	N/A	N/A

*NOTE: For continuous monitors use 8760 as the number of samples.*

*\* Turbidity & chlorine Min/Max (lows/highs) are due to planned maintenance and not plant upset.*



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

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
N/A	N/A	N/A	N/A	N/A

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	17-Jan-2018	<0.6	µg/L	No
Arsenic	17-Jan-2018	<1.0	µg/L	No
Barium	17-Jan-2018	14.0	µg/L	No
Boron	17-Jan-2018	<50.0	µg/L	No
Cadmium	17-Jan-2018	<0.1	µg/L	No
Chromium	17-Jan-2018	<1.0	µg/L	No
*Lead	Refer to Summary Table Below			
Mercury	17-Jan-2018	<0.1	µg/L	No
Selenium	17-Jan-2018	<1.0	µg/L	No
Sodium	12-Jan-2015	3.28	mg/L	No
Uranium	17-Jan-2018	<2.0	µg/L	No
Fluoride	12-Jan-2015	0.025	mg/L	No
Nitrite	17-Jan-2018	<0.010	mg/L	No
	19-Apr-2018	<0.010	mg/L	No
	10-July-2018	<0.010	mg/L	No
	01-Oct-2018	<0.010	mg/L	No
Nitrate	17-Jan-2018	<0.02	mg/L	No
	19-Apr-2018	0.384	mg/L	No
	10-July-2018	0.37	mg/L	No
	01-Oct-2018	0.347	mg/L	No

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

## Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	90	<1 – 20.4	5
Distribution	27	1 – 5.6	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	17-Jan-2018	<0.1	µg/L	No
Atrazine + N-dealkylated metabolites	17-Jan-2018	<0.2	µg/L	No
Azinphos-methyl	17-Jan-2018	<0.1	µg/L	No
Benzene	17-Jan-2018	<0.5	µg/L	No
Benzo(a)pyrene	17-Jan-2018	<0.01	µg/L	No
Bromoxynil	17-Jan-2018	<0.2	µg/L	No
Carbaryl	17-Jan-2018	<0.2	µg/L	No
Carbofuran	17-Jan-2018	<0.2	µg/L	No
Carbon Tetrachloride	17-Jan-2018	<0.2	µg/L	No
Chlorpyrifos	17-Jan-2018	<0.1	µg/L	No
Diazinon	17-Jan-2018	<0.1	µg/L	No
Dicamba	17-Jan-2018	<0.2	µg/L	No
1,2-Dichlorobenzene	17-Jan-2018	<0.5	µg/L	No
1,4-Dichlorobenzene	17-Jan-2018	<0.5	µg/L	No
1,2-Dichloroethane	17-Jan-2018	<0.5	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	17-Jan-2018	<0.5	µg/L	No
Dichloromethane (methylene chloride)	17-Jan-2018	<5.0	µg/L	No
2,4 Dichlorophenol	17-Jan-2018	<0.3	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	17-Jan-2018	<0.2	µg/L	No
Diclofop-methyl	17-Jan-2018	<0.2	µg/L	No
Dimethoate	17-Jan-2018	<0.1	µg/L	No
Diquat	17-Jan-2018	<1.0	µg/L	No
Diuron	17-Jan-2018	<1.0	µg/L	No
Glyphosate	17-Jan-2018	<5.0	µg/L	No



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

<b>Haloacetic acids (HAA)*</b> (NOTE: show latest annual average)	01-Oct-2018 2018 Average	16.2 13.0	µg/L	No
<b>Malathion</b>	17-Jan-2018	<0.1	µg/L	No
<b>Metolachlor</b>	17-Jan-2018	<0.1	µg/L	No
<b>Metribuzin</b>	17-Jan-2018	<0.1	µg/L	No
<b>Monochlorobenzene</b>	17-Jan-2018	<0.5	µg/L	No
<b>Paraquat</b>	17-Jan-2018	<1.0	µg/L	No
<b>Pentachlorophenol</b>	17-Jan-2018	<0.5	µg/L	No
<b>Phorate</b>	17-Jan-2018	<0.1	µg/L	No
<b>Picloram</b>	17-Jan-2018	<0.2	µg/L	No
<b>Polychlorinated Biphenyls(PCB)</b>	17-Jan-2018	<0.035	µg/L	No
<b>Prometryne</b>	17-Jan-2018	<0.1	µg/L	No
<b>Simazine</b>	17-Jan-2018	<0.1	µg/L	No
<b>THM</b> (NOTE: show latest annual average)	01-Oct-2018 2018 Average	21.6 17.6	µg/L µg/L	No No
<b>Terbufos</b>	17-Jan-2018	<0.2	µg/L	No
<b>Tetrachloroethylene</b>	17-Jan-2018	<0.5	µg/L	No
<b>2,3,4,6-Tetrachlorophenol</b>	17-Jan-2018	<0.5	µg/L	No
<b>Triallate</b>	17-Jan-2018	<0.1	µg/L	No
<b>Trichloroethylene</b>	17-Jan-2018	<0.5	µg/L	No
<b>2,4,6-Trichlorophenol</b>	17-Jan-2018	<0.5	µg/L	No
<b>Trifluralin</b>	17-Jan-2018	<0.1	µg/L	No
<b>Vinyl Chloride</b>	17-Jan-2018	<0.2	µg/L	No
<b>MCPA</b>	17-Jan-2018	<0.2	µg/L	No

\*Parameter exceedance not reportable until 2020

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
Lead	5.2	ug/L	12-Apr-2018
Lead	5.3	ug/L	12-Apr-2018
Lead	5.6	ug/L	12-Apr-2018
Lead	5.7	ug/L	12-Apr-2018
Lead	6.8	ug/L	03-Oct-2018
Lead	6.8	ug/L	03-Oct-2018
Lead	6.8	ug/L	03-Oct-2018
Lead	7.3	ug/L	03-Oct-2018
Lead	10.7	ug/L	03-Oct-2018





# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

Lead	7.4	ug/L	04-Oct-2018
Lead	14.1	ug/L	04-Oct-2018
Lead	14.6	ug/L	04-Oct-2018
Lead	11.1	ug/L	04-Oct-2018
Lead	20.4	ug/L	04-Oct-2018

