

**Part III Form 2**
**Section 11. ANNUAL REPORT.**

<b>Drinking-Water System Number:</b>	220002100
<b>Drinking-Water System Name:</b>	Muskoka Beach Water Treatment Plant
<b>Drinking-Water System Owner:</b>	District Municipality of Muskoka
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 01 to December 31, 2022

**Complete if your Category is Large Municipal Residential or Small Municipal Residential**

**Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ X ]**

**Is your annual report available to the public at no charge on a web site on the Internet? Yes [ X ] No [ ]**

**Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.**

District Municipality of Muskoka  
70 Pine Street  
Bracebridge, Ontario  
P1H 1N3  
(705) 645-6764  
www.muskoka.on.ca

**Complete for all other Categories.**

**Number of Designated Facilities served:**

N/A

**Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]**

**Number of Interested Authorities you report to:**

N/A

**Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]**

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

**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 [ ]**

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

**Describe your Drinking-Water System**

The water treatment plant in Gravenhurst was originally constructed in 1983. Significant improvements to process monitoring, control, and chemical feed systems were completed in 2004. In 2022 the treatment process, consisting of chemically assisted coagulation-flocculation, was upgraded to include settling tanks changing the process from a direct filtration plant to a conventional treatment plant. The 4 filters are dual media filters with a combination of sand and anthracite coal. Disinfection in a chlorine contact chamber followed by final pH adjustment in the clearwells, and fluoride addition at the highlift header completes the treatment process. The water system currently serves a population of approximately 7,800 people. The rated water production of the plant is 9,996 cubic meters per day. The raw water source is Lake Muskoka, with the intake structure located approx. 11.5 meters deep, approximately 1,000 meters from shore.

**List all water treatment chemicals used over this reporting period**

Sodium Hypochlorite, Sodium hydroxide, Polyaluminum Chloride, Carbon Dioxide, Hydrated Lime, Sodium Permanganate, Fluoride, Cationic Polymer

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

**Describe**

New Sedimentation tanks in service, effectively commissioned at plant rated flow capacity.

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
N/A					

### Microbiological testing done under section 8-2 during this reporting period

	Number of Samples	Range of E.Coli Or Fecal Results (#-#)	Range of Total Coliform Results (#-#)	Number of HPC Samples Or Background Colony Counts	Range of HPC Results (#-#) Or Background Colony Counts
<b>Raw</b>	52	0 - 3	0 - 30	0	N/A
<b>Treated</b>	52	0 - 0	0 - 0	52	0-1
<b>Distribution</b>	313	0 - 0	0 - 0	249	0-140

### Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min # - max #)	Geometric Mean
<b>Turbidity</b>	<b>8760</b>	0.02-0.06 NTU	0.028 NTU
<b>Chlorine</b>	<b>8760</b>	1.49-2.50	2.02
<b>Chlorine Residual Distribution System</b>	<b>8760</b>	0.69-1.69	1.08
<b>Fluoride</b> (If the DWS provides fluoridation)	<b>8760</b>	0.36-0.80	0.61

**NOTE:**

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

**NOTE:** Record the unit of measure if it is **not** milligrams per litre.

### Summary of additional testing and sampling carried out in accordance with the requirement of an approval or order.

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
<b>Antimony</b>	May 17/22	0.6<MDL	µg/L	No
<b>Arsenic</b>	May 17/22	0.2<MDL	µg/L	No
<b>Barium</b>	May 17/22	12.0	µg/L	No
<b>Boron</b>	May 17/22	3	µg/L	No
<b>Cadmium</b>	May 17/22	0.008	µg/L	No
<b>Chromium</b>	May 17/22	0.14	µg/L	No
<b>Lead*</b>	May 17/22		µg/L	No
<b>Mercury</b>	May 17/22	0.01<MDL	µg/L	No
<b>Selenium</b>	May 17/22	0.05	µg/L	No
<b>Sodium</b>	May 17/22	19.9	mg/L	No
<b>Uranium</b>	May 17/22	0.002	µg/L	No
<b>Fluoride</b>	May 17/22	0.54	mg/L	No
<b>Nitrite</b>	Feb 14/22	0.003<MDL	mg/L	No
<b>Nitrate</b>	Feb 14/22	0.255	mg/L	No
<b>Nitrite</b>	May 17/22	0.003<MDL	mg/L	No

Nitrate	May 17/22	0.231	mg/L	No
Nitrite	Aug 16/22	0.003<MDL	mg/L	No
Nitrate	Aug 16/22	0.250	mg/L	No
Nitrite	Nov 23/22	0.003<MDL	mg/L	No
Nitrate	Nov 23/22	0.189	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.

**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 small non-municipal non-residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) -(max#)	Geometric Mean Average	Unit of Measure	Number of Exceedances
Plumbing	0	N.A.	N.A.	N.A.	N.A.
Distribution	6	0.02 – 0.13	0.03	µg/L	0

**Summary of Organic parameters sampled during this reporting period or most recent**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	May 17/22	0.02<MDL	µg/L	No
Atrazine + N-dealkylated metabolites	May 17/22	0.01<MDL	µg/L	No
Azinphos-methyl	May 17/22	0.05<MDL	µg/L	No
Benzene	May 17/22	0.32<MDL	µg/L	No
Benzo(a)pyrene	May 17/22	0.004<MDL	µg/L	No
Bromoxynil	May 17/22	0.33<MDL	µg/L	No
Carbaryl	May 17/22	0.05<MDL	µg/L	No
Carbofuran	May 17/22	0.01<MDL	µg/L	No
Carbon Tetrachloride	May 17/22	0.17<MDL	µg/L	No
Chlorpyrifos	May 17/22	0.02<MDL	µg/L	No
Diazinon	May 17/22	0.02<MDL	µg/L	No
Dicamba	May 17/22	0.20<MDL	µg/L	No
1,2-Dichlorobenzene	May 17/22	0.41<MDL	µg/L	No
1,4-Dichlorobenzene	May 17/22	0.36<MDL	µg/L	No
1,2-Dichloroethane	May 17/22	0.35<MDL	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	May 17/22	0.33<MDL	µg/L	No
Dichloromethane	May 17/22	0.35<MDL	µg/L	No
2-4 Dichlorophenol	May 17/22	0.15<MDL	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	May 17/22	0.19<MDL	µg/L	No
Diclofop-methyl	May 17/22	0.40<MDL	µg/L	No
Dimethoate	May 17/22	0.06<MDL	µg/L	No
Diquat	May 17/22	1<MDL	µg/L	No
Diuron	May 17/22	0.03<MDL	µg/L	No

<b>Glyphosate</b>	May 17/22	1<MDL	µg/L	No
<b>Malathion</b>	May 17/22	0.02<MDL	µg/L	No
<b>MCPA</b>	May 17/22	0.00012<MDL	µg/L	No
<b>Metolachlor</b>	May 17/22	0.01<MDL	µg/L	No
<b>Metribuzin</b>	May 17/22	0.02<MDL	µg/L	No
<b>Monochlorobenzene</b>	May 17/22	0.30<MDL	µg/L	No
<b>Paraquat</b>	May 17/22	1<MDL	µg/L	No
<b>Pentachlorophenol</b>	May 17/22	0.15<MDL	µg/L	No
<b>Phorate</b>	May 17/22	0.01<MDL	µg/L	No
<b>Picloram</b>	May 17/22	1<MDL	µg/L	No
<b>Polychlorinated Biphenyls(PCB)</b>	May 17/22	0.04<MDL	µg/L	No
<b>Prometryne</b>	May 17/22	0.03<MDL	µg/L	No
<b>Simazine</b>	May 17/22	0.01<MDL	µg/L	No
<b>THM</b> (NOTE: annual average from Distribution – 12 samples)	Feb 14/22 May 17/22 Aug 16/22 Nov 23/22	67	µg/L	No
<b>Terbufos</b>	May 17/22	0.01<MDL	µg/L	No
<b>Tetrachloroethylene</b>	May 17/22	0.35<MDL	µg/L	No
<b>2,3,4,6-Tetrachlorophenol</b>	May 17/22	0.20<MDL	µg/L	No
<b>Triallate</b>	May 17/22	0.01<MDL	µg/L	No
<b>Trichloroethylene</b>	May 17/22	0.44<MDL	µg/L	No
<b>2,4,6-Trichlorophenol</b>	May 17/22	0.25<MDL	µg/L	No
<b>Trifluralin</b>	May 17/22	0.02<MDL	µg/L	No
<b>Vinyl Chloride</b>	May 17/22	0.17<MDL	µg/L	No
<b>HAA5</b> (NOTE: annual average from Distribution)	Feb 14/22 May 17/22 Aug 16/22 Nov 23/22	65.3	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
<b>THM</b> (NOTE: annual average from Distribution – 12 samples)	<b>67</b>	ug/L	Feb 14/22 May 17/22 Aug 16/22 Nov 23/22
<b>HAA5</b> (NOTE: annual average from Distribution – 12 samples)	<b>65.3</b>	ug/L	Feb 14/22 May 17/22 Aug 16/22 Nov 23/22