

# 2017 Annual Drinking Water System (DWS) Quality Report for Ballantrae/Musselman's Lake DWS

Prepared by The Regional Municipality of York pursuant to Section 11 of O.Reg. 170/03

**Drinking Water System Number:** 220008658  
**Drinking Water System Name:** Ballantrae/Musselman's Lake DWS  
**Drinking Water System Owner:** The Regional Municipality of York  
**DWS Category:** Large Municipal Residential  
**Drinking Water System Classification:** Water Distribution and Supply II  
**Reporting period:** Jan 1, 2017 - Dec 31, 2017

**The Ballantrae/Musselman's Lake DWS serves approximately 5056 people**

This annual report is available to the public at no charge on the Region's website ([york.ca/drinkingwater](http://york.ca/drinkingwater)) and upon request. Accessible formats or communication supports are also available upon request. Please contact [AccessYork@york.ca](mailto:AccessYork@york.ca) or call 1-877-464-9675.

**Summary report required under O.Reg. 170/03 Schedule 22 will be available for inspection at:**

The Regional Municipality of York  
Administrative Centre  
Environmental Services Department  
17250 Yonge Street, Newmarket ON  
and online, at [york.ca/drinkingwater](http://york.ca/drinkingwater)

**List all Drinking Water Systems which receive their drinking water from the Ballantrae/Musselman's Lake DWS:**

Ballantrae-Musselman's Lake Distribution System (260006737)

**A copy of York Region's annual report was provided to all Drinking Water System owners that are connected to and receive drinking water from York Region.**

**System users were notified that York Region's annual report is available free of charge by public access and notice through:**

- Media (internet, social media)
- Public Requests at any time

## **Description of the Ballantrae/Musselman's Lake DWS**

### **Introduction**

The communities of Ballantrae and Musselman's Lake are centered on Aurora Road between Highway 48 and Ninth Line in Whitchurch-Stouffville. Local groundwater is naturally high in minerals. York Region operates the water supply, while the Town of Whitchurch-Stouffville maintains water quality and distributes it to users. The Province governs the Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

### **Raw water source**

Groundwater

### **Profile of water in distribution system**

Groundwater

### **Water treatment description**

Ballantrae-Musselman's Lake system includes three wells and one storage facility. Water is disinfected with chlorine. Sodium silicate is used to manage iron and manganese. The storage facility holds water and maintains pressure. Tests confirm ground water quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

### **List of water treatment chemicals used in this system**

Chlorine (Gas, Sodium Hypochlorite); Sodium Silicate

### **Brief description and breakdown of monetary expenses incurred**

\$35,438 for general maintenance and repair.

**Notices submitted under Section 18(1) of the Safe Drinking Water Act or Section 16-4 of O.Reg. 170/03 and reported to MOECC Spills Action Centre**

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	18-Mar-17	mg/L	0.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	19-Mar-17
	04-Jul-17	mg/L	0.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	04-Jul-17

### Microbiological testing completed under Schedule 10 of O.Reg. 170/03

\*For distribution samples collected under Schedule 10, refer to the local municipality

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	152	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	6
Total Coliforms	Raw	152	1
	Treated	104	0

### Operational testing completed under Schedule 7 of Regulation 170/03 during this reporting period

\*8,760 is used as the number of samples for continuous analyzers

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.34	0.00	2.84
Turbidity (Treated)	NTU	8,760	0.07	0.02	6.65

### Summary of testing pursuant to Schedule 13 of O. Reg. 170/03 and sampling carried out in accordance with the requirement of an approval, order or other legal instrument

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to four decimals. For a complete set of results, see the open dataset available at [york.ca/drinkingwater](http://york.ca/drinkingwater)

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	11	0.085	0.03	<0.125
Haloacetic Acids	mg/L	4	0.021	<0.02	0.024
Nitrate	mg/L	9	0.766	<1	<1.25
Nitrate + Nitrite	mg/L	9	0.767	<0.006	<1.25
Nitrite	mg/L	9	0.078	<0.006	<0.125
Sodium	mg/L	3	11.675	11.3	12.4
Trihalomethanes	mg/L	6	0.017	0.009	0.0276

\*Lead testing under Schedule 15.1 is conducted by the Local Municipality - refer to Local Municipality reports for results. York Region occasionally collects samples tested for lead for non-regulatory research purposes

**Organic and inorganic parameter(s) that exceeded half the standard prescribed in Schedule 2 of O.Reg. 169/03 Ontario Drinking Water Quality Standards**

**Not Applicable**  
 There were no parameters that exceeded half the standard indicated above for the Ballantrae/Musselman's Lake DWS during 2017

**Summary of inorganic parameters teste pursuant to Schedule 23 of O.Reg. 170/03**

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to four decimals. For a complete set of results, see the open dataset available at [york.ca/drinkingwater](http://york.ca/drinkingwater)

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0006	0.0006	0.0007	0.006
Arsenic	mg/L	3	0.0006	<0.0005	0.0008	0.025
Barium	mg/L	3	0.0773	0.0596	0.1	1
Boron	mg/L	3	0.0291	0.0238	0.0347	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	3	0.0006	0.0005	0.0008	0.05
Mercury	mg/L	3	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	3	0.0005	<0.0005	<0.0005	0.02

**Summary of organic parameters tested pursuant to Schedule 24 of O.Reg. 170/03**

Values with a less than sign ("<") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to four decimals. For a complete set of results, see the open dataset available at [york.ca/drinkingwater](http://york.ca/drinkingwater)

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	2	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	2	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	2	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	2	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	2	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	2	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	2	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	2	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	2	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	2	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	2	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	2	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	2	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	2	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	2	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	2	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	2	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	2	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	2	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	2	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	2	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	2	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	2	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	2	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	2	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	2	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	2	0.0002	<0.0002	<0.0002	0.002