



# **2019 Annual Compliance Report**

## **Drinking Water System General Information**

This report has been prepared in accordance with the reporting requirements of the Safe Drinking Water Act 2002 O. Reg 170/03, s 11(1), (3), (6), (7), (8), (9.1) and 10 as well as Schedule 22-1 and 22-2.

This annual report is included in the Water Summary Report presented to Council and can be viewed on the Municipal website at [www.meaford.ca](http://www.meaford.ca)

## **Drinking Water System Information**

Drinking Water System Number	210000176
Drinking Water System Name	The Municipality of Meaford Water Treatment Plant
Drinking Water System Owner	Municipality of Meaford
Drinking Water System Category	Large Municipal Residential
Period being reported	January 1, 2019 to December 31, 2019
Does your Drinking Water System serve more than 10,000 people?	No

## **Drinking Water System Description**

The Meaford Water System is situated on Georgian Bay in Meaford, Ontario. The treatment plant was originally constructed in 1959/60. In 1975 gas chlorination was added to the treatment plant. The Meaford Water Plant was further upgraded in 1999/2000 by completing the following: increasing the clear water storage, expanding the control building, installing a SCADA system and new low lift and high lift pumping system, backwash waste water treatment.

Another upgrade in 2002 added one more gas chlorinator, ultraviolet disinfection on both filter effluent's, in line booster pump to feed plant and new truck fill station. Two new chlorine sample pumps and one new filter effluent sample pump. Both filter effluent and treated water effluent turbidimeters were upgraded in 2011.

The plant SCADA system and PLC panels were upgraded during 2013. The system presently consists of the following:

- An approximately 760mm raw water intake extends into Georgian Bay with chlorination for zebra mussel control
- Two 150 HP low lift pumps
- Injection of poly aluminum chloride prior to inline flash mixer
- Two filter beds with multi-media and backwash troughs
- Ultraviolet disinfection on filter effluent's
- Gas chlorine disinfection (3 chlorinators)
- One clearwell comprising of two cells in series
- Three 200 HP high lift pumps
- A filter backwash waste treatment system

The filter backwash wastewater treatment system consists of surge tank, a treatment clarifier, and injection of vitamin D-Chlor for de-chlorination. The treated backwash wastewater is discharged into the storm sewer which ends up in Georgian Bay, the sludge is pumped into the sanitary sewer. The water plant has standby power, provided by a Diesel Generator (including fuel storage tanks).

The UTM co-ordinates of the plant are: Zone 17 531440E, 494400N

### **Meaford Water Tower**

An elevated storage tank is located on Nelson St. in Meaford and is referred to as the Meaford Water Tower. This Tower has a capacity of 570 cubic meters. The Tower level supplies water pressure to the lower zone as well as the pressure stations in the Municipality.

### **St. Vincent St. Booster Station**

A booster station is located on St. Vincent St. and is known as St. Vincent St. Booster Station. The water pressure at this station is boosted for higher distribution pressures and volume to provide fire flows throughout the upper southern part of the Municipality.

### **Nelson St. Booster Station**

A booster station is located on Nelson St. across from the Water Tower. The water from this station is boosted to supply volume throughout the upper west part of the Municipality.

### **Summary of Water Treatment Chemicals Used Over this Reporting Period**

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Chlorine Gas (68 kg cylinders) – used in zebra mussel chlorination (during warmer months >10 degrees), used in chlorination during filtration and post chlorination (treatment after filtration).

PAX XL-1900 – is a coagulant used prior to filtration. A coagulants primary objective is to adhere to suspended particulates, make them bigger in size, so there is a higher removal rate of particulates in the filtration process.

Vita D-Chlor – is a chemical for dechlorinating previously treated water before it is sent to sewer or Georgian Bay after waste processes.

## Summary of Monetary Expenses Incurred in 2019

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Bulk Water Piping and Backflow upgrades	\$15,528.57
Highlift Pump #2 replacement	\$50,318.89
Sample Station	\$2,216.00
St. Vincent VFD Replacement	\$5,413.63
UV Valves and Actuators	\$38,893.94
Fuel Tank Replacement at WTP	\$89,013.31

## Summary of Adverse Drinking Water Quality Results

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There were no incidents of adverse drinking water quality during 2019.

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

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Parameter	Number of Samples	Range of E. Coli or Fecal Results Min-Max	Range of Total Coliform Results Min-Max	Number of HPC Samples	Results of HPC Results Min # to Max #
Raw	52	0-13	0-340	N/A	N/A
Treated	52	0	0	52	0-60
Distribution	211	0	0	67	0-180

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

## Summary of Operational Testing completed under Schedule 7, 8, or 9 of Ontario Regulation 170/03 during this reporting period

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	Number of Grab Samples	Range of Results Min # to Max #	Unit of Measure
<b>Turbidity</b>			
Treated	8760		NTU
<b>Chlorine</b>			
Treated	8760		mg/L

## Summary of additional Testing and Sampling

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Please see attached additional sampling results for Haloacetic Acids, Trihalomethanes, Process Wastewater Suspended Solids, Nitrate, Nitrite, pH and Alkalinity.

### Haloacetic Acid

Quarter	HAA Sample Result ug/L	Sampling Location
A	14	56 Stewart St.
B	5.3	WTP Sink
C	23.6	56 Stewart St.
D	5.5	Sample Station Ridge Road
<b>RAA</b>	<b>12.1</b>	

### Trihalomethanes

Quarter	THM Sample Result ug/L	Sampling Location
A	20	555 St. Vincent St.
B	20	158175 7 <sup>th</sup> Line
C	46	325 St. Vincent St.
D	30	Sample Station 7 <sup>th</sup> Line
<b>RAA</b>	<b>29</b>	

### Process Wastewater Total Suspended Solids

Sample Date	Result Value	Unit of Measure
January 8, 2019	22	mg/L
February 6, 2019	41	mg/L
March 8, 2019	39	mg/L
April 16, 2019	52	mg/L
May 14, 2019	2	mg/L
June 18, 2019	32	mg/L

July 16, 2019	30	mg/L
August 22, 2019	21	mg/L
September 13, 2019	10	mg/L
October 23, 2019	16	mg/L
November 15, 2019	8	mg/L
December 7, 2019	7	mg/L
<b>Annual Average</b>	<b>23</b>	<b>mg/L</b>

### Nitrate Results

Sample Date	Location	Results (mg/L)
February 19, 2019	Meaford WTP-Treated Tap	0.351
May 21, 2019	Meaford WTP-Treated Tap	0.272
August 19, 2019	Meaford WTP-Treated Tap	0.231
November 18, 2019	Meaford WTP-Treated Tap	0.268

### Nitrite Results

Sample Date	Location	Results (mg/L)
February 19, 2019	Meaford WTP – Treated Tap	0.003<MDL
May 21, 2019	Meaford WTP-Treated Tap	0.003<MDL
August 19, 2019	Meaford WTP-Treated Tap	0.003<MDL
November 18, 2019	Meaford WTP-Treated Tap	0.003<MDL

### Summary of Lead, pH & Alkalinity Results

Sample Date	Location	Lead	pH	Alkalinity mg/L as CaCo3
March 27, 2019	325 St. Vincent St.	0.05	7.46	73
September 23, 2019	Water Tower	0.03	7.51	65
	Yard Hydrant Ridge Rd.	1.34	7.55	78
	Yard Hydrant Ivan	0.16	7.40	67

### Summary of Inorganic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Sept 16, 2019	0.10	ug/L	No
Arsenic	Sept 16, 2019	0.3	ug/L	No
Barium	Sept 16, 2019	12.3	ug/L	No
Boron	Sept 16, 2019	13	ug/L	No
Cadmium	Sept 16, 2019	0.005	ug/L	No
Chromium	Sept 16, 2019	0.21	ug/L	No
Mercury	Sept 16, 2019	0.01<MDL	ug/L	No
Sodium	Sept 18, 2017	4.38	mg/L	No
Uranium	Sept 16, 2019	0.079	ug/L	No
Fluoride	Sept 18, 2017	0.08	mg/L	No
Nitrite	Feb 19, 2019	0.003< MDL	mg/L	No
	May 21, 2019	0.003<MDL		
	Aug 19, 2019	0.003<MDL		
	Nov 18, 2019	0.003<MDL		
Nitrate	Feb 19, 2019	0.351	mg/L	No
	May 21, 2019	0.272		
	Aug 19, 2019	0.231		
	Nov 18, 2019	0.268		

## Summary of Organic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance (Yes or No)
Alachlor	Sept 16, 2019	0.02<MDL	ug/L	No
Atrazine + N-dealkylated metabolites	Sept 16, 2019	0.01	ug/L	No
Atrazine	Sept 16, 2019	0.01	ug/L	No
Desethyl atrazine	Sept 16, 2019	0.01<MDL	ug/L	No
Azinphos-methyl	Sept 16, 2019	0.05<MDL	ug/L	No
Benzene	Sept 16, 2019	0.32<MDL	ug/L	No
Benzo(a)pyrene	Sept 16, 2019	0.004<MDL	ug/L	No
Bromoxynil	Sept 16, 2019	0.33<MDL	ug/L	No
Carbaryl	Sept 16, 2019	0.05<MDL	ug/L	No
Carbofuran	Sept 16, 2019	0.01<MDL	ug/L	No
Carbon Tetrachloride	Sept 16, 2019	0.17<MDL	ug/L	No
Chlorpyrifos	Sept 16, 2019	0.02<MDL	ug/L	No
Diazinon	Sept 16, 2019	0.02<MDL	ug/L	No
Dicamba	Sept 16, 2019	0.20<MDL	ug/L	No
1,2-Dichlorobenzene	Sept 16, 2019	0.41<MDL	ug/L	No
1,4-Dichlorobenzene	Sept 16, 2019	0.36<MDL	ug/L	No
1,2-Dichloroethane	Sept 16, 2019	0.35<MDL	ug/L	No
1,1-Dichloroethylen	Sept 16, 2019	0.33<MDL	ug/L	No
Dichloromethane	Sept 16, 2019	0.35<MDL	ug/L	No
2-4 Dichlorophenol	Sept 16, 2019	0.15<MDL	ug/L	No
2,4 Dichlorophenoxy acetic acid (2,4-D)	Sept 16, 2019	0.19<MDL	ug/L	No
Diclofop-methyl	Sept 16, 2019	0.40<MDL	ug/L	No
Dimethoate	Sept 16, 2019	0.03<MDL	ug/L	No
Diquat	Sept 16, 2019	1<MDL	ug/L	No
Diuron	Sept 16, 2019	0.03<MDL	ug/L	No
Glyphosate	Sept 16, 2019	1<MDL	ug/L	No
Melathion	Sept 16, 2019	0.02<MDL	ug/L	No
Metolachlor	Sept 16, 2019	0.01<MDL	ug/L	No
Metribuzin	Sept 16, 2019	0.02<MDL	ug/L	No
Monochlorobenzene	Sept 16, 2019	0.30<MDL	ug/L	No
Paraquat	Sept 16, 2019	1<MDL	ug/L	No
Pentachlorophenol	Sept 16, 2019	0.15<MDL	ug/L	No
Phorate	Sept 16, 2019	0.01<MDL	ug/L	No

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance (Yes or No)</b>
Picloram	Sept 16, 2019	1<MDL	ug/L	No
PolychlorinatedBiphenyls (PCB)	Sept 16, 2019	0.04<MDL	ug/L	No
Prometryne	Sept 16, 2019	0.03<MDL	ug/L	No
Simazine	Sept 16, 2019	0.01<MDL	ug/L	No
THM (Note: Latest RAA)	Nov 18, 2019	29	ug/L	No
HAA (Note: Latest RAA)	Nov 18, 2019	12.1	ug/L	No
Terbufos	Sept 16, 2019	0.01<MDL	ug/L	No
Tetrachloroethylene	Sept 16, 2019	0.35<MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	Sept 16, 2019	0.20<MDL	ug/L	No
2 methyl-4 chlorophenozyacetic acid (MCPA)	Sept 16, 2019	0.00012<MDL	mg/L	No
Triallate	Sept 16, 2019	0.001<MDL	ug/L	No
Trichloroethylene	Sept 16, 2019	0.44<MDL	ug/L	No
2,4,6-Trichlorophenol	Sept 16, 2019	0.25<MDL	ug/L	No
Trifluralin	Sept 16, 2019	0.02<MDL	ug/L	No
Vinyl Chloride	Sept 16, 2019	0.17<MDL	ug/L	No