



# 2018 Annual Compliance Report

## Drinking Water System General Information

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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 has been 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

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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, 2018 to December 31, 2018
Does your Drinking Water System serve more than 10,000 people?	No

## Drinking Water System Description

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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 MCC 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 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 coagulant's 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 2018

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SCADA Programming Upgrades	\$62,615.00
Sludge Pump Replacement	\$6,107.65
Generator Maintenance	\$1,621.14
Backwash Pump Check Valve Replacement	\$9,780.15
Flow Meter Replacement	\$12,263.28
Chlorinator Maintenance Parts and Repairs	\$12,088.65
UV Reactor Maintenance Parts	\$8797.84
UV Reference Sensor Calibration	\$2741.00
Clarifier waste tank Cleanout	\$2030.00
Electrical Repairs	\$3904.00
Backflow Repair	\$2220.00

## Summary of Adverse Drinking Water Quality Results

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There was one instance of adverse drinking water in 2018. Following a water valve repair on Edwin St. samples were taken at private dwellings following the repair and sent to laboratory for analysis. One sample was determined to have 1 Total Coliform. Re-samples were taken before, at and after the place of adverse and came back clear of bacterial contamination. The Ministry of Environment, Conservation and Parks, Spills Action Centre and the Local Medical Officer of Health were all notified. An adverse water quality incident report was filled out and submitted.

## 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- NDOGT	0-NDOGT	N/A	N/A
Treated	52	0	0	52	0-20
Distribution	279	0	0-1	77	0-20

**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
August 17 2018	Distribution Sample - Total Coliform	1	CFU/100mL	Re-Sample	August 20 2018

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

	Number of Grab Samples	Range of Results Min # to Max #	Unit of Measure
<b>Turbidity</b>			
Treated	8760	0.04-0.24	NTU
<b>Chlorine</b>			
Treated	8760	0.49-4.99	mg/L

**Summary of additional Testing and Sampling**

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 # 1 ug/L	Sampling Location
A	12.1	Water Treatment Plant Drinking Water Tap
B	<5.3	56 Stewart St.
C	21.3	223 Nelson St. W
D	14.2	56 Stewart St.
<b>RAA</b>	<b>13</b>	

## Trihalomethanes

Quarter	THM Sample Result # 1 ug/L	Sampling Location
A	27	7 <sup>th</sup> Line B/O 158175
B	33	197716 Grey Rd. 7 YH
C	63	7 <sup>th</sup> Line B/O 158175
D	40	271 Graham St. YH
<b>RAA</b>	<b>41</b>	

## Process Wastewater Total Suspended Solids

Sample Date	Result Value	Unit of Measure
January 11, 2018	3	mg/L
February 7, 2018	19	mg/L
March 9, 2018	31	mg/L
April 11, 2018	14	mg/L
May 10, 2018	22	mg/L
June 15, 2018	28	mg/L
July 25, 2018	5	mg/L
August 13, 2018	23	mg/L
September 10, 2018	5	mg/L
October 9, 2018	20	mg/L
November 10, 2018	4	mg/L
December 14, 2018	7	mg/L
<b>Annual Average</b>	<b>15</b>	<b>mg/L</b>

### Nitrate Results

Sample Date	Location	Results (mg/L)
February 20, 2018	Meaford WTP-Treated Tap	0.296
May 22, 2018	Meaford WTP-Treated Tap	0.272
August 20, 2018	Meaford WTP-Treated Tap	0.224
November 19, 2018	Meaford WTP-Treated Tap	0.250

### Nitrite Results

Sample Date	Location	Results (mg/L)
February 20, 2018	Meaford WTP – Treated Tap	0.003<MDL
May 22, 2018	Meaford WTP-Treated Tap	0.003<MDL
August 20, 2018	Meaford WTP-Treated Tap	0.003<MDL
November 19, 2018	Meaford WTP-Treated Tap	0.003<MDL

### pH & Alkalinity Results

Sample Date	Location	pH	Alkalinity mg/L as CaCo <sub>3</sub>
March 26, 2018	197714 Grey Rd 7	7.76	75
September 24, 2018	F.H 024 168 Boucher St. E	7.87	69

## Summary of Inorganic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Sept 24, 2018	0.09	ug/L	No
Arsenic	Sept 24, 2018	0.2<MDL	ug/L	No
Barium	Sept 24, 2018	12.4	ug/L	No
Boron	Sept 24, 2018	16	ug/L	No
Cadmium	Sept 24, 2018	0.004	ug/L	No
Chromium	Sept 24, 2018	0.22	ug/L	No
Mercury	Sept 24, 2018	0.01	ug/L	No
Sodium	Sept 18, 2017	4.38	mg/L	No
Uranium	Sept 24, 2018	0.146	ug/L	No
Fluoride	Sept 18, 2017	0.08	mg/L	No
Nitrite	Feb 20, 2018 May 22, 2018 Aug 20, 2018 Nov 19, 2018	0.003< MDL 0.003<MDL 0.003<MDL 0.003<MDL	mg/L	No
Nitrate	Feb 20, 2018 May 22, 2018 Aug 20, 2018 Nov 19, 2018	0.296 0.272 0.224 0.250	mg/L	No

## Summary of Lead Testing

Location Type	Number of Samples	Range of Lead Results (min-max)	Unit of Measure	Number of Exceedances
Distribution	2	0.06	Ug/L	0

## Summary of Organic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance (Yes or No)
Alachlor	Sept 24, 2018	0.02<MDL	ug/L	No
Atrazine + N-dealkylated metabolites	Sept 24, 2018	0.01<MDL	ug/L	No
Atrazine	Sept 24, 2018	0.01<MDL	ug/L	No
Desethyl atrazine	Sept 24, 2018	0.01<MDL	ug/L	No
Azinphos-methyl	Sept 24, 2018	0.05<MDL	ug/L	No
Benzene	Sept 24, 2018	0.32<MDL	ug/L	No
Benzo(a)pyrene	Sept 24, 2018	0.004<MDL	ug/L	No
Bromoxynil	Sept 24, 2018	0.33<MDL	ug/L	No
Carbaryl	Sept 24, 2018	0.05<MDL	ug/L	No
Carbofuran	Sept 24, 2018	0.01<MDL	ug/L	No
Carbon Tetrachloride	Sept 24, 2018	0.16<MDL	ug/L	No
Chlorpyrifos	Sept 24, 2018	0.02<MDL	ug/L	No
Diazinon	Sept 24, 2018	0.02<MDL	ug/L	No
Dicamba	Sept 24, 2018	0.20<MDL	ug/L	No
1,2-Dichlorobenzene	Sept 24, 2018	0.41<MDL	ug/L	No
1,4-Dichlorobenzene	Sept 24, 2018	0.36<MDL	ug/L	No
1,2-Dichloroethane	Sept 24, 2018	0.35<MDL	ug/L	No
1,1-Dichloroethylen	Sept 24, 2018	0.33<MDL	ug/L	No
Dichloromethane	Sept 24, 2018	0.35<MDL	ug/L	No
2,4 Dichlorophenol	Sept 24, 2018	0.15<MDL	ug/L	No
2,4 Dichlorophenoxy acetic acid (2,4-D)	Sept 24, 2018	0.19<MDL	ug/L	No
Diclofop-methyl	Sept 24, 2018	0.40<MDL	ug/L	No
Dimethoate	Sept 24, 2018	0.03<MDL	ug/L	No
Diquat	Sept 24, 2018	1<MDL	ug/L	No
Diuron	Sept 24, 2018	0.03<MDL	ug/L	No
Glyphosate	Sept 24, 2018	1<MDL	ug/L	No
Melathion	Sept 24, 2018	0.02<MDL	ug/L	No
Metolachlor	Sept 24, 2018	0.01<MDL	ug/L	No
Metribuzin	Sept 24, 2018	0.02<MDL	ug/L	No
Monochlorobenzene	Sept 24, 2018	0.30<MDL	ug/L	No
Paraquat	Sept 24, 2018	1<MDL	ug/L	No
Pentachlorophenol	Sept 24, 2018	0.15<MDL	ug/L	No
Phorate	Sept 24, 2018	0.01<MDL	ug/L	No



Parameter	Sample Date	Result Value	Unit of Measure	Exceedance (Yes or No)
Picloram	Sept 24, 2018	1<MDL	ug/L	No
PolychlorinatedBiphenyls (PCB)	Sept 24, 2018	0.04<MDL	ug/L	No
Prometryne	Sept 24, 2018	0.03<MDL	ug/L	No
Simazine	Sept 24, 2018	0.01<MDL	ug/L	No
THM (Note: Latest RAA)	Nov 19, 2018	41	ug/L	No
HAA (Note: Latest RAA)	Nov 19, 2018	13	ug/L	No
Terbufos	Sept 24, 2018	0.01<MDL	ug/L	No
Tetrachloroethylene	Sept 24, 2018	0.35<MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	Sept 24, 2018	0.20<MDL	ug/L	No
2 methyl-4 chlorophenozyacetic acid (MCPA)	Sept 24, 2018	0.00012<MDL	mg/L	No
Triallate	Sept 24, 2018	0.001<MDL	ug/L	No
Trichloroethylene	Sept 24, 2018	0.44<MDL	ug/L	No
2,4,6-Trichlorophenol	Sept 24, 2018	0.25<MDL	ug/L	No
Trifluralin	Sept 24, 2018	0.02<MDL	ug/L	No
Vinyl Chloride	Sept 24, 2018	0.17<MDL	ug/L	No