2024 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 to be presented to Council and can be viewed on the Municipal website at www.meaford.ca/WaterReports

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, 2024 to December 31, 2024
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. 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
- Gas chlorine disinfection (3 chlorinators)
- One clearwell comprising of two cells in series
- Three 200 HP high lift pumps and 1 VFD high lift pump 75HP
- A filter backwash waste treatment system

The filter backwash wastewater treatment system consists of 2 Backwash pumps, air scour, 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 replaced in 2019).

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 station consists of 5 pumps. 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

In 2022 the construction of the new Nelson Street booster station was completed. The new station is located on the same property as the Water Tower. The station consists of 7 pumps: of varying horsepower. This station is used to boost the water pressure in the distribution and provide adequate fire flows throughout the upper western part of the Municipality.

Summary of Drinking Water Inspections and Audits

MECP Inspections
During 2024 there was one MECP inspection completed in February. The Municipality received 100% on the inspection report card.

Internal Audit
Tavares Group evaluated the DWQMS during 2024. They concluded with 1 minor non-conformity

and six opportunities for improvement.

External Audit
The external audit was conducted by Intertek – SAI Global there were no non-conformities and two opportunities for improvement.

Summary of Water Treatment Chemicals Used Over this Reporting Period

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 2024

Chlorine Tank Regulator Replacement (2)	$10,572.00
UV Reactor Purchase (Install to occur to 2025)	$358,636.00
SCBA Replacement	$10,000.00
Generator Conduit and Feeder Repair -Emergency purchase (WTP)	$26,131.79
Filter #1, Filter #2 and Backwash Flow meter replacements	$40,938.77

Summary of Adverse Drinking Water Quality Results

There were no incidents of adverse drinking water quality during 2024.

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

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	53	0-11	0-267	N/A	N/A
Treated	53	0	0	53	0-2
Distribution	171	0	0	53	0-13

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

	Number of Grab Samples	Range of Results Min # to Max #	Unit of Measure
Turbidity			
Treated	8760	0.07-4	NTU
Chlorine			
Treated	8760	1.05-3.25	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 ug/L	Sampling Location
A	5.3	223 Nelson St W.
B	18.8	223 Nelson St W.
C	22.6	91 Edwin St. Valve Chamber
D	14.2	223 Nelson St W.
RAA	**15.23**	

Trihalomethanes

Quarter	THM Sample Result ug/L	Sampling Location
A	19	325 St Vincent St.
B	30	St Andrews St Yard Hydrant
C	54	Golf Course Sample Stn
D	24	Algonquin Dr. Sample Stn
RAA	**31.75**	

Process Wastewater Total Suspended Solids

Sample Date	Result Value	Unit of Measure
January 12, 2024	10	mg/L
February 15, 2024	15	mg/L
March 13, 2024	29	mg/L
April 17, 2024	20	mg/L
May 22, 2024	30	mg/L
June 20, 2024	3	mg/L
July 19, 2024	42	mg/L
August 16, 2024	16	mg/L
September 20, 2024	25	mg/L
October 30, 2024	24	mg/L
November 21, 2024	16	mg/L
December 19, 2024	27	mg/L
Annual Average	**21.4**	**mg/L**

Nitrate Results

Sample Date	Location	Results (mg/L)
February 20, 2024	Meaford WTP-Treated Tap	0.253
May 21, 2024	Meaford WTP-Treated Tap	0.245
August 12, 2024	Meaford WTP-Treated Tap	0.224
November 18, 2024	Meaford WTP-Treated Tap	0.233

Nitrite Results

Sample Date	Location	Results (mg/L)
February 20, 2024	Meaford WTP – Treated Tap	0.003<MDL
May 21, 2024	Meaford WTP-Treated Tap	0.003<MDL
August 12, 2024	Meaford WTP-Treated Tap	0.003<MDL
November 18, 2024	Meaford WTP-Treated Tap	0.003<MDL

Summary of Lead, pH & Alkalinity Results

Sample Date	Location	Lead	pH	Alkalinity mg/L as CaCo3
March 18, 2024	St Andrews Yard Hydrant	0.07	7.41	74
	325 St Vincent St	0.11	7.43	75
	Stn 3	0.26	7.31	71
September 24, 2024	223 Nelson St W	3.80	7.62	76
	Golf Course Sample Stn	3.40	7.68	67
	Memorial Park Auto Flusher	0.09	7.95	72

Summary of Inorganic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Sept 16, 2024	0.6<MDL	ug/L	No
Arsenic	Sept 16, 2024	0.3	ug/L	No
Barium	Sept 16, 2024	13.8	ug/L	No
Boron	Sept 16, 2024	14	ug/L	No
Cadmium	Sept 16, 2024	0.003<MDL	ug/L	No
Chromium	Sept 16, 2024	0.18	ug/L	No
Mercury	Sept 16, 2024	0.01<MDL	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Sodium	Sept 20, 2022	4.40	mg/L	No
Uranium	Sept 16, 2024	0.094	ug/L	No
Fluoride	Sept 20, 2022	0.06<MDL	mg/L	No
Nitrite	Feb 20, 2024 May 21, 2024 Aug 12, 2024 Nov 18, 2024	0.003<MDL 0.003<MDL 0.003<MDL 0.003<MDL	mg/L	No
Nitrate	Feb 20, 2024 May 21, 2024 Aug 12, 2024 Nov 18, 2024	0.253 0.245 0.224 0.233	mg/L	No

Summary of Organic Parameters

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance (Yes or No)
Alachlor	Sept 16, 2024	0.02<MDL	ug/L	No
Atrazine + N-dealkylated metabolites	Sept 16, 2024	0.02	ug/L	No
Atrazine	Sept 16, 2024	0.01	ug/L	No
Desethyl atrazine	Sept 16, 2024	0.01	ug/L	No
Azinphos-methyl	Sept 16, 2024	0.05<MDL	ug/L	No
Benzene	Sept 16, 2024	0.32<MDL	ug/L	No
Benzo(a)pyrene	Sept 16, 2024	0.004<MDL	ug/L	No
Bromoxynil	Sept 16, 2024	0.33<MDL	ug/L	No
Carbaryl	Sept 16, 2024	0.05<MDL	ug/L	No
Carbofuran	Sept 16, 2024	0.01<MDL	ug/L	No
Carbon Tetrachloride	Sept 16, 2024	0.17<MDL	ug/L	No
Chlorpyrifos	Sept 16, 2024	0.02<MDL	ug/L	No
Diazinon	Sept 16, 2024	0.02<MDL	ug/L	No
Dicamba	Sept 16, 2024	0.20<MDL	ug/L	No
1,2-Dichlorobenzene	Sept 16, 2024	0.41<MDL	ug/L	No
1,4-Dichlorobenzene	Sept 16, 2024	0.36<MDL	ug/L	No
1,2-Dichloroethane	Sept 16, 2024	0.35<MDL	ug/L	No
1,1-Dichloroethylene	Sept 16, 2024	0.33<MDL	ug/L	No
Dichloromethane	Sept 16, 2024	0.35<MDL	ug/L	No
2-4 Dichlorophenol	Sept 16, 2024	0.15<MDL	ug/L	No
2,4 Dichlorophenoxyacetic acid (2,4-D)	Sept 16, 2024	0.19<MDL	ug/L	No
Diclofop-methyl	Sept 16, 2024	0.40<MDL	ug/L	No
Dimethoate	Sept 16, 2024	0.06<MDL	ug/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance (Yes or No)
Diquat	Sept 16, 2024	1<MDL	ug/L	No
Diuron	Sept 16, 2024	0.03<MDL	ug/L	No
Glyphosate	Sept 16, 2024	1<MDL	ug/L	No
Malathion	Sept 16, 2024	0.02<MDL	ug/L	No
Metolachlor	Sept 16, 2024	0.01<MDL	ug/L	No
Metribuzin	Sept 16, 2024	0.02<MDL	ug/L	No
Monochlorobenzene	Sept 16, 2024	0.3<MDL	ug/L	No
Paraquat	Sept 16, 2024	1<MDL	ug/L	No
Picloram	Sept 16, 2024	1<MDL	ug/L	No
Pentachlorophenol	Sept 16, 2024	0.15<MDL	ug/L	No
Phorate	Sept 16, 2024	0.01<MDL	ug/L	No
Polychlorinated Biphenyls (PCBs)	Sept 16, 2024	0.04<MDL	ug/L	No
Prometryne	Sept 16, 2024	0.03<MDL	ug/L	No
Simazine	Sept 16, 2024	0.01<MDL	ug/L	No
THM (Note: Latest RAA)	Nov 18, 2024	24	ug/L	No
HAA (Note: Latest RAA)	Nov 18, 2024	14.2	ug/L	No
Terbufos	Sept 16, 2024	0.01<MDL	ug/L	No
Tetrachloroethylene	Sept 16, 2024	0.35<MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	Sept 16, 2024	0.20<MDL	ug/L	No
2 methyl-4 chlorophenozyacetic acid (MCPA)	Sept 16, 2024	0.00012<MDL	mg/L	No
Triallate	Sept 16, 2024	0.01<MDL	ug/L	No
Trichloroethylene	Sept 16, 2024	0.44<MDL	ug/L	No
2,4,6-Trichlorophenol	Sept 16, 2024	0.25<MDL	ug/L	No
Trifluralin	Sept 16, 2024	0.02<MDL	ug/L	No
Vinyl Chloride	Sept 16, 2024	0.17<MDL	ug/L	No