

## Drinking Water Quality and Compliance Village of Marengo

### Introduction

The Water Security Agency and the Ministry of Environment requires that at least once each year waterworks owners provide notification to consumers of the quality of water produced and supplied as well as information on the performance of the waterworks in submitting samples as required by a Minister's Order or Permit to Operate a waterworks. The following is a summary of the Marengo water quality and sample submission compliance record for the January 1<sup>st</sup> to December 31<sup>st</sup>, 2022 time period. This report was completed on June 28<sup>th</sup>, 2023 Readers should refer to Water Security Agency's [Municipal Drinking Water Quality Monitoring Guidelines, June 2015, EPB 502](#) for more information on minimum sample submission requirements and the meaning of type of sample. Permit requirements for a specific waterworks may require more sampling than outlined in the department's monitoring guidelines. If consumers need more information on the nature and significance of specific water tests, for example, "what is the significance of Selenium in a water supply", more detailed information is available from: [http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index\\_e.html](http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index_e.html).

### Water Quality Standards

#### Bacteriological Quality

Parameter/Location	Limit	Regular Samples Required	Regular Samples Submitted	# of Positive Regular Submitted (%)
Total Coliform	0 Organisms/100 mL	24	25	0
E. coli	0 Organisms/100 mL	24	25	0
Background Bacteria	Less than 200/100 mL			

#### Water Disinfection –

#### Chlorine Residual in Distribution System for Test Results Submitted with Bacteriological Samples

Parameter	Minimum Limit	Total Chlorine Residual Range	Free Chlorine Residual Range	# Tests Required	# Tests Submitted	# Adequate Chlorine (%)
Chlorine	0.1 mg/L free OR					
Residual	0.5 mg/L total	0.78 to 2.2	0.4 to 2.2	24	25	100

#### Water Disinfection - Free Chlorine Residual for Water Entering Distribution System from Waterworks Records- From Water Treatment Plant Records

Parameter	Limit (mg/L)	Test Level Range	# Tests Performed	# Tests Not Meeting Requirements
Free Chlorine Residual	at least 0.1	0.18 to 2.68	364	0

*A minimum of 0.1 milligrams per litre (mg/L) free chlorine residual is required for water entering the distribution system. Tests are normally performed on a daily basis by the waterworks operator and are to be recorded in operation records. This data includes the number of free chlorine residual tests performed, the overall range of free chlorine residual (highest and lowest recorded values) and the number of tests and percentage of results not meeting the minimum requirement of 0.1 mg/L free chlorine residual.*

#### Turbidity – From Water Treatment Plant Records

Parameter	Limit Limit (NTU)	Range (NTU)	# Tests Required	#Tests Performed	# of Days Exceeding Limit
Turbidity	<0.3 or 0.2 95% of Measurements each month; not to exceed 0.3 or 0.2 for more than 12 consecutive hours Never > 1.0	0.021 to 0.303	365	278	19

*Inline Turbidity meter started June 16, 2021*



### Chemical – Health Category

All waterworks serving less than 5000 persons are required to submit water samples for SE's Chemical Health category once every 2 years. The Chemical Health category includes analysis for arsenic, barium, boron, cadmium, chromium, fluoride, lead, nitrate, selenium and uranium.

The last sample for Chemical Health analysis was submitted on November 24<sup>th</sup>, 2021. Sample results indicated that the provincial drinking water quality standards were not exceeded.

Parameter	Limit MAC(mg/L)	Limit IMAC (mg/L)	Sample Result(s)	# Samples Exceeding Limit	
Arsenic	0.010		0.0004	0	* Results expressed as average values for communities or waterworks that fluoridate drinking water supplies or those with elevated concentrations of fluoride or nitrates.
Barium	1.0		0.0172	0	
Boron		5.0	0.1	0	
Cadmium	0.005		0.00015	0	
Chromium	0.05		0.0019	0	
Fluoride (avg*)	1.5		0.24	0	
Lead	0.01		0.010	0	
Nitrate (avg*)	45		0.53	0	
Selenium	0.01		0.0013	0	
Uranium	0.02		0.0086	0	

### Chemical – Trihalomethanes (THMs) and Haloacetic Acids (HAAs)

Parameter	THMs Limit (mg/L)	Sample Result (average)	# Samples Required	# Samples Submitted
Trihalomethanes	0.1	0.080	4 (1 every 3 months)	5
Haloacetic Acids	0.08	0.034	4 (1 every 3 months)	4

### General Chemical

Parameter	Aesthetic Objectives * (mg/L)	Sample Results (average)	# Samples Required	# Samples Submitted
Alkalinity	500	339	4	4
Bicarbonate	No Objective	414	4	4
Calcium	No Objective	130	4	4
Carbonate	No Objective	0	4	4
Chloride	250	38	4	4
Conductivity	No Objective	1337	4	4
Hardness	800	596	4	4
Magnesium	200	83	4	4
PH	No Objective	8	4	4
Sodium	300	103	4	4
Sulphate	500	365	4	4
Total dissolved Solids	1500	1129	4	4

All waterworks serving less than 5000 persons are required to submit water samples for SE's General Chemical category once every two years if a ground water source and once per three months every second year if a surface water or blended surface/groundwater source. The General Chemical category includes analysis for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as CaCO<sub>3</sub>), magnesium, sodium, sulphate and total dissolved solids.

The last sets of quarterly samples for General Chemical analysis were required in 2021 and were submitted on April 27<sup>th</sup>, 2021, June 8<sup>th</sup>, 2021, August 17<sup>th</sup>, 2021 and November 24<sup>th</sup>, 2021. Sample results indicated that there were no exceedences of the provincial aesthetic objectives for the General Chemical category.

\*Objectives apply to certain characteristics of or substances found in water for human consumptive or hygienic use. The presence of these substances will affect the acceptance of water by consumers and/or interfere with the practice of supplying good quality water. Compliance with drinking water aesthetic objectives is not mandatory as these objectives are in the range where they do not constitute a health hazard. The aesthetic objectives for several parameters (including hardness as CaCO<sub>3</sub>, magnesium, sodium and total dissolved solids) consider regional differences in drinking water sources and quality.



**More information on water quality and sample submission performance may be obtained from:**

Village of Marengo  
Box 70 Marengo, SK S0L 2K0  
306-968-2922/Fax: 306-912-8922  
rm292.rm322@sasktel.net

The following is information on the Village of Marengo water and sewer works, as required under *The Municipalities Regulations*.

2022 Waterworks Financial Overview:

**Includes Conditional grants for capital purchases but not amortization:**

- total waterworks revenues - \$43,850.00
- total waterworks expenditures - \$64,958.00
- total debt payments on waterworks infrastructure loans - \$0 (0 loans)
- comparison of waterworks revenues to expenditures plus debt payments, expressed as a ratio:  

<u>\$43,850.00</u>	= 0.68	(For 2022, waterworks revenues covered 68% of the waterworks expenditures with a deficit of \$21,108.00)
\$64,958.00		

The following waterworks information is available at the municipal office for public viewing:

- The waterworks rate policy and capital investment strategy
- the above financial information
- the 2005 waterworks assessment

Water Reserves Account Balance at December 31<sup>st</sup>, 2022 – \$95,366.00

