



Saskatchewan  
Ministry of  
Environment



## Drinking Water Quality and Compliance City of Martensville, 2014 Annual Notice to Consumers

The Water Security Agency and 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 City of Martensville water quality and sample submission compliance record for the January to December 2014 time period. This report was completed on June 11, 2015. Readers should refer to Saskatchewan Water Security Agency's [Municipal Drinking Water Quality Monitoring Guidelines, June 2015, EPB 502](#) for more information on minimum sample submission requirements. 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 Sample Required	Regular Samples Submitted	# of Positive Regular Submitted (Percentage)
Total Coliform and E. coli	0 organisms/100 mL	156	159	0
E. coli	0 organisms/100 ml	156	159	0
Background Bacteria	Less than 200 organisms/100 mL	156	159	0

*The owner/operator is responsible to ensure that one hundred percent of all bacteriological samples are submitted as required. Generally analysis is performed on a single sample for all parameters mentioned above. All waterworks are required to submit samples for bacteriological water quality, the frequency of monitoring depends on the population served by the waterworks.*

#### Water Disinfection – Chlorine Residual for Test Results Submitted with Bacteriological Samples

Parameter	Minimum Limit (mg/L)	Free Chlorine Residual Range	Total Chlorine Residual Range	# Tests Required	# Tests Submitted	# Adequate Chlorine (%)
Chlorine Residual in Distribution System	0.1 mg/L free OR 0.5 mg/L total	0..01 – .17	0.95 – 1.88	156	159	100%

*A minimum of 0.1 milligrams per litre (mg/L) free chlorine residual **OR** 0.5 mg/L total chlorine residual is required at all times throughout the distribution system unless otherwise approved. A proper chlorine submission is defined as a bacteriological sample submission form with both the free and total chlorine residual fields filled out. An*

adequate chlorine is a result that indicates that the chlorine level is above the regulated minimums. An adequate chlorine may be counted even if the chlorine results were submitted incorrectly. A waterworks is required to submit chlorine residual test results on every bacteriological sample they submit.

**Water Disinfection – Free Chlorine Residual for Water Entering Distribution System – From Water Treatment Plant Records**

Parameter	Limit (mg/L)	Test Level Range	# Tests Performed	# Tests Not Meeting Requirements
Total Chlorine	at least 0.5	1.21 – 2.65	730	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 operators 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**

Parameter	Limit (NTU)	Test Level Range	# Tests Not Meeting Requirements	Maximum Turbidity (NTU)	# Tests Required	# Tests Performed
Turbidity	1.0	.06 – 0.9	0	0.9	730	730

Turbidity is a measure of water treatment efficiency. Turbidity measures the “clarity” of the drinking water and is generally reported in Nephelometric Turbidity Units (NTU). All waterworks are required to monitor turbidity at the water treatment plant. The frequency of measurement varies from daily for small systems to continuous for larger waterworks.

**Chemical – Trihalomethanes**

Parameter	Trihalomethanes Limit (mg/L)	Sample Result (average)	# Samples Required	# Samples Submitted
Trihalomethanes	0.1	.051	4 (1 every 3 months)	4

**Chemical – Health Category** (see 2014 WTR Supply Consumer Notification information on Website)

Parameter	Limit MAC(mg/L)	Limit IMAC (mg/L)	Sample Results	Samples Exceeding MAC/IMAC	# Samples Required	# Samples Required
Arsenic	0.025		_____	_____	NA	_____
Barium	1.0		_____	_____	NA	_____
Boron		5.0	_____	_____	NA	_____
Cadmium	0.005		_____	_____	NA	_____
Chromium	0.05		_____	_____	NA	_____
Fluoride (avg.*)	1.5		_____	_____	NA	_____
Lead	0.01		_____	_____	NA	_____
Nitrate (avg.*)	45.0		_____	_____	NA	_____
Selenium	0.01		_____	_____	NA	_____
Uranium	0.02		_____	_____	NA	_____

Substances within the chemical health category may be naturally occurring in drinking water sources or may be the result of human activities. These substances may represent a long-term health risk if the Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) is exceeded. All drinking water supplies are required to monitor for substances in the “Chemical-Health” category, the frequency of monitoring depends on the population served by the waterworks. Some waterworks add fluoride to drinking water as a means to aid in the prevention of dental decay.

\* Results expressed as average values for communities or waterworks which fluoridate drinking water supplies or those with elevated concentrations of fluoride or nitrates.

Parameter	Limit MAC (mg/L)	Limit IMAC (mg/L)	Sample Result	# Samples Exceeding MAC/IMAC	#Samples Required	# Samples Submitted
Atrazine		0.005	_____	_____	NA	_____
Bromoxynil		0.005	_____	_____	NA	_____
Carbofuran	0.09		_____	_____	NA	_____
Chlorpyrifos	0.09		_____	_____	NA	_____
Dicamba	0.12		_____	_____	NA	_____
2,4-D*		0.1	_____	_____	NA	_____
Diclofop-methyl	0.009		_____	_____	NA	_____
Dimethoate		0.2	_____	_____	NA	_____
Malathion	.19		_____	_____	NA	_____
Pentachlorophenol	0.06		_____	_____	NA	_____
Picloram		0.19	_____	_____	NA	_____
Trifluralin		0.045	_____	_____	NA	_____

**Chemical – Cyanide and Mercury** (see 2014 WTR Supply Consumer Notification information on Website)

Parameter	Limit MAC (mg/L)	Sample Results	# Samples Exceeding MAC	# Samples Required	# Samples Submitted
Cyanide	0.2	_____	_____	NA	_____
Mercury	0.001	_____	_____	NA	_____

**Chemical – Synthetic Organic Chemicals**

All waterworks serving 5000 persons or more are required to submit water samples for Saskatchewan Environment’s “Synthetic Organic Chemicals” category. The frequency of sample submission depends on the number of persons supplied by the waterworks. The “Synthetic Organic Chemicals” category includes analysis for Benzene, Benzo(a)pyrene, Carbon tetrachloride, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethylene, Dichloromethane, 2,4-Dichlorophenol, Monochlorobenzene, 2,3,4,6-Tetrachlorophenol, Trichloroethylene, 2,4,6-Trichlorophenol and Vinyl Chloride.

Samples for synthetic organic chemicals were submitted on *(insert dates)*. Sample results indicated that the provincial drinking water quality standards were not exceeded. *(Use this one if review indicates that there were no exceedences)*. **(OR)** Samples exceeded provincial water quality standards only for the following parameters: *(Use only the applicable portion of table below for which values have been exceeded)*.

Parameter/Location	Limit MAC	Limit IMAC	Sample Result(s)	# Samples Exceeding Limit	# Samples Required	# Samples Submitted
Benzene	0.005	_____	_____	_____	NA	_____
Benzo(a)pyrene	0.00001	_____	_____	_____	NA	_____
Carbon Tetrachloride	0.005	_____	_____	_____	NA	_____
Dichlorobenzene, 1,2	0.02	_____	_____	_____	NA	_____
Dichlorobenzene, 1,4	0.005	_____	_____	_____	NA	_____
Dichloroethylene, 1,1	0.014	_____	_____	_____	NA	_____
Dichloromethane	0.05	_____	_____	_____	NA	_____
Dichlorophenol, 2,4	0.9	_____	_____	_____	NA	_____
Monochlorobenzene	0.08	_____	_____	_____	NA	_____
Tetrachlorophenol, 2,3,4,6	0.1	_____	_____	_____	NA	_____
Trichloroethylene	0.05	_____	_____	_____	NA	_____
Trichlorophenol, 2,4,6	0.005	_____	_____	_____	NA	_____
Vinyl Chloride	0.002	_____	_____	_____	NA	_____

All waterworks serving more than 5000 persons are required to submit water samples for the General Chemical category as per their permit to operate. 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 sample for General Chemical analysis was required on *(insert year required)* and submitted on *(insert date)* *(use this statement if a groundwater supply)*. The last sets of quarterly samples for General Chemical analysis were required on *(insert year or sample submission period required)* and were submitted on *(insert dates)* *(use this statement if a surface source or blended source)*. Sample results indicated that there were no exceedences of the provincial aesthetic objectives for the General Chemical category *(use this statement if there were no exceedences)*. **(OR)** Samples exceeded provincial

aesthetic objectives for the General Chemical category for the following parameters: *(use only the applicable portions of the table below for which values have been exceeded)*.

*\*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 hazards. 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:**

City of Martinsville  
Joe Doxey, Director of Infrastructure & Planning  
SOK 2T0  
306-931-2166  
306-933-2468

*(Note: This short form may be used for communities or waterworks serving a population of 5000 or more persons).*

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**Chemical – Cyanide and Mercury**

Date of last sample: \_\_\_\_\_

Parameter	Limit MAC (mg/L)	Sample Results	# Samples Exceeding MAC	# Samples Required	# Samples Submitted
Cyanide	0.2	_____	_____	_____	_____
Mercury	0.001	_____	_____	_____	_____

*Mercury enters water supplies naturally and as a result of human activities. Cyanide can enter source waters as a result of industrial effluent or spill events. These substances may represent a long-term health risk if the Maximum Acceptable Concentration (MAC) is exceeded. Mandatory sampling requirements depends on the population served by the waterworks.*

**Algal Toxins –Microcystin-LR**

Date of last sample: \_\_\_\_\_

Parameter	Limit MAC (mg/L)	Sample Results	# Samples Exceeding MAC	# Samples Required	# Samples Submitted
Microcystin LR	0.0015	_____	_____	_____	_____

*Microcystin LR is an algal toxin typically released following die-off on an algal bloom in a raw surface water supply. Samples should typically be collected and analyzed on a monthly basis during periods when algae blooms on reservoirs or other surface water sources occur.*

**Chemical – Synthetic Organic Chemicals**

Parameter	Limit MAC (mg/L)	Limit IMAC (mg/L)	Sample Result(s)	# Samples Exceeding Limit	# Samples Required	# Samples Submitted
Benzene	0.005		_____	_____	_____	_____
Benzo(a)pyrene	0.00001		_____	_____	_____	_____
Carbon tetrachloride	0.005		_____	_____	_____	_____
Dichlorobenzene, 1,2	0.02		_____	_____	_____	_____
Dichlorobenzene, 1,4	0.005		_____	_____	_____	_____
Dichloroethane, 1,2		0.005	_____	_____	_____	_____
Dichloroethylene, 1,1	0.014		_____	_____	_____	_____
Dichloromethane	0.05		_____	_____	_____	_____
Dichlorophenol, 2,4	0.9		_____	_____	_____	_____
Monochlorobenzene	0.08		_____	_____	_____	_____
Tetrachlorophenol, 2,3,4,6	0.1		_____	_____	_____	_____
Tichloroethylene	0.05		_____	_____	_____	_____
Trichlorophenol, 2,4,6	0.005		_____	_____	_____	_____
Vinyl Chloride	0.002		_____	_____	_____	_____

Contamination of drinking water by synthetic organic chemicals only results from pollution events. Contamination of drinking water in excess of Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) may represent a health risk. Mandatory sampling requirements depends on the population served by the waterworks.

**Radiological**

Parameter	Becquerels/L	Sample Results	# Samples Exceeding Limit	# Samples Required	# Samples Submitted
Gross Alpha	0.5	_____	_____	_____	_____
Gross Beta	1.0	_____	_____	_____	_____
Lead-210	0.2	_____	_____	_____	_____
Radium-226	0.5	_____	_____	_____	_____
Tritium	7000	_____	_____	_____	_____
Strontium-90	5	_____	_____	_____	_____
Iodine-131	6	_____	_____	_____	_____
Cesium-137	10	_____	_____	_____	_____

Radiological constituents in drinking water may be the result of natural conditions or as a result of human activities. Gross alpha and Gross Beta are initial water quality screening tests used to determine the overall quality of drinking water for a larger set of specific radiological parameters. Further sampling may be required if Gross Alpha or Beta exceedences are found. Sampling requirements depend on permit specific requirements.

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

- City/Owner/Manager Name and Title
- Postal Address
- Telephone number / Facsimile number (if available) / E-mail address (if available)

(Note: This form may be used for communities or waterworks serving a population of 5000 persons or more).

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