Saskatchewan Ministry of Environment

Water Security Agency

Drinking Water Quality and Compliance
Cities Long Form – A Template for 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 Yorkton** water quality and sample submission compliance record for **2023**. This report was completed on **May 29, 2024**. 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 .

Water Quality Standards

Bacteriological Quality

Parameter/Location	Limit	Regular Sample Required	Regular Samples Submitted	# of Positive Regular Submitted (Percentage)
Total Coliform and	0 organisms/100 mL	156	156	0%
E. coli	0 organisms/100 ml	156	156	0%
Background Bacteria	Less than 200 organisms/100 mL	156	156	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	0.45-1.58mg/L	0.80-1.90mg/L	156	156	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
Free Chlorine Residual	at least 0.1	0.89-3.54 mg/L	Continuous	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
Turbidity	1.0	0.018-0.650 NTU	0	0.650	Continuous

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 – Health Category

Parameter	Limit MAC(mg/L)	Limit IMAC(mg/L)	Sample Results(mg/L)	Samples Exceeding MAC/IMAC	# Samples Required	# Samples Submitted
Arsenic	0.010		0.008	0	1	1
Barium	1.0		0.055	0	1	1
Boron		5.0	0.08	0	1	1
Cadmium	0.005		<0.00001	0	1	1
Chromium	0.05		<0.0005	0	1	1
Fluoride (avg.*)	1.5		0.175	0	1	1
Lead	0.01		<0.0001	0	1	1
Nitrate (avg.*)	45.0		0.27	0	1	1
Selenium	0.01		0.0003	0	1	1
Uranium	0.02		0.00034	0	1	1

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.

Chemical – Pesticides

Parameter	Limit MAC(mg/L)	Limit IMAC(mg/L)	Sample Results(mg/L)	Samples Exceeding MAC/IMAC	# Samples Required	# Samples Submitted
Atrazine		0.005	<0.0002	0	1	1
Bromoxynil		0.005	<0.002	0	1	1
Carbofuran	0.09		<0.0002	0	1	1
Chlorpyrifos	0.09		<0.0002	0	1	1
Dicamba	0.12		<0.001	0	1	1
2,4-D*		0.1	<0.001	0	1	1
Diclofop-methyl	0.009		<0.001	0	1	1
Dimethoate		0.2	<0.005	0	1	1
Malathion	0.19		<0.0002	0	1	1
MCPA	0.10		<0.001	0	1	1
Pentachlorophenol	0.06		<0.002	0	1	1
Picloram		0.19	<0.001	0	1	1
Trifluralin		0.045	<0.0002	0	1	1

Pesticides in drinking water may occur as a result of the use of these substances by humans. These substances may represent a long-term health risk if the Maximum Acceptable Concentration (MAC) or Interim Maximum Acceptable Concentration (IMAC) is exceeded. Mandatory sampling requirements depends on the population served by the waterworks.

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

Parameter	Limit (mg/L)	Sample Result (average)	# Samples Required	# Samples Submitted
Trihalomethanes	0.100	0.052	4 (one every 3 months)	4

Trihalomethanes and Haloacetic Acids are generated during the water disinfection process by a by-product of reactions between chlorine and organic material. Trihalomethanes are generally found only in drinking water obtained from surface water supplies. Trihalomethanes and Haloacetic Acids are to be monitored on a quarterly basis and the Interim Maximum Acceptable Concentration is expressed as an average of 4 quarterly samples. Only water supplies derived from surface water or groundwater under the influence of surface water are required to monitor Trihalomethane and Haloacetic Acids unless otherwise specified in the waterworks permit to operate.

General Chemical

Parameter	Aesthetic Objectives* (mg/L)	Sample Results (average)(mg/L)	# Samples Required	# Samples Submitted
Alkalinity	500	332.5	2	2
Bicarbonate	No Objective	405.5	2	2
Calcium	No Objective	131	2	2
Carbonate	No Objective	<1	2	2
Chloride	250	32.5	2	2
Conductivity	No Objective	1195	2	2
Hardness	800	569	2	2
Magnesium	200	59	2	2
PH	No Objective	7.95	2	2
Sodium	300	50.5	2	2
Sulphate	500	285	2	2
Total dissolved solids	1500	822.5	2	2

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 $CaCO_3$), 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 $CaCO_3$, magnesium, sodium and total dissolved solids) consider regional differences in drinking water sources and quality*

Chemical – Cyanide and Mercury Date of last sample: September 19, 2023

Parameter	Limit MAC (mg/L)	Sample Results(mg/L)	# Samples Exceeding MAC	# Samples Required	# Samples Submitted
Cyanide	0.2	<0.002	0	1	2
Mercury	0.001	<0.000001	0	1	2

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.

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		<0.0005	0	1	1
Benzo(a)pyrene	0.00001		<0.00001	0	1	1
Carbon tetrachloride	0.005		<0.002	0	1	1
Dichlorobenzene, 1,2	0.02		<0.0005	0	1	1
Dichlorobenzene, 1,4	0.005		<0.0005	0	1	1
Dichloroethane, 1,2		0.005	<0.0005	0	1	1
Dichloroethylene, 1,1	0.014		<0.0005	0	1	1
Dichloromethane	0.05		<0.0005	0	1	1
Dichlorophenol, 2,4	0.9		<0.0002	0	1	1
Monochlorobenzene	0.08		<0.0005	0	1	1
Tetrachlorophenol, 2,3,4,6	0.1		<0.001	0	1	1
Tichloroethylene	0.05		<0.0005	0	1	1
Trichlorophenol, 2,4,6	0.005		<0.002	0	1	1
Vinyl Chloride	0.002		<0.0005	0	1	1

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.

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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