



**Drinking Water Quality and Compliance
SaskWater Cupar Water Supply System
2016 Notification to Consumers**

The Water Security Agency (WSA) 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 Permit to Operate a waterworks. The following is a summary of the SaskWater Cupar Water Supply System water quality and sample submission compliance record for the January 1, 2016 to December 31, 2016 time period. This report was completed on March 20, 2017. Readers should refer to the WSA's Municipal Drinking Water Quality Monitoring Guidelines, October 2012, EPB 202 for more information on minimum sample submission requirements and types of samples. Permit requirements for a specific waterworks may require more sampling than outlined in the Agency's monitoring guidelines. If consumers need to know more about drinking water in Saskatchewan, more detailed information is available from: <http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index-eng.php>.

BACTERIOLOGICAL QUALITY

Parameter	Limit	Regular Samples Required	Regular Samples Submitted	# Positive of Regular Submitted
Total Coliform	0 Organisms/100 mL	52	52	0
E. Coli	0 Organisms/100 mL	52	52	0
Background Bacteria	Less than 200/100 mL	52	52	0

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 in Distribution System – From Test Results Submitted with Bacteriological Samples

Parameter	Minimum Limit (either/or)	Range (mg/L)	# Tests Required	# Tests Submitted	# Adequate Chlorine
Free Chlorine	0.1 mg/L	0.80 – 1.19	52	52	52
Total Chlorine	0.5 mg/L	0.91 – 1.34	52	52	

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. An adequate chlorine is a result that indicates that the chlorine level is above the regulated minimums. A waterworks is required to submit chlorine residual test results on every bacteriological sample they submit.

Free Chlorine Residual for Water Entering Distribution System

Parameter	Limit (mg/L)	Range (mg/L)	# Tests Required	# Tests Performed	% Adequate Chlorine
Free Chlorine	At least 0.1	0.37 – 1.81	366	Continuous	100

Minimum 0.1 milligrams per litre (mg/L) free chlorine residual is required for water entering a distribution system. Residuals are monitored continuously and tests normally performed on a daily basis by waterworks operators and are recorded in operation records.

TURBIDITY

Turbidity in the Distribution System – From Test Results Submitted with Bacteriological Samples

Parameter	Limit (NTU)	Range (NTU)	# Tests Required	# Tests Performed	# Exceeding Limit
Turbidity	No standard	0.07 – 0.21	52	52	0

Turbidity for Water Entering the Distribution System

Parameter	Limit (NTU)	Range (NTU)	95th Percentile (NTU)	# Tests Required	# Tests Performed	# of Months Exceeding 95th Percentile Limit
Turbidity	< 1.0 – 95% of measurements made each month	0.01 – 1.00	0.05	366	Continuous	0

Turbidity is a measure of water treatment efficiency. Turbidity measures the “clarity” of the drinking water and is reported in Nephelometric Turbidity Units (NTU). All waterworks are required to monitor turbidity at the water treatment plant. The turbidity is done daily with bench testing instrument, as well as continuously with an on-line analyzer.

CHEMICAL – GENERAL

The Cupar Water Supply System is required to submit water samples for the WSA’s General Chemical category once every second year. 2016 is a required sample year. The last sample for General Chemical analysis was submitted on November 9, 2016. Sample results indicated that the provincial drinking water quality standards were not exceeded.

Parameter	MAC	AO *	Sample Results	# of Samples Required	# of Samples Submitted
Total Alkalinity (mg/L)		500	76.7	1	1
Bicarbonate (mg/L)	No Objective		94	1	1
Calcium (mg/L)	No Objective		11	1	1
Carbonate (mg/L)	No Objective		0	1	1
Chloride (mg/L)		250	13.8	1	1
Fluoride (mg/L)	1.5		<0.05	1	1
Total Hardness (mg/L)		800	44	1	1
Hydroxide (mg/L)	No Objective		0	1	1
Magnesium (mg/L)		200	4	1	1
Nitrate (mg/L)	45		<0.2	1	1
pH (pH units)		6.5 - 9.0	7.7	1	1
Potassium (mg/L)	No Objective		<1	1	1
Sodium (mg/L)		300	46	1	1
Specific Conductivity (µs/cm)	No Objective		310	1	1
Sulphate (mg/L)		500	55.2	1	1
Total Dissolved Solids (mg/L)		1500	225	1	1

MAC – Maximum Acceptable Concentration

AO – Aesthetic Objective

*Objectives apply to certain characteristics of, or substances found, in water for human consumptive or hygienic use. Compliance with drinking water aesthetic objectives (AO) is not mandatory as these objectives are in the range where they do not constitute a health hazards. The AO for several parameters (including hardness, magnesium, sodium and total dissolved solids) consider regional differences in sources and quality.

CHEMICAL – HEALTH

The Cupar Water Supply System is required to submit water samples for the WSA’s Chemical Health category once every second year. 2016 is a required sample year. The last sample for Chemical Health analysis was submitted on November 9, 2016. Sample results indicated that the provincial drinking water quality standards were not exceeded.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO (mg/L)	Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Aluminum		No Objective		<0.007	1	1
Arsenic	0.010			<0.0001	1	1
Barium	1.0			0.0012	1	1
Boron		5.0		0.3	1	1
Cadmium	0.005			<0.00015	1	1
Chromium	0.050			<0.00019	1	1
Copper			1.0	0.0348	1	1
Iron			0.3	<0.1	1	1
Lead	0.010			0.0002	1	1
Manganese			0.05	<0.01	1	1
Selenium	0.010			<0.00113	1	1
Uranium	0.020			<0.00011	1	1
Zinc			5	0.0055	1	1

MAC – Maximum Acceptable Concentrations

AO – Aesthetic Objective

IMAC – Interim Maximum Acceptable Concentrations

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

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