



Drinking Water Quality and Compliance
SaskWater Meadow Lake Potable Water Supply System
2020 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 Meadow Lake Potable Water Supply System water quality and sample submission compliance record for the January 1, 2020 to December 31, 2020 time period. This report was completed on January 28, 2021. 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	50	50	0
E. Coli	0 Organisms/100 mL	50	50	0
Background Bacteria	Less than 200/100 mL	50	50	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 – From Test Results Submitted with Bacteriological Samples from WTP

Parameter	Minimum Limit (either/or)	Range (mg/L)	# Tests Required	# Tests Submitted	# Adequate Chlorine
Free Chlorine	0.10 mg/L	0.55 – 1.56	50	50	50
Total Chlorine	0.50 mg/L	0.94 – 2.06	50	50	

A minimum of 0.10 milligrams per litre (mg/L) free chlorine residual **OR** 0.50 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	Minimum Limit (mg/L)	Range (mg/L)	Average (mg/L)	# Tests Required	# Tests Performed	% Adequate Chlorine
Free Chlorine	0.51	0.54 – 1.77	1.16	366	724	100

Tests routinely performed by waterworks operators are to be recorded in operation records. Additional testing done for informational purposes.

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TURBIDITY

Turbidity – From Test Results Submitted with Bacteriological Samples from the WTP

Parameter	Limit (NTU)	Range (NTU)	# Tests Required	# Tests Performed	# Exceeding Limit
Turbidity	No standard	0.05 – 0.32	50	50	0

Turbidity for Water Leaving the Filters

Parameter	Limit (NTU)	Range (NTU)	95 th Percentile (NTU)	# Tests Required	# Tests Performed	# of Months Exceeding 95 th Percentile 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	0.020 – 0.477	0.224	Continuous	Continuous	0

ULTRAVIOLET DOSAGE

Parameter	Limit (%T)	Range (% T)	# Samples Required	# Samples Submitted
Ultraviolet Transmittance	No Limit	79.9 – 97.3	Continuous	Continuous

MICROCYSTIN LR and/or TOTAL MICROCYSTIN TOXINS

The Meadow Lake Potable Water Supply System is required to sample for microcystin at the water treatment plant once every month during the algal bloom period.

Parameter	Maximum Limit (mg/L)	Maximum Result (mg/L)	# Samples Required	# Samples Submitted	# Exceeding Limit
Microcystin	0.0015	0.0001	4	4	0

GIARDIA AND CRYPTOSPORIDIUM – RAW WATER

SaskWater Meadow Lake Potable Water Supply System is required to sample from the raw water entering the water treatment plant for giardia & cryptosporidium semi-annually (early spring and fall) and following upsets or significant events that may affect raw water quality.

Parameter	Limit	Average (cysts or oocysts / 100 L)	# Samples Required	# Samples Submitted
Giardia	No Standard	8.9 (cysts)	2	2
Cryptosporidium	No Standard	0.0 (oocysts)	2	2

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CHEMICAL – GENERAL

SaskWater Meadow Lake Potable Water Supply System is required to submit samples for the WSA's General Chemical category once per three months every year.

Parameter	MAC	AO *	Sample Results	# of Samples Required	# of Samples Submitted
Total Alkalinity (mg/L)		500	145	4	4
Bicarbonate (mg/L)	No Objective		177	4	4
Calcium (mg/L)	No Objective		38	4	4
Carbonate (mg/L)	No Objective		<1	4	4
Chloride (mg/L)		250	44	4	4
Fluoride (mg/L)	1.5		0.06	4	4
Total Hardness (mg/L)		800	170	4	4
Hydroxide (mg/L)	No Objective		<1	4	4
Magnesium (mg/L)		200	18	4	4
Nitrate (mg/L)	45		0.38	4	4
pH (pH units)		6.5 – 9.0	7.61	4	4
Potassium (mg/L)	No Objective		4.3	4	4
Sodium (mg/L)		300	14	4	4
Specific Conductivity (µs/cm)	No Objective		404	4	4
Sulphate (mg/L)		500	6.3	4	4
Total Dissolved Solids (mg/L)		1500	242	4	4

MAC – Maximum Acceptable Concentration

AO – Aesthetic Objective

CHEMICAL – HEALTH

SaskWater Meadow Lake Potable Water Supply System is required to submit water samples for the WSA's Chemical Health category once every year.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO * (mg/L)	Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Aluminum	No Objective			0.031	1	1
Antimony				<0.0002	1	1
Arsenic	0.010			0.0003	1	1
Barium	1.0			0.025	1	1
Boron		5.0		0.3	1	1
Cadmium	0.005			<0.00001	1	1
Chromium	0.05			<0.0005	1	1
Copper			1.0	0.016	1	1
Iron			0.3	0.0006	1	1
Lead	0.01			0.0001	1	1
Manganese			0.05	0.009	1	1
Selenium	0.01			<0.0001	1	1
Silver				<0.00005	1	1
Uranium	0.02			<0.0001	1	1
Zinc			5	0.0042	1	1

MAC – Maximum Acceptable Concentration IMAC – Interim Maximum Acceptable Concentration

AO – Aesthetic Objective

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CHEMICAL – ORGANICS

SaskWater Meadow Lake Potable Water Supply System is required to submit water samples for the WSA's Synthetic Organic category once every 2 years. 2020 is a required sampling year.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO* (mg/L)	Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Benzene	0.005			<0.0005	1	1
Benzo(a)pyrene	0.00001			<0.00001	1	1
Carbon tetrachloride	0.005			<0.002	1	1
Dichlorobenzene 1,2	10.2			<0.0005	1	1
Dichlorobenzene 1,4	0.005			<0.0005	1	1
Dichloroethane 1,2		0.005		<0.0005	1	1
Dichloroethylene 1,1	0.014			<0.0005	1	1
Dichloromethane	0.05			<0.0005	1	1
Dichlorophenol 2,4	0.9			<0.0002	1	1
Ethylbenzene			0.0024	<0.0005	1	1
Monochlorobenzene	0.080			<0.0005	1	1
Tetrachloroethylene				<0.0005	1	1
Tetrachlorophenol 2,3,4,6	0.10			<0.001	1	1
Toluene	0.05			<0.0005	1	1
Trichloroethylene	0.010		0.024	<0.0005	1	1
Trichlorophenol 2,4,6	0.005			<0.002	1	1
Vinyl Chloride	0.002			<0.0005	1	1
Xylene			0.3	<0.0005	1	1

MAC – Maximum Acceptable Concentrations

AO – Aesthetic Objective

IMAC – Interim Maximum Acceptable Concentrations

*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.

CHEMICAL – PESTICIDES

SaskWater Meadow Lake Potable Water Supply System is required to submit water samples for the WSA's Pesticide category once every 2 years. 2020 is a required sampling year.

Parameter	MAC (mg/L)	IMAC (mg/L)	Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Atrazine		0.005	<0.0002	1	1
Bromoxynil		0.005	<0.002	1	1
Carbofuran	0.09		<0.0002	1	1
Chlorpyrifos	0.09		<0.0002	1	1
Dicamba	0.12		<0.001	1	1
2, 4-D		0.10	<0.001	1	1
Diclofop-methyl	0.009		<0.001	1	1
Dimethoate		0.02	<0.005	1	1
Malathion	0.19		<0.0002	1	1
MCPA	No standard		<0.001	1	1
Pentachlorophenol	0.06		<0.0005	1	1
Picloram		0.19	<0.001	1	1
Trifluralin		0.045	<0.0002	1	1

MAC – Maximum Acceptable Concentrations

IMAC – Interim Maximum Acceptable Concentrations

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RADIOLOGICAL

Gross alpha and beta activity is a measure of radioactivity within water. The activity is the frequency of release of alpha and beta particles after the nuclear decay of radionuclides. Should gross alpha or beta activity exceed a particular standard, further testing is required to identify the specific radionuclides present in water. Radionuclides can enter water from both natural sources and human activities.

Parameter	Limit (Bq/L)	Result (Bq/L)	# Samples Required	# Samples Submitted
Gross alpha	0.5	<0.23	1	1
Gross beta	1.0	0.24 +/- 0.04	1	1

CYANIDE AND MERCURY

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.

Parameter	Maximum Limit (mg/L)	Sample Results (mg/L)	# Samples Required	# Samples Submitted
Cyanide	0.2	<0.001	1	1
Mercury	0.001	0.000002	1	1

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

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