Drinking Water Quality and Compliance
SaskWater Buffalo Pound Potable Water Supply System - North
2022 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 Buffalo Pound Potable Water Supply System - North water quality and sample submission compliance record for the January 1, 2022 to December 31, 2022 time period. This report was completed on February 1, 2023. Readers should refer to WSA's Municipal Drinking Water Quality Monitoring Guidelines 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, 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	24	52	0
E. Coli	0 Organisms/100 mL	24	52	0
Background Bacteria	Less than 200/100 mL	24	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. Additional testing was done for informational purposes.

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	0.10 mg/L	0.22 – 1.33	24	52	52
Total Chlorine	0.50 mg/L	0.59 – 1.74	24	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. Additional testing was done for informational purposes.

Free Chlorine Residual for Water in the Distribution System

Parameter	Minimum Limit (mg/L)	Range (mg/L)	Average (mg/L)	# Tests Required	# Tests Performed	% Adequate Chlorine
Free Chlorine	0.10	0.16 – 1.67	0.79	Continuous	Continuous	100

Residuals are continuously monitored and recorded. Tests performed by waterworks operators are to be recorded in operation records.

Buffalo Pound North Water Supply System

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	0.05 – 0.16	0	52	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). Additional testing was done for informational purposes.

CHEMICAL – TRIHALOMETHANES (THM)

Trihalomethanes are formed when chlorine reacts with organic matter in water. The four THM compounds are: chloroform, dibromochloromethane, bromodichloromethane (BCDM) and bromoform. The sum of the concentrations of these four components is referred to as Total Trihalomethanes. The limit for THM is a long term objective based on an annual average of seasonal samples. Additional testing was done for informational purposes.

Parameter	Maximum Limit (mg/L)	Average (mg/L)	# Samples Required	# Samples Submitted
Trihalomethane	0.100	0.048	4	5

CHEMICAL – HALOACETIC ACIDS (HAAs)

Haloacetic acids are formed when chlorine reacts with organic matter in water. The five regulated haloacetic acids are: monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid. The sum of the concentrations of these five components is referred to as HAA5. The limit for HAA5 is a long term objective based on an annual average of seasonal samples.

Parameter	Maximum Limit (mg/L)	Average (mg/L)	# Samples Required	# Samples Submitted
Haloacetic Acids 5	0.080	0.036	4	4

CHEMICAL – Health

The permit for SaskWater's Buffalo Pound Potable Water Supply System – North does not require sampling for Chemical Health parameters. Additional testing was carried out by SaskWater for informational purposes.

Parameter	MAC (mg/L)	IMAC (mg/L)	AO* (mg/L)	Sample Results (mg/L)	# of Samples Required	# of Samples Submitted
Aluminum	No Objective			0.0178	0	1
Antimony	0.006			0.00020	0	1
Arsenic	0.010			0.00070	0	1
Barium	1.0			0.0519	0	1
Boron		5.0		<0.1	0	1
Cadmium	0.005			<0.00015	0	1
Chromium	0.05			<0.00019	0	1
Copper			1.0	<0.00829	0	1
Lead	0.01			0.00010	0	1
Selenium	0.01			<0.00113	0	1
Silver	No Objective			<0.00020	0	1
Uranium	0.02			0.00020	0	1
Zinc			5	0.0044	0	1

MAC – Maximum Acceptable Concentrations AO – Aesthetic Objective
IMAC – Interim Maximum Acceptable Concentrations

CHEMICAL – GENERAL

The permit for SaskWater's Buffalo Pound Potable Water Supply System – North does not require sampling for General Chemical parameters. Additional testing was carried out by SaskWater for informational purposes.

Parameter	MAC	AO*	Sample Results	# of Samples Required	# of Samples Submitted
Total Alkalinity (mg/L)		500	133	0	1
Bicarbonate (mg/L)	No Objective		162	0	1
Calcium (mg/L)	No Objective		42	0	1
Carbonate (mg/L)	No Objective		0	0	1
Chloride (mg/L)		250	31.7	0	1
Fluoride (mg/L)	1.5		0.10	0	1
Iron (mg/L)		0.3	<0.1	0	1
Total Hardness (mg/L)		800	200	0	1
Hydroxide (mg/L)	No Objective		0	0	1
Magnesium (mg/L)		200	23	0	1
Manganese (mg/L)		0.05	<0.01	0	1
Nitrate (mg/L)	45		0.2	0	1
pH (pH units)		7.0 – 10.5	7.4	0	1
Potassium (mg/L)	No Objective		5	0	1
Sodium (mg/L)		300	37	0	1
Specific Conductivity (µs/cm)	No Objective		538	0	1
Sulphate (mg/L)		500	93.4	0	1
Total Dissolved Solids (mg/L)		1500	394	0	1

MAC – Maximum Acceptable Concentrations AO – Aesthetic Objective

*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.

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

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