

Town Of Assiniboia

Drinking Water Quality and Compliance

2010

Introduction

Saskatchewan 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 Town of Assiniboia's water quality and sample submission compliance record for 2010. This report was completed on March 19th 2011. Readers should refer to Environment's Municipal Drinking Water Quality Monitoring Guidelines, November 2002, EPB 202 for more information on minimum sample submission requirements and the meaning of type of sample. 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 Samples Required	Regular Samples Submitted	# of Positive Regular Submitted (%)
Total Coliform	0 Organisms/100 mL	72	74	0(0%)
Background Bacteria	Less than 200/100 mL	72	74	0(0%)

Water Disinfection –

Chlorine Residual in Distribution System for Test Results Submitted with Bacteriological Samples

Parameter	Minimum Limit	TOTAL Chlorine Residual Range	# Tests Required	# Tests Submitted	# Adequate Chlorine FREE (%)
Chlorine Residual	TOTAL 0.5 mg/L	0.87 – 12.0	72	74	74(100%)

Parameter	Minimum Limit	FREE Chlorine Residual Range	# Tests Required	# Tests Submitted	# Adequate Chlorine FREE (%)
Chlorine Residual	FREE 0.1 mg/L	0.00 – 2.50	72	74	66(89%)

Water Disinfection - Free Chlorine Residual for Water Entering Distribution System from Waterworks Records-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 – 2.50	365	61(16.7%)

A minimum of 0.1 milligrams per litre (mg/L) free chlorine residual is required for water entering the distribution system. Tests are 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 – From Water Treatment Plant Records

Parameter	Limit (NTU)	Test Level Range	# Tests Not Meeting Requirements	Maximum Turbidity (NTU)	# Tests Required	# Tests Performed
Turbidity	< 0.300 (95% of the time)	0.08 – 1.65	76	1.65	365	365

Turbidity is the cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is a key test of water quality. Fluids can contain suspended solid matter consisting of particles of many different sizes. While some suspended material will be large enough and heavy enough to settle rapidly to the bottom of the container if a liquid sample is left to stand (the settleable solids), very small particles will settle only very slowly or not at all if the sample is regularly agitated or the particles are colloidal. These small solid particles cause the liquid to appear turbid.

Chemical – Health Category

All waterworks serving less than 5000 persons are required to submit water samples for SE's Chemical Health category once every 2 years. The Chemical Health category includes analysis for arsenic, barium, boron, cadmium, chromium, lead, selenium and uranium. The last sample for Chemical Health analysis was submitted on July 5th 2010. Sample results indicated that the provincial drinking water quality standards were not exceeded.

Parameter	Limit MAC(mg/L)	Limit IMAC (mg/L)	Sample Result(s)	# Samples Exceeding Limit
Arsenic	0.025		1.80 ug/l	0
Barium	1.0		36.1 ug/l	0
Boron		5.0	0.20 mg/l	0
Cadmium	0.005		<0.03 ug/l	0
Chromium	0.05		<0.03 ug/l	0
Lead	0.01		<0.01 ug/l	0
Selenium	0.01		01.1 ug/l	0
Uranium	0.02		0.03 ug/l	0

Chemical – Trihalomethanes (THMs)

Parameter	THMs Limit (mg/L)	Sample Result (average)	# Samples Required	# Samples Submitted
Trihalomethanes	0.1	55.97	4 (1 every 3 months)	4

Chemical- Flouride	Limit MAC(mg/L)	# Samples required	#Samples Submitted	#Samples Exceeding limit
Flouride	1.50mg/L	52	52	0

All waterworks serving less than 5000 persons are required to submit water samples for SE's General Chemical category once every two years if a ground water source and once per three months every second year if a surface water or blended surface/groundwater source. The General Chemical category includes analysis for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as CaCO₃), magnesium, sodium, sulphate and total dissolved solids. The last sets of quarterly samples for General Chemical analysis were required in 2009 and were submitted on March 9th, June 1st, August 11th and November 23rd. Samples exceeded provincial aesthetic objectives for the General Chemical category for the following parameters: Sodium and total dissolved solids. 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 CaCO₃, 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:

Town of Assiniboia
 Po Box 670
 Assiniboia Sk
 S0H0B0
 Phone 1306 643 3382