



Drinking Water Quality and Compliance Annual Notice to Consumers

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 Leader's** water quality and sample submission compliance record for the **2010** calendar year. This report was completed on **February 25, 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 and E. Coli Bacteria	0 Organisms/100 mL	52	52(100%)	0(0%)

Water Disinfection –

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

Parameter	Minimum Limit	Total Chlorine Residual Range	Free Chlorine Residual Range	# Adequate Chlorine (%)
Chlorine Residual	0.1 mg/L free OR 0.5 mg/L total	0.16 – 2.3	0.11 – 2.19	52(100%)

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	1.15 – 2.9	365	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 operator 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	0.3	0.04 – 0.18	0	0.18	365	365

Chemical – Trihalomethanes (THMs)

Parameter	THMs Limit (mg/L)	Sample Result (average)	# Samples Required	# Samples Submitted
Trihalomethanes	0.1	0.055	4 (1 every 3 months)	4

Trihalomethanes are generated during the water disinfection process as a by-product of reactions between chlorine and organic material. Trihalomethanes are generally found only in drinking water obtained from surface water supplies. Trihalomethanes are to be monitored on a quarterly basis and the Interim Maximum Acceptable Concentration (IMAC) result 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 usually required to monitor for trihalomethanes.

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, fluoride, lead, nitrate, selenium and uranium.

The last sample for Chemical Health analysis was submitted on **May 19, 2009**. 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)	
Arsenic	0.01		0.0003	*MAC = Maximum Acceptable Concentration IMAC = Interim Maximum Acceptable Concentration
Barium	1.0		0.076	
Boron		5.0	0.03	
Cadmium	0.005		<0.0001	
Chromium	0.05		<0.0005	
Fluoride	1.5		0.105	
Lead	0.01		0.0008	
Nitrate	45.0		1.25	
Selenium	0.01		0.0005	
Uranium	0.02		0.0006	

General Chemical

All waterworks serving less than 5000 persons are required to submit water samples for SE's General Chemical category once per three months every second year for a surface water 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 **2010** and were submitted on **March 10, August 12, October 6, and December 8, 2008**. Sample results indicated that there were no exceedences of the provincial aesthetic objectives for the General Chemical category.

Aesthetic Parameter	Objectives * (mg/L)	Sample Results (average)
Alkalinity	500	131
Bicarbonate	No Objective	160
Calcium	No Objective	47
Carbonate	No Objective	0
Chloride	250	12
Conductivity	No Objective (USIE/CM)	455
Hardness	800	192
Magnesium	200	18
PH	No Objective (PH UNITS)	7.5
Sodium	300	20.5
Sulphate	500	87.4
Total dissolved Solids	1500	348

*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:

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