



## Drinking Water Quality and Compliance Hamlet of Garrick

### 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 **Hamlet of Garrick** water quality and sample submission compliance record for the year from **January 1, 2019 to December 31, 2019**. This report was completed on **June 2, 2020**. 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](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 Background Bacteria	0 Organisms/100 mL Less than 200/100 mL	12	13	1

#### 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	# Tests Required	# Tests Submitted	# Adequate Chlorine (%)
Chlorine	0.1 mg/L free OR					
Residual	0.5 mg/L total	0.60 – 1.49	0.04 – 0.96	13	13	

#### 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	0.03 – 4.40	365	3

*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	1.0	0.18 – 2.77	67	2.77	365	365

### 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 **August 20, 2019** 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		3.2 ug/L	NONE	* Results expressed as average values for communities or waterworks that fluoridate drinking water supplies or those with elevated concentrations of fluoride or nitrates.
Barium	1.0		8.1 ug/L	NONE	
Boron	5.0		0.2 mg/L	NONE	
Cadmium	0.005		< 0.15 ug/L	NONE	
Chromium	0.05		< 0.19 ug/L	NONE	
Fluoride (avg*)	1.5		0.19 mg/L	NONE	
Lead	0.01		0.20 ug/L	NONE	
Nitrate (avg.*)	45.0		< 1.1 mg/L	NONE	
Selenium	0.01		< 1.13 ug/L	NONE	
Uranium	0.02		1.6 ug/L	NONE	

#### **Chemical – Trihalomethanes (THMs)**

Parameter	THMs Limit (mg/L)	Sample Result (average)	# Samples Required	# Samples Submitted
Trihalomethanes	0.1	<u>Not Applicable</u>	4 (1 every 3 months)	<u>0</u>

*Note: Only water supplies derived from surface water or groundwater under the influence of surface water are required to monitor for THMs. Waterworks using groundwater sources beyond the influence of surface water do not need to report THMs since sampling/analysis will not likely have been performed.*

#### **General Chemical**

Parameter	Aesthetic Objectives * (mg/L)	Sample Results (average)	# Samples Required	# Samples Submitted
Alkalinity	500	389 mg/L	1	1
Bicarbonate	No Objective	475 mg/L	1	1
Calcium	No Objective	232 mg/L	1	1
Carbonate	No Objective	0 mg/L	1	1
Chloride	250	9.8 mg/L	1	1
Conductivity	No Objective	1948 uS/cm	1	1
Hardness	800	1168 mg/L	1	1
Magnesium	200	143 mg/L	1	1
PH	No Objective	7.7 pH units	1	1
Sodium	300	68 mg/L	1	1
Sulphate	500	812.3 mg/L	1	1
Total dissolved Solids	1500	1751 mg/L	1	1

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 CaCO<sub>3</sub>), magnesium, sodium, sulphate and total dissolved solids.

The last sample for General Chemical analysis was submitted on **March 12, 2018**. Sample results indicated that there were no exceedences of the provincial aesthetic objectives for the General Chemical category.

\*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<sub>3</sub>, 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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