

## Drinking Water Quality and Compliance Hamlet of Garrick

### Introduction

The Water Security Agency and the 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, 2021 to December 31, 2021**. This report was completed on **June 14, 2022**. Readers should refer to Water Security Agency's [Municipal Drinking Water Quality Monitoring Guidelines, June 2015, EPB 502](#) 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	0 Organisms/100 mL	12	12	0
E. coli	0 Organisms/100 mL			
Background Bacteria	Less than 200/100 mL			

#### 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 Residual	0.1 mg/L free OR 0.5 mg/L total	.59-1.23	.25-.76	12	12	

##### 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	.06-2.20	365	2

*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	.27 – 6.62	62	6.62	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 **Sept 21, 2021**. 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	0.010		1.1 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		5.2 ug/L	NONE	
Boron		5.0	0.2 mg/L	NONE	
Bromate	0.01			NONE	
Cadmium	0.005		< 0.15 ug/L	NONE	
Chlorate	1.0			NONE	
Chlorite	1.0			NONE	
Chromium	0.05		< 0.19 ug/L	NONE	
Fluoride (avg*)	1.5			NONE	
Lead	0.01		0.20ug/L	NONE	
Nitrate (avg.*)	45.0			NONE	
Selenium	0.01		< 0.19 ug/L	NONE	
Uranium	0.02		1.5 ug/L	NONE	

#### **Chemical – Trihalomethanes (THMs) and Haloacetic Acids (HAAs)**

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>
Haloacetic Acids	0.08	<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 and HAAs. Waterworks using groundwater sources beyond the influence of surface water do not need to report THMs or HAAs since sampling/analysis will not likely have been performed unless otherwise noted in the waterworks permit to operate*

#### **General Chemical**

Parameter	Aesthetic Objectives * (mg/L)	Sample Results (average)	# Samples Required	# Samples Submitted
Alkalinity	500	394 mg/L	1	1
Bicarbonate	No Objective	481 mg/L	1	1
Calcium	No Objective	224 mg/L	1	1
Carbonate	No Objective	0 mg/L	1	1
Chloride	250	16.4 mg/L	1	1
Conductivity	No Objective	1984 uS/cm	1	1
Hardness	800	1169 mg/L	1	1
Magnesium	200	148 mg/L	1	1
PH	No Objective	7.6 pH units	1	1
Sodium	300	76 mg/L	1	1
Sulphate	500	828.6 mg/L	1	1
Total dissolved Solids	1500	1785 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 required on **June 23, 2020** and submitted on **June 23, 2020**. 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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**Saskatchewan  
Ministry of  
Environment**

