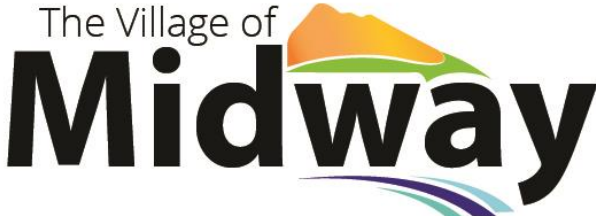


# 2018 Annual Water Report



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## Introduction:

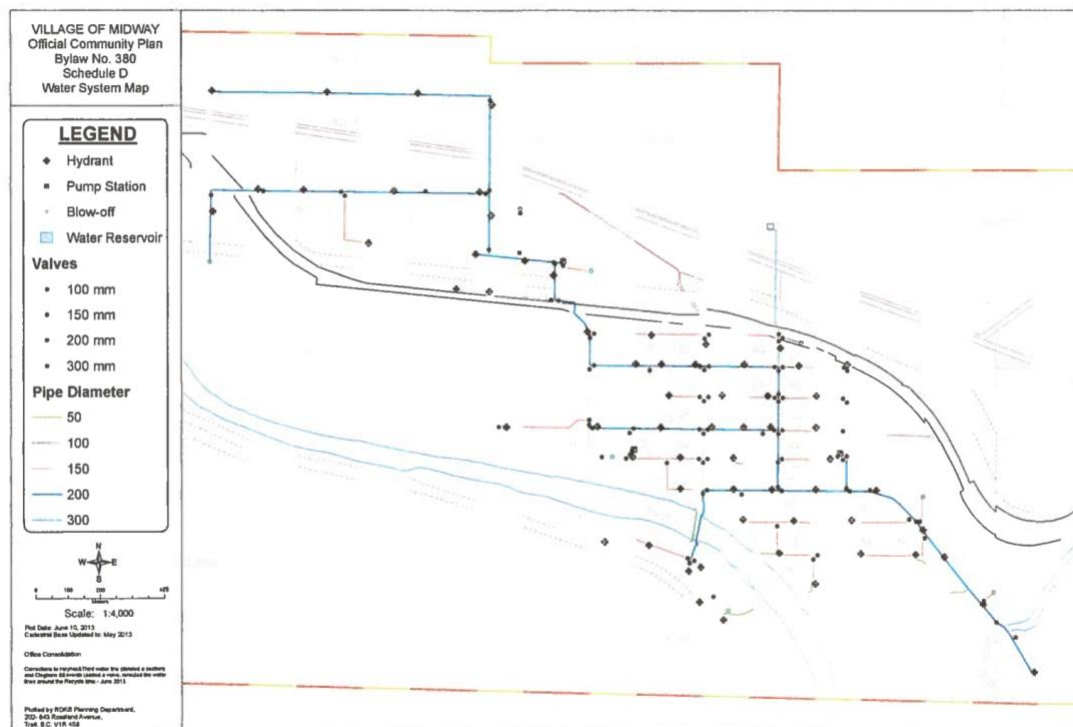
Under the terms of the Village of Midway Operating Permit the Village is required to provide an annual report to users of the system that provides an overview of the water system, and a summary of water test results, maintenance and improvements made to the system. All water suppliers are required to provide a similar annual report to their users.

This report has been submitted to Interior Health and is posted on the Village of Midway website. [www.midwaybc.ca](http://www.midwaybc.ca)

## Midway Water Distribution System:

The Village of Midway has approximately 263 residential 21 commercial water connections serving the residents of Midway. These users primarily get their drinking water from 2 wells.

As part of the water distribution system the Village maintains 17 km of water main, 1 reservoir and 2 pump stations. Figure 1 shows the layout of the Village's water distribution system



## Village of Midway Water Distribution System

## **Reservoir:**

The Village has one reservoir located on the north side of Hwy 3, just above town.

The reservoir is a concrete underground tank that holds 245,000 imperial gallons of water. The tank was constructed in 1995.

## **Distribution System:**

The Village's 17 km distribution system is made up of a combination of PVC piping ranging in size from 37mm to 300mm in diameter. There are 64 fire hydrants, 87 isolation valves, 2 prvs, 1 creek crossing and 1 bridge crossing. System pressure ranges from 72psi – 95psi. The majority of the system was installed between 1995 and 1996.

## **Pump Stations:**

The Village has 3 pump stations. 2 of which are tied into the distribution system. The #1 pump house is our main lift station. This well is 96.7' deep with a 60hp pump supplying the system at a rate of 720 imp gal per min. This pump is used in the warmer months when the demand for water is high. #2 pump house is 65' deep with a 10hp pump supplying the system at a rate of 100 imp gal per min. This pump is used in the winter months when the demand for water is low. In case of a power outage the Village has a back up generator for the #2 pump house.

# **Routine Maintenance Program**

## **Distribution System:**

Fire hydrants are inspected annually and completely tore down once every five years. The distribution system is flushed twice a year, once in the spring and again in the fall. Dead-ends are flushed quarterly. All isolation valves are exercised annually to make sure they are operating properly.

## **Reservoir:**

The reservoir is inspected monthly to make sure the site and structure is secure. The isolation valves are exercised annually. The reservoir is drained, inspected and cleaned every 5 years.

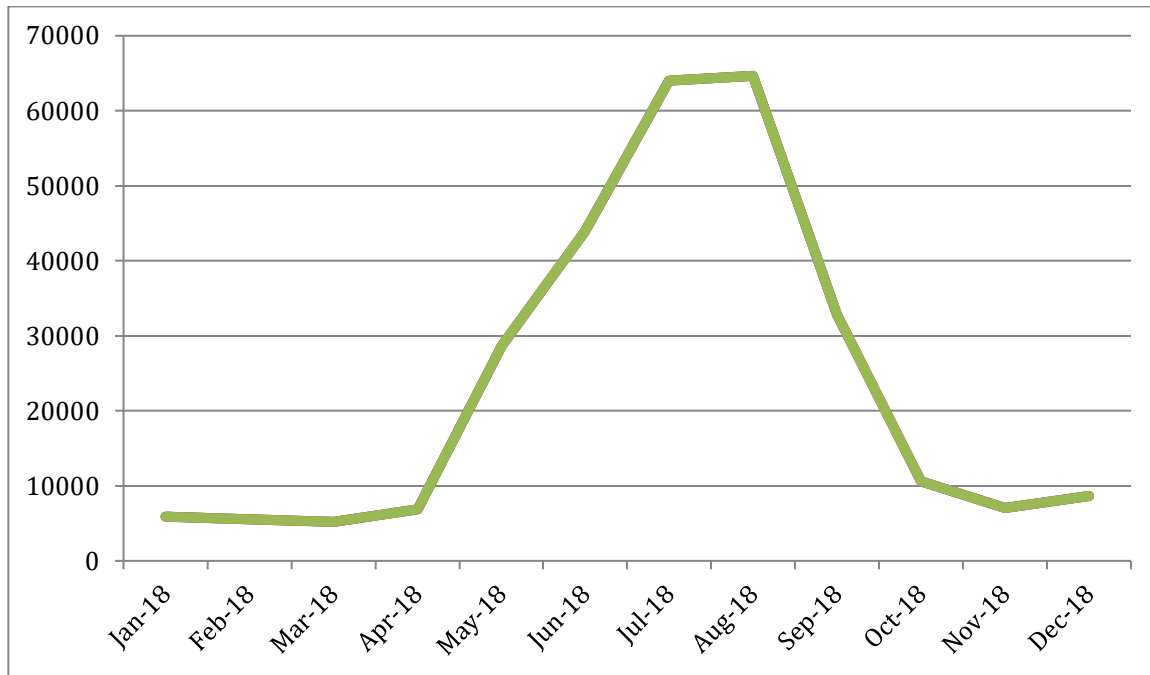
## **Pump Stations:**

Pump stations are inspected daily. A complete run through of all valves, alarms and procedures are done annually. Pump station maintenance is done every 5 years.

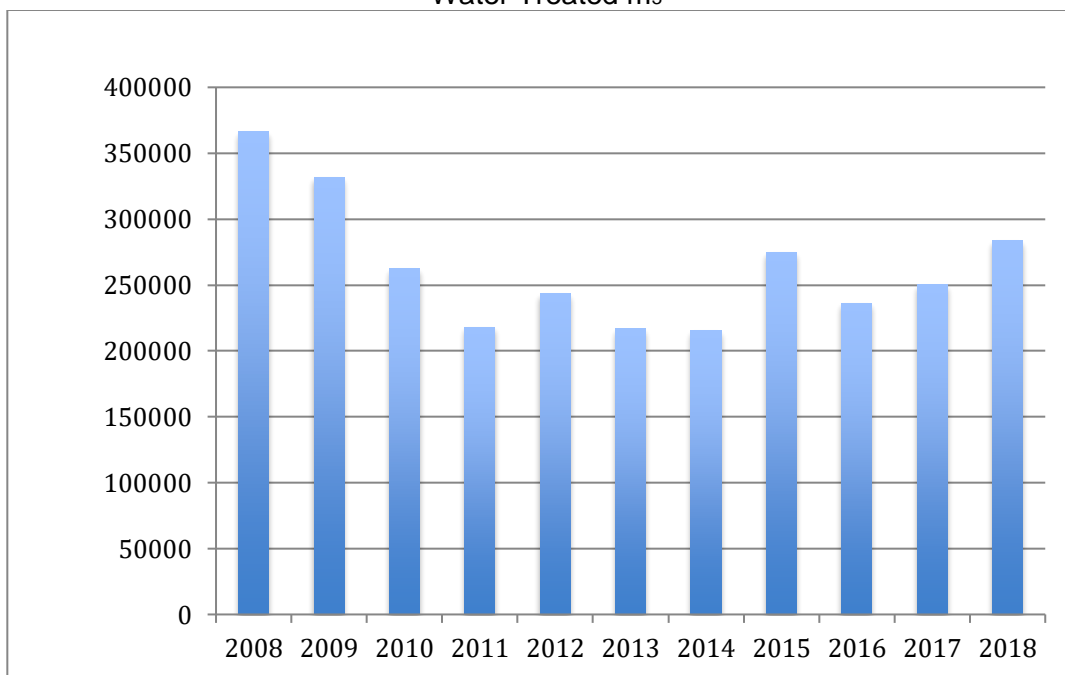
## Water Consumption:

In 2018, the Village of Midway's water consumption was 62,451,909 imp gal (283,912 m<sup>3</sup>). The daily average in the winter months is 52,132 imp gal per day (237 m<sup>3</sup>) and in the summer months it is 282,880 imp gal per day (1286 m<sup>3</sup>). Before bringing in a watering bylaw the average daily use in the summer months were double what they are now.

**Monthly Water Consumption**  
Water Treated m<sup>3</sup>



**Annual Water Consumption**  
Water Treated m<sup>3</sup>



## **Water Sampling and Testing:**

### **Bacteriological:**

As required by the Interior Health Authority (IHA), Village staff takes weekly samples of the water for bacteriological testing for total Coliforms and e-Coli bacteria. There are two different sampling sites used in the Village. In addition, water samples are taken from within project areas after any work on infrastructure.

See Appendix A for 2018 test results.

### **Full Spectrum Analysis:**

Every two years, Village staff also sends samples from the source water for a full spectrum analysis. Parameters such as alkalinity, metals, pH, turbidity, hardness and disinfection byproducts are tested

See Appendix B for 2019 test results.

### **Cross Connection Program:**

The Village is developing a Cross Connection Control Program to address the potential for the water system to be compromised by high risk service connections that could introduce contaminated water into the Village's water system.

### **Emergency Response Plan:**

The Village has an Emergency Response Plan pertaining to the water system. The Emergency Response Plan identifies a number of potential emergencies that could occur and provides a systematic approach on how the Village will deal with the emergency. The plan is available for public viewing at the Village office.

### **Wellhead Protection Plan:**

The Village has completed Phase II and will be working on phase III in 2019.

Appendix A:  
Medical Clinic

Sample Date	Coliform	E. Coli	Turbidity	Arsenic
3-Jan-18	<1	<1		
9-Jan-18	<1	<1		
16-Jan-18	<1	<1		
25-Jan-18	<1	<1		
31-Jan-18	<1	<1		
7-Feb-18	<1	<1		
16-Feb-18	<1	<1		
21-Feb-18	<1	<1		
28-Feb-18	<1	<1		
8-Mar-18	<1	<1		
15-Mar-18	<1	<1		
22-Mar-18	<1	<1		
28-Mar-18	<1	<1		
5-Apr-18	<1	<1		
13-Apr-18	<1	<1		
18-Apr-18	<1	<1		
25-Apr-18	<1	<1		
2-May-18	<1	<1		
9-May-18	<1	<1		
16-May-18	<1	<1	<0.10	
30-May-18	<1	<1	<0.10	
31-May-18	<1	<1	<0.10	0.00881
6-Jun-18	<1	<1	0.11	
13-Jun-18	<1	<1	<0.10	
21-Jun-18	<1	<1	<0.10	
27-Jun-18	<1	<1	<0.10	
18-Jul-18	<1	<1		
24-Jul-18	<1	<1	<0.10	0.00708
26-Jul-18	<1	<1	<0.10	
31-Jul-18	<1	<1	0.17	
9-Aug-18	<1	<1	0.13	
21-Aug-18	<1	<1	<0.10	0.00844
23-Aug-18	<1	<1	<0.10	
29-Aug-18	<1	<1	<0.10	
6-Sept-18	<1	<1	<0.10	
13-Sept-18	<1	<1	<0.10	
24-Sept-18	<1	<1	<0.10	
27-Sept-18	<1	<1	<0.10	
4-Oct-18	<1	<1	<0.10	
12-Oct-18	<1	<1	<0.10	
18-Oct-18	<1	<1	0.36	
29-Oct-18	<1	<1	<0.10	
1-Nov-18	<1	<1	<0.10	
8-Nov-18	<1	<1		
22-Nov-18	<1	<1		
29-Nov-18	<1	<1		
6-Dec-18	<1	<1		
12-Dec-18	<1	<1		
20-Dec-18	<1	<1		

## Community Centre

Sample Date	Coliform	E. Coli	Turbidity
3-Jan-18	<1	<1	<0.10
9-Jan-18	<1	<1	<0.10
16-Jan-18	<1	<1	<0.10
25-Jan-18	<1	<1	<0.10
31-Jan-18	<1	<1	<0.10
7-Feb-18	<1	<1	<0.10
16-Feb-18	<1	<1	0.10
21-Feb-18	<1	<1	0.10
28-Feb-18	<1	<1	<0.10
8-Mar-18	<1	<1	<0.10
15-Mar-18	<1	<1	<0.10
22-Mar-18	<1	<1	<0.10
28-Mar-18	<1	<1	
5-Apr-18	<1	<1	<0.10
13-Apr-18	<1	<1	<0.10
18-Apr-18	<1	<1	<0.10
25-Apr-18	<1	<1	<0.10
2-May-18	<1	<1	
9-May-18	<1	<1	<0.10
16-May-18	<1	<1	
30-May-18	<1	<1	
31-May-18	2	<1	
6-Jun-18	<1	<1	
13-Jun-18	<1	<1	
21-Jun-18	<1	<1	
27-Jun-18	<1	<1	
18-Jul-18	<1	<1	
24-Jul-18	<1	<1	
26-Jul-18	<1	<1	
31-Jul-18	<1	<1	
9-Aug-18	<1	<1	
21-Aug-18	<1	<1	
23-Aug-18	<1	<1	
29-Aug-18	<1	<1	
6-Sept-18	<1	<1	
13-Sept-18	<1	<1	
24-Sept-18	<1	<1	
27-Sept-18	<1	<1	
4-Oct-18	<1	<1	
12-Oct-18	<1	<1	
18-Oct-18	<1	<1	
29-Oct-18	<1	<1	
1-Nov-18	<1	<1	
8-Nov-18	<1	<1	<0.10
22-Nov-18	<1	<1	<0.10
29-Nov-18	<1	<1	<0.10
6-Dec-18	<1	<1	<0.10
12-Dec-18	<1	<1	<0.10
20-Dec-18	<1	<1	<0.10



**Well #1**

<b>Sample Date</b>	<b>Coliform</b>	<b>E. Coli</b>	<b>Turbidity</b>	<b>Arsenic</b>
7-May-18	<1	<1		

**Well #2**

<b>Sample Date</b>	<b>Coliform</b>	<b>E. Coli</b>	<b>Turbidity</b>
22-Oct-18	<1	<1	

## Appendix B:



## TEST RESULTS

REPORTED TO PROJECT Midway, Corporation of the Village of Drinking Water

WORK ORDER REPORTED 9052487 2019-06-04 16:56

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
Well #1 (9052487-01)   Matrix: Water   Sampled: 2019-05-27 08:30					
<b>Anions</b>					
Chloride	11.9	AO ≤ 250	0.10 mg/L	2019-05-28	
Fluoride	0.73	MAC = 1.5	0.10 mg/L	2019-05-28	
Nitrate (as N)	1.35	MAC = 10	0.010 mg/L	2019-05-28	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2019-05-28	
Sulfate	43.5	AO ≤ 500	1.0 mg/L	2019-05-28	
<b>Calculated Parameters</b>					
Hardness, Total (as CaCO <sub>3</sub> )	205	None Required	0.500 mg/L	N/A	
Solids, Total Dissolved	290	AO ≤ 500	1.00 mg/L	N/A	
<b>General Parameters</b>					
Alkalinity, Total (as CaCO <sub>3</sub> )	215	N/A	1.0 mg/L	2019-05-28	
Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> )	< 1.0	N/A	1.0 mg/L	2019-05-28	
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	215	N/A	1.0 mg/L	2019-05-28	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	< 1.0	N/A	1.0 mg/L	2019-05-28	
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	< 1.0	N/A	1.0 mg/L	2019-05-28	
Conductivity (EC)	482	N/A	2.0 µS/cm	2019-05-28	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2019-05-29	
pH	8.15	7.0-10.5	0.10 pH units	2019-05-28	HT2
Turbidity	< 0.10	OG < 1	0.10 NTU	2019-05-29	
<b>Microbiological Parameters</b>					
Coliforms, Total	< 1	MAC = 0	1 CFU/100 mL	2019-05-28	
E. coli	< 1	MAC = 0	1 CFU/100 mL	2019-05-28	
<b>Total Metals</b>					
Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2019-06-02	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2019-06-02	
Arsenic, total	0.00786	MAC = 0.01	0.00050 mg/L	2019-06-02	
Barium, total	0.0391	MAC = 1	0.0050 mg/L	2019-06-02	
Boron, total	0.0243	MAC = 5	0.0050 mg/L	2019-06-02	
Cadmium, total	0.000013	MAC = 0.005	0.000010 mg/L	2019-06-02	
Calcium, total	49.0	None Required	0.20 mg/L	2019-06-02	
Chromium, total	0.00109	MAC = 0.05	0.00050 mg/L	2019-06-02	
Copper, total	0.00114	AO ≤ 1	0.00040 mg/L	2019-06-02	
Iron, total	< 0.010	AO ≤ 0.3	0.010 mg/L	2019-06-02	
Lead, total	< 0.00020	MAC = 0.005	0.00020 mg/L	2019-06-02	
Magnesium, total	20.1	None Required	0.010 mg/L	2019-06-02	
Manganese, total	< 0.00020	MAC = 0.12	0.00020 mg/L	2019-06-02	
Potassium, total	2.19	N/A	0.10 mg/L	2019-06-02	
Selenium, total	0.00083	MAC = 0.05	0.00050 mg/L	2019-06-02	
Sodium, total	26.2	AO ≤ 200	0.10 mg/L	2019-06-02	
Uranium, total	0.00821	MAC = 0.02	0.000020 mg/L	2019-06-02	
Zinc, total	< 0.0040	AO ≤ 5	0.0040 mg/L	2019-06-02	

Caring About Results, Obviously.

Page 2 of 4



## TEST RESULTS

REPORTED TO PROJECT Midway, Corporation of the Village of Drinking Water

WORK ORDER REPORTED 9042065 2019-04-30 17:15

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
<b>Medical Centre (9042065-01)   Matrix: Water   Sampled: 2019-04-23 08:40</b>					
<i>Microbiological Parameters</i>					
Coliforms, Total	< 1	MAC = 0	1 CFU/100 mL	2019-04-24	
E. coli	< 1	MAC = 0	1 CFU/100 mL	2019-04-24	
<b>Community Centre (9042065-02)   Matrix: Water   Sampled: 2019-04-23 08:55</b>					
<i>General Parameters</i>					
Turbidity	< 0.10	OG < 1	0.10 NTU	2019-04-26	
<i>Microbiological Parameters</i>					
Coliforms, Total	< 1	MAC = 0	1 CFU/100 mL	2019-04-24	
E. coli	< 1	MAC = 0	1 CFU/100 mL	2019-04-24	
<b>Well #2 (9042065-03)   Matrix: Water   Sampled: 2019-04-23 09:15</b>					
<i>Anions</i>					
Chloride	6.69	AO ≤ 250	0.10 mg/L	2019-04-25	
Fluoride	0.45	MAC = 1.5	0.10 mg/L	2019-04-25	
Nitrate (as N)	2.89	MAC = 10	0.010 mg/L	2019-04-25	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2019-04-25	
Sulfate	22.2	AO ≤ 500	1.0 mg/L	2019-04-25	
<i>Calculated Parameters</i>					
Hardness, Total (as CaCO <sub>3</sub> )	168	None Required	0.500 mg/L	N/A	
Solids, Total Dissolved	216	AO ≤ 500	1.00 mg/L	N/A	
<i>General Parameters</i>					
Alkalinity, Total (as CaCO <sub>3</sub> )	166	N/A	1.0 mg/L	2019-04-26	
Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> )	< 1.0	N/A	1.0 mg/L	2019-04-26	
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	166	N/A	1.0 mg/L	2019-04-26	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	< 1.0	N/A	1.0 mg/L	2019-04-26	
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	< 1.0	N/A	1.0 mg/L	2019-04-26	
Conductivity (EC)	373	N/A	2.0 µS/cm	2019-04-26	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2019-04-30	
pH	8.06	7.0-10.5	0.10 pH units	2019-04-26	HT2
Turbidity	< 0.10	OG < 1	0.10 NTU	2019-04-26	
<i>Microbiological Parameters</i>					
Coliforms, Total	< 1	MAC = 0	1 CFU/100 mL	2019-04-24	
E. coli	< 1	MAC = 0	1 CFU/100 mL	2019-04-24	
<i>Total Metals</i>					
Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2019-04-30	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2019-04-30	



## TEST RESULTS

REPORTED TO PROJECT Midway, Corporation of the Village of Drinking Water

WORK ORDER REPORTED 9042065 2019-04-30 17:15

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
Well #2 (9042065-03)   Matrix: Water   Sampled: 2019-04-23 09:15, Continued					
<i>Total Metals, Continued</i>					
Arsenic, total	0.00442	MAC = 0.01	0.00050 mg/L	2019-04-30	
Barium, total	0.0310	MAC = 1	0.0050 mg/L	2019-04-30	
Boron, total	0.0123	MAC = 5	0.0050 mg/L	2019-04-30	
Cadmium, total	0.000012	MAC = 0.005	0.000010 mg/L	2019-04-30	
Calcium, total	50.4	None Required	0.20 mg/L	2019-04-30	
Chromium, total	0.00149	MAC = 0.05	0.00050 mg/L	2019-04-30	
Copper, total	0.00079	AO ≤ 1	0.00040 mg/L	2019-04-30	
Iron, total	< 0.010	AO ≤ 0.3	0.010 mg/L	2019-04-30	
Lead, total	< 0.00020	MAC = 0.005	0.00020 mg/L	2019-04-30	
Magnesium, total	10.2	None Required	0.010 mg/L	2019-04-30	
Manganese, total	< 0.00020	AO ≤ 0.05	0.00020 mg/L	2019-04-30	
Potassium, total	1.94	N/A	0.10 mg/L	2019-04-30	
Selenium, total	0.00081	MAC = 0.05	0.00050 mg/L	2019-04-30	
Sodium, total	10.2	AO ≤ 200	0.10 mg/L	2019-04-30	
Uranium, total	0.00569	MAC = 0.02	0.000020 mg/L	2019-04-30	
Zinc, total	0.0055	AO ≤ 5	0.0040 mg/L	2019-04-30	

### Sample Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.