

Beaver Falls Waterworks District Annual Drinking Water Report 2015



Water system: Beaver Falls Waterworks District

Date of report: March 2016

Period of monitoring covered by this report: January 1, 2015 – December 31, 2015

Interior Health Permit to Operate Facility Number: 0210637

IHA Permit: Drinking Water System 1-300 Connections

Connections: 196 active

Location of water supply system: Beaver Falls BC

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Introduction

This annual report provides an overview of the Beaver Falls Waterworks District (BFWD) water system and summarizes the water quality from January 1, 2015 to December 31, 2015. This report also includes a summary of inquiries and complaints; completed and proposed maintenance activities and the Emergency Response Plan. This report is required by Interior Health Authority as part of the Beaver Falls Waterworks District Operating Permit.

Beaver Falls Waterworks System

The community of Beaver Falls lies within the Regional District of Kootenay Boundary (RDKB) in BC and forms a part of the RDKB Electoral Area "A". Beaver Falls is primarily a residential community with some commercial areas. The population is approximately 594 people, with a total land area of about 15 square km.

The Beaver Falls Waterworks (BFWD) originated October 1, 1959 under the provincial Letters Patent.

The water supply distribution system includes the two production wells, 16 fire hydrants, two Imperial gallon reservoirs and approximately 5 km of looped AC(asbestos cement) steel and PVC piping. The storage system is then gravity fed back into the community within the Improvement District. The BFWD provides potable water to 196 active connections. Other private domestic water wells also exist in Beaver Falls Waterworks Improvement District.

The BFWD's potable water supply is currently sourced from Well No. 1 and Well No.2 located approximately 17 m northwest of Beaver Creek. The water comes from an underground aquifer and sourced from groundwater extracted from the two production wells (Wells #1, #2,). The BFWD wells are situated adjacent to Beaver Creek, just outside the southwest municipal boundary of the Village of Fruitvale in the vicinity of Scout Camp, which is accessed from Bluebird road on the east side of Highway 3B. Well No.1, which is located approximately 42 m to the northeast of Well No.2, Wells No.1 and No.3 are located in the same pump house. The pump house is located approximately 37 m north of Beaver Creek. A third production well (Well No.3) was drilled in 2005 (approximately 3 m from Well No.1), with the intention of using it as a replacement Well No. 1 however, it was not put into use.

Well #1

Well No.1 is located inside a locked and secured masonry pump house (Pump house No.1) with a concrete slab around the well. Well No.1 was drilled to a total depth of 20.7 m (68 ft) below ground surface in 1973. The well is completed with 250 mm (10 inch) diameter well casing and nominal 200 mm (8 inch) telescopic, stainless steel well screen. The well screen assembly is approximately 7.6 m (25 ft) in length, and consists of five, 1.5 m (5-ft) lengths of well screen, with slot sizes varying between 60-slot (0.060 inch) and 100-slot (0.100 inch). The largest slot-size well screen (100-slot) is located at the bottom of the assembly and the smallest slot size (60-slot) is at the middle of the assembly. The screen is equipped with a K-packer located at 12.5 m (41 ft) belowground surface. In October 2014, Precision Service & Pumps Inc. performed a well test and concluded that the pumping rate has decreased since the last test in 2010 and well redevelopment is recommended. The pumping rate is currently at 114 US gpm, and Precision Pumps pulled the well and rebuilt the pump. While they were rebuilding the pump, they put a temporary pump in the well so we could still have two wells running.

Well #2

According to the well record, Well No.2 was drilled to a total depth of 28.1 m (92 ft) below ground surface in 1985. The well is completed with 250 mm (10 inch) diameter well casing and nominal 200 mm (8 inch) telescopic, stainless steel well screen. The well screen assembly is approximately 7.6 m (25 ft) in length, and consists of five, 1.5 m (5-ft) lengths of well screen, with slot sizes varying between 20-slot (0.020 inch) and 120-slot (0.120 inch). The largest slot-size well screen (120-slot) is located at the top of the assembly and the smallest slot size (20-slot) is at the middle of the assembly. The screen is equipped with a K-packer located at 19.9 m (65 ft) below ground surface. In October 2014, Precision Service & Pumps Inc. performed a well test and concluded that this well's performance has not declined and showed it is pumping at 200 US gpm.

Reservoirs

The BFWD has two reservoirs that are located on Deer Road which is on the west side of Hwy 3B. Built in 1966, reservoir #1 holds 545,000 litres and #2 holds 300,000 litres it was built in 1986. Both reservoirs are constructed of steel.

SCADA (Supervisory Control and Data Acquisition)

The SCADA system is used to monitor and control the wells and reservoir. The SCADA system was installed in September of 2014 replacing the circular chart recorder.

Routine Maintenance Program

Fire Hydrants are flushed every spring along with pressure testing and removal of winter markers. In the fall, they are inspected, pressure tested, winter markers are placed on hydrants and any worn parts are replaced. Easy access to hydrants is maintained throughout the year; during winter months, hydrants are cleared of snow and during summer months, grass is cut.

Chlorination at the reservoir and system flush is completed twice per year, once in the spring and once in the fall.

Inventory and equipment count is done yearly at the beginning of January.

Water usage is monitored through the SCADA system.

We are the process of updating our mapping to show water lines, valves etc.

Valve exercising to ensure valves are in proper working condition.

Water Quality Complaints

There have been no water complaints for 2015. In October of 2015, testing indicated that there were some Total Coliform counts in the water, but this was due to a testing error.

2015 Improvements

Forsythia bank project was completed in August of 2015.

John Rd. new water line was replaced in October of 2015.

Bluebird Rd has a major break in June of 2015, this was repaired.

Ongoing maintenance work for residential upgrades to isolation valves.

2015 Proposed Improvements

Increased pressure for Christie Rd residents.

Repair of the pitting on the reservoirs.

Continuing with residential valve upgrades.

Water Consumption

In 2015, the BFWD total water consumption was 101,245 cubic meters. The minimum daily demand in January was 117 gallons per day per household and the maximum daily demand in August was 690.

Emergency Response Plan

The BFWD has an Emergency Response Plan (ERP) in place. The plan is reviewed and updated each year. The BFWD ERP can be viewed on our website at www.beaverfallswaterworksdistrict.myruralwater.com. The Plan identifies potential emergencies and action plans. A copy of this report is submitted to Interior Health drinking water officer.

Water Sampling and Testing

As required by the Interior Health Authority (IHA), the Beaver Falls Waterworks District (BFWD) Water System Operator takes water samples for the purpose of testing of Total Coliforms and e-Coli. The samples are sent to Caro Analytical Services in Kelowna, results are emailed back to the BFWD and to Interior Health. There are eight sampling sites used with one sample taken weekly and alternating between sites.

2015 Water Sample Reports for Beaver Falls Waterworks District

Date	Site	Coliforms, Total CFU/ 100ml	E.Coli CFU/100ml
Jan-14	Pumphouse	<1	<1
Jan-22	Fox Rd	<1	<1
Feb-18	Fox Rd.	<1	<1
Feb-25	Pumphouse	<1	<1
Mar-11	Pumphouse	<1	<1
Apr-15	Pumphouse	<1	<1
Apr-21	Fox Rd	<1	<1
May-06	Fox Rd	<1	<1
May-06	Christie Road	<1	<1
May-13	Pumphouse #2	<1	<1
May-23	Hwy 3B	<1	<1
Jun-03	Fox Rd	<1	<1
Jun-17	Beaver Rd	<1	<1
Jun-17	Fox Rd	<1	<1
Jul-8	Fox Rd	<1	<1
Jul-22	Fox Rd	<1	<1
Aug-19	Christie Rd	<1	<1
Aug-19	Fox Rd.	<1	<1
Sep-03	Pumphouse	<1	<1
Sep-03	Christie Rd	<1	<1
Sep-25	Pumphouse #1	<1	<1
Oct-07	Hydrant 16	3	<1
Oct-07	Pumphouse #2	<1	<1
Oct 21	Fox Rd	<1	<1
Nov-04	Fox	<1	<1
Nov-04	Hwy 3B	<1	<1
Dec 2	Hydrant 16	<1	<1
Dec 2	Well #1	<1	<1
Dec-16	Hydrant 15	<1	<1
Dec-16	Hydrant 4	<1	<1

Testing Error