



Making a difference...together

**WILDERNESS MOUNTAIN WATER SERVICE COMMISSION**  
Notice of Annual General Meeting on **Thursday, December 14, 2017 at 6 p.m.**  
Old East Sooke Fire Hall  
1397 Coppermine Road, East Sooke, BC

Rob Hancock (Chair)   Director Mike Hicks   Chuck Taylor

---

**AGENDA**

1.    Approval of Agenda
2.    Adoption of Minutes of the Annual General Meeting of November 10, 2016
3.    Chairs Report
4.    2016 Annual Report
5.    Election of Commission Members
6.    New Business
7.    Adjournment

---

*To ensure quorum, advise Lorrie Siemens 250.360.3087 or [lsiemens@crd.bc.ca](mailto:lsiemens@crd.bc.ca) if you cannot attend.*



Making a difference...together

## **Minutes of the Annual General Meeting of the Wilderness Mountain Water Service Commission**

**Held Thursday, November 10, 2016 at the Old East Sooke Fire Hall, 1397 Coppermine Road, East Sooke, BC**

---

**PRESENT:** **Committee Members:** R. Hancock (C), C. Taylor, S. Williamson, **Staff:** I. Jesney, Senior Manager, Infrastructure Engineering, M. McCrank, Senior Manager, Infrastructure Operations, J. Blaney, Manager, Water Quality Laboratory, Kyu-Chang Jo, Financial Analyst, L. Siemens (recorder)  
12 Members of the Public

**ABSENT:** Director M. Hicks

The meeting was called to order at 7:05 p.m.

### **1. Approval of Agenda**

**MOVED** by C. Taylor, **SECONDED** by S. Williamson,  
That the agenda be approved as distributed.

**CARRIED**

### **2. Adoption of Minutes of the Annual General Meeting of October 5, 2015**

**MOVED** by C. Taylor, **SECONDED** by S. Williamson,  
That the minutes of the Annual General Meeting of October 5, 2015 be adopted as previously circulated.

**CARRIED**

### **3. Chairs Report**

Chair Hancock presented a written report. The report was received as documentation.

### **4. 2015 Annual Report and Presentation**

I. Jesney presented a written report and PowerPoint presentation to accompany the written report.

The following topics were addressed:

- Purpose of Annual General Meeting
- System Overview
- Water Supply and Consumption
- Drinking Water Quality
- Raw Water Entering the Treatment Plant
- Treated Water in the Distribution System
- Operations 2015
- Capital Improvements
- 2015 Financial Report

CRD staff and commission members responded to questions from the public.

**5. Election of Commission Members**

Chair Hancock advised that the terms for Shawn Williamson and Chuck Taylor will expire on December 31, 2016 and an election will be held to fill the two-year positions beginning January 1, 2017 and expiring on December 31, 2018. He then called for nominations. Shawn Williamson and Chuck Taylor were nominated and agreed to stand. Nominations were called for two more times and hearing none, Shawn Williamson and Chuck Taylor were elected by acclamation. Their names will be forwarded to the CRD Board for appointment.

**6. New Business**

Staff advised that M. McCrank will be making a presentation after the meeting regarding the boil water advisories in 2016.

**7. Adjournment**

**MOVED** by R. Hancock, **SECONDED** by C. Taylor,  
That the meeting be adjourned at 7:30 p.m.

**CARRIED**



Making a difference...together

## WILDERNESS MOUNTAIN WATER LOCAL SERVICE 2016 ANNUAL REPORT

### Introduction

This report provides a summary of the Wilderness Mountain Water Service for the year 2016. This report includes a description of the service, summary of the water supply, demand and production, drinking water quality, operations highlights, capital project updates and financial report.

### Service Description

The community of Wilderness Mountain is a rural residential development located on Mount Matheson in the Juan de Fuca Electoral Area which was originally serviced by a private water utility from about 1983 and in 2008 the service converted to the Capital Regional District (CRD). The Wilderness Mountain water service is made up of 82 parcels encompassing a total area of approximately 124 hectares. Of the 82 parcels, 70 were customers to the water system in 2016.

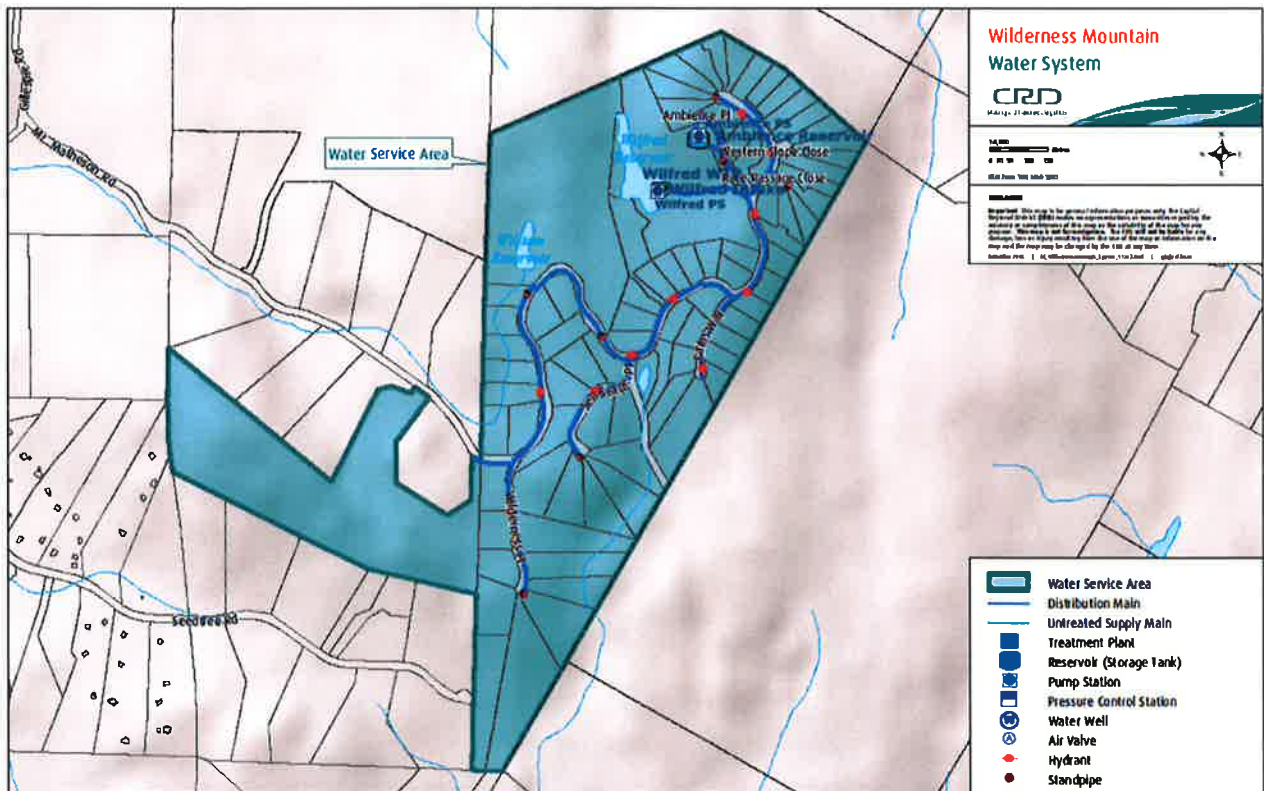
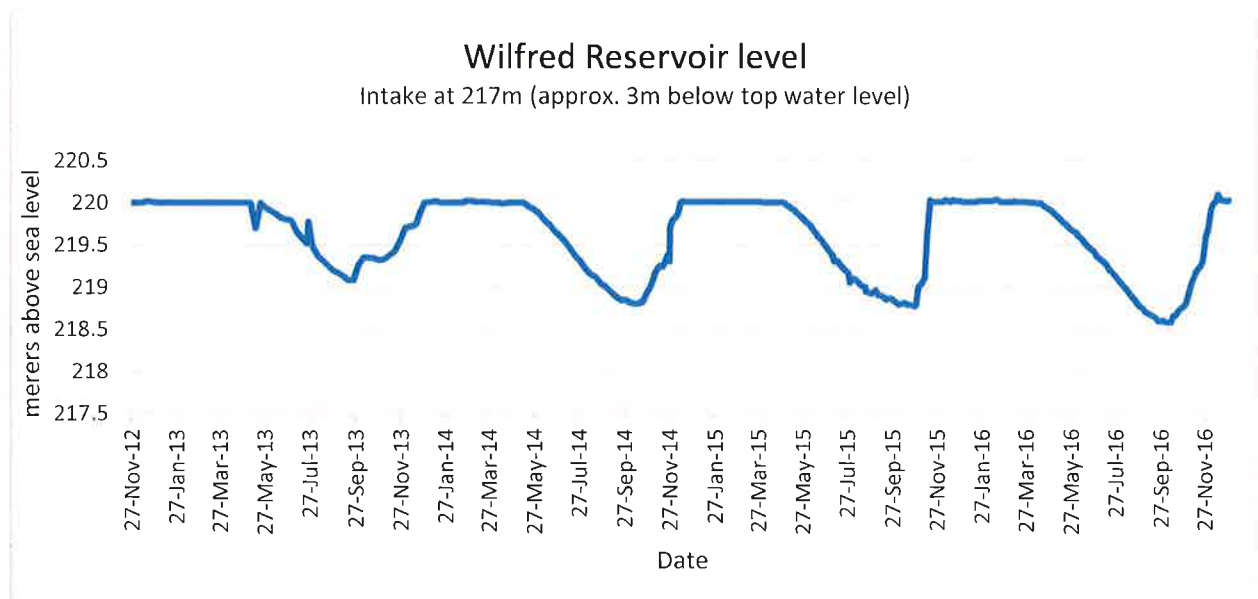


Figure 1: Map of the Wilderness Mountain Water Service Area.

The Wilderness Mountain water system is primarily comprised of:

- Raw water is obtained from Wilfred Reservoir, a small surface water body which lies within a protected watershed and was created by the construction of two dams.
- Water from Wilfred Reservoir is pumped to the treatment plant which consists of coarse cartridge filtration, ultraviolet disinfection and chloramine disinfection.
- The chloraminated water is then pumped to two distribution system storage tanks (combined capacity of 250 cubic metres or 66,000 USg) and the distribution system.
- Distribution system (3,750 metre network of 150 mm (6") and 100 mm (4") PVC watermains).
- Other water system assets: 70 service connections, 10 hydrants, 6 standpipes, 21 gate valves and a SCADA system.
- Although the water system also includes the William Brook Dam and related water reservoir, this reservoir is no longer utilized for water supply.

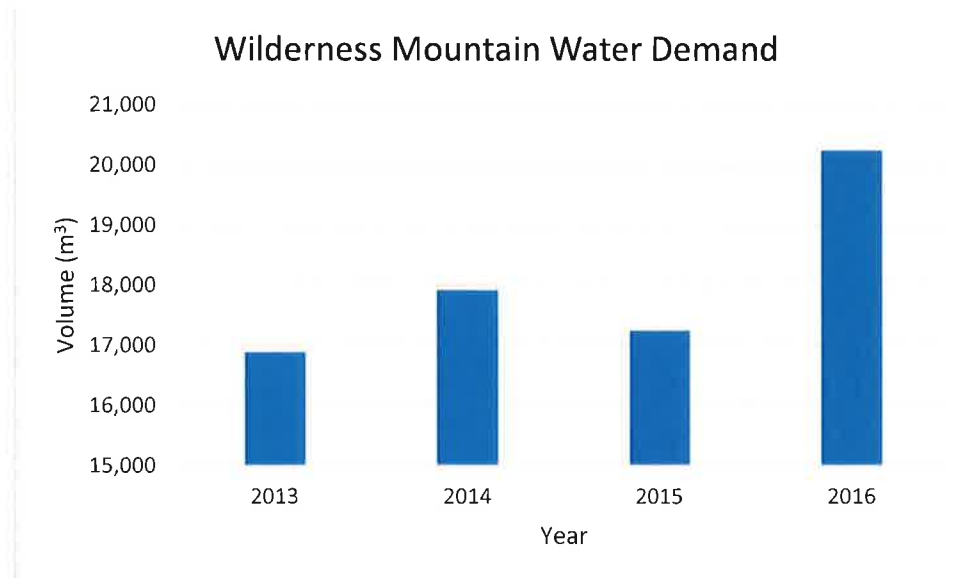
## Water Supply



**Figure 2: Wilfred Reservoir Water Level 2013-2016**

Note that reservoir level has been increasingly drawn down during the summer period. However, the additional drawdown in 2016 may be attributed to the water main flushing completed by operations in response to water quality issues.

## Water Usage



**Figure 3: Wilderness Mountain water demand 2013-2016.**

Note that the higher demand exhibited during 2016 in Figure 3 is primarily due to increased flushing due to water quality issues.

## Drinking Water Quality

2016 was a challenging year for the drinking water quality in the Wilderness Mountain Water System. Over the winter and spring months, the drinking water quality was relatively good and stable with no adverse test results and no exceedances of any regulated parameters. However, by the end of June 2016, the abundance of algal and zooplankton populations in Wilfred Reservoir increased such that the 1 NTU turbidity threshold at the treatment plant was regularly exceeded which in turn led to a number of total coliform exceedances downstream of the plant. CRD responded by providing primary disinfection with free chlorine and a distribution system flush. On July 2, the CRD issued a taste and odour advisory to the customers on this system due to the usage of free chlorine. While the response succeeded in eliminating the bacteria breakthrough at the treatment plant, high disinfection by-product concentrations were registered during the time period of disinfecting with free chlorine. Concurrently, the use of free chlorine could not establish a sufficiently lasting chlorine residual in the distribution system. As a result, bacteria regrowth occurred in the far extremity of the system (end of Wilderness Place). After two consecutive adverse bacteriological results at 563 Wilderness Place, CRD, in agreement with Island Health, issued a Boil Water Advisory for the Wilderness Mountain Water System. CRD staff flushed the distribution pipes, installed a bleeder valve at 563 Wilderness Place and intensified the sampling and testing efforts. Staff switched the system back to chlorination on August 10<sup>th</sup> and together with more favourable raw water conditions in the lake, the treated water in the entire system tested free of any indicator bacteria. On August 26<sup>th</sup>, Island Health agreed to rescind the Boil Water Advisory. Between October 10<sup>th</sup> and 12<sup>th</sup>, the CRD issued another Boil Water Advisory due to a mechanical failure of the disinfection system. Following this event, the system provided safe drinking water of relatively good quality for the rest of the year. CRD staff utilized the winter

months to design and install additional equipment to better prepare this water system for the next summer season.

The data below provides a summary of the water quality characteristics in 2016:

Raw Water:

- The raw water exhibited low concentrations of total coliform bacteria during the winter and higher concentrations during the summer months.
- *E. coli* bacteria concentrations were typically low with only one exceedance of 20 CFU/100mL.
- *Cryptosporidium* and *Giardia* parasites were tested for once in 2016 and neither was detected.
- The raw water had a naturally elevated concentrations of manganese especially during the spring season. Elevated manganese concentrations, since untreated, likely contributed to regular water discolouration at the customers' taps.
- The mean annual raw water turbidity was just above 1 NTU but the turbidity typically exceeded 1 NTU for long periods of time between spring and fall. Highest recorded turbidity entering the plant was 2.73 NTU. Raw water turbidity spikes often coincided with algal and/or zooplankton blooms in Wilfred Reservoir.
- The raw water was soft (median hardness 15.5 mg/L CaCO<sub>3</sub>).
- The pH was slightly acidic (median pH 6.47).
- The median total organic carbon (TOC) concentration was elevated at 4.11 mg/L.

Treated Water:

- The treated water was bacteriologically safe to drink except for the periods when the system was under a Boil Water Advisory. No *E. coli* was found in the treated water, however a number of test results were positive for Total Coliform bacteria between June and August 2016.
- The treated water turbidity (cloudiness) was usually under the *Guidelines for Canadian Drinking Water Quality (GCDWQ)* turbidity limit of 1.0 NTU during the winter and spring months but often over during the rest of the year (peak 3.3 NTU on July 1, 2016).
- The disinfection by-products THM and HAA were typically well below the *GCDWQ* limits during the periods that chloramination was used. However, during the time the system was disinfected with free chlorine (July 2 – August 10), THM and HAA levels exceeded the limits of 100 ug/L and 80 ug/L respectively (THM up to 160 ug/L and HAA up to 88 ug/L). The health risk from these disinfection by-products over the Maximum Acceptable Concentration (MAC) is from chronic exposure over many years.
- The annual median total chlorine residual in the system was 0.65 mg/L.

Water quality data collected from this drinking water system can be reviewed on the CRD website:

<https://www.crd.bc.ca/about/data/drinking-water-quality-reports/juan-de-fuca-water-quality-reports/wilderness-mountain-water-quality-reports>

## **Operational Highlights**

The following is a summary of the major operational issues that were addressed by CRD Integrated Water Services staff:

- March, 2016 – Annual Water Main Flushing
- April, 2016 – Water treatment facility programing modifications. Programing review and modifications were required as a result of ongoing facility nuisance shutdown events and emergency call out events.
- July 28th, 2016 - Boil Water Advisory issued by Island Health. A summary of this event was provided in a verbal report at the November, 2016 AGM. The Advisory was rescinded by Island Health on Aug 26<sup>th</sup>, 2016.
- July, 2016 – Flushing and Reservoir boosting to deal with Water Quality issue
- October, 2016 – William Brook Dam cleared Dam and Spillway
- October 10<sup>th</sup>, 2016 – Boil Water Advisory issued by Island Health due to a mechanical failure of the disinfection equipment at the water treatment plant. Rescinded October 12<sup>th</sup>, 2016
- October, 2016 – Boost Reservoirs with Chlorine in response to the disinfection equipment failure.
- November, 2016 – Hydrant Inspections

## **Capital Project Updates**

The Capital Projects that were in progress or completed in 2016 included:

1. SCADA Upgrade, Phase 2 – the second and final phase of SCADA upgrading project was completed and it included the installation of onsite instrumentation and alarms to enable the water treatment plant operators to obtain field information remotely.
2. Undertake Improvement to Intake Pump – the proposed installation of pipe fittings to allow the operators to remove and inspect the pump and motor with less difficulty is in progress and was completed in 2017.
3. Install Flushing Appurtenance at Ambience Place – an existing flush valve appurtenance was discovered at the same location as the proposed installation and it was determined to be operable and therefore, this work was no longer required.
4. Chemical Metering Pump – a spare chemical metering pump was purchased and is ready for service if required.
5. William Brook Dam – dam safety related work to clear vegetation from the dam and spillway was completed.
6. William Brook Transfer Agreement – since William Brook dam and reservoir were determined to be surplus to the Wilderness Mountain system, other potential owners were pursued to take on ownership and operation. Most options to transfer ownership have been exhausted.
7. Wilfred Reservoir and Dam – an intake screen was proposed to be added but work was subsequently cancelled due to the difficult logistics to clean the screen if it were installed. Also, the valve handle replacement for the lower level outlet pipe is still a work-in-progress.



## Financial Report

Please refer to the attached [Statement of Operations](#). Revenue includes parcel taxes (*Transfers from Government*), fixed user fees (*User Charges*), interest on savings (*Interest Earnings*), a transfer from the maintenance reserve account, and miscellaneous revenue such as late payment charges (*Other Revenue*).

Expenses includes all costs of providing the service. General Government Services includes budget preparation, financial management, utility billing and risk management services. CRD Labour and Operating Costs includes CRD staff time as well as the costs of equipment, tools and vehicles. Debt servicing costs are interest and principal payments on long term debt. Other Expenses includes all other costs to administer and operate the water system, including insurance, supplies, water testing and electricity.

The difference between Revenue and Expenses is reported as Net Revenue (expenses). Any transfers to or from capital or reserve accounts for the service (*Transfers to Own Funds*) are deducted from this amount and it is then added to any surplus or deficit carry forward from the prior year, yielding an Accumulated Surplus (or deficit) that is carried forward to the following year.

Submitted by:	Matt McCrank, M.Sc., P.Eng., Senior Manager, Infrastructure Operations Ian Jesney, P.Eng., Senior Manager, Infrastructure Engineering Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
---------------	---

## CAPITAL REGIONAL DISTRICT

### WILDERNESS MOUNTAIN WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2016

	2016	2015
<b>Revenue</b>		
Transfers from government	45,530	66,530
User Charges	43,554	42,941
Water Sales	15,336	15,120
Fees and Charges	98	76
Other revenue from own sources:		
Interest earnings	-	240
Other revenue	89	79
<b>Total revenue</b>	<b>104,607</b>	<b>124,986</b>
<b>Expenses</b>		
General government services	4,773	4,140
CRD Labour and Operating costs	69,703	61,122
Debt Servicing Costs	23,676	23,667
Other expenses	31,822	14,921
<b>Total expenses</b>	<b>129,974</b>	<b>103,849</b>
<b>Net revenue (expenses)</b>	<b>(25,367)</b>	<b>21,137</b>
Transfers to own funds:		
Capital Reserve Fund	-	12,187
<b>Annual surplus (deficit)</b>	<b>(25,367)</b>	<b>8,950</b>
Accumulated surplus, beginning of year	21,000	12,050
<b>Accumulated surplus, end of year</b>	<b>\$ (4,367)</b>	<b>21,000</b>