island health

DRINKING WATER SYSTEM ANNUAL REPORT

Reporting Period: January 1st to December 31st, 2018 (year)

Water System Kerry Village Water System

Water System Owner Cowichan Valley Regional District

Primary Contact Name (Operator or Manager) Brian Dennison

Phone Number (Operator or Manager) 250-746-2532

E-mail (Operator or Manager) bdennsion@cvrd.bc.ca

DESCRIBE YOUR WATER SUPPLY SYSTEM

What is the Source(s) of Raw Water?

☒ Deep Well ☐ Shallow Well ☐ Surface Water ☐ Other

If other, specify details:

Does the Drinking Water System have Primary Disinfection? ☒ Yes ☐ No

☒ Chlorination ☐ Ultraviolet Light ☐ Ozone ☐ Other

If other, specify details:

Does the Drinking Water System have Secondary Disinfection? ☒ Yes ☐ No

☒ Chlorination ☐ Other

If other, specify details:

Does the Drinking Water System have Filtration? ☐ Yes ☒ No

Check all boxes that apply

☐ Cartridge Filter(s) ☐ Carbon Filter ☐ Sand Filtration ☐ Reverse Osmosis ☐ Other

If other, specify details:

PUBLIC REPORTING

Emergency Response & Contingency Plan (ERCP)

Is your ERCP up to Date? ☒ Yes ☐ No

How do you Inform the System Users of the ERCP?

☐ Hand Delivered ☐ Bulletin Board ☐ Newspaper ☐ Utility Bill Insert ☐ Website

☒ Other (specify details) CVRD Engineering Services, 175 Ingram Street, Duncan, BC

Drinking Water System Annual Report

How do you Inform the System Users of the Annual Report?

☐ Hand Delivered ☐ Bulletin Board ☐ Newspaper ☐ Utility Bill Insert ☒ Website

☐ Other (specify details)

COMPLIANCE WITH OPERATING PERMIT

List the conditions of your Operating Permit (Contact the DWO for a copy if needed):

Are you in compliance with your Operating Permit? ☒ Yes ☐ No

BACTERIOLOGICAL TESTING AND DRINKING WATER PROTECTION REGULATION WATER QUALITY STANDARDS

How many bacteriological samples were collected during this reporting period? 55

What is the minimum required sampling frequency for this system? (#samples/month) 4 samples/month

Additional sampling details:

Was the minimum required sampling frequency achieved? ☒ Yes ☐ No

Comments:

Bacteriological summary attached to this report? ☒ Yes ☐ No

If no, how do the users of the system view the results?

WATER QUALITY STANDARDS FOR POTABLE WATER

Parameter:	***Standard:***	**Did this system meet standard?**	
Escherichia coli (for all samples)	No detectable *Escherichia coli* per 100ml	☒ Yes	☐ No
Total Coliform Bacteria *(if only 1 sample collected in a 30 day period)*	No detectable total coliform bacteria per 100ml	☒ Yes	☐ No
Total Coliform Bacteria *(if more than 1 sample collected in a 30 day period)*	No more than 10% of samples contain total coliform bacteria, **and** No sample has more than 10 total coliform bacteria per 100ml	☐ Yes	☒ No

If the system did not meet any of above Drinking Water Protection Regulation standards, record the results in the table below; attach additional sheets if necessary.

Date	TC/100ml	E.coli/100ml	Reason	Corrective Action
12/06/18	81		Raw water	contaminated sample/ resampled
11/06/18	17		Raw water	contaminated sample/ resampled

CHEMICAL SAMPLING COMPLETED DURING THIS REPORTING PERIOD

Was any chemical sampling conducted during reporting period?	■ Yes	☐ No
If no, when were the last chemical samples conducted for this system? (date)		☐ Don't know
If yes, attach a list of the chemical results	See attached full spectrum report	
If any water samples did not meet the Guidelines for Canadian Drinking Water Quality, record the results in the table below; attach additional sheets if necessary.		
Next scheduled full chemical test (date)	May, 2019	

Parameter	Result ÓŸƎKÚ	Corrective Action / Treatment / Comments

ADDITIONAL TESTING

Does the system have analyzers for continuous monitoring? ■ Yes ☐ No

If yes, check all boxes that apply:

■ Chlorine ☐ Turbidity ☐ Other (details)

Are the results available on request?

If any additional testing or sampling was conducted, record results in the table below; attach additional sheets if necessary.

Additional Testing & Reason for Sampling	Corrective Action Taken

WATER QUALITY COMPLAINTS

Were there any water quality complaints in this reporting period? (e.g. taste, odour, colour etc.) ☐ Yes ■ No

If yes, complete the table below; attach additional sheets if necessary.

Date	Water Quality Complaint	Corrective Action / Treatment

OPERATIONAL PROBLEMS

Were there any operational problems during this reporting period? (e.g. insufficient water supply, malfunction of disinfection equipment, line breaks, elevated turbidity etc.). ☐ Yes ■ No

If yes, complete the table below; attach additional sheets if necessary.

Incident Date	Type of Operational Problem	Corrective Action Taken

MAJOR UPGRADES/REPAIRS & EXPENSES

Were there any major upgrades/repairs or any major costs incurred during this reporting period? ■ Yes ☐ No

If yes, complete the table below; attach additional sheets if necessary.

Major Upgrades/Expenses	Details
Improvements required by DWO	
Additions/changes to system	Injection of Polyphosphates
Purchase or install new equipment	
Equipment repair or replacement	
Annual maintenance of system	System flushing, hydrant maintenance, genset serviced, reservoir cleaned
Specialist report	
Other	

FUTURE IMPROVEMENTS

Are there any plans for future improvements? ☐ Yes ■ No

If yes, complete the table below; attach additional sheets if necessary.

Future Upgrades or Improvements	Estimated Date of Completion
See the attached table.	

Click here to enter a date. June 16, 2019 **DATE COMPLETED:**	Rodrigo Lama **COMPLETED BY:**

Future upgrades or improvements	Estimated date of Completion
Manganese treatment pilot program	2019
Install Manganese Treatment system	2020/2021
Redevelop Well #1	2020/2021
Groundwater monitoring (data collection) all wells	2019

KERRY VILLAGE WATER SYSTEM

Facility Location:
Bourban Road
Mill Bay

Facility Information:
Facility Type: 15-300 DWC

Facility Sampling History:

Location	Date	Total Coliform	E.Coli
S-2 Water Treatment Building, 1045 Bourban Road	18-Dec-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	11-Dec-2018	L1	L1
S-1 Water Treatment Building - Raw Water, RAW WATER Kerry Village	4-Dec-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	4-Dec-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	26-Nov-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	20-Nov-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	13-Nov-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	5-Nov-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	29-Oct-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	22-Oct-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	16-Oct-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	10-Oct-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	2-Oct-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	25-Sep-2018	L1	L1

S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	18-Sep-2018	L1	L1
S-1 Water Treatment Building - Raw Water, RAW WATER Kerry Village	11-Sep-2018	17.9	L1
S-2 Water Treatment Building, 1045 Bourban Road	11-Sep-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	5-Sep-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	28-Aug-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	21-Aug-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	14-Aug-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	8-Aug-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	31-Jul-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	23-Jul-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	16-Jul-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	9-Jul-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	3-Jul-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	27-Jun-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	18-Jun-2018	L1	L1
S-1 Water Treatment Building - Raw Water, RAW WATER Kerry Village	12-Jun-2018	81.6	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	12-Jun-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	4-Jun-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	28-May-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	23-May-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	14-May-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	7-May-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	30-Apr-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	24-Apr-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	16-Apr-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	10-Apr-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	3-Apr-2018	L1	L1
S-1 Water Treatment Building - Raw Water, RAW WATER Kerry Village	27-Mar-2018	L1	L1

S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	27-Mar-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	19-Mar-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	13-Mar-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	5-Mar-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	26-Feb-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	19-Feb-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	13-Feb-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	5-Feb-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	30-Jan-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	22-Jan-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	16-Jan-2018	L1	L1
S-3 1070 Briarwood Kerry Village, S-3 1070 Briarwood, Kerry Village	8-Jan-2018	L1	L1
S-2 Water Treatment Building, 1045 Bourban Road	2-Jan-2018	L1	L1

Report For:	Cowichan Valley Regional District
Received:	07/09/2018 13:10
Report ID:	L2110366
Report Name:	ALS Final Results Report

Sample ID:	**L2110366-1**	
Water System:	Kerry Village Water	(KVW)
Facility:	Distribution	
Sampling Pt:	S3-1070 Briarwood Dr (2-2-MD, 27ADC)	
Comment:	S3-1070 BRIARWOOD DR	
Sampled:	06/11/2018	

INORGANIC			Criteria & Type		Status
Aluminum (total)	< 0.010	mg/L	<=0.1	Operational - Conventional	Final
Ammonia (total, as N)	< 0.0050	mg/L			Final
Antimony (total)	< 0.00050	mg/L	<=0.006	MAC	Final
Arsenic (total)	0.00249	mg/L	<=0.01	MAC	Final
Barium (total)	0.032	mg/L	<=1	MAC	Final
Beryllium (total)	< 0.0050	mg/L			Final
Bismuth (total)	< 0.20	mg/L			Final
Boron (total)	< 0.10	mg/L	<=5	MAC	Final
Bromide	< 0.050	mg/L			Final
Cadmium (total)	< 0.00020	mg/L	<=0.005	MAC	Final
Calcium (total)	35.3	mg/L			Final
Chloride	13.7	mg/L	<=250	AO	Final
Chromium (total)	< 0.0020	mg/L	<=0.05	MAC	Final
Cobalt (total)	< 0.010	mg/L			Final
Copper (total)	0.0047	mg/L	<=1	AO	Final
Fluoride	0.078	mg/L	<=1.5	MAC	Final
Iron (total)	< 0.030	mg/L	<=0.3	AO	Final
Lead (total)	< 0.00050	mg/L	<=0.005	MAC	Final
Lithium (total)	< 0.010	mg/L			Final
Magnesium (total)	8.03	mg/L			Final
Manganese (total)	0.0709	mg/L	<=0.12	MAC	Final
Mercury (total)	< 0.00020	mg/L	<=0.001	MAC	Final
Molybdenum (total)	< 0.030	mg/L			Final
Nickel (total)	< 0.050	mg/L			Final
Nitrate (as N)	< 0.0050	mg/L	<=10	MAC	Final
Nitrate + Nitrite (as N)	< 0.0051	mg/L	<=10	User-Defined	Final
Nitrite (as N)	< 0.0010	mg/L	<=1	MAC	Final
Phosphorus (total)	0.87	mg/L			Final
Potassium (total)	0.55	mg/L			Final
Selenium (total)	< 0.0010	mg/L	<=0.05	MAC	Final
Silicon (total, as Si)	8.83	mg/L			Final
Silver (total)	< 0.010	mg/L			Final
Sodium (total)	16.7	mg/L	<=200	AO	Final

WaterTrax

Sample ID: **L2110366-1 (continued)**
Water System: Kerry Village Water (KVW)
Facility: Distribution
Sampling Pt: S3-1070 Briarwood Dr (2-2-MD, 27ADC)
Comment: S3-1070 BRIARWOOD DR
Sampled: 06/11/2018

INORGANIC			Criteria & Type		Status
Strontium (total)	0.310	mg/L			Final
Sulphate	11.4	mg/L	<=500	AO	Final
Sulphide (total, as S)	< 0.018	mg/L			Final
Thallium (total)	< 0.20	mg/L			Final
Tin (total)	< 0.030	mg/L			Final
Titanium (total)	< 0.010	mg/L			Final
Vanadium (total)	< 0.030	mg/L			Final
Zinc (total)	< 0.0050	mg/L	<=5	AO	Final

MICROORGANISMS			Criteria & Type		Status
Background Bacteria	< 1	CFU/100ml	<=200,OG	User-Defined	Final
Escherichia coli / E. coli (counts)	< 1	CFU/100ml	<=0,P	Microbiological Standard	Final
Fecal (thermal tolerant) Coliforms (counts)	< 1	CFU/100ml	<=0,OG	Microbiological Standard	Final
Heterotrophic Plate Count / HPC	< 1	CFU/ml	<=5	User-Defined	Final
Iron Bacteria (MPN / PA)	SC				Final
Sulfate Reducing Bacteria	SC				Final
Total Coliforms (counts)	< 1	CFU/100ml	<=0,OG	User-Defined	Final

ORGANIC			Criteria & Type		Status
Tannins and Lignins	< 0.10	mg/L			Final
Total Kjeldahl Nitrogen / TKN	< 0.050	mg/L			Final
Total Organic Carbon / TOC	1.09	mg/L			Final

PHYSICAL			Criteria & Type		Status
Alkalinity (total, as CaCO3)	160	mg/L			Final
Colour	< 5.0	CU	<=15	AO	Final
Conductivity	299	uS/cm			Final
Hardness (total, as CaCO3)	121	mg/L			Final
Langelier Index	0.65				Final
Langelier Index (@ 20 C)	16.2				Final
pH	6.8			Current Level	Final
pH	8.34			Current Level	Final
Total Dissolved Solids / TDS	185	mg/L	<=500	AO	Final
Turbidity	1.0	NTU	<=5	User-Defined	Final

Sample ID: **L2110366-1 (continued)**
Water System: Kerry Village Water (KVW)
Facility: Distribution
Sampling Pt: S3-1070 Briarwood Dr (2-2-MD, 27ADC)
Comment: S3-1070 BRIARWOOD DR
Sampled: 06/11/2018

RADIONUCLIDES			Criteria & Type		Status
Uranium (total)	0.00118	mg/L	<=0.02	MAC	Final

Result Legend

P=present, A=absent, PR=presumptive, ND=non-detect, OR=over-range, OG=overgrown, Y=yes, N=no,
TNTC=too numerous to count, NR=no result, NT=not tested, IG=ignore, ER=external report, SC=see comment
< means less than lower detection limit shown
> means greater than upper detection limit shown
« means detected & less than number shown
» means detected & greater than number shown
**** Indicates Criteria is exceeded***

Approved on:
06/18/2019 mm/dd/yyyy
Approved by:
Rod Lama