

DRINKING WATER SYSTEM ANNUAL REPORT

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

Water System

Water System Owner

Primary Contact Name (Operator or Manager)

Phone Number (Operator or Manager)

E-mail (Operator or Manager)

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?

What is the minimum required sampling frequency for this system? (#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 <i>Escherichia coli</i> per 100ml	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Total Coliform Bacteria (if only 1 sample collected in a 30 day period)	No detectable total coliform bacteria per 100ml	<input type="checkbox"/> Yes	<input type="checkbox"/> 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	<input type="checkbox"/> Yes	<input type="checkbox"/> 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

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

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)

Parameter	Result	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	
Purchase or install new equipment	
Equipment repair or replacement	
Annual maintenance of system	
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

Click here to enter a date.

DATE COMPLETED:

COMPLETED BY:

Future upgrades or improvements	Estimated date of Completion
Genset installation	2020
WTP inspection and upgrades	2020/2021
investigate for new well	2024/2025
Groundwater monitoring (data collection) all wells	2020



WOODLEY RANGE WATER SYSTEM

Facility Location:

5005 Aho Road
Ladysmith

Facility Information:

Facility Type: 15-300 DWC

Facility Sampling History:

Location	Date	Total Coliform	E.Coli
4966 Aho Road Woodley Range, 4966 Aho Road	17-Dec-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	10-Dec-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	3-Dec-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	26-Nov-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	19-Nov-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	13-Nov-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	5-Nov-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	22-Oct-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	16-Oct-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	9-Oct-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	3-Oct-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	24-Sep-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	17-Sep-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	10-Sep-2018	L1	L1



Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	27-Aug-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	20-Aug-2018	1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	13-Aug-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	7-Aug-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	30-Jul-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	24-Jul-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	9-Jul-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	3-Jul-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	26-Jun-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	19-Jun-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	13-Jun-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	5-Jun-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	22-May-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	15-May-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	8-May-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	1-May-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	23-Apr-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	17-Apr-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	9-Apr-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	4-Apr-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	14-Mar-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	6-Mar-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	27-Feb-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	19-Feb-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	13-Feb-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	6-Feb-2018	L1	L1
Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	30-Jan-2018	L1	L1
4966 Aho Road Woodley Range, 4966 Aho Road	22-Jan-2018	L1	L1
5120 Aho Road Woodley Range, 5120 Aho Road	15-Jan-2018	L1	L1
4828 Judiths Run - Woodley Range, 4828 Judiths Run	9-Jan-2018	L1	L1



Lot 53 Henry Roethel Road, Lot 53 Henry Roethel Road	3-Jan-2018	L1	L1
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Laboratory Report**ALS Environmental**

Report For: Cowichan Valley Regional District
Received: 03/02/2018 09:15
Report ID: L2056383
Report Name: ALS Final Results Report

Sample ID: L2056383-1
Water System: Woodley Range Water System
Source: Wells
Facility: Wells
Sampling Pt: Well 26 (2-2-SR, 32864)
Comment: WELL 26
Sampled: 02/13/2018

INORGANIC		Criteria & Type		Status
Aluminum (total)	0.019 mg/L	<=0.1	Operational - Conventional	Final
Ammonia (total, as N)	0.0913 mg/L			Final
Antimony (total)	< 0.00050 mg/L	<=0.006	MAC	Final
Arsenic (total)	0.00059 mg/L	<=0.01	MAC	Final
Barium (total)	0.029 mg/L	<=1	MAC	Final
Beryllium (total)	< 0.0050 mg/L			Final
Bismuth (total)	< 0.20 mg/L			Final
Boron (total)	0.18 mg/L	<=5	MAC	Final
Bromide	< 0.050 mg/L			Final
Cadmium (total)	< 0.00020 mg/L	<=0.005	MAC	Final
Calcium (total)	11.9 mg/L			Final
Chloride	3.76 mg/L	<=250	AO	Final
Chromium (total)	< 0.0020 mg/L	<=0.05	MAC	Final
Cobalt (total)	< 0.010 mg/L			Final
Copper (total)	< 0.0010 mg/L	<=1	AO	Final
Fluoride	0.278 mg/L	<=1.5	MAC	Final
Iron (total)	0.103 mg/L	<=0.3	AO	Final
Lead (total)	< 0.00050 mg/L	<=0.005	MAC	Final
Lithium (total)	0.018 mg/L			Final
Magnesium (total)	0.39 mg/L			Final
Manganese (total)	0.0419 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)	< 0.30 mg/L			Final
Potassium (total)	0.30 mg/L			Final
Selenium (total)	< 0.0010 mg/L	<=0.05	MAC	Final
Silicon (total, as Si)	4.48 mg/L			Final
Silver (total)	< 0.010 mg/L			Final

Laboratory Report

ALS Environmental

Report Name: ALS Final Results Report

Sample ID: L2056383-1 (continued)

Water System: Woodley Range Water System

Source: Wells

Facility: Wells

Sampling Pt: Well 26 (2-2-SR, 32864)

Comment: WELL 26

Sampled: 02/13/2018

INORGANIC

		Criteria & Type		Status
Sodium (total)	123 mg/L	<=200	AO	Final
Strontium (total)	0.233 mg/L			Final
Sulphate	93.3 mg/L	<=500	AO	Final
Sulphide (total, as S)	0.076 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)	0.0685 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	0.11 mg/L			Final
Total Kjeldahl Nitrogen / TKN	0.106 mg/L			Final
Total Organic Carbon / TOC	0.95 mg/L			Final

PHYSICAL

		Criteria & Type		Status
Alkalinity (bicarbonate, as CaCO3)	202 mg/L			Final
Alkalinity (carbonate, as CaCO3)	5.6 mg/L			Final
Alkalinity (hydroxide, as CaCO3)	< 1.0 mg/L			Final
Alkalinity (total, as CaCO3)	208 mg/L			Final
Colour	< 5.0 CU	<=15	AO	Final
Conductivity	601 uS/cm			Final
Hardness (total, as CaCO3)	31.3 mg/L			Final
pH	8.36		Current Level	Final
Total Dissolved Solids / TDS	361 mg/L	<=500	AO	Final
Turbidity	4.19 NTU	<=5	User-Defined	Final

Laboratory Report

ALS Environmental

Report Name: ALS Final Results Report

Sample ID: L2056383-1 (continued)
Water System: Woodley Range Water System
Source: Wells
Facility: Wells
Sampling Pt: Well 26 (2-2-SR, 32864)
Comment: WELL 26
Sampled: 02/13/2018

RADIONUCLIDES

Uranium (total) < 0.00010 mg/L

Criteria & Type

<=0.02 MAC

Status

Final

Sample ID: L2056383-2
Water System: Woodley Range Water System
Source: Wells
Facility: Wells
Sampling Pt: Well 67 (2-6-SR, 32868)
Comment: WELL 67
Sampled: 02/13/2018

INORGANIC

Aluminum (total) 0.079 mg/L

Criteria & Type

<=0.1 Operational - Conventional

Status

Final

Ammonia (total, as N) 0.0505 mg/L

Final

Antimony (total) < 0.00050 mg/L

<=0.006 MAC

Final

Arsenic (total) 0.00012 mg/L

<=0.01 MAC

Final

Barium (total) < 0.010 mg/L

<=1 MAC

Final

Beryllium (total) < 0.0050 mg/L

Final

Bismuth (total) < 0.20 mg/L

Final

Boron (total) 0.52 mg/L

<=5 MAC

Final

Bromide 0.161 mg/L

Final

Cadmium (total) < 0.00020 mg/L

<=0.005 MAC

Final

Calcium (total) 6.17 mg/L

Final

Chloride 32.9 mg/L

<=250 AO

Final

Chromium (total) < 0.0020 mg/L

<=0.05 MAC

Final

Cobalt (total) < 0.010 mg/L

Final

Copper (total) < 0.0010 mg/L

<=1 AO

Final

Fluoride 1.36 mg/L

<=1.5 MAC

Final

Iron (total) 0.053 mg/L

<=0.3 AO

Final

Lead (total) < 0.00050 mg/L

<=0.005 MAC

Final

Lithium (total) 0.011 mg/L

Final

Magnesium (total) 0.54 mg/L

Final

Manganese (total) 0.0204 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

Laboratory Report

ALS Environmental

Report Name: ALS Final Results Report

Sample ID: L2056383-2 (continued)
Water System: Woodley Range Water System
Source: Wells
Facility: Wells
Sampling Pt: Well 67 (2-6-SR, 32868)
Comment: WELL 67
Sampled: 02/13/2018

INORGANIC

		Criteria & Type		Status
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)	< 0.30 mg/L			Final
Potassium (total)	0.11 mg/L			Final
Selenium (total)	< 0.0010 mg/L	<=0.05	MAC	Final
Silicon (total, as Si)	5.15 mg/L			Final
Silver (total)	< 0.010 mg/L			Final
Sodium (total)	68.4 mg/L	<=200	AO	Final
Strontium (total)	0.0686 mg/L			Final
Sulphate	3.23 mg/L	<=500	AO	Final
Sulphide (total, as S)	1.99 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)	0.240 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	10 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	0.13 mg/L		Final
Total Kjeldahl Nitrogen / TKN	0.074 mg/L		Final
Total Organic Carbon / TOC	1.07 mg/L		Final

PHYSICAL

		Criteria & Type	Status
Alkalinity (bicarbonate, as CaCO3)	126 mg/L		Final
Alkalinity (carbonate, as CaCO3)	9.4 mg/L		Final
Alkalinity (hydroxide, as CaCO3)	< 1.0 mg/L		Final
Alkalinity (total, as CaCO3)	135 mg/L		Final

Laboratory Report

ALS Environmental

Report Name: ALS Final Results Report

Sample ID: L2056383-2 (continued)
Water System: Woodley Range Water System
Source: Wells
Facility: Wells
Sampling Pt: Well 67 (2-6-SR, 32868)
Comment: WELL 67
Sampled: 02/13/2018

PHYSICAL

Colour < 5.0 CU
Conductivity 379 uS/cm
Hardness (total, as CaCO₃) 17.6 mg/L
pH 8.60
Total Dissolved Solids / TDS 206 mg/L
*** Turbidity 7.99 NTU**

Criteria & Type

<=15 AO

Status

Final

Final

Final

Current Level Final

<=500 AO Final

<=5 User-Defined Final

RADIONUCLIDES

Uranium (total) < 0.00010 mg/L

Criteria & Type

<=0.02 MAC

Status

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