

Village of Cumberland ANNUAL REPORT <small>(Drinking Water System Name)</small>
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Reporting Period:	2018
Operating Permit Number:	1414314
Drinking Water System Owner:	Corporation of the Village of Cumberland
Drinking Water System Contact:	
Name:	<u>Gavin Murgatroyd</u>
Phone No:	<u>(250) 336-3014</u>
Email:	<u>gmurgatroyd@cumberland.ca</u>

1 Microbiological testing completed during this reporting period:

- a. bacteriological results attached to this report.
- b. adverse bacteriological results: None detected
 Listed in table below:

Adverse Results:

Date	Total coliform	E. Coli	Reason	Corrective Action

2 Chemical results for this reporting period:

- a. most recent chemical analysis attached to this report.
- b. chemical parameters listed in *The Guidelines for Canadian Drinking Water Quality* ("the Guidelines") are:
 - all within GCDWQ
 - above the GCDWQ and are listed below:

Parameters above the Guidelines:

Parameter	Result	Max. Acceptable Concentration	Aesthetic Objective	Treatment/Corrective Action

Village of Cumberland **ANNUAL REPORT**
(Drinking Water System Name)

3 Summarize additional testing and sampling carried out in accordance with the requirement of a Water Source approval, Written Order or as per the conditions of your *Operating Permit*.

- no additional testing
 additional testing listed below:

Additional testing:

Description of parameter & reason for sampling	Health parameter or non-health related parameter	Corrective action necessary (Y/N?)	Corrective action taken
UVT	Continued monitoring in preparation for new WTP	N	N/A

4 Water Quality Complaints:

- During the course of the year, the water system:
 did not receive water quality complaints (ie taste, odour, colour, etc)
 received water quality complaints and are listed below:

Water Quality Complaints:

Date	Water quality complaint	Corrective action taken
See attached	See attached	See attached

5 Adverse results: Total number of adverse results during this reporting period for insufficient water supply, malfunction of disinfection equipment or elevated turbidity:

- No adverse results
 Adverse results listed below:

Adverse Results:

Incident date	Corrective action	Corrected by

6 Description of the system:

Sources of raw water:

- Groundwater
- Surface water
- Other (specify): _____

Does the drinking water system have disinfection? Yes No

Disinfection methods (check boxes that apply):

- Chlorination
- Ultraviolet light
- Ozonation
- Other (specify): _____

Does the drinking water system have treatment? Yes No

Treatment type (check boxes that apply):

- Particulate cartridge filters
- Membrane filtration
- Carbon filter
- Sand filtration
- Reverse osmosis
- Other (specify): _____

7 Major expenses incurred during the period covered by the report:

To purchase or install required equipment: New WTP and reservoir

To repair equipment: _____

To replace equipment: _____

To complete annual maintenance of system: *(system flushing, replacement of carbon filters, etc)* _____

To complete specialist report (specify): _____

8 Further communication with users:

a. Indicate how you notified system users that your annual report is available, and is free of charge:

- hand delivered
- public access/ notice via web
- public access/notice via government office
- public access/notice via newspaper
- public access/notice via bill stuffer
- public access/ notice via other method (specify): _____

Village of Cumberland

ANNUAL REPORT

(Drinking Water System Name)

b. Improvements or remedial actions required by the Drinking Water Officer:

- no action required
- Drinking Water Officer inspection report attached to report
- actions required by Drinking Water Officer listed below:

Improvements/Remedial Actions:

Required action	Completion date

c. Future water system improvements:

- no improvements planned
- improvements listed below:

Future Improvements:

Future plans	Planned completion date
Construction of the new water treatment plant and 2500m ³ reservoir	June 2019

d. Emergency Response Plan can be accessed by:

- posting on web
- posting at nearest government office
- contacting water system owner
- Other (specify): _____

Water Quality Complaint Tracking

Date	Who	Location	Concern	Probable Cause	Action
04-Jan-18	██████████	27 █ Uiverston Ave.	Murky water	Water main break	Advised to flush until clear
06-Mar-18	██████████	26 █ Dunsmuir Ave.	Water tastes funny	House was vacant for 6 weeks	GM site visit. Flushed cold water via bath tub for 10 mins and then did a taste test. No odour, colour, or funny taste evident. Chlorine residual 0.88ppm - normal for this part of the water distribution system. Tenant will continue to monitor.
14-May-18	██████████ @ Cumberland Health Centre	26 █ Windermere Ave.	Flakes of greasy material in the water	Uncertain but inside their premises	GM flushed for 10 mins at hydrant #78 / Some specks of sediment but no sign of greasy flakes
28-May-18	██████████ @ Cumberland Health Centre	26 █ Windermere Ave.	Flakes of greasy material in the water	Uncertain but inside their premises It was determined that an expansion tank near their kitchen dishwasher was causing the black greasy specs/flakes	GM flushed for 10 mins at hydrant #78 / Some specks of sediment but no sign of greasy flakes
13-Jun-18	██████████	26 █ Maryport Ave.	Chlorine taste	GM flushed hydrant (x2) to obtain Cl2 residual for VIHA samples	GM and MS met with resident at their house. Did Cl2 residual testing. Results were 0.22 + 0.25 ppm. Explained what these numbers meant and advised to flush until clear
08-Aug-18	Various	Various	Brown water		GM met with resident - flushed cold for 10 mins then did a Cl2 residual test (.47ppm) and had a glass of water - didn't notice any colour, smell, or taste issues.
29-Aug-18	██████████	33 █ Mill St.	Brown and smelly water	Lake turn over and/or hydrant mtce in the area. Could also be that surface water levels are lower and temperature is higher this time of year.	Suggested they flush their hot water tank
30-Aug-18	██████████	26 █ Willard Ave.	Silt in water	Coming from hot water system	
11-Oct-18	██████████	█ - 26 █ Kendal Ave. 25 █ Beaumont	Red colour in water Discoloured water	New to town / explained water system, flushing program, and that we used more Allen Lake water this summer	Education Education and suggested they drain/flush hot water tank
17-Oct-18	██████████	Museum	Yellow/brown colour and lead	Allen Lake water / old pipes in various areas around the village	Flush cold water until clear and get a lead sample done

Water Sample Range Report

Island Health

Facility Name: VILLAGE OF CUMBERLAND WATER SUPPLY
Facility Type: 301-10000 (DWT)
Date Range: Jan 1 2018 to Dec 31 2018
Date Created: Oct 08 2019

Sampling Site	Date Collected	Total Coliform	E. Coli	Fecal Coliform
<u>3190 Royston Road,</u>				
<u>Site #4 - 3190</u>				
<u>Royston Road, Dist.</u>				
<u>site, Monthly</u>				
	09-Jan-2018	L1	L1	
	05-Feb-2018	L1	L1	
	06-Feb-2018	L1	L1	
	06-Mar-2018	L1	L1	
	27-Mar-2018	L1	L1	
	10-Apr-2018	L1	L1	
	09-May-2018	L1	L1	
	14-May-2018	L1	L1	
	12-Jun-2018	L1	L1	
	03-Jul-2018	L1	L1	
	11-Jul-2018	L1	L1	
	08-Aug-2018	L1	L1	
	20-Aug-2018	L1	L1	
	11-Sep-2018	L1	L1	
	09-Oct-2018	L1	L1	
	16-Oct-2018	L1	L1	
	14-Nov-2018	L1	L1	
	26-Nov-2018	L1	L1	
	11-Dec-2018	<u>L1</u>	<u>L1</u>	
	Total Positive:	0	0	0
<u>3328 Second Street,</u>				
<u>Site #2 - 3328</u>				
<u>Second Street, Dist.</u>				
<u>site, Monthly</u>				
	09-Jan-2018	L1	L1	
	22-Jan-2018	0	0	
	06-Feb-2018	L1	L1	
	06-Mar-2018	L1	L1	
	12-Mar-2018	L1	L1	
	10-Apr-2018	L1	L1	
	30-Apr-2018	L1	L1	
	09-May-2018	L1	L1	
	29-May-2018	L1	L1	
	12-Jun-2018	L1	L1	
	18-Jun-2018	L1	L1	
	11-Jul-2018	L1	L1	
	07-Aug-2018	L1	L1	
	08-Aug-2018	L1	L1	
	11-Sep-2018	L1	L1	
	25-Sep-2018	L1	L1	
	16-Oct-2018	L1	L1	

13-Nov-2018	L1	L1	
14-Nov-2018	L1	L1	
11-Dec-2018	<u>L1</u>	<u>L1</u>	
Total Positive:	0	0	0

3607 Small Road,
Site #5 - 3607 Small
Road, Dist. site,
Monthly

09-Jan-2018	L1	L1	
06-Feb-2018	L1	L1	
13-Feb-2018	L1	L1	
06-Mar-2018	L1	L1	
04-Apr-2018	L1	L1	
10-Apr-2018	L1	L1	
09-May-2018	L1	L1	
23-May-2018	L1	L1	
12-Jun-2018	L1	L1	
09-Jul-2018	L1	L1	
11-Jul-2018	L1	L1	
08-Aug-2018	L1	L1	
27-Aug-2018	L1	L1	
11-Sep-2018	L1	L1	
15-Oct-2018	L1	L1	
16-Oct-2018	L1	L1	
14-Nov-2018	L1	L1	
03-Dec-2018	L1	L1	
11-Dec-2018	<u>L1</u>	<u>L1</u>	
Total Positive:	0	0	0

4700 Cumberland
Road, Site #3 - 4700
Cumberland Road,
Dist. site, Monthly

09-Jan-2018	L1	L1	
29-Jan-2018	0	0	
06-Feb-2018	L1	L1	
06-Mar-2018	L1	L1	
19-Mar-2018	L1	L1	
10-Apr-2018	L1	L1	
07-May-2018	L1	L1	
09-May-2018	L1	L1	
12-Jun-2018	L1	L1	
25-Jun-2018	L1	L1	
11-Jul-2018	L1	L1	
08-Aug-2018	L1	L1	
13-Aug-2018	L1	L1	
11-Sep-2018	L1	L1	
01-Oct-2018	L1	L1	
16-Oct-2018	L1	L1	
14-Nov-2018	L1	L1	
20-Nov-2018	L1	L1	
11-Dec-2018	<u>L1</u>	<u>L1</u>	
Total Positive:	0	0	0

, Site #7 - 2476
Dunsmuir Avenue,

Dist. site, Monthly

08-Jan-2018	0	0	
09-Jan-2018	L1	L1	
06-Feb-2018	L1	L1	
26-Feb-2018	L1	L1	
06-Mar-2018	L1	L1	
10-Apr-2018	L1	L1	
16-Apr-2018	L1	L1	
09-May-2018	L1	L1	
05-Jun-2018	L1	L1	
12-Jun-2018	L1	L1	
11-Jul-2018	L1	L1	
23-Jul-2018	L1	L1	
08-Aug-2018	L1	L1	
10-Sep-2018	L1	L1	
11-Sep-2018	L1	L1	
17-Oct-2018	L1	L1	
22-Oct-2018	L1	L1	
29-Oct-2018	L1	L1	
14-Nov-2018	L1	L1	
11-Dec-2018	L1	L1	
17-Dec-2018	L1	L1	
27-Dec-2018	<u>L1</u>	<u>L1</u>	
Total Positive:	0	0	0

2040 Derwent, Site #1 - 2040 Derwent, Dist. site, Monthly

09-Jan-2018	L1	L1	
15-Jan-2018	0	0	
06-Feb-2018	L1	L1	
05-Mar-2018	L1	L1	
06-Mar-2018	L1	L1	
10-Apr-2018	L1	L1	
23-Apr-2018	L1	L1	
09-May-2018	L1	L1	
11-Jun-2018	L1	L1	
12-Jun-2018	L1	L1	
11-Jul-2018	L1	L1	
30-Jul-2018	L1	L1	
08-Aug-2018	L1	L1	
11-Sep-2018	L1	L1	
17-Sep-2018	L1	L1	
16-Oct-2018	L1	L1	
22-Oct-2018	L1	L1	
05-Nov-2018	L1	L1	
14-Nov-2018	L1	L1	
11-Dec-2018	<u>L1</u>	<u>L1</u>	
Total Positive:	0	0	0

Lindale rd, End of Lindale Rd, Dist. site, Monthly

Result Values: E - estimated L - less than G - greater than

Interpreting Sample Reports

In VIHA, the results of drinking water sampling are reported using the following coding system:

- L1** Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- OG** Overgrown - Meaning: Too many background bacteria to give an accurate count
 - EST** Estimated Count
 - and
 - A** Sample not tested; Too long in transit
 - C** Sample leaked/broken in transit
 - D** Sample not tested; No collection date given
- T** Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.
 - NS** No sample received with requisition

Samples that contain total coliform:	0	0.00% of total
Samples that contain e. coli:	0	0.00% of total
Samples that contain fecal coliform:	0	0.00% of total
Number of positive samples in last 30 days:	0/0	
Total number of samples:	119	

Comments:

Environmental Health Officer
 Oct 8 2019

FOR FURTHER INFORMATION PLEASE CALL: Kumar, Pooja (Pam) (250) 331-8509 Comox Valley Office

Operator

Village of Cumberland
 PO Box 340
 Cumberland, BC
 V0R 1S0

(250) 336-2291

Your P.O. #: 17-15
Your Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your C.O.C. #: WI15192

Attention: MARK SPRINGFORD

VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2018/10/29
Report #: R2641900
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B892396

Received: 2018/10/22, 11:30

Sample Matrix: DRINKING WATER
Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Alkalinity - Water (1)	1	N/A	2018/10/24	BBY6SOP-00026	SM 22 2320 B m
Chloride by Automated Colourimetry (1)	1	N/A	2018/10/24	BBY6SOP-00011	SM 22 4500-Cl- E m
Colour (True) by Kone Lab (1)	1	N/A	2018/10/23	BBY6SOP-00057	SM 22 2120 C m
Coliforms & E.coli by Quantitray (MPN)	1	N/A	2018/10/22	CTYSOP-00002	SM 23 9223
Conductance - water (1)	1	N/A	2018/10/24	BBY6SOP-00026	SM 22 2510 B m
Fluoride (1)	1	N/A	2018/10/25	BBY6SOP-00048	SM 22 4500-F C m
Hardness Total (calculated as CaCO3) (1, 2)	1	N/A	2018/10/25	BBY WI-00033	Auto Calc
Mercury (Total) by CVAF (1)	1	2018/10/23	2018/10/23	BBY7SOP-00015	BCM0E BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	1	N/A	2018/10/25	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total) (1)	1	N/A	2018/10/24	BBY7SOP-00003,	EPA 6020b R2 m
Nitrate + Nitrite (N) (1)	1	N/A	2018/10/23	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrite (N) by CFA (1)	1	N/A	2018/10/23	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrogen - Nitrate (as N) (1)	1	N/A	2018/10/24	BBY WI-00033	Auto Calc
pH Water (1, 3)	1	N/A	2018/10/24	BBY6SOP-00026	SM 22 4500-H+ B m
Sulphate by Automated Colourimetry (1)	1	N/A	2018/10/24	BBY6SOP-00017	SM 22 4500-SO42- E m
Total Dissolved Solids (Filt. Residue) (1)	1	2018/10/25	2018/10/26	BBY6SOP-00033	SM 23 2540 C m
Total Trihalomethanes Calculation (1)	1	N/A	2018/10/26	BBY WI-00033	Auto Calc
Turbidity (1)	1	N/A	2018/10/24	BBY6SOP-00027	SM 22 2130 B m
VOCs, VH, F1, LH in Water by HS GC/MS (1)	1	N/A	2018/10/26	BBY8SOP-00009/11/12	BCM0E BCLM Jul 2017

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report.

Your P.O. #: 17-15
Your Project #: ALLENS LAKE ANNUAL
Your C.O.C. #: WI15172

Attention: MARK SPRINGFORD

VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2018/10/23
Report #: R2639271
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B890775

Received: 2018/10/17, 12:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity - Water (1)	1	N/A	2018/10/19	BBY6SOP-00026	SM 22 2320 B m
Chloride by Automated Colourimetry (1)	1	N/A	2018/10/18	BBY6SOP-00011	SM 22 4500-Cl- E m
Colour (True) by Kone Lab (1)	1	N/A	2018/10/18	BBY6SOP-00057	SM 22 2120 C m
Coliforms & E.coli by Quantitray (MPN)	1	N/A	2018/10/17	CTYSOP-00002	SM 23 9223
Conductance - water (1)	1	N/A	2018/10/19	BBY6SOP-00026	SM 22 2510 B m
Fluoride (1)	1	N/A	2018/10/23	BBY6SOP-00048	SM 22 4500-F C m
Hardness Total (calculated as CaCO3) (1, 2)	1	N/A	2018/10/22	BBY WI-00033	Auto Calc
Mercury (Total) by CVAf (1)	1	2018/10/19	2018/10/19	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	1	N/A	2018/10/22	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total) (1)	1	N/A	2018/10/20	BBY7SOP-00003,	EPA 6020b R2 m
Nitrate + Nitrite (N) (1)	1	N/A	2018/10/18	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrite (N) by CFA (1)	1	N/A	2018/10/18	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrogen - Nitrate (as N) (1)	1	N/A	2018/10/19	BBY WI-00033	Auto Calc
pH Water (1, 3)	1	N/A	2018/10/19	BBY6SOP-00026	SM 22 4500-H+ B m
Sulphate by Automated Colourimetry (1)	1	N/A	2018/10/18	BBY6SOP-00017	SM 22 4500-SO42- E m
Total Dissolved Solids (Filt. Residue) (1)	1	2018/10/19	2018/10/22	BBY6SOP-00033	SM 23 2540 C m
Turbidity (1)	1	N/A	2018/10/19	BBY6SOP-00027	SM 22 2130 B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Your P.O. #: 17-15
Your Project #: ALLENS LAKE ANNUAL
Your C.O.C. #: WI15172

Attention: MARK SPRINGFORD

VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2018/10/23
Report #: R2639271
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B890775

Received: 2018/10/17, 12:00

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

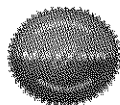
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Vancouver

(2) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(3) The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

Encryption Key



Maxxam
23 Oct 2018 16:38:31

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Melissa McIntosh, Project Manager

Email: MMcIntosh@maxxam.ca

Phone# (250) 338 7786

=====
This report has been generated and distributed using a secure automated process.

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B890775
Report Date: 2018/10/23

VILLAGE OF CUMBERLAND
Client Project #: ALLENS LAKE ANNUAL
Your P.O. #: 17-15

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID					U05339	
Sampling Date					2018/10/17 11:15	
COC Number					WI15172	
	UNITS	MAC	AO	OG	ALLENS LAKE (RAW) - TAP	RDL
ANIONS						
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050
Calculated Parameters						
Nitrate (N)	mg/L	10	-	-	<0.020	0.020
Misc. Inorganics						
Fluoride (F)	mg/L	1.5	-	-	<0.020	0.020
Alkalinity (Total as CaCO3)	mg/L	-	-	-	12.4	1.0
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<1.0	1.0
Bicarbonate (HCO3)	mg/L	-	-	-	15.2	1.0
Carbonate (CO3)	mg/L	-	-	-	<1.0	1.0
Hydroxide (OH)	mg/L	-	-	-	<1.0	1.0
Anions						
Dissolved Sulphate (SO4)	mg/L	-	500	-	<1.0	1.0
Dissolved Chloride (Cl)	mg/L	-	250	-	1.2	1.0
MISCELLANEOUS						
True Colour	Col. Unit	-	15	-	10.9	5.0
Nutrients						
Nitrate plus Nitrite (N)	mg/L	-	-	-	<0.020	0.020
Physical Properties						
Conductivity	uS/cm	-	-	-	28.6	2.0
pH	pH	-	-	7.0:10.5	7.23	
Physical Properties						
Total Dissolved Solids	mg/L	-	500	-	14	10
Turbidity	NTU	see remark	see remark	see remark	0.22	0.10
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

Maxxam Job #: B890775
Report Date: 2018/10/23

VILLAGE OF CUMBERLAND
Client Project #: ALLENS LAKE ANNUAL
Your P.O. #: 17-15

MICROBIOLOGY (WATER)

Maxxam ID			U05339
Sampling Date			2018/10/17 11:15
COC Number			WI15172
	UNITS	MAC	ALLENS LAKE (RAW) - TAP
Microbiological Param.			
Total Coliforms (QT)	MPN/100mL	0	200
E. coli (QT)	MPN/100mL	0	0
No Fill	No Exceedance		
Grey	Exceeds 1 criteria policy/level		
Black	Exceeds both criteria/levels		

Maxxam Job #: B890775
Report Date: 2018/10/23

VILLAGE OF CUMBERLAND
Client Project #: ALLENS LAKE ANNUAL
Your P.O. #: 17-15

TOT. METALS W/ CV HG FOR DRINKING WATER (WATER)

Maxxam ID					UO5339	
Sampling Date					2018/10/17 11:15	
COC Number					WI15172	
	UNITS	MAC	AO	OG	ALLENS LAKE (RAW) - TAP	RDL
Calculated Parameters						
Total Hardness (CaCO3)	mg/L	-	-	-	11.2	0.50
Elements						
Total Mercury (Hg)	ug/L	1	-	-	0.0021	0.0020
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	-	-	100	17.1	3.0
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50
Total Arsenic (As)	ug/L	10	-	-	<0.10	0.10
Total Barium (Ba)	ug/L	1000	-	-	<1.0	1.0
Total Beryllium (Be)	ug/L	-	-	-	<0.10	0.10
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	1.0
Total Boron (B)	ug/L	5000	-	-	<50	50
Total Cadmium (Cd)	ug/L	5	-	-	<0.010	0.010
Total Chromium (Cr)	ug/L	50	-	-	<1.0	1.0
Total Cobalt (Co)	ug/L	-	-	-	<0.20	0.20
Total Copper (Cu)	ug/L	-	1000	-	5.31	0.20
Total Iron (Fe)	ug/L	-	300	-	90.3	5.0
Total Lead (Pb)	ug/L	10	-	-	0.28	0.20
Total Manganese (Mn)	ug/L	-	50	-	4.0	1.0
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10
Total Silicon (Si)	ug/L	-	-	-	2260	100
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020
Total Strontium (Sr)	ug/L	-	-	-	6.4	1.0
Total Thallium (Tl)	ug/L	-	-	-	<0.010	0.010
Total Tin (Sn)	ug/L	-	-	-	<5.0	5.0
Total Titanium (Ti)	ug/L	-	-	-	<5.0	5.0
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0
Total Zinc (Zn)	ug/L	-	5000	-	<5.0	5.0
Total Zirconium (Zr)	ug/L	-	-	-	<0.10	0.10
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

Maxxam Job #: B890775
Report Date: 2018/10/23

VILLAGE OF CUMBERLAND
Client Project #: ALLENS LAKE ANNUAL
Your P.O. #: 17-15

TOT. METALS W/ CV HG FOR DRINKING WATER (WATER)

Maxxam ID					UO5339	
Sampling Date					2018/10/17 11:15	
COC Number					WI15172	
	UNITS	MAC	AO	OG	ALLENS LAKE (RAW) - TAP	RDL
Total Calcium (Ca)	mg/L	-	-	-	3.04	0.050
Total Magnesium (Mg)	mg/L	-	-	-	0.868	0.050
Total Potassium (K)	mg/L	-	-	-	0.061	0.050
Total Sodium (Na)	mg/L	-	200	-	0.833	0.050
Total Sulphur (S)	mg/L	-	-	-	<3.0	3.0
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

Maxxam Job #: B890775
Report Date: 2018/10/23

VILLAGE OF CUMBERLAND
Client Project #: ALLENS LAKE ANNUAL
Your P.O. #: 17-15

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B890775
Report Date: 2018/10/23

VILLAGE OF CUMBERLAND
Client Project #: ALLENS LAKE ANNUAL
Your P.O. #: 17-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Andy Lu, Ph.D., P.Chem., Scientific Specialist

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Your P.O. #: 17-15
 Your Project #: DRINKING WATER
 Site Location: **HENDERSON RAW**
 Your C.O.C. #: W115173

Attention: MARK SPRINGFORD

VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA V0R 1S0

Report Date: 2018/10/25
 Report #: R2640273
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B891284

Received: 2018/10/18, 12:05

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity - Water (1)	1	N/A	2018/10/20	BBY6SOP-00026	SM 22 2320 B m
Chloride by Automated Colourimetry (1)	1	N/A	2018/10/19	BBY6SOP-00011	SM 22 4500-Cl- E m
Colour (True) by Kone Lab (1)	1	N/A	2018/10/19	BBY6SOP-00057	SM 22 2120 C m
Coliforms & E.coli by Quantitray (MPN)	1	N/A	2018/10/18	CTYSOP-00002	SM 23 9223
Conductance - water (1)	1	N/A	2018/10/20	BBY6SOP-00026	SM 22 2510 B m
Fluoride (1)	1	N/A	2018/10/24	BBY6SOP-00048	SM 22 4500-F C m
Hardness Total (calculated as CaCO3) (1, 2)	1	N/A	2018/10/22	BBY WI-00033	Auto Calc
Mercury (Total) by CVAf (1)	1	2018/10/19	2018/10/19	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	1	N/A	2018/10/22	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total) (1)	1	N/A	2018/10/21	BBY7SOP-00003,	EPA 6020b R2 m
Nitrate + Nitrite (N) (1)	1	N/A	2018/10/20	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrite (N) by CFA (1)	1	N/A	2018/10/20	BBY6SOP-00010	SM 22 4500-NO3- I m
Nitrogen - Nitrate (as N) (1)	1	N/A	2018/10/23	BBY WI-00033	Auto Calc
pH Water (1, 3)	1	N/A	2018/10/20	BBY6SOP-00026	SM 22 4500-H+ B m
Sulphate by Automated Colourimetry (1)	1	N/A	2018/10/19	BBY6SOP-00017	SM 22 4500-SO42- E m
Total Dissolved Solids (Filt. Residue) (1)	1	2018/10/19	2018/10/23	BBY6SOP-00033	SM 23 2540 C m
Turbidity (1)	1	N/A	2018/10/19	BBY6SOP-00027	SM 22 2130 B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Your P.O. #: 17-15
Your Project #: DRINKING WATER
Site Location: HENDERSON RAW
Your C.O.C. #: W15173

Attention: MARK SPRINGFORD

VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2018/10/25
Report #: R2640273
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B891284

Received: 2018/10/18, 12:05

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

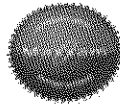
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Vancouver

(2) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(3) The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

Encryption Key



Maxxam
25 Oct 2018 11:58:55

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Melissa McIntosh, Project Manager

Email: MMcIntosh@maxxam.ca

Phone# (250) 338 7786

=====

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Maxxam Job #: B891284
Report Date: 2018/10/25

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: HENDERSON RAW
Your P.O. #: 17-15

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID					U08177	
Sampling Date					2018/10/18 09:30	
COC Number					W15173	
	UNITS	MAC	AO	OG	HENDERSON RAW - TAP	RDL
ANIONS						
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050
Calculated Parameters						
Nitrate (N)	mg/L	10	-	-	<0.020	0.020
Misc. Inorganics						
Fluoride (F)	mg/L	1.5	-	-	<0.020	0.020
Alkalinity (Total as CaCO3)	mg/L	-	-	-	12.7	1.0
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<1.0	1.0
Bicarbonate (HCO3)	mg/L	-	-	-	15.5	1.0
Carbonate (CO3)	mg/L	-	-	-	<1.0	1.0
Hydroxide (OH)	mg/L	-	-	-	<1.0	1.0
Anions						
Dissolved Sulphate (SO4)	mg/L	-	500	-	<1.0	1.0
Dissolved Chloride (Cl)	mg/L	-	250	-	<1.0	1.0
MISCELLANEOUS						
True Colour	Col. Unit	-	15	-	10.8	5.0
Nutrients						
Nitrate plus Nitrite (N)	mg/L	-	-	-	<0.020	0.020
Physical Properties						
Conductivity	uS/cm	-	-	-	28.4	2.0
pH	pH	-	-	7.0:10.5	7.22	
Physical Properties						
Total Dissolved Solids	mg/L	-	500	-	26	10
Turbidity	NTU	see remark	see remark	see remark	0.24	0.10
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

Maxxam Job #: B891284
Report Date: 2018/10/25

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: HENDERSON RAW
Your P.O. #: 17-15

MICROBIOLOGY (WATER)

Maxxam ID			U08177
Sampling Date			2018/10/18 09:30
COC Number			WI15173
	UNITS	MAC	HENDERSON RAW - TAP
Microbiological Param.			
Total Coliforms (QT)	MPN/100mL	0	>200
E. coli (QT)	MPN/100mL	0	0
No Fill	No Exceedance		
Grey	Exceeds 1 criteria policy/level		
Black	Exceeds both criteria/levels		

Maxxam Job #: B891284
Report Date: 2018/10/25

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: HENDERSON RAW
Your P.O. #: 17-15

TOT. METALS W/ CV HG FOR DRINKING WATER (WATER)

Maxxam ID					UO8177	
Sampling Date					2018/10/18 09:30	
COC Number					WI15173	
	UNITS	MAC	AO	OG	HENDERSON RAW - TAP	RDL
Calculated Parameters						
Total Hardness (CaCO3)	mg/L	-	-	-	12.1	0.50
Elements						
Total Mercury (Hg)	ug/L	1	-	-	0.0051	0.0020
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	-	-	100	15.0	3.0
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50
Total Arsenic (As)	ug/L	10	-	-	<0.10	0.10
Total Barium (Ba)	ug/L	1000	-	-	<1.0	1.0
Total Beryllium (Be)	ug/L	-	-	-	<0.10	0.10
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	1.0
Total Boron (B)	ug/L	5000	-	-	<50	50
Total Cadmium (Cd)	ug/L	5	-	-	<0.010	0.010
Total Chromium (Cr)	ug/L	50	-	-	<1.0	1.0
Total Cobalt (Co)	ug/L	-	-	-	<0.20	0.20
Total Copper (Cu)	ug/L	-	1000	-	4.20	0.20
Total Iron (Fe)	ug/L	-	300	-	100	5.0
Total Lead (Pb)	ug/L	10	-	-	<0.20	0.20
Total Manganese (Mn)	ug/L	-	50	-	3.4	1.0
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10
Total Silicon (Si)	ug/L	-	-	-	2680	100
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020
Total Strontium (Sr)	ug/L	-	-	-	6.9	1.0
Total Thallium (Tl)	ug/L	-	-	-	<0.010	0.010
Total Tin (Sn)	ug/L	-	-	-	<5.0	5.0
Total Titanium (Ti)	ug/L	-	-	-	<5.0	5.0
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0
Total Zinc (Zn)	ug/L	-	5000	-	5.4	5.0
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

Maxxam Job #: B891284
Report Date: 2018/10/25

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: HENDERSON RAW
Your P.O. #: 17-15

TOT. METALS W/ CV HG FOR DRINKING WATER (WATER)

Maxxam ID					U08177	
Sampling Date					2018/10/18 09:30	
COC Number					W115173	
	UNITS	MAC	AO	OG	HENDERSON RAW - TAP	RDL
Total Zirconium (Zr)	ug/L	-	-	-	<0.10	0.10
Total Calcium (Ca)	mg/L	-	-	-	3.48	0.050
Total Magnesium (Mg)	mg/L	-	-	-	0.815	0.050
Total Potassium (K)	mg/L	-	-	-	<0.050	0.050
Total Sodium (Na)	mg/L	-	200	-	0.794	0.050
Total Sulphur (S)	mg/L	-	-	-	<3.0	3.0
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

Maxxam Job #: 8891284
Report Date: 2018/10/25

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: HENDERSON RAW
Your P.O. #: 17-15

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Job #: B891284
Report Date: 2018/10/25

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: HENDERSON RAW
Your P.O. #: 17-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reinert, B.Sc., Scientific Spécialist

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Your P.O. #: 17-15
Your Project #: DRINKING WATER
Site Location: **SITE #7 ANNUAL**
Your C.O.C. #: WI15192

Attention: MARK SPRINGFORD
VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2018/10/29
Report #: R2641900
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: 8892396

Received: 2018/10/22, 11:30

Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

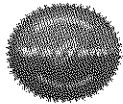
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Vancouver

(2) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(3) The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

Encryption Key



Maxxam

29 Oct 2018 11:40:08

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Melissa McIntosh, Project Manager

Email: MMcIntosh@maxxam.ca

Phone# (250) 338 7786

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Maxxam Job #: B892396
Report Date: 2018/10/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your P.O. #: 17-15

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

Maxxam ID					UP4717	
Sampling Date					2018/10/22 11:00	
COC Number					WI15192	
	UNITS	MAC	AO	OG	SITE #7 ANNUAL FULL ANALYSIS - TAP	RDL
ANIONS						
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050
Calculated Parameters						
Nitrate (N)	mg/L	10	-	-	0.054	0.020
Misc. Inorganics						
Fluoride (F)	mg/L	1.5	-	-	0.022	0.020
Alkalinity (Total as CaCO3)	mg/L	-	-	-	45.6	1.0
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<1.0	1.0
Bicarbonate (HCO3)	mg/L	-	-	-	55.6	1.0
Carbonate (CO3)	mg/L	-	-	-	<1.0	1.0
Hydroxide (OH)	mg/L	-	-	-	<1.0	1.0
Anions						
Dissolved Sulphate (SO4)	mg/L	-	500	-	7.5	1.0
Dissolved Chloride (Cl)	mg/L	-	250	-	13	1.0
MISCELLANEOUS						
True Colour	Col. Unit	-	15	-	<5.0	5.0
Nutrients						
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.054	0.020
Physical Properties						
Conductivity	uS/cm	-	-	-	136	2.0
pH	pH	-	-	7.0:10.5	7.61	
Physical Properties						
Total Dissolved Solids	mg/L	-	500	-	88	10
Turbidity	NTU	see remark	see remark	see remark	0.15	0.10
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

Maxxam Job #: B892396
Report Date: 2018/10/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your P.O. #: 17-15

VOLATILE ORGANICS BY GC-MS (DRINKING WATER)

Maxxam ID			UP4717	
Sampling Date			2018/10/22 11:00	
COC Number			W115192	
	UNITS	MAC	SITE #7 ANNUAL FULL ANALYSIS - TAP	RDL
Volatiles				
Total Trihalomethanes	ug/L	100	<1.0	1.0
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				

Maxxam Job #: 8892396
Report Date: 2018/10/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your P.O. #: 17-15

MICROBIOLOGY (DRINKING WATER)

Maxxam ID			UP4717
Sampling Date			2018/10/22 11:00
COC Number			WI15192
	UNITS	MAC	SITE #7 ANNUAL FULL ANALYSIS - TAP
Microbiological Param.			
Total Coliforms (QT)	MPN/100mL	0	0
E. coli (QT)	MPN/100mL	0	0
No Fill	No Exceedance		
Grey	Exceeds 1 criteria policy/level		
Black	Exceeds both criteria/levels		

Maxxam Job #: B892396
Report Date: 2018/10/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your P.O. #: 17-15

TOT. METALS W/ CV HG FOR DRINKING WATER (DRINKING WATER)

Maxxam ID					UP4717	
Sampling Date					2018/10/22 11:00	
COC Number					WI15192	
	UNITS	MAC	AO	OG	SITE #7 ANNUAL FULL ANALYSIS - TAP	RDL

Calculated Parameters						
Total Hardness (CaCO3)	mg/L	-	-	-	39.0	0.50
Elements						
Total Mercury (Hg)	ug/L	1	-	-	0.0030	0.0020
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	-	-	100	<3.0	3.0
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50
Total Arsenic (As)	ug/L	10	-	-	<0.10	0.10
Total Barium (Ba)	ug/L	1000	-	-	1.8	1.0
Total Beryllium (Be)	ug/L	-	-	-	<0.10	0.10
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	1.0
Total Boron (B)	ug/L	5000	-	-	175	50
Total Cadmium (Cd)	ug/L	5	-	-	<0.010	0.010
Total Chromium (Cr)	ug/L	50	-	-	<1.0	1.0
Total Cobalt (Co)	ug/L	-	-	-	<0.20	0.20
Total Copper (Cu)	ug/L	-	1000	-	52.5	0.20
Total Iron (Fe)	ug/L	-	300	-	<5.0	5.0
Total Lead (Pb)	ug/L	10	-	-	0.49	0.20
Total Manganese (Mn)	ug/L	-	50	-	<1.0	1.0
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10
Total Silicon (Si)	ug/L	-	-	-	5590	100
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020
Total Strontium (Sr)	ug/L	-	-	-	33.5	1.0
Total Thallium (Tl)	ug/L	-	-	-	<0.010	0.010
Total Tin (Sn)	ug/L	-	-	-	<5.0	5.0
Total Titanium (Ti)	ug/L	-	-	-	<5.0	5.0
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels
RDL = Reportable Detection Limit	

Maxxam Job #: B892396
Report Date: 2018/10/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your P.O. #: 17-15

TOT. METALS W/ CV HG FOR DRINKING WATER (DRINKING WATER)

Maxxam ID					UP4717	
Sampling Date					2018/10/22 11:00	
COC Number					WI15192	
	UNITS	MAC	AO	OG	SITE #7 ANNUAL FULL ANALYSIS - TAP	RDL
Total Zinc (Zn)	ug/L	-	5000	-	5.5	5.0
Total Zirconium (Zr)	ug/L	-	-	-	<0.10	0.10
Total Calcium (Ca)	mg/L	-	-	-	10.9	0.050
Total Magnesium (Mg)	mg/L	-	-	-	2.85	0.050
Total Potassium (K)	mg/L	-	-	-	0.332	0.050
Total Sodium (Na)	mg/L	-	200	-	11.0	0.050
Total Sulphur (S)	mg/L	-	-	-	<3.0	3.0
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

Maxxam Job #: B892396
Report Date: 2018/10/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your P.O. #: 17-15

TRIHALOMETHANES (THM) IN WATER

Maxxam ID		UP4717	
Sampling Date		2018/10/22 11:00	
COC Number		WI15192	
	UNITS	SITE #7 ANNUAL FULL ANALYSIS - TAP	RDL
Volatiles			
Bromodichloromethane	ug/L	<1.0	1.0
Bromoform	ug/L	<1.0	1.0
Chlorodibromomethane	ug/L	<1.0	1.0
Chloroform	ug/L	<1.0	1.0
Surrogate Recovery (%)			
1,4-Difluorobenzene (sur.)	%	98	
4-Bromofluorobenzene (sur.)	%	95	
D4-1,2-Dichloroethane (sur.)	%	99	
RDL = Reportable Detection Limit			



Maxxam Job #: B892396
Report Date: 2018/10/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your P.O. #: 17-15

GENERAL COMMENTS

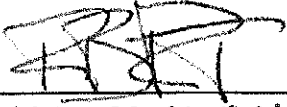
Results relate only to the items tested.

Maxxam Job #: B892396
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VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #7 ANNUAL
Your P.O. #: 17-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reinert, B.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



DRINKING WATER SYSTEM INSPECTION REPORT

Health Protection

SYSTEM NAME <i>Village of Cumberland Water System</i>	E.H.O. NAME <i>Pam Kumar</i>	<i>David Cherry</i>	
ADDRESS <i>2673 Dunsmuir Ave Cumberland</i>	POSTAL CODE <i>V8K 1S8</i>	SYSTEM NUMBER <i>1414319</i>	
OPERATOR <i>Gavin Muratryud</i>	INSPECTION DATE (DMY) <i>14, 11, 18</i>	TIME SPENT (Hrs. - nearest 1/4) <i>2.0</i>	

SYSTEM TYPE (CHECK One)

> 20,000 (DWP)
 10,001 - 20,000 (DWM)
 301 - 10,000 (DWT)
 15 - 300 (DWC)
 2 - 14 (DWS)

1 - SERVES PUBLIC (DWQ)
 1 HAULER (DWH)

TYPE OF INSPECTION

INITIAL
 ROUTINE

COMPLAINT
 FOLLOW-UP

CRITICAL HAZARD

These items relate to Public Health Safety & MUST RECEIVE IMMEDIATE ATTENTION

Microbiological Contamination of Raw Water Supply Due to:

301 Flood
 302 Sewage
 303 Industrial
 304 Agriculture
 305 Other (Specify) _____

306 Chemical Contamination of Raw Water Supply
 307 Contamination of Finished Water - Reservoir
 308 Contamination of Finished Water - Mains
 309 Cross-Connection
 310 Use of Unapproved Source
 311 Interruption of Treatment
 312 Inadequate Treatment
 313 Other (Specify) _____

SANITATION & MAINTENANCE

These items must be corrected within a designated time period

314 Improper Maintenance of Distribution System
 315 Improper or No Disinfection of New or Repaired Main
 316 Source Unprotected and Subject to Contamination
 317 Inadequate or Improper Construction of Water Works
 318 Inadequate Microbiological Analysis Data
 319 Inadequate Chemical Analysis Data
 320 Interruption of Treatment
 321 Inadequate Treatment
 322 Emergency Response Plan
 323 Other (Specify) _____

CODE	FINDINGS AND ACTIONS REQUIRED
	<ul style="list-style-type: none"> - Operator training ongoing - Annual report ready for posting on village website - Flushing is done twice yearly - Fire hydrant maintenance program in place - Provide updated water system map - Complete watershed update and provide copy to Environmental Health - Construction of Reservoir and Wtreatment ahead of schedule

At the time of inspection this system has a hazard rating of HIGH MODERATE LOW Issue Permit Conditions of Permit

FOLLOW UP VISIT PHONE Date

RECEIVED BY *[Signature]* PRINT NAME *David Wang* E.H.O. *[Signature]*

