

## **CERTIFICATE OF ANALYSIS**

Mid Shuswap Lumby Water Stewards **REPORTED TO** 

> 1631 Mable Lake Rd Lumby, BC V0E 2G6

**ATTENTION** Russ Collins

Mid Shuswap Lumby Water Stewards **PO NUMBER** 

You know that the sample you collected after

snowshoeing to site, digging 5 meters, and

racing to get it on a plane so you can submit it

to the lab for time sensitive results needed to

make important and expensive decisions

(whew) is VERY important. We know that too.

**PROJECT Analytical Testing** 

#### Introduction:

**PROJECT INFO** 

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

We've Got Chemistry

It's simple. We figure the more you working with enjoy fun and our engaged team the more members; likely you are to give us continued opportunities to support you.

Ahead of the Curve

**WORK ORDER** 

**COC NUMBER** 

**RECEIVED / TEMP** REPORTED

> research, regulation and instrumentation, knowledge, are your analytical centre the knowledge technical you BEFORE you need it, so you can stay up to date and in the know.

Through

23E1859

40837.5581

2023-05-15 09:03 / 1.1°C

2023-05-19 10:02

By engaging our services, you are agreeing to CARO Analytical Service's Standard Terms and Conditions outlined here: https://www.caro.ca/terms-conditions

If you have any questions or concerns, please contact me at TeamCaro@caro.ca

#### Authorized By:

Team CARO

Client Service Representative

1-888-311-8846 | www.caro.ca



Harris Creek (HWY 6) (23E1859-01)   Matrix: Water   Sampled: 2023-05-14 11:30	REPORTED TO PROJECT	Mid Shuswap Lumby Wa Analytical Testing	ater Stewards			WORK ORDER REPORTED	23E1859 2023-05-1	9 10:02
Anions Chloride  0.31 AO ≤ 250 0.10 mg/L 2023-05-16 Chloride  0.31 AO ≤ 250 0.10 mg/L 2023-05-16 Nitrale (as N) < 0.010 MAC = 1 0.010 mg/L 2023-05-16 Sulfate  6.2 AO ≤ 500 1.0 mg/L 2023-05-16  Sulfate  Calculated Parameters  Nitrate (as N) < 0.0100 NAA 0.0100 mg/L 2023-05-16  Nitrate (as N) < 0.0100 NAA 0.0100 mg/L 2023-05-16  Nitrate +Nitrile (as N) < 0.0100 NA 0.0500 mg/L NA Nitrogen, Total (as N)	Analyte		Result	Guideline	RL	Units	Analyzed	Qualifie
Chloride         0.31         AO ≤ 250         0.10         mg/L         2023-05-16           Nitrate (as N)         < 0.010	Harris Creek (HWY 6) (23E1859-01)   Matrix: Water   Sampled: 2023-05-14 11:30							
Nitrate (as N)	Anions							
Nitrate (as N)	Chloride		0.31	AO ≤ 250	0.10	ma/L	2023-05-16	
Nitrite (as N)								
Sulfate   S.2   AO ≤ 500   1.0 mg/L   2023-05-16								
Calculated Parameters           Nitrate+Nitrite (as N)         < 0.0100         N/A         0.0100         mg/L         N/A           Nitrate+Nitrite (as N)         0.472         N/A         0.0500         mg/L         N/A           Ammonia, Total (as N)         0.120         None Required         0.050         mg/L         2023-05-16           Ammonia, Total (as N)         0.120         None Required         0.050         mg/L         2023-05-16           Nitrogen, Total Kjeldahl         0.472         N/A         0.050         mg/L         2023-05-16           Phosphorus, Total (as P)         0.147         N/A         0.055         mg/L         2023-05-16         HT2           Phosphorus, Total (as P)         0.147         N/A         0.0050         mg/L         2023-05-16         HT2           Phosphorus, Total (as P)         0.147         N/A         0.0050         mg/L         2023-05-16         HT2           Phosphorus, Total (as P)         0.147         N/A         0.0050         mg/L         2023-05-16         HT2           Phosphorus, Total (as P)         0.147         N/A         0.0050         mg/L         2023-05-16         TT         TUT-DICIDION         1         MPN/100 mL         2023-								
Nitrate + Nitrite (as N)	Calculated Parame	ters						
Nitrogen, Total         0.472         N/A         0.0500         mg/L         N/A           General Parameters         Ammonia, Total (as N)         0.120         None Required         0.050         mg/L         2023-05-17           Conductivity (EC)         50.1         N/A         2.0         µS/cm         2023-05-18           pH         6.63         7.0-10.5         0.10         pH units         2023-05-18         HT2           Phosphorus, Total (as P)         0.147         N/A         0.0050         mg/L         2023-05-17         TD-Phosphorus, Total Dissolved         0.0251         N/A         0.0050         mg/L         2023-05-16         HT2           Phosphorus, Total Dissolved         0.0251         N/A         0.0050         mg/L         2023-05-17         Turbidity         38.4         OG < 1         0.10         NTU         2023-05-16         TURDIGITY         1410         MAC = 0         1         MPN/100 mL         2023-05-15         MICTORIAN         20.00         MAC = 0         1         MPN/100 mL         2023-05-15         PRES           Duteau Creek (HWY 6) (23E1859-02)   Matrix: Water   Sampled: 2023-05-14 11:15         PRES         PRES           Duteau Creek (HWY 6) (23E1859-02)   Matrix: Water   Sampled: 2023-05-14 11:1			< 0.0100	N/A	0.0100	ma/l	NI/A	
General Parameters           Ammonia, Total (as N)         0.120         None Required         0.050         mg/L         2023-05-17           Conductivity (EC)         50.1         N/A         2.0         μS/cm         2023-05-18           Nitrogen, Total (Seldahl)         0.472         N/A         0.050         mg/L         2023-05-18           pH         6.63         7.0-10.5         0.10         pH units         2023-05-16         HT2           Phosphorus, Total (as P)         0.147         N/A         0.050         mg/L         2023-05-17         Phosphorus, Total Dissolved         0.021         N/A         0.0050         mg/L         2023-05-17         Phosphorus, Total Dissolved         0.021         N/A         0.0050         mg/L         2023-05-17         Phosphorus, Total Dissolved         0.021         N/A         0.0050         mg/L         2023-05-16         December 30         N/A         0.0050         mg/L         2023-05-16         December 30         N/A         0.0010         M/A         1.007         N/A         1.007         M/A         1.007		14)						
Ammonia, Total (as N)         0.120         None Required         0.050         mg/L         2023-05-17           Conductivity (EC)         50.1         N/A         2.0         μS/cm         2023-05-16           Nitrogen, Total Kjeldahl         0.472         N/A         0.050         mg/L         2023-05-18           PH         6.63         7.0-10.5         0.10         pH units         2023-05-17           Phosphorus, Total (as P)         0.147         N/A         0.0050         mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0251         N/A         0.0050         mg/L         2023-05-16           Microbiological Parameters         Wilcrobiological Parameters         FILT, PRES         FILT			0.472	IV/A	0.0300	mg/L	IN/A	
Conductivity (EC)         50.1         N/A         2.0 μS/cm         2023-05-16           Nitrogen, Total Kjeldahl         0.472         N/A         0.050 mg/L         2023-05-18           pH         6.63         7.0-10.5         0.10 pH units         2023-05-16         HT2           Phosphorus, Total (as P)         0.147         N/A         0.0050 mg/L         2023-05-17         Thosphorus, Total Dissolved         0.0251         N/A         0.0050 mg/L         2023-05-17         Thosphorus, Total Dissolved         0.0251         N/A         0.0050 mg/L         2023-05-16         Thosphorus, Total Dissolved         0.0251         N/A         0.0050 mg/L         2023-05-16         Thosphorus, Total Cardiant         0.0050 mg/L         2023-05-16         0.0050 mg/L         2023-05-16         N/A         0.0050 mg/L         2023-05-16         0.0050 mg/L         2023-05-16         0.0050 mg/L         <	General Parameter	s						
Nitrogen, Total Kjeldahl         0.472         N/A         0.050 mg/L         2023-05-18           pH         6.63         7.0-10.5         0.10 pH units         2023-05-16 HT2           Phosphorus, Total (as P)         0.147 N/A         0.0050 mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0251 N/A         0.0050 mg/L         2023-05-17           Turbidity         38.4 OG < 1	Ammonia, Total (a	s N)	0.120	None Required	0.050	mg/L	2023-05-17	
pH         6.63         7.0-10.5         0.10         pH units         2023-05-16         HT2           Phosphorus, Total (as P)         0.147         N/A         0.0050         mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0251         N/A         0.0050         mg/L         2023-05-17           Turbidity         38.4         OG < 1	Conductivity (EC)		50.1	N/A	2.0	μS/cm	2023-05-16	
Phosphorus, Total (as P)	Nitrogen, Total Kje	eldahl	0.472	N/A	0.050	mg/L	2023-05-18	
Phosphorus, Total Dissolved         0.0251         N/A         0.0050 mg/L         2023-05-17           Turbidity         38.4         OG < 1         0.10 NTU         2023-05-16           Microbiological Parameters           Coliforms, Total (Q-Tray)         1410 MAC = 0         1 MPN/100 mL MPN/100 mL MPN/100 mL MAC = 0         2023-05-15           Coliforms, Fecal (Q-Tray)         29 N/A MAC = 0         1 MPN/100 mL MPN/100 mL MAC = 0         2023-05-15           E. coli (Q-Tray)         24 MAC = 0         1 MPN/100 mL MPN/100 mL MAC = 0         2023-05-15           Duteau Creek (HWY 6) (23E1859-02)   Matrix: Water   Sampled: 2023-05-14 11:15         FILT, PRES           Anions           Chloride 2.37 AO ≤ 250 0.10 mg/L 2023-05-16         Mitrate (as N) 0.089 MAC = 10 0.010 mg/L 2023-05-16         Mitrate (as N) MJA 20.00 mg/L 2023-05-16         Nitrate (as N) MJA 20.00 mg/L 2023-05-16         Calculated Parameters           Sulfate 11.7 AO ≤ 500 1.0 mg/L 2023-05-16         N/A 0.050 mg/L 2023-05-16           Calculated Parameters           Nitrate-Nitrite (as N) 0.0983 N/A 0.0000 mg/L N/A 0.050 mg/L 2023-05-16         N/A 0.050 mg/L 2023-05-17           Coloquity (EC) 135 N/A 2.0 μS/cm 2023-05-16         N/A 2.0 μS/cm 2023-05-16         N/A 2.0 μS/cm 2023-05-16         N/A 2.0 μS/cm 202	рН		6.63	7.0-10.5	0.10	pH units	2023-05-16	HT2
Microbiological Parameters         Coliforms, Total (Q-Tray)         1410 MAC = 0 MAC = 0 MPN/100 mL MPN/100 mL MPN/100 mL MAC = 0 MPN/100 mL MPN/100 mL MAC = 0 MPN/100 mL MPN/100 mL MAC = 0 MPN/100 mL MAC = 0 MPN/100 mL MPN/100 mL MAC = 0 MPN/100 mL MPN/100 mL MAC = 0 MPN/100 mL MPN/100	Phosphorus, Total	(as P)	0.147	N/A	0.0050	mg/L	2023-05-17	
Microbiological Parameters           Coliforms, Total (Q-Tray)         1410         MAC = 0         1         MPN/100 mL         2023-05-15           Coliforms, Fecal (Q-Tray)         29         N/A         1         MPN/100 mL         2023-05-15           E. coli (Q-Tray)         24         MAC = 0         1         MPN/100 mL         2023-05-15           Duteau Creek (HWY 6) (23E1859-02)   Matrix: Water   Sampled: 2023-05-14 11:15         FILT, PRES           Anions           Chloride         2.37         AO ≤ 250         0.10         mg/L         2023-05-16           Nitrate (as N)         0.089         MAC = 10         0.010         mg/L         2023-05-16           Nitrate (as N)         <0.010	Phosphorus, Total	Dissolved	0.0251	N/A	0.0050	mg/L	2023-05-17	
Coliforms, Total (Q-Tray)  1410  MAC = 0  1 MPN/100 mL  2023-05-15  Coliforms, Fecal (Q-Tray)  29 N/A  1 MPN/100 mL  2023-05-15  E. coli (Q-Tray)  24 MAC = 0  1 MPN/100 mL  2023-05-15   Duteau Creek (HWY 6) (23E1859-02)   Matrix: Water   Sampled: 2023-05-14 11:15  Chloride  2.37 AO ≤ 250  0.10 mg/L  2023-05-16  Nitrate (as N)  0.089 MAC = 10  0.010 mg/L  2023-05-16  Nitrite (as N)  <0.010 MAC = 1  0.010 mg/L  2023-05-16  Sulfate  11.7 AO ≤ 500  1.0 mg/L  2023-05-16  Calculated Parameters  Nitrate+Nitrite (as N)  0.0893 N/A  Nitrogen, Total  0.0100 mg/L  N/A  Nitrogen, Total  0.0500 mg/L  N/A  Nitrogen, Total  A 0.0500 mg/L  2023-05-16  Nitrogen, Total (as N)  <0.050 None Required  0.050 mg/L  2023-05-16  Nitrogen, Total (as N)  0.0407 N/A  0.0500 mg/L  2023-05-16  Nitrogen, Total Kjeldahl  0.407 N/A  0.0500 mg/L  2023-05-16  Nitrogen, Total Kjeldahl  0.407 N/A  0.0500 mg/L  2023-05-16  Nitrogen, Total (as P)  0.0410 N/A  0.0050 mg/L  2023-05-17  Phosphorus, Total Dissolved  0.0198 N/A  0.0050 mg/L  2023-05-17	Turbidity		38.4	OG < 1	0.10	NTU	2023-05-16	
Coliforms, Fecal (Q-Tray)   29 N/A	Microbiological Pa	rameters						
Coliforms, Fecal (Q-Tray)   29 N/A	Coliforms, Total (C	Q-Tray)	1410	MAC = 0	1	MPN/100 mL	2023-05-15	
E. coli (Q-Tray)  24 MAC = 0 1 MPN/100 mL 2023-05-15  Duteau Creek (HWY 6) (23E1859-02)   Matrix: Water   Sampled: 2023-05-14 11:15  FILT, PRES  Anions  Chloride 2.37 AO ≤ 250 0.10 mg/L 2023-05-16  Nitrate (as N) 0.089 MAC = 10 0.010 mg/L 2023-05-16  Nitrite (as N) < 0.010 MAC = 1 0.010 mg/L 2023-05-16  Sulfate 11.7 AO ≤ 500 1.0 mg/L 2023-05-16  Calculated Parameters  Nitrate+Nitrite (as N) 0.8893 N/A 0.0100 mg/L 2023-05-16  Nitrogen, Total (as N) 0.496 N/A 0.0500 mg/L N/A  General Parameters  Ammonia, Total (as N) < 0.050 None Required 0.050 mg/L 2023-05-16  Nitrogen, Total Kjeldahl 0.407 N/A 0.050 mg/L 2023-05-16  Phosphorus, Total (as P) 0.0410 N/A 0.0050 mg/L 2023-05-16  HT2  Phosphorus, Total Dissolved 0.0198 N/A 0.0050 mg/L 2023-05-17  Phosphorus, Total Dissolved 0.0198 N/A 0.0050 mg/L 2023-05-17			29	N/A	1	MPN/100 mL	2023-05-15	
PRES           Anions         Chloride         2.37         AO ≤ 250         0.10 mg/L         2023-05-16         Nitrate (as N)         0.089         MAC = 10         0.010 mg/L         2023-05-16         2023-05-16         Nitrite (as N)         < 0.010         MAC = 1         0.010 mg/L         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-16         2023-05-17         2023-05-17         2023-05-17         2023-05-16         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2023-05-17         2		• • • • • • • • • • • • • • • • • • • •	24	MAC = 0	1	MPN/100 mL	2023-05-15	
Nitrate (as N)         0.089         MAC = 10         0.010 mg/L         2023-05-16           Nitrite (as N)         < 0.010		NY 6) (23E1859-02)   Matr	ix: Water   Samp	oled: 2023-05-14 11:	15			
Nitrate (as N)         0.089         MAC = 10         0.010 mg/L         2023-05-16           Nitrite (as N)         < 0.010	Chloride		2.37	AO ≤ 250	0.10	ma/l	2023-05-16	
Nitrite (as N)         < 0.010         MAC = 1         0.010 mg/L         2023-05-16           Sulfate         11.7         AO ≤ 500         1.0 mg/L         2023-05-16           Calculated Parameters           Nitrate+Nitrite (as N)         0.0893         N/A         0.0100 mg/L         N/A           Nitrogen, Total         0.496         N/A         0.0500 mg/L         N/A           General Parameters           Ammonia, Total (as N)         < 0.050         None Required         0.050 mg/L         2023-05-17           Conductivity (EC)         135         N/A         2.0 μS/cm         2023-05-16           Nitrogen, Total Kjeldahl         0.407         N/A         0.050 mg/L         2023-05-18           pH         6.82         7.0-10.5         0.10 pH units         2023-05-16 HT2           Phosphorus, Total (as P)         0.0410         N/A         0.0050 mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0198         N/A         0.0050 mg/L         2023-05-17								
Sulfate       11.7       AO ≤ 500       1.0 mg/L       2023-05-16         Calculated Parameters         Nitrate+Nitrite (as N)       0.0893       N/A       0.0100 mg/L       N/A         Nitrogen, Total       0.496       N/A       0.0500 mg/L       N/A         General Parameters         Ammonia, Total (as N)       < 0.050       None Required       0.050 mg/L       2023-05-17         Conductivity (EC)       135       N/A       2.0 µS/cm       2023-05-16         Nitrogen, Total Kjeldahl       0.407       N/A       0.050 mg/L       2023-05-18         pH       6.82       7.0-10.5       0.10 pH units       2023-05-16       HT2         Phosphorus, Total (as P)       0.0410       N/A       0.0050 mg/L       2023-05-17         Phosphorus, Total Dissolved       0.0198       N/A       0.0050 mg/L       2023-05-17								
Nitrate+Nitrite (as N)         0.0893         N/A         0.0100 mg/L         N/A           Nitrogen, Total         0.496         N/A         0.0500 mg/L         N/A           General Parameters           Ammonia, Total (as N)         < 0.050								
Nitrogen, Total         0.496         N/A         0.0500         mg/L         N/A           General Parameters         Ammonia, Total (as N)         < 0.050	Calculated Parame	ters						
Nitrogen, Total         0.496         N/A         0.0500         mg/L         N/A           General Parameters         Ammonia, Total (as N)         < 0.050	Nitrate+Nitrite (as	N)	0.0893	N/A	0.0100	ma/l	N/A	
General Parameters           Ammonia, Total (as N)         < 0.050         None Required         0.050         mg/L         2023-05-17           Conductivity (EC)         135         N/A         2.0         μS/cm         2023-05-16           Nitrogen, Total Kjeldahl         0.407         N/A         0.050         mg/L         2023-05-18           pH         6.82         7.0-10.5         0.10         pH units         2023-05-16         HT2           Phosphorus, Total (as P)         0.0410         N/A         0.0050         mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0198         N/A         0.0050         mg/L         2023-05-17		,						
Ammonia, Total (as N)         < 0.050         None Required         0.050         mg/L         2023-05-17           Conductivity (EC)         135         N/A         2.0 μS/cm         2023-05-16           Nitrogen, Total Kjeldahl         0.407         N/A         0.050 mg/L         2023-05-18           pH         6.82         7.0-10.5         0.10 pH units         2023-05-16         HT2           Phosphorus, Total (as P)         0.0410         N/A         0.0050 mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0198         N/A         0.0050 mg/L         2023-05-17		rs		<u> </u>				
Conductivity (EC)         135         N/A         2.0 μS/cm         2023-05-16           Nitrogen, Total Kjeldahl         0.407         N/A         0.050 mg/L         2023-05-18           pH         6.82         7.0-10.5         0.10 pH units         2023-05-16 HT2           Phosphorus, Total (as P)         0.0410         N/A         0.0050 mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0198         N/A         0.0050 mg/L         2023-05-17			< 0.050	None Required	0.050	ma/l	2023_05 17	
Nitrogen, Total Kjeldahl         0.407         N/A         0.050 mg/L         2023-05-18           pH         6.82         7.0-10.5         0.10 pH units         2023-05-16 HT2           Phosphorus, Total (as P)         0.0410         N/A         0.0050 mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0198         N/A         0.0050 mg/L         2023-05-17		14 <i>)</i>		<u> </u>				
pH         6.82         7.0-10.5         0.10 pH units         2023-05-16         HT2           Phosphorus, Total (as P)         0.0410         N/A         0.0050 mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0198         N/A         0.0050 mg/L         2023-05-17		aldahl				-		
Phosphorus, Total (as P)         0.0410         N/A         0.0050 mg/L         2023-05-17           Phosphorus, Total Dissolved         0.0198         N/A         0.0050 mg/L         2023-05-17		Juani						⊔Tາ
Phosphorus, Total Dissolved <b>0.0198</b> N/A 0.0050 mg/L 2023-05-17		(as D)				-		пі
<u> </u>								
	Turbidity	DISSUIVEU	5.01	OG < 1			2023-05-17	



**General Parameters** 

REPORTED TO PROJECT	Mid Shuswap Lumby Wa Analytical Testing	ater Stewards			WORK ORDER REPORTED	23E1859 2023-05-1	9 10:02
Analyte		Result	Guideline	RL	Units	Analyzed	Qualifie
Duteau Creek (H\	WY 6) (23E1859-02)   Matr	ix: Water   Samp	oled: 2023-05-14 11:	15, Continue	ed		FILT, PRES
Microbiological Pa	rameters						
Coliforms, Total (C	Q-Tray)	1410	MAC = 0	1	MPN/100 mL	2023-05-15	
Coliforms, Fecal (	Q-Tray)	215	N/A	1	MPN/100 mL	2023-05-15	
E. coli (Q-Tray)		215	MAC = 0	1	MPN/100 mL	2023-05-15	
Mid Bessette Cre	ek (23E1859-03)   Matrix:	Water   Sampled	d: 2023-05-14 10:40				FILT, PRES
Anions							
Chloride		0.60	AO ≤ 250	0.10	mg/L	2023-05-16	
Nitrate (as N)		0.018	MAC = 10	0.010	mg/L	2023-05-16	
Nitrite (as N)		< 0.010	MAC = 1	0.010	mg/L	2023-05-16	
Sulfate		7.3	AO ≤ 500	1.0	mg/L	2023-05-16	
Calculated Parame	ters						
Nitrate+Nitrite (as	N)	0.0178	N/A	0.0100	mg/L	N/A	
Nitrogen, Total		0.824	N/A	0.0500	mg/L	N/A	
General Parameter	rs						
Ammonia, Total (a	ıs N)	< 0.050	None Required	0.050	mg/L	2023-05-17	
Conductivity (EC)	· · · · · · · · · · · · · · · · · · ·	80.9	N/A	2.0	μS/cm	2023-05-16	
Nitrogen, Total Kje		0.806	N/A	0.050	mg/L	2023-05-18	
pH		6.71	7.0-10.5	0.10	pH units	2023-05-16	HT2
Phosphorus, Total	(as P)	0.218	N/A	0.0050	mg/L	2023-05-17	
Phosphorus, Total	Dissolved	0.0232	N/A	0.0050	mg/L	2023-05-17	
Turbidity		74.9	OG < 1	0.10	NTU	2023-05-16	
Microbiological Pa	rameters						
Coliforms, Total (C	O-Trav)	> 2420	MAC = 0	1	MPN/100 mL	2023-05-15	
Coliforms, Fecal (	• • • • • • • • • • • • • • • • • • • •	72	N/A		MPN/100 mL	2023-05-15	
E. coli (Q-Tray)	,,	72	MAC = 0		MPN/100 mL	2023-05-15	
Lower Bessette C	Creek (23E1859-04)   Matr	ix: Water   Samp	led: 2023-05-14 10:	25			FILT, PRES
Anions							
Chloride		0.61	AO ≤ 250	0.10	mg/L	2023-05-16	
Nitrate (as N)		0.017	MAC = 10	0.010	mg/L	2023-05-16	
Nitrite (as N)		< 0.010	MAC = 1	0.010	mg/L	2023-05-16	
Sulfate		7.7	AO ≤ 500	1.0	mg/L	2023-05-16	
Calculated Parame	eters						
Nitrate+Nitrite (as	N)	0.0170	N/A	0.0100	mg/L	N/A	



REPORTED TO	Mid Shuswap Lumby Water Stewards	<b>WORK ORDER</b>	23E1859
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Analyte	Result	Guideline	RL	Units	Analyzed	Qualific
Lower Bessette Creek (23E1859-04)   Matrix: Water   Sampled: 2023-05-14 10:25, Continued						
General Parameters, Continued						
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2023-05-17	
Conductivity (EC)	84.4	N/A	2.0	μS/cm	2023-05-16	
Nitrogen, Total Kjeldahl	0.550	N/A	0.050	mg/L	2023-05-18	
рН	6.62	7.0-10.5	0.10	pH units	2023-05-16	HT2
Phosphorus, Total (as P)	0.291	N/A	0.0050	mg/L	2023-05-17	
Phosphorus, Total Dissolved	0.0230	N/A	0.0050	mg/L	2023-05-17	
Turbidity	104	OG < 1	0.10	NTU	2023-05-16	
Microbiological Parameters						
Coliforms, Total (Q-Tray)	> 2420	MAC = 0	1	MPN/100 mL	2023-05-15	
Coliforms, Fecal (Q-Tray)	108	N/A	1	MPN/100 mL	2023-05-15	
E. coli (Q-Tray)	105	MAC = 0	1	MPN/100 mL	2023-05-15	
Amiama						
Anions						
Chloride	0.15	AO ≤ 250		mg/L	2023-05-16	
Chloride Nitrate (as N)	0.071	MAC = 10	0.010	mg/L	2023-05-16	
Chloride Nitrate (as N) Nitrite (as N)	<b>0.071</b> < 0.010	MAC = 10 MAC = 1	0.010 0.010	mg/L mg/L	2023-05-16 2023-05-16	
Chloride Nitrate (as N) Nitrite (as N) Sulfate	0.071	MAC = 10	0.010 0.010	mg/L	2023-05-16	
Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters	0.071 < 0.010 3.6	MAC = 10 MAC = 1 AO ≤ 500	0.010 0.010 1.0	mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16	
Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Nitrate+Nitrite (as N)	0.071 < 0.010 3.6	MAC = 10 MAC = 1 AO ≤ 500	0.010 0.010 1.0 0.0100	mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16 N/A	
Chloride Nitrate (as N) Nitrite (as N) Sulfate  Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total	0.071 < 0.010 3.6	MAC = 10 MAC = 1 AO ≤ 500	0.010 0.010 1.0	mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16	
Chloride Nitrate (as N) Nitrite (as N) Sulfate  Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total	0.071 < 0.010 3.6	MAC = 10 MAC = 1 AO ≤ 500 N/A N/A	0.010 0.010 1.0 0.0100	mg/L mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16 N/A	
Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total General Parameters	0.071 < 0.010 3.6 0.0708 0.254	MAC = 10 MAC = 1 AO ≤ 500	0.010 0.010 1.0 0.0100 0.0500	mg/L mg/L mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16 N/A N/A	
Chloride Nitrate (as N) Nitrite (as N) Sulfate  Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total  General Parameters Ammonia, Total (as N)	0.071 < 0.010 3.6 0.0708 0.254	MAC = 10  MAC = 1  AO ≤ 500  N/A  N/A  None Required	0.010 0.010 1.0 0.0100 0.0500	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16 N/A N/A 2023-05-17	
Chloride Nitrate (as N) Nitrite (as N) Sulfate  Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total  General Parameters Ammonia, Total (as N) Conductivity (EC)	0.071 < 0.010 3.6 0.0708 0.254 < 0.050 72.0	MAC = 10  MAC = 1  AO ≤ 500  N/A  N/A  None Required  N/A	0.010 0.010 1.0 0.0100 0.0500 0.050 2.0 0.050	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16 N/A N/A 2023-05-17 2023-05-16	HT2
Chloride  Nitrate (as N)  Nitrite (as N)  Sulfate  Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total  General Parameters  Ammonia, Total (as N)  Conductivity (EC)  Nitrogen, Total Kjeldahl	0.071 < 0.010 3.6 0.0708 0.254 < 0.050 72.0 0.183	MAC = 10  MAC = 1  AO ≤ 500  N/A  N/A  N/A  None Required  N/A  N/A	0.010 0.010 1.0 0.0100 0.0500 0.050 2.0 0.050	mg/L mg/L mg/L mg/L mg/L mg/L pS/cm mg/L pH units	2023-05-16 2023-05-16 2023-05-16 N/A N/A 2023-05-17 2023-05-16 2023-05-18	HT2
Chloride  Nitrate (as N)  Nitrite (as N)  Sulfate  Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total  General Parameters  Ammonia, Total (as N)  Conductivity (EC)  Nitrogen, Total Kjeldahl  pH	0.071 < 0.010 3.6 0.0708 0.254 < 0.050 72.0 0.183 6.63	MAC = 10  MAC = 1  AO ≤ 500  N/A  N/A  N/A  None Required  N/A  N/A  7.0-10.5	0.010 0.010 1.0 0.0100 0.0500 0.050 2.0 0.050 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L pS/cm mg/L pH units mg/L	2023-05-16 2023-05-16 2023-05-16 N/A N/A 2023-05-17 2023-05-16 2023-05-18 2023-05-16	HT2
Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total General Parameters Ammonia, Total (as N) Conductivity (EC) Nitrogen, Total Kjeldahl pH Phosphorus, Total (as P)	0.071 < 0.010 3.6  0.0708 0.254  < 0.050 72.0 0.183 6.63 0.0417	MAC = 10  MAC = 1  AO ≤ 500  N/A  N/A  None Required  N/A  N/A  7.0-10.5  N/A	0.010 0.010 1.0 0.0100 0.0500 0.050 0.050 0.10 0.0050 0.0050	mg/L mg/L mg/L mg/L mg/L mg/L mg/L pS/cm mg/L pH units mg/L	2023-05-16 2023-05-16 2023-05-16 N/A N/A 2023-05-17 2023-05-16 2023-05-16 2023-05-16 2023-05-17	HT2
Chloride Nitrate (as N) Nitrite (as N) Sulfate Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total General Parameters Ammonia, Total (as N) Conductivity (EC) Nitrogen, Total Kjeldahl pH Phosphorus, Total (as P) Phosphorus, Total Dissolved Turbidity	0.071 < 0.010 3.6  0.0708 0.254  < 0.050 72.0 0.183 6.63 0.0417 0.0057	MAC = 10  MAC = 1  AO ≤ 500  N/A  N/A  None Required  N/A  N/A  7.0-10.5  N/A  N/A	0.010 0.010 1.0 0.0100 0.0500 0.050 0.050 0.10 0.0050 0.0050	mg/L mg/L mg/L mg/L mg/L mg/L mg/L pS/cm mg/L pH units mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16 N/A N/A 2023-05-17 2023-05-16 2023-05-16 2023-05-17 2023-05-17	HT2
Chloride Nitrate (as N) Nitrite (as N) Sulfate  Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total  General Parameters Ammonia, Total (as N) Conductivity (EC) Nitrogen, Total Kjeldahl pH Phosphorus, Total (as P) Phosphorus, Total Dissolved Turbidity	0.071 < 0.010 3.6  0.0708 0.254  < 0.050 72.0 0.183 6.63 0.0417 0.0057	MAC = 10  MAC = 1  AO ≤ 500  N/A  N/A  None Required  N/A  N/A  7.0-10.5  N/A  N/A	0.010 0.010 1.0 0.0100 0.0500 0.050 0.050 0.10 0.0050 0.0050 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L pS/cm mg/L pH units mg/L mg/L mg/L	2023-05-16 2023-05-16 2023-05-16 N/A N/A 2023-05-17 2023-05-16 2023-05-16 2023-05-17 2023-05-17	HT2
Chloride Nitrate (as N) Nitrite (as N) Sulfate  Calculated Parameters Nitrate+Nitrite (as N) Nitrogen, Total  General Parameters  Ammonia, Total (as N) Conductivity (EC) Nitrogen, Total Kjeldahl pH Phosphorus, Total (as P) Phosphorus, Total Dissolved Turbidity  Microbiological Parameters	0.071 < 0.010 3.6  0.0708 0.254  < 0.050 72.0 0.183 6.63 0.0417 0.0057 17.0	MAC = 10  MAC = 1  AO ≤ 500  N/A  N/A  None Required  N/A  N/A  7.0-10.5  N/A  N/A  OG < 1	0.010 0.010 1.0 0.0100 0.0500 0.050 0.050 0.10 0.0050 0.0050 0.10	mg/L mg/L mg/L mg/L mg/L mg/L mg/L  mg/L μS/cm mg/L pH units mg/L NTU  MPN/100 mL	2023-05-16 2023-05-16 2023-05-16 N/A N/A 2023-05-17 2023-05-16 2023-05-16 2023-05-17 2023-05-17 2023-05-17	

Shuswap River (Odd Fellows) (23E1859-06) | Matrix: Water | Sampled: 2023-05-14 09:20

FILT, PRES



Turbidity

REPORTED TO Mid Shuswap Lu PROJECT Analytical Testing	mby Water Stewards g			WORK ORDER REPORTED	23E1859 2023-05-1	9 10:02
Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Shuswap River (Odd Fellows) (23E1859-06)   Matrix: Water   Sampled: 2023-05-14 09:20, Continued						
Anions, Continued						
Chloride	0.21	AO ≤ 250	0.10	mg/L	2023-05-16	
Nitrate (as N)	0.065	MAC = 10	0.010		2023-05-16	
Nitrite (as N)	< 0.010	MAC = 1	0.010		2023-05-16	
Sulfate	4.3	AO ≤ 500		mg/L	2023-05-16	
Calculated Parameters						
Nitrate+Nitrite (as N)	0.0648	N/A	0.0100	ma/L	N/A	
Nitrogen, Total	0.351	N/A	0.0500		N/A	
General Parameters						
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2023-05-17	
Conductivity (EC)	89.2	N/A		μS/cm	2023-05-16	
Nitrogen, Total Kjeldahl	0.286	N/A	0.050	·	2023-05-18	
pH	6.83	7.0-10.5		pH units	2023-05-16	HT2
Phosphorus, Total (as P)	0.0939	N/A	0.0050	· · · · · · · · · · · · · · · · · · ·	2023-05-17	
Phosphorus, Total Dissolved	0.0077	N/A	0.0050		2023-05-17	
Turbidity	35.7	OG < 1		NTU	2023-05-16	
Microbiological Parameters						
Coliforms, Total (Q-Tray)	1120	MAC = 0	1	MPN/100 mL	2023-05-15	HT1
Coliforms, Fecal (Q-Tray)	77	N/A	1	MPN/100 mL	2023-05-15	HT1
E. coli (Q-Tray)	77	MAC = 0	1	MPN/100 mL	2023-05-15	HT1
Vance Creek (Mabel Lake Rd) (23E	1859-07)   Matrix: Water	Sampled: 2023-05	5-14 11:00			FILT, PRES
	1.88	AO < 250	0.10	ma/l	2022 05 16	
Chloride Nitrate (as N)	0.068	AO ≤ 250 MAC = 10	0.10	mg/L	2023-05-16 2023-05-16	
Nitrite (as N)	< 0.010	MAC = 10	0.010		2023-05-16	
Sulfate	< 0.010	IVIAC - I	0.010			
	20.7	AO < 500	1 0	ma/l		
	20.7	AO ≤ 500	1.0	mg/L	2023-05-16	
Calculated Parameters						
Calculated Parameters  Nitrate+Nitrite (as N)	0.0682	N/A	0.0100	mg/L	N/A	
Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total				mg/L		
Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total  General Parameters	0.0682 0.404	N/A N/A	0.0100 0.0500	mg/L mg/L	N/A N/A	
Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total  General Parameters  Ammonia, Total (as N)	0.0682 0.404 0.166	N/A N/A None Required	0.0100 0.0500 0.050	mg/L mg/L mg/L	N/A N/A 2023-05-17	
Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total  General Parameters  Ammonia, Total (as N)  Conductivity (EC)	0.0682 0.404 0.166 234	N/A N/A None Required N/A	0.0100 0.0500 0.050 2.0	mg/L mg/L μS/cm	N/A N/A 2023-05-17 2023-05-16	
Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total  General Parameters  Ammonia, Total (as N)  Conductivity (EC)  Nitrogen, Total Kjeldahl	0.0682 0.404 0.166 234 0.336	N/A N/A None Required N/A N/A	0.0100 0.0500 0.050 2.0 0.050	mg/L mg/L μS/cm mg/L	N/A N/A 2023-05-17 2023-05-16 2023-05-18	
Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total  General Parameters  Ammonia, Total (as N)  Conductivity (EC)  Nitrogen, Total Kjeldahl pH	0.0682 0.404 0.166 234 0.336 7.42	N/A N/A None Required N/A N/A 7.0-10.5	0.0100 0.0500 0.050 2.0 0.050 0.10	mg/L mg/L mg/L  µS/cm mg/L pH units	N/A N/A 2023-05-17 2023-05-16 2023-05-18 2023-05-16	HT2
Calculated Parameters  Nitrate+Nitrite (as N)  Nitrogen, Total  General Parameters  Ammonia, Total (as N)  Conductivity (EC)  Nitrogen, Total Kjeldahl	0.0682 0.404 0.166 234 0.336	N/A N/A None Required N/A N/A	0.0100 0.0500 0.050 2.0 0.050	mg/L mg/L mg/L  µS/cm mg/L pH units mg/L	N/A N/A 2023-05-17 2023-05-16 2023-05-18	HT2

2023-05-16

OG < 1

0.10 NTU

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**REPORTED TO** Mid Shuswap Lumby Water Stewards

PROJECT Analytical Testing

WORK ORDER

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**REPORTED** 2023-05-19 10:02

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
Vance Creek (Mabel Lake Rd) (23E185	9-07)   Matrix: Water	Sampled: 2023-05	-14 11:00, Continued		FILT, PRES
Microbiological Parameters					
Coliforms, Total (Q-Tray)	299	MAC = 0	1 MPN/100 mL	2023-05-15	
Coliforms, Fecal (Q-Tray)	3	N/A	1 MPN/100 mL	2023-05-15	
E. coli (Q-Tray)	2	MAC = 0	1 MPN/100 mL	2023-05-15	

### Sample Qualifiers:

FILT The sample has been filtered for TDP in the laboratory. Results may not reflect conditions at the time of sampling.

HT1 The sample was prepared and/or analyzed past the recommended holding time.

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is

recommended.

PRES Sample has been preserved for TDP in the laboratory and the holding time has been extended.



## **APPENDIX 1: SUPPORTING INFORMATION**

REPORTED TO Mid Shuswap Lumby Water Stewards

PROJECT Analytical Testing

WORK ORDER REPORTED 23E1859

**RTED** 2023-05-19 10:02

Analysis Description	Method Ref.	Technique	Accredited	Location
Ammonia, Total in Water	SM 4500-NH3 G* (2021)	Automated Colorimetry (Phenate)	✓	Kelowna
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Coliforms, Fecal in Water	NA / SM 9223 (2016)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Coliforms, Total in Water	NA / SM 9223 (2016)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Conductivity in Water	SM 2510 B (2021)	Conductivity Meter	✓	Kelowna
E. coli in Water	NA / SM 9223 (2016)	Quanti-Tray / Enzyme Substrate Endo Agar	✓	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2021)	Block Digestion and Flow Injection Analysis	✓	Kelowna
pH in Water	SM 4500-H+ B (2021)	Electrometry	✓	Kelowna
Phosphorus, Total Dissolved in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2021)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna
Phosphorus, Total in Water	SM 4500-P B.5* (2011) / SM 4500-P F (2021)	Persulfate Digestion / Automated Colorimetry (Ascorbic Acid)	✓	Kelowna
Turbidity in Water	SM 2130 B (2020)	Nephelometry	✓	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

#### **Glossary of Terms:**

RL Reporting Limit (default)

Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors

> Greater than the specified Result

AO Aesthetic Objective

MAC Maximum Acceptable Concentration (health based)

mg/L Milligrams per litre

MPN/100 mL Most Probable Number per 100 millilitres

NTU Nephelometric Turbidity Units

OG Operational Guideline (treated water) pH units pH < 7 = acidic, ph > 7 = basic  $\mu S/cm$  Microsiemens per centimetre

SM Standard Methods for the Examination of Water and Wastewater, American Public Health Association

### Guidelines Referenced in this Report:

Guidelines for Canadian Drinking Water Quality (Health Canada, September 2022)

Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user



## **APPENDIX 1: SUPPORTING INFORMATION**

**REPORTED TO** Mid Shuswap Lumby Water Stewards

PROJECT Analytical Testing

WORK ORDER
REPORTED

23E1859

2023-05-19 10:02

#### **General Comments:**

The results in this report apply to the received samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Caro will dispose of all samples within 30 days of sample receipt, unless otherwise agreed. The quality control (QC) data is available upon request

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted red. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do <u>not</u> take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager: TeamCaro@caro.ca

Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline(s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.