



CERTIFICATE OF ANALYSIS

REPORTED TO	Yukon Government - Department of Education 1000 Lewes Blvd. Whitehorse, YT Y1A 6N2	WORK ORDER	8081757
ATTENTION	Miles Hume	RECEIVED / TEMP REPORTED	2018-08-15 12:00 / 15°C 2018-08-28 13:08
PO NUMBER		COC NUMBER	B65361/81/82/83/84/86/8 5/87
PROJECT	Department of Education 2018 Water Testing Program		
PROJECT INFO	Contract No. C00044694 (JHES)		

Introduction:

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 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks



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.

We've Got Chemistry



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

Ahead of the Curve



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

Work Order Comments:

Extra samples not listed on COC: CF3, KF1, KF2

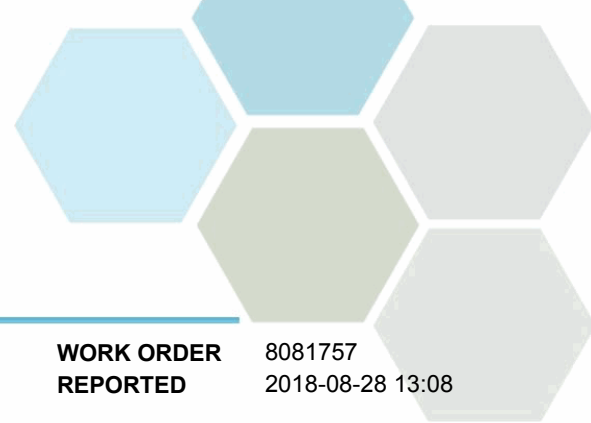
If you have any questions or concerns, please contact me at machan@caro.ca

Authorized By:

Maggie Chan, DipT
Client Service Representative

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

#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7

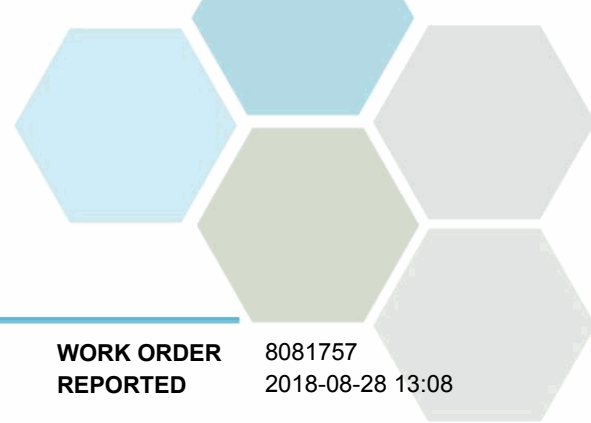


TEST RESULTS

REPORTED TO PROJECT Yukon Government - Department of Education
Department of Education 2018 Water Testing Program

WORK ORDER REPORTED 8081757
2018-08-28 13:08

Analyte	Result	RL	Units	Analyzed	Qualifier
CF1 (8081757-01) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	27.3	0.20	µg/L	2018-08-25	
CF2 (8081757-02) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	12.3	0.20	µg/L	2018-08-25	
CF3 (8081757-03) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	28.1	0.20	µg/L	2018-08-25	
CF4 (8081757-04) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	18.5	0.20	µg/L	2018-08-25	
CF5 (8081757-05) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	23.5	0.20	µg/L	2018-08-25	
CF6 (8081757-06) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	149	0.20	µg/L	2018-08-25	
CF7 (8081757-07) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	9.76	0.20	µg/L	2018-08-25	
CF8 (8081757-08) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	17.8	0.20	µg/L	2018-08-25	
CF9 (8081757-09) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					

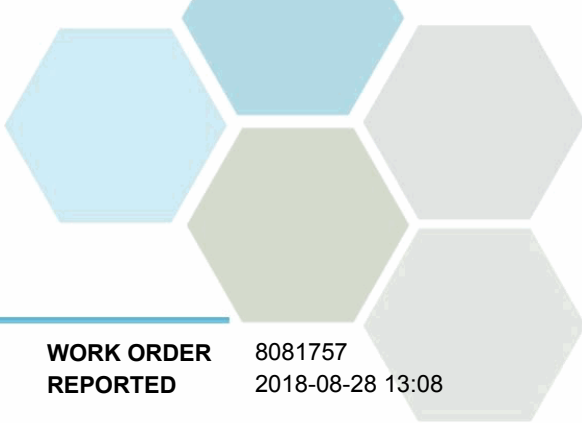


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2018-08-28 13:08

Analyte	Result	RL	Units	Analyzed	Qualifier
CF9 (8081757-09) Matrix: Water Sampled: 2018-08-14 08:00, Continued					
<i>Total Metals, Continued</i>					
Lead, total	11.8	0.20	µg/L	2018-08-25	
CF10 (8081757-10) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	11.3	0.20	µg/L	2018-08-25	
CF11 (8081757-11) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	6.18	0.20	µg/L	2018-08-25	
CF12 (8081757-12) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	10.7	0.20	µg/L	2018-08-25	
CF13 (8081757-13) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	8.00	0.20	µg/L	2018-08-25	
CF14 (8081757-14) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	3.03	0.20	µg/L	2018-08-25	
CF15 (8081757-15) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	195	0.20	µg/L	2018-08-25	
CF16 (8081757-16) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	0.80	0.20	µg/L	2018-08-25	
CF17 (8081757-17) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					

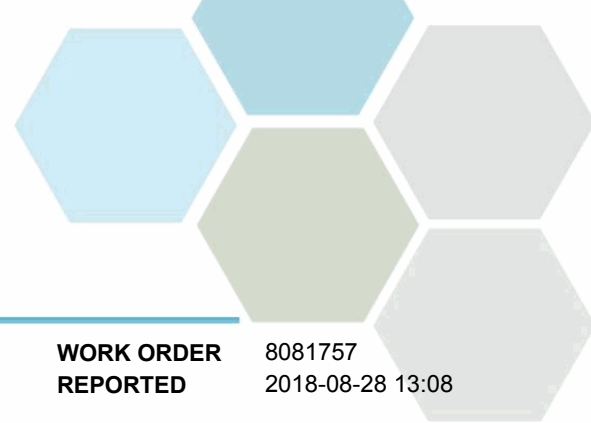


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Analyte	Result	RL	Units	Analyzed	Qualifier
CF17 (8081757-17) Matrix: Water Sampled: 2018-08-14 08:00, Continued					
<i>Total Metals, Continued</i>					
Lead, total	6.84	0.20	µg/L	2018-08-25	
CF18 (8081757-18) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	4.25	0.20	µg/L	2018-08-25	
CF19 (8081757-19) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	13.4	0.20	µg/L	2018-08-25	
CF20 (8081757-20) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	22.2	0.20	µg/L	2018-08-25	
CF21 (8081757-21) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	12.3	0.20	µg/L	2018-08-25	
CF22 (8081757-22) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	6.67	0.20	µg/L	2018-08-25	
CF23 (8081757-23) Matrix: Water Sampled: 2018-08-14 08:00					
<i>Total Metals</i>					
Lead, total	10.2	0.20	µg/L	2018-08-25	
CF24 (8081757-24) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	6.36	0.20	µg/L	2018-08-25	
CF25 (8081757-25) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					

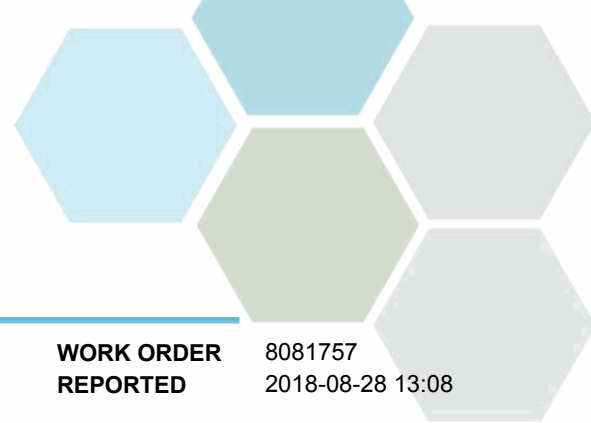


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2018-08-28 13:08

Analyte	Result	RL	Units	Analyzed	Qualifier
CF25 (8081757-25) Matrix: Water Sampled: 2018-08-14 08:15, Continued					
<i>Total Metals, Continued</i>					
Lead, total	44.4	0.20	µg/L	2018-08-25	
CF26 (8081757-26) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	208	0.20	µg/L	2018-08-25	
CF27 (8081757-27) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	3.27	0.20	µg/L	2018-08-25	
CF28 (8081757-28) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	1.78	0.20	µg/L	2018-08-25	
CF29 (8081757-29) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	2.48	0.20	µg/L	2018-08-25	
CF30 (8081757-30) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	5.38	0.20	µg/L	2018-08-25	
CF31 (8081757-31) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	4.26	0.20	µg/L	2018-08-25	
CF32 (8081757-32) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	17.7	0.20	µg/L	2018-08-25	
CF33 (8081757-33) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					

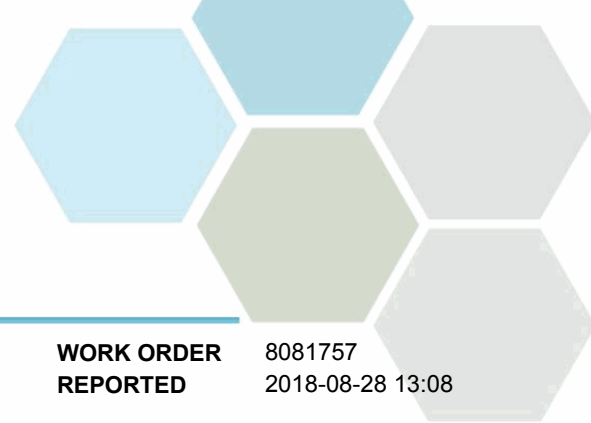


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Analyte	Result	RL	Units	Analyzed	Qualifier
CF33 (8081757-33) Matrix: Water Sampled: 2018-08-14 08:15, Continued					
<i>Total Metals, Continued</i>					
Lead, total	4.21	0.20	µg/L	2018-08-25	
CSF1 (8081757-34) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	9.60	0.20	µg/L	2018-08-25	
HF1 (8081757-35) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	7.48	0.20	µg/L	2018-08-25	
HF2 (8081757-36) Matrix: Water Sampled: 2018-08-14 08:15					
<i>Total Metals</i>					
Lead, total	32.7	0.20	µg/L	2018-08-25	
HF4 (8081757-38) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	7.86	0.20	µg/L	2018-08-25	
HF5 (8081757-39) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	8.18	0.20	µg/L	2018-08-25	
HF6 (8081757-40) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	5.13	0.20	µg/L	2018-08-25	
GOF1 (8081757-41) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	18.6	0.20	µg/L	2018-08-25	
OF1 (8081757-42) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					

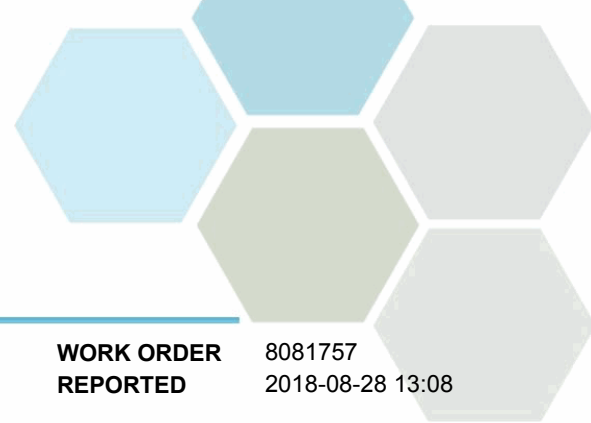


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Analyte	Result	RL	Units	Analyzed	Qualifier
OF1 (8081757-42) Matrix: Water Sampled: 2018-08-14 08:30, Continued					
<i>Total Metals, Continued</i>					
Lead, total	22.4	0.20	µg/L	2018-08-25	
BF23A (8081757-43) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	1.94	0.20	µg/L	2018-08-25	
BF24A (8081757-44) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	1.25	0.20	µg/L	2018-08-25	
BF1 (8081757-45) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	30.6	0.20	µg/L	2018-08-25	
BF2 (8081757-46) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	3.94	0.20	µg/L	2018-08-25	
BF3 (8081757-47) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	6.95	0.20	µg/L	2018-08-25	
BF4 (8081757-48) Matrix: Water Sampled: 2018-08-14 08:30					
<i>Total Metals</i>					
Lead, total	7.84	0.20	µg/L	2018-08-25	
BF5 (8081757-49) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	10.7	0.20	µg/L	2018-08-25	
BF6 (8081757-50) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					

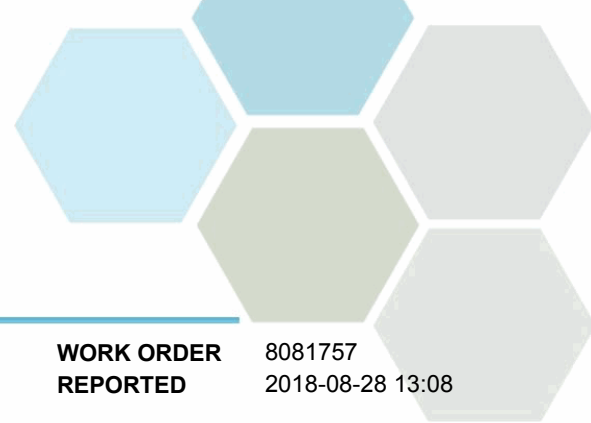


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Analyte	Result	RL	Units	Analyzed	Qualifier
BF6 (8081757-50) Matrix: Water Sampled: 2018-08-14 09:30, Continued					
<i>Total Metals, Continued</i>					
Lead, total	3.72	0.20	µg/L	2018-08-25	
BF7 (8081757-51) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	8.16	0.20	µg/L	2018-08-25	
BF8 (8081757-52) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	3.16	0.20	µg/L	2018-08-25	
BF9 (8081757-53) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	5.00	0.20	µg/L	2018-08-25	
BF10 (8081757-54) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	3.82	0.20	µg/L	2018-08-25	
BF11 (8081757-55) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	11.3	0.20	µg/L	2018-08-25	
BF12 (8081757-56) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	7.19	0.20	µg/L	2018-08-25	
BF13 (8081757-57) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	7.45	0.20	µg/L	2018-08-25	
BF14 (8081757-58) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					

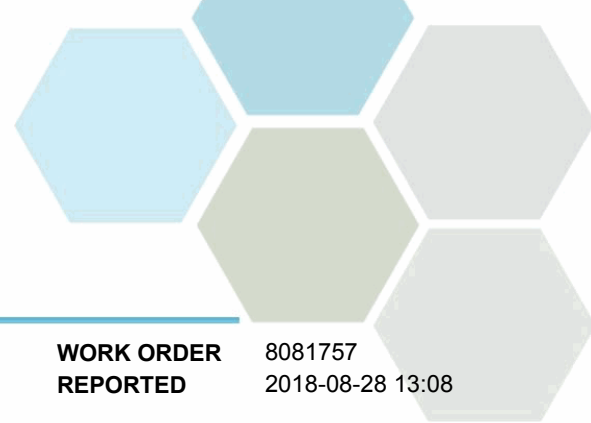


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Analyte	Result	RL	Units	Analyzed	Qualifier
BF14 (8081757-58) Matrix: Water Sampled: 2018-08-14 09:30, Continued					
<i>Total Metals, Continued</i>					
Lead, total	12.2	0.20	µg/L	2018-08-25	
BF15 (8081757-59) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	11.8	0.20	µg/L	2018-08-25	
BF16 (8081757-60) Matrix: Water Sampled: 2018-08-14 09:30					
<i>Total Metals</i>					
Lead, total	12.1	0.20	µg/L	2018-08-25	
BF17 (8081757-61) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	17.2	0.20	µg/L	2018-08-25	
BF18 (8081757-62) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	4.10	0.20	µg/L	2018-08-25	
BF19 (8081757-63) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	23.6	0.20	µg/L	2018-08-25	
BF20 (8081757-64) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	24.6	0.20	µg/L	2018-08-25	
BF21 (8081757-65) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	7.20	0.20	µg/L	2018-08-25	
BF22 (8081757-66) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					

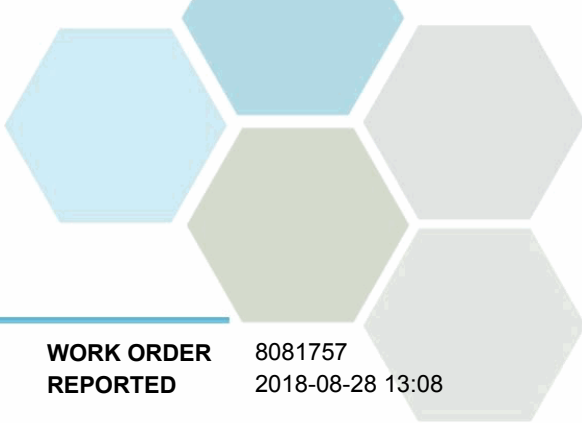


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Analyte	Result	RL	Units	Analyzed	Qualifier
BF22 (8081757-66) Matrix: Water Sampled: 2018-08-14 09:00, Continued					
<i>Total Metals, Continued</i>					
Lead, total	13.0	0.20	µg/L	2018-08-25	
BF23 (8081757-67) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	1.04	0.20	µg/L	2018-08-25	
BF24 (8081757-68) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	3.65	0.20	µg/L	2018-08-25	
BF25 (8081757-69) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	1.51	0.20	µg/L	2018-08-25	
BF26 (8081757-70) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	3.67	0.20	µg/L	2018-08-25	
BF27 (8081757-71) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	5.13	0.20	µg/L	2018-08-25	
BF28 (8081757-72) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	7.81	0.20	µg/L	2018-08-25	
BF29 (8081757-73) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	4.72	0.20	µg/L	2018-08-25	
BF30 (8081757-74) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					

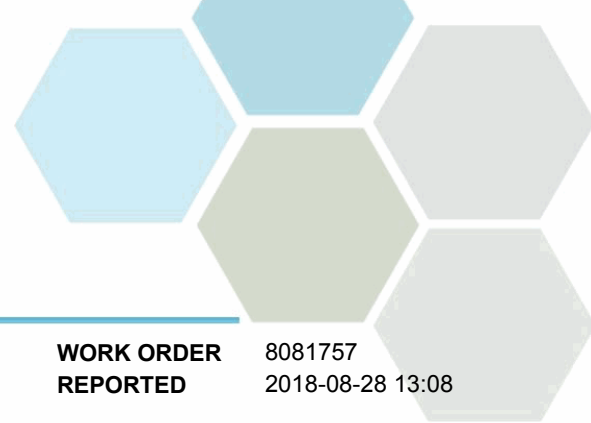


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Analyte	Result	RL	Units	Analyzed	Qualifier
BF30 (8081757-74) Matrix: Water Sampled: 2018-08-14 09:00, Continued					
<i>Total Metals, Continued</i>					
Lead, total	2.56	0.20	µg/L	2018-08-25	
BF31 (8081757-75) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	3.68	0.20	µg/L	2018-08-25	
BF32 (8081757-76) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	2.58	0.20	µg/L	2018-08-25	
BF33 (8081757-77) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	3.69	0.20	µg/L	2018-08-25	
BF34 (8081757-78) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	7.15	0.20	µg/L	2018-08-25	
BF35 (8081757-79) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	1.23	0.20	µg/L	2018-08-25	
BF36 (8081757-80) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	3.42	0.20	µg/L	2018-08-25	
BF37 (8081757-81) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					
Lead, total	0.94	0.20	µg/L	2018-08-25	
BF38 (8081757-82) Matrix: Water Sampled: 2018-08-14 09:00					
<i>Total Metals</i>					



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Analyte	Result	RL	Units	Analyzed	Qualifier
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BF38 (8081757-82) | Matrix: Water | Sampled: 2018-08-14 09:00, Continued

Total Metals, Continued

Lead, total	2.33	0.20	µg/L	2018-08-25	
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JHES (8081757-83) | Matrix: Water | Sampled: 2018-08-14 09:30

Anions

Chloride	8.74	0.10	mg/L	2018-08-21	
Fluoride	0.52	0.10	mg/L	2018-08-21	
Nitrate (as N)	0.072	0.010	mg/L	2018-08-21	HT1
Nitrite (as N)	< 0.010	0.010	mg/L	2018-08-21	HT1
Sulfate	41.9	1.0	mg/L	2018-08-21	

General Parameters

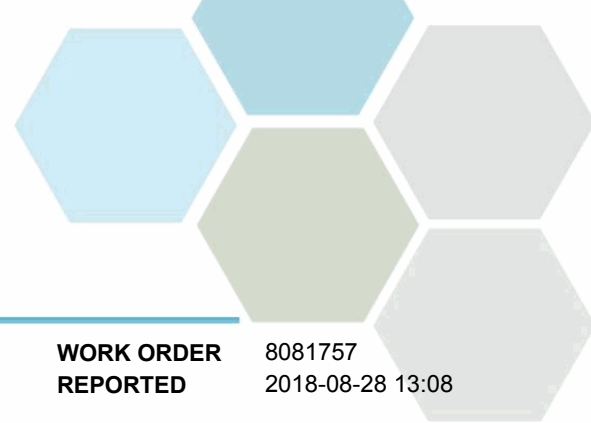
Alkalinity, Total (as CaCO ₃)	151	1.0	mg/L	2018-08-22	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0	mg/L	2018-08-22	
Alkalinity, Bicarbonate (as CaCO ₃)	151	1.0	mg/L	2018-08-22	
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0	mg/L	2018-08-22	
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0	mg/L	2018-08-22	
Colour, True	< 5.0	5.0	CU	2018-08-22	HT1
Conductivity (EC)	354	2.0	µS/cm	2018-08-22	
pH	7.91	0.10	pH units	2018-08-22	HT2
Turbidity	4.21	0.10	NTU	2018-08-21	HT1

Calculated Parameters

Hardness, Total (as CaCO ₃)	161	0.500	mg/L	N/A	
Solids, Total Dissolved	< 10	10	mg/L	2018-08-28	

Total Metals

Aluminum, total	94.0	5.0	µg/L	2018-08-22	
Antimony, total	< 0.20	0.20	µg/L	2018-08-22	
Arsenic, total	4.30	0.50	µg/L	2018-08-22	
Barium, total	65.7	5.0	µg/L	2018-08-22	
Boron, total	87.9	5.0	µg/L	2018-08-22	
Cadmium, total	0.023	0.010	µg/L	2018-08-22	
Calcium, total	27500	200	µg/L	2018-08-22	
Chromium, total	0.63	0.50	µg/L	2018-08-22	
Copper, total	363	0.40	µg/L	2018-08-22	
Iron, total	337	10	µg/L	2018-08-22	
Lead, total	87.8	0.20	µg/L	2018-08-22	
Magnesium, total	22400	10	µg/L	2018-08-22	
Manganese, total	222	0.20	µg/L	2018-08-22	
Mercury, total	< 0.000040	0.000040	mg/L	2018-08-22	CT5
Potassium, total	1890	100	µg/L	2018-08-22	
Selenium, total	< 0.50	0.50	µg/L	2018-08-22	



TEST RESULTS

REPORTED TO PROJECT Yukon Government - Department of Education
Department of Education 2018 Water Testing Program

WORK ORDER REPORTED 8081757
2018-08-28 13:08

Analyte	Result	RL	Units	Analyzed	Qualifier
JHES (8081757-83) Matrix: Water Sampled: 2018-08-14 09:30, Continued					
<i>Total Metals, Continued</i>					
Sodium, total	10100	100	µg/L	2018-08-22	
Uranium, total	3.31	0.020	µg/L	2018-08-22	
Zinc, total	31.6	4.0	µg/L	2018-08-22	

CF3 (8081757-84) | Matrix: Water | Sampled: 2018-08-14 09:00

<i>Total Metals</i>					
Lead, total	4.10	0.20	µg/L	2018-08-25	

KF1 (8081757-85) | Matrix: Water | Sampled: 2018-08-14 09:00

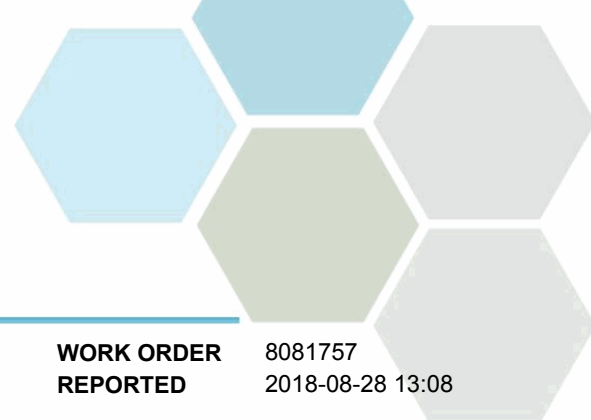
<i>Total Metals</i>					
Lead, total	11.7	0.20	µg/L	2018-08-25	

KF2 (8081757-86) | Matrix: Water | Sampled: 2018-08-14 09:00

<i>Total Metals</i>					
Lead, total	2.04	0.20	µg/L	2018-08-25	

Sample Qualifiers:

- CT5 This sample has been incorrectly preserved for Mercury analysis
- 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.



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT Yukon Government - Department of Education
Department of Education 2018 Water Testing Program

WORK ORDER REPORTED 8081757
2018-08-28 13:08

Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2011)	Titration with H ₂ SO ₄	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Colour, True in Water	SM 2120 C (2011)	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	SM 2510 B (2011)	Conductivity Meter	Kelowna
Hardness in Water	SM 2340 B* (2011)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	N/A
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna
Solids, Total Dissolved in Water	SM 1030 E (2011)	Calculation: $100 \times \frac{[\text{Cations}] - [\text{Anions}]}{[\text{Cations}] + [\text{Anions}]}$	N/A
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO ₃ +HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Turbidity in Water	SM 2130 B (2011)	Nephelometry	Kelowna

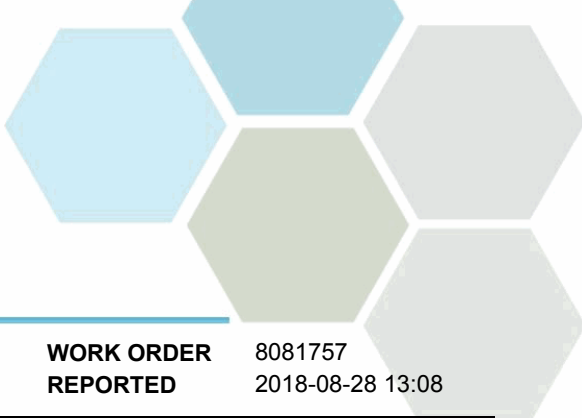
Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

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
CU	Colour Units (referenced against a platinum cobalt standard)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
pH units	pH < 7 = acidic, pH > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the 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. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



APPENDIX 2: QUALITY CONTROL RESULTS

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Department of Education 2018 Water Testing Program

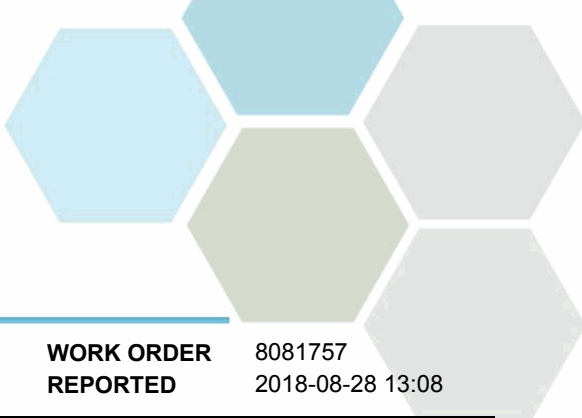
WORK ORDER REPORTED 8081757
2018-08-28 13:08

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup):** An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS):** A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS):** A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM):** A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B8H1614									
Blank (B8H1614-BLK1)			Prepared: 2018-08-21, Analyzed: 2018-08-21						
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Sulfate	< 1.0	1.0 mg/L							
Blank (B8H1614-BLK2)			Prepared: 2018-08-22, Analyzed: 2018-08-22						
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Sulfate	< 1.0	1.0 mg/L							
LCS (B8H1614-BS1)			Prepared: 2018-08-21, Analyzed: 2018-08-21						
Chloride	14.8	0.10 mg/L	16.0		93	90-110			
Fluoride	3.83	0.10 mg/L	4.00		96	88-108			
Nitrate (as N)	4.01	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.01	0.010 mg/L	2.00		100	85-114			
Sulfate	15.3	1.0 mg/L	16.0		96	91-109			
LCS (B8H1614-BS2)			Prepared: 2018-08-22, Analyzed: 2018-08-22						
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Fluoride	3.90	0.10 mg/L	4.00		97	88-108			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.02	0.010 mg/L	2.00		101	85-114			
Sulfate	15.8	1.0 mg/L	16.0		99	91-109			
General Parameters, Batch B8H1613									
Blank (B8H1613-BLK1)			Prepared: 2018-08-21, Analyzed: 2018-08-21						
Turbidity	< 0.10	0.10 NTU							
LCS (B8H1613-BS1)			Prepared: 2018-08-21, Analyzed: 2018-08-21						
Turbidity	39.0	0.10 NTU	40.0		98	90-110			

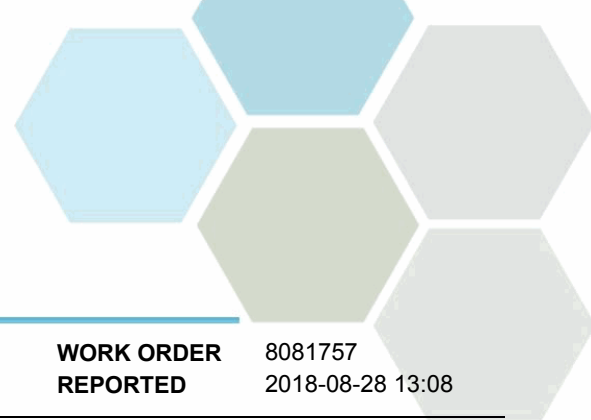


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Yukon Government - Department of Education
Department of Education 2018 Water Testing Program

WORK ORDER REPORTED 8081757
2018-08-28 13:08

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B8H1738									
Blank (B8H1738-BLK1)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
Blank (B8H1738-BLK2)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
Alkalinity, Total (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO ₃)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO ₃)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B8H1738-BS1)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
Alkalinity, Total (as CaCO ₃)	106	1.0 mg/L	100		106	92-106			
LCS (B8H1738-BS2)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
Alkalinity, Total (as CaCO ₃)	106	1.0 mg/L	100		106	92-106			
LCS (B8H1738-BS3)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
Conductivity (EC)	1400	2.0 µS/cm	1410		99	95-104			
LCS (B8H1738-BS4)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
Conductivity (EC)	1410	2.0 µS/cm	1410		100	95-104			
Reference (B8H1738-SRM1)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
pH	6.99	0.10 pH units	7.01		100	98-102			HT2
Reference (B8H1738-SRM2)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
pH	6.96	0.10 pH units	7.01		99	98-102			HT2
General Parameters, Batch B8H1758									
Blank (B8H1758-BLK1)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
Colour, True	< 5.0	5.0 CU							
LCS (B8H1758-BS1)					Prepared: 2018-08-22, Analyzed: 2018-08-22				
Colour, True	9.5	5.0 CU	10.0		95	85-115			
Total Metals, Batch B8H1518									
Blank (B8H1518-BLK1)					Prepared: 2018-08-20, Analyzed: 2018-08-21				
Aluminum, total	< 5.0	5.0 µg/L							
Antimony, total	< 0.20	0.20 µg/L							
Arsenic, total	< 0.50	0.50 µg/L							
Barium, total	< 5.0	5.0 µg/L							
Boron, total	< 5.0	5.0 µg/L							
Cadmium, total	< 0.010	0.010 µg/L							
Calcium, total	< 200	200 µg/L							
Chromium, total	< 0.50	0.50 µg/L							
Copper, total	< 0.40	0.40 µg/L							
Iron, total	< 10	10 µg/L							
Lead, total	< 0.20	0.20 µg/L							
Magnesium, total	< 10	10 µg/L							

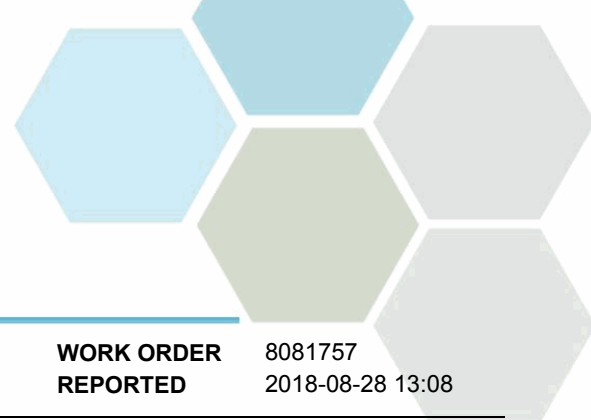


APPENDIX 2: QUALITY CONTROL RESULTS

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Department of Education 2018 Water Testing Program

WORK ORDER REPORTED 8081757
2018-08-28 13:08

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B8H1518, Continued									
Blank (B8H1518-BLK1), Continued					Prepared: 2018-08-20, Analyzed: 2018-08-21				
Manganese, total	< 0.20	0.20 µg/L							
Mercury, total	< 0.000040	0.000040 mg/L							
Potassium, total	< 100	100 µg/L							
Selenium, total	< 0.50	0.50 µg/L							
Sodium, total	< 100	100 µg/L							
Uranium, total	< 0.020	0.020 µg/L							
Zinc, total	< 4.0	4.0 µg/L							
LCS (B8H1518-BS1)					Prepared: 2018-08-20, Analyzed: 2018-08-21				
Aluminum, total	21.9	5.0 µg/L	20.0		110	80-120			
Antimony, total	20.8	0.20 µg/L	20.0		104	80-120			
Arsenic, total	20.0	0.50 µg/L	20.0		100	80-120			
Barium, total	20.1	5.0 µg/L	20.0		101	80-120			
Boron, total	18.0	5.0 µg/L	20.0		90	80-120			
Cadmium, total	20.5	0.010 µg/L	20.0		103	80-120			
Calcium, total	1840	200 µg/L	2000		92	80-120			
Chromium, total	20.4	0.50 µg/L	20.0		102	80-120			
Copper, total	21.2	0.40 µg/L	20.0		106	80-120			
Iron, total	1920	10 µg/L	2000		96	80-120			
Lead, total	20.9	0.20 µg/L	20.0		104	80-120			
Magnesium, total	1980	10 µg/L	2000		99	80-120			
Manganese, total	19.9	0.20 µg/L	20.0		100	80-120			
Mercury, total	0.000943	0.000040 mg/L	0.00100		94	80-120			
Potassium, total	1850	100 µg/L	2000		92	80-120			
Selenium, total	18.9	0.50 µg/L	20.0		94	80-120			
Sodium, total	1900	100 µg/L	2000		95	80-120			
Uranium, total	21.0	0.020 µg/L	20.0		105	80-120			
Zinc, total	22.3	4.0 µg/L	20.0		112	80-120			
Reference (B8H1518-SRM1)					Prepared: 2018-08-20, Analyzed: 2018-08-22				
Aluminum, total	332	5.0 µg/L	303		110	82-114			
Antimony, total	56.3	0.20 µg/L	51.1		110	88-115			
Arsenic, total	131	0.50 µg/L	118		111	88-111			
Barium, total	861	5.0 µg/L	823		105	83-110			
Boron, total	3380	5.0 µg/L	3450		98	80-118			
Cadmium, total	54.3	0.010 µg/L	49.5		110	90-110			
Calcium, total	10800	200 µg/L	11600		93	85-113			
Chromium, total	269	0.50 µg/L	250		107	88-111			
Copper, total	541	0.40 µg/L	486		111	90-117			
Iron, total	508	10 µg/L	488		104	90-116			
Lead, total	218	0.20 µg/L	204		107	90-110			
Magnesium, total	3980	10 µg/L	3790		105	88-116			
Manganese, total	116	0.20 µg/L	109		106	88-108			
Mercury, total	0.00457	0.000040 mg/L	0.00489		93	80-120			
Potassium, total	7190	100 µg/L	7210		100	87-116			
Selenium, total	133	0.50 µg/L	121		110	90-122			
Sodium, total	7570	100 µg/L	7540		100	86-118			
Uranium, total	33.4	0.020 µg/L	30.6		109	88-112			
Zinc, total	2750	4.0 µg/L	2490		110	90-113			
Total Metals, Batch B8H1684									
Blank (B8H1684-BLK1)					Prepared: 2018-08-21, Analyzed: 2018-08-25				
Lead, total	< 0.20	0.20 µg/L							

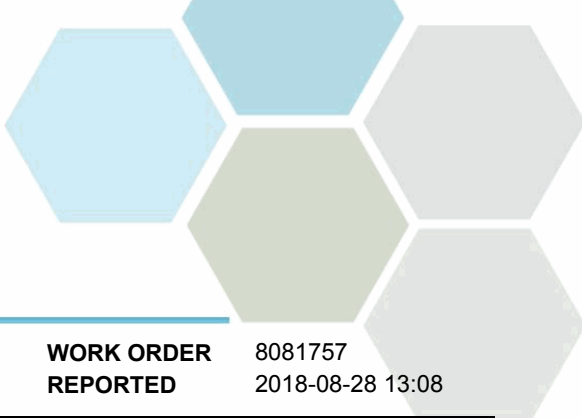


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Yukon Government - Department of Education
Department of Education 2018 Water Testing Program

WORK ORDER REPORTED 8081757
2018-08-28 13:08

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B8H1684, Continued									
Blank (B8H1684-BLK2)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	< 0.20	0.20 µg/L							
LCS (B8H1684-BS1)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	20.6	0.20 µg/L	20.0		103	80-120			
LCS (B8H1684-BS2)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	21.3	0.20 µg/L	20.0		106	80-120			
Duplicate (B8H1684-DUP2)			Source: 8081757-35		Prepared: 2018-08-21, Analyzed: 2018-08-25				
Lead, total	7.62	0.20 µg/L		7.48			2	20	
Reference (B8H1684-SRM1)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	214	0.20 µg/L	204		105	90-110			
Reference (B8H1684-SRM2)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	211	0.20 µg/L	204		103	90-110			
Total Metals, Batch B8H1685									
Blank (B8H1685-BLK1)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	< 0.20	0.20 µg/L							
Blank (B8H1685-BLK2)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	< 0.20	0.20 µg/L							
LCS (B8H1685-BS1)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	20.5	0.20 µg/L	20.0		102	80-120			
LCS (B8H1685-BS2)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	20.6	0.20 µg/L	20.0		103	80-120			
Duplicate (B8H1685-DUP1)			Source: 8081757-36		Prepared: 2018-08-21, Analyzed: 2018-08-25				
Lead, total	32.6	0.20 µg/L		32.7			< 1	20	
Duplicate (B8H1685-DUP2)			Source: 8081757-76		Prepared: 2018-08-21, Analyzed: 2018-08-25				
Lead, total	2.66	0.20 µg/L		2.58			3	20	
Reference (B8H1685-SRM1)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	208	0.20 µg/L	204		102	90-110			
Reference (B8H1685-SRM2)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	213	0.20 µg/L	204		104	90-110			
Total Metals, Batch B8H1686									
Blank (B8H1686-BLK1)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	< 0.20	0.20 µg/L							
LCS (B8H1686-BS1)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	20.8	0.20 µg/L	20.0		104	80-120			
Duplicate (B8H1686-DUP1)			Source: 8081757-77		Prepared: 2018-08-21, Analyzed: 2018-08-25				
Lead, total	3.70	0.20 µg/L		3.69			< 1	20	
Reference (B8H1686-SRM1)			Prepared: 2018-08-21, Analyzed: 2018-08-25						
Lead, total	208	0.20 µg/L	204		102	90-110			



APPENDIX 2: QUALITY CONTROL RESULTS

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Department of Education 2018 Water Testing Program

WORK ORDER REPORTED 8081757
2018-08-28 13:08

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B8H2020									
Blank (B8H2020-BLK1)			Prepared: 2018-08-24, Analyzed: 2018-08-25						
Lead, total	< 0.20	0.20 µg/L							
Blank (B8H2020-BLK2)			Prepared: 2018-08-24, Analyzed: 2018-08-25						
Lead, total	< 0.20	0.20 µg/L							
LCS (B8H2020-BS1)			Prepared: 2018-08-24, Analyzed: 2018-08-25						
Lead, total	21.1	0.20 µg/L	20.0		106	80-120			
LCS (B8H2020-BS2)			Prepared: 2018-08-24, Analyzed: 2018-08-25						
Lead, total	21.1	0.20 µg/L	20.0		106	80-120			
Reference (B8H2020-SRM1)			Prepared: 2018-08-24, Analyzed: 2018-08-25						
Lead, total	210	0.20 µg/L	204		103	90-110			
Reference (B8H2020-SRM2)			Prepared: 2018-08-24, Analyzed: 2018-08-25						
Lead, total	210	0.20 µg/L	204		103	90-110			

QC Qualifiers:

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