



<b>FIELD REVIEW REPORT</b>		DATE: <b>December 30, 2019</b>	ISLANDER PROJECT No.: <b>2087</b>
REPORT No: <b>59</b>	STAGE OF CONSTRUCTION: <b>Landfill Closure</b>	WEATHER: <b>Cloud 2°C</b>	PAGE: 1 OF 4
PROJECT: <b>Cobble Hill Landfill Closure Construction</b>			
TO: <b>CHH</b>	ATTENTION: <b>Marty Block</b>		
CC:			

**Semi Monthly Reporting Requirements SPO MO1701**

Per **SPO MO1701 Section 4:**

*Commencing in the month that closure activities commence pursuant to the approved Updated Final Closure Plan,*

*the Named Parties must submit semi-monthly status reports, certified by a Qualified Professional. The reports must include the status of closure activities, inspection results, quality control and testing results, photographs which support/document the quality control and testing results, inspection reports and other supporting documents as needed to fully document all stages and components of the closure activities.*

- Per the Site’s QMP, activities that occurred during this reporting cycle are termed “Pre-construction Activities”. Specifically, soil import commenced on December 22, 2019.
- A Stage 1 PSI was completed by IEL for the origin site of soil: 3100 Constellation Avenue, Langford BC.
- PEA
  - Liner appears to be in good condition, with no noticeable changes since the date of our last inspection
- Soil Management Area (SMA)
  - All works are in good condition and no noticeable changes since the date of our last inspection
- Contact Water Containment Pond
  - All works are in good condition and no noticeable changes since the date of our last inspection
- cut-off ditch upland of PEA
  - All works are in good condition, ditch still performing well
- Pictures documenting current Site status are shown below

*Status reports must be submitted by the 15th and 30th of each month (or the next business day thereafter if the 15th or 30th of the month is not a business day) until closure activities have been completed. Submissions must be made electronically to the following email inbox: [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca).*

- Submitted December 30, 2019



**Per Condition 10 of June 26, 2019 Letter Re: Second Amended Spill Prevention Order MO1701, dated June 29, 2017 – Final Closure Plan**

*The semi-monthly status reports submitted pursuant to section 4 of the SPO must also include:*

- *Identification of any deviations from the quality management plan and the construction activities work plan and implementation schedule referenced in conditions 3 and 4 of this approval;*
- There have been no deviations this reporting period.
- *The results of inspections, repairs, quality controls and testing, in accordance with the quality management plan referenced in condition 5 of this approval;*
- A Stage 1 PSI was conducted by IEL to determine soil origin site land use.
- *The planned activities (and associated timing) for the next reporting cycle; and*
- Soil importation is to continue into the subsequent reporting cycle.
- *The environmental monitoring program laboratory reports and tabulated results (Quarterly Only-Submitted quarterly, reviewed annually by others)*
- Sampling per the Approved Closure Plan EMP was conducted on Dec 23, 2019 for Q4 2019. Groundwater levels were also captured. Laboratory reports and tabulated results to be submitted following Q4 2019 environmental sampling by named parties. Laboratory results and tabulated data for Q3 2019 is attached.
- *Copies of all soil relocation documentation as required in condition 7 of this approval.*
- Origin site land use was assessed via Technical Guidance 10 on Contaminated Sites. Soil quality was confirmed per a letter of assurance provided by CSAP to BC ENV.

Total Leachate Collected: 0.09 m<sup>3</sup>

Total Leachate Stored: 14.51m<sup>3</sup>

Total Leachate Transferred: 0m<sup>3</sup>

ISLANDER ENGINEERING LTD.

Mike Achtem, P.Eng



<b>FIELD REVIEW REPORT</b>				DATE: <b>December 30, 2019</b>	ISLANDER PROJECT No.: <b>2087</b>
REPORT No: <b>59</b>	STAGE OF CONSTRUCTION: <b>Landfill Closure</b>	WEATHER: <b>Cloud 2°C</b>	PAGE: <b>3 of 4</b>		



**SMA - looking south**



**Soil Stockpiling – Eastern extent of bedrock knob east of the PEA**



**Site – Looking southwest**



**Site – Looking east at stockpile location**



**FIELD REVIEW REPORT**

DATE: **December 30, 2019**

ISLANDER PROJECT No.: **2087**

REPORT No: **59**

STAGE OF CONSTRUCTION: **Landfill Closure**

WEATHER: **Cloud 2°C**

PAGE: **4 of 4**



**PEA – liner near NE corner**



**PEA– NW corner**



**PEA north face**

Table 1: Analytical Results for Nutrients			SHA-SW-1
Laboratory ID			9100387-07
Sample ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	SW1
Date Sampled/Time			2019-09-30
<b>Physical Tests</b>			
Colour, True (Colour Units)	15 TCU	15 <sup>(1)</sup> units absolute, or 5 units above background (30-day average)	<5.0
Total Suspended Solids (mg/L)	-	25 mg/L above background (24-hr during clear flow)	<2.0
pH	7-10.5	6.5-9	7.79
Conductivity (uS/cm)	-	-	572
Hardness (as CaCO <sub>3</sub> )	-	-	262
Turbidity (NTU)	Δ1 NTU	8 NTU above background (24-hr during clear flow)	<0.10
<b>Anions and Nutrients mg/L</b>			
Alkalinity Total (as CaCO <sub>3</sub> )	<10 high sensitivity to acid inputs		119
Acid Sensitivity	10-20 moderate sensitivity to acid inputs		Low
	>20 low sensitivity to acid inputs		
Chloride (Cl)	250 mg/L	600 mg/L (instant max), 150 mg/L (30-day average)	20.3
Fluoride (F)	1.5 mg/L (instant max) 1.0 mg/L (30-day average)	0.4 (Hardness <10mg/L)	<0.10
		Hardness-Dependent AW (Hardness is >10mg/L) <sup>(3)</sup>	0.31
Nitrate (as N)	45 mg/L	32.8 mg/L (instant maximum) 3.0 mg/L (30-day average)	0.287
Nitrite (as N) <sup>(2)</sup>	3 mg/L	Cl > 10 mg/L 0.6 mg/L (MAX), 0.2 mg/L (30-day average)	<0.0050
Sulfate (SO <sub>4</sub> ) H 0-30 mg/L	500 mg/L	128 mg/L 30-day average)	
H 31 - 75 mg/L		218 mg/L (30-day average)	
H 76 - 180 mg/L		309 mg/L (30-day average)	
H 181 - 250 mg/L		429 mg/L (30-day average)	
H > 250 mg/L		TBD	155

Notes: Refer to Table Endnotes (attached)

Table 2: Analytical Results for Total Metals			SHA-SW-1
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	9100387-07
Sample ID			SW1
Date Sampled/Time			2019-09-30
<b>Physical Tests</b>			
Hardness (as CaCO3) (mg/L)	-	-	262
pH	7-10.5	6.5-9	7.79
<b>Total Metals (mg/L)</b>			
Aluminum (Al)-Total	0.2	-	0.0145
Antimony (Sb)-Total	-	-	<0.00020
Arsenic (As)-Total	0.01	0.005	<0.00050
Barium (Ba)-Total	-	-	0.0181
Beryllium (Be)-Total	-	-	<0.00010
Bismuth, total	-	-	<0.00010
Boron (B)-Total	5	1.2	0.0172
Cadmium (Cd)-Total	-	-	0.00014
Calcium (Ca)-Total	-	-	88.9
Chromium (Cr)-Total	-	-	0.00122
Chromium (Cr(III))	-	-	-
Chromium (Cr(VI))	-	-	-
Cobalt (Co)-Total	-	0.110 (Short Term), 0.004 (Long Term Average)	<0.00010
Copper (Cu)-Total	0.5	Hardness-Dependent <sup>(1)</sup>	0.0016
		Hardness-Dependent BCAWQG to protect AW <sup>(2)</sup> (instant max)	0.0266
		Hardness-Dependent BCAWQG to protect AW <sup>(2)</sup> (30-d average)	0.0105
Iron (Fe)-Total	-	1	0.019
		Hardness-Dependent <sup>(1)</sup>	<0.00020
		Hardness-Dependent BCAWQG to protect AW <sup>(2)</sup> (instant max)	0.2782
Lead (Pb)-Total	0.01	Hardness-Dependent BCAWQG to protect AW <sup>(2)</sup> (30-d average)	0.0142
		-	-
Lithium (Li)-Total	-	-	0.00029
Magnesium (Mg)-Total	-	-	12
Manganese (Mn)-Total	-	Hardness-Dependent <sup>(1)</sup>	0.0143
		Hardness-Dependent BCAWQG to protect AW <sup>(2)</sup> (instant max)	3.4
		Hardness-Dependent BCAWQG to protect AW <sup>(2)</sup> (30-d average)	1.8
Mercury (Hg)-Total	0.001	0.00002	<0.000010
Molybdenum (Mo)-Total	0.25	S1 (instant max) 2 (30-d average)	0.00094
Nickel (Ni)-Total	-	0.025 (Hardness-Dependent <sup>(1)</sup> BCAWQG to protect AW (H<60mg/L)	0.00075
		Calculated Hardness-Dependent <sup>(1)</sup> BCAWQG to protect AW (60<H<180 mg/L CaCO3)	0.199
Phosphorus(P)-Total	-	-	<0.050
Potassium (K)-Total	-	-	0.93
Selenium (Se)-Total	0.01	0.002	<0.00050
Silicon (Si)-Total	-	-	5.7
Silver (Ag)-Total	-	HARDNESS <100mg/L 0.0001 (SHORT TERM), 0.00005 (LONG TERM), HARDNESS >100mg/L 0.003 (SHORT TERM), 0.0015 (LONG TERM)	<0.000050
Sodium (Na)-Total	-	-	11.6
Strontium (Sr)-Total	-	-	0.244
Sulfur (S)-Total	-	-	54.9
Tellurium (Te)-Total	-	-	<0.00050
Thallium (Tl)-Total	-	-	<0.000020
Thorium (Th)-Total	-	-	<0.00010
Tin (Sn)-Total	-	-	<0.00020
Titanium (Ti)-Total	-	-	<0.0050
Uranium (U)-Total	-	-	0.0015
Vanadium (V)-Total	-	-	0.0013
Zinc (Zn)-Total	5.0	Hardness >90 mg/L	<0.0040
		Hardness-Dependent BCAWQG to protect AW <sup>(2)</sup> (instant max)	0.162
		Hardness-Dependent BCAWQG to protect AW <sup>(2)</sup> (30-d average)	0.137
Zirconium (Zr)-Total	-	-	<0.00010

Table 3: Analytical Results for Dissolved Metals			SHA-SW-1
Laboratory ID			9100387-07
Sample ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	SW1
Date Sampled/Time			2019-09-30
<b>Physical Tests</b>			
Hardness (as CaCO <sub>3</sub> ) (mg/L)	-	-	262
pH	7-10.5	6.5-9	7.79
<b>Dissolved Metals (mg/L)</b>			
Aluminum (Al)-Dissolved	-	0.05 (30-day average where median pH > 6.5) 0.1 (maximum where instantaneous pH > 6.5) *** indicates pH-dependent maximum where instant pH ≤ 6.5	<0.0050
		pH/Hardness Dependent BCAWQG to protect AW <sup>(4)</sup> (instant max)	0.716
		pH/Hardness Dependent BCAWQG to protect AW <sup>(4)</sup> (30-d Mean)	1.081
Antimony (Sb)-Dissolved	-	-	0.0002
Arsenic (As)-Dissolved	-	-	<0.00050
Barium (Ba)-Dissolved	-	-	0.017
Beryllium (Be)-Dissolved	-	-	<0.00010
Bismuth (Bi)-Dissolved	-	-	<0.00010
Boron (B)-Dissolved	-	-	0.0164
Cadmium (Cd)-Dissolved	-	<b>Hardness-Dependent<sup>(3)</sup></b>	<0.000010
		Calculated Hardness-Dependent <sup>(a)</sup> BCAWQG to protect AW (short-term max) $e[1.03 * \ln(\text{Hss}) - 5.274]$ ug/L H<455mg/L	0.00159
		Calculated Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (long-term max) $e[0.736 * \ln(\text{Hss}) - 4.943]$ ug/L H<285mg/L	0.00043
Calcium (Ca)-Dissolved	-	up to 4, highly sensitive to acid inputs 4 to 8, moderately sensitive over 8 low sensitivity	85.7
			Low
Chromium (Cr)-Dissolved	-	-	<0.00050
Cobalt (Co)-Dissolved	-	-	<0.00010
Copper (Cu)-Dissolved	-	-	0.00121
Iron (Fe)-Dissolved	-	0.35	<0.010
Lead (Pb)-Dissolved	-	-	<0.00020
Lithium, dissolved	-	-	0.00019
Magnesium (Mg)-Dissolved	-	-	11.5
Manganese (Mn)-Dissolved	-	-	0.00269
Mercury (Hg)-Dissolved	-	-	<0.000010
Molybdenum (Mo)-Dissolved	-	-	0.00091
Nickel (Ni)-Dissolved	-	-	0.00049
Phosphorus (P)-Dissolved	-	-	<0.050
Potassium (K)-Dissolved	-	-	0.87
Selenium (Se)-Dissolved	-	-	<0.00050
Silicon (Si)-Dissolved	-	-	5.6
Silver (Ag)-Dissolved	-	-	<0.000050
Sodium (Na)-Dissolved	-	-	11.1
Strontium (Sr)-dissolved	-	-	0.239
Sulfur (S)-Dissolved	-	-	53
Tellurium (Te)-Dissolved	-	-	<0.00050
Thallium (Tl)-Dissolved	-	-	<0.000020
Thorium (Th)-Dissolved	-	-	<0.00010
Tin (Sn)-Dissolved	-	-	0.00054
Titanium (Ti)-Dissolved	-	-	<0.0050
Uranium (U)-Dissolved	-	-	0.00142
Vanadium (V)-Dissolved	-	-	<0.0010
Zinc (Zn)-Dissolved	-	-	<0.0040
Zirconium (Zr)-Dissolved	-	-	<0.00010

Notes: Refer to Table Endnotes (attached)

Table 4: Analytical Results for Hydrocarbons and PAHs			SHA-SW-1
Laboratory ID	BC DRINKING WATER QUALITY GUIDELINES	BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES	9100387-07
Sample ID			SW1
Date Sampled/ Time			2019-09-30
<b>Hydrocarbons ug/L</b>			
LEPH	-	-	<250
HEPH	-	-	<250
<b>Polycyclic Aromatic</b>			
Acenaphthene	-	<b>6 (LONG TERM)</b>	<0.050
Acenaphthylene	-	-	<0.200
Acridine	-	<b>3 (LONG TERM), 0.05 (PHOTOTOXIC)</b>	<0.050
Anthracene	-	<b>4 (LONG TERM), 0.1 (PHOTOTOXIC)</b>	<0.010
Benz(a)anthracene	<b>0.01</b>	<b>0.1 (LONG TERM), 0.1 (PHOTOTOXIC)</b>	<0.010
Benzo(a)pyrene	-	<b>0.01 (LONG TERM)</b>	<0.010
Benzo(b)fluoranthene	-	-	-
Benzo(b+j)fluoranthene	-	-	<0.050
Benzo(g,h,i)perylene	-	-	<0.050
Benzo(k)fluoranthene	-	-	<0.050
2-Chloronaphthalene			-
Chrysene	-	-	<0.050
Dibenz(a,h)anthracene	-	-	<0.010
Fluoranthene	-	<b>4 (LONG TERM), 0.2 (PHOTOTOXIC)</b>	<0.030
Fluorene	-	<b>12 (LONG TERM)</b>	<0.050
Indeno(1,2,3-c,d)pyrene	-	-	<0.050
1-Methylnaphthalene			<0.100
2-Methylnaphthalene			<0.100
Naphthalene	-	<b>1 (LONG TERM)</b>	<0.200
Phenanthrene	-	<b>0.3 (LONG TERM)</b>	<0.100
Pyrene	-	<b>0.02 (PHOTOTOXIC)</b>	<0.040
Quinoline	-	-	<0.050

Notes: Refer to Table Endnotes (attached)



## Analytical Table Footnotes: Leachate and Surface Water

All concentrations in mg/L, except pH or as indicated.

"<" less than the laboratory detection limit indicated.

"-" means not analyzed or no standard or guideline applies.

\* RPDs are not normally calculated where one or more concentrations are less than five times RDL.

(1) Guideline of 15 mg/L Pt for Drinking Water. Once background levels are established, colour should also not exceed 5 mg/L above background, to protect for Aquatic Life. This is considered a clearwater system (background less than 20 mg/L Pt.)

(2) Nitrite BCAWWQG Guideline is Chloride dependent

(3) Standard is calculated based on the hardness dependent BCAWWQG formula, and has been calculated and shown for each individual result

(4) pH-dependent maximum where instant pH < 6.5

**BOLD, UNDERLINE**

Laboratory Detection Limit exceeds one or more applicable Standard

**BOLD, BLUE SHADING**

Concentration greater than BCAWWQG Guideline

**BOLD, BEIGE SHADING**

Concentration greater than BCAWWQG Chronic Guideline

**BOLD, GREEN SHADING**

Concentration greater than BC Ministry of Environment Drinking Water Sources

**Table 1: Analytical Results for Nutrients**

Sample Location	CSR Standards <sup>(1)</sup>		SB2
	As-built Well Depths		
Sample ID			9100387-05
			SB2
Date Sampled	Aquatic Life	Drinking Water	2019-09-30
<b>Physical Tests</b>			
Colour, True (TCU)	-	-	<5.0
Conductivity (uS/cm)	-	-	1100
Hardness (as CaCO3) mg/L	-	-	385
pH (pH Units)	-	-	7.49
Total Suspended Solids mg/L			46.8
Turbidity (NTU)	-	-	4.52
<b>Anions and Nutrients mg/L</b>			
Alkalinity, Total (as CaCO3)	-	-	260
Chloride (Cl)	1500	250	106
Fluoride (F)	2 (H < 50)	1.5	
	3 (H ≥ 50)		<0.10
Nitrate (as N)	400	10	0.53
Nitrite (as N) <sup>(2)</sup> Cl <2 mg/L	0.2	3.2	
Cl 2 - <4 mg/L	0.4		
Cl 4 - <6 mg/L	0.6		
Cl 6 - <8 mg/L	0.8		
Cl 8 - <10 mg/L	1		
Cl ≥ 10 mg/L	2		<0.0050
Sulfate (SO4)	1000	500	157

Notes: Refer to Table Endnotes (attached)

Table 2: Analytical Results for Total Metals

Sample Location	CSR Standards <sup>(1)</sup>		SB2
As-built Well Depths			3.28m
Sample ID			9100387-05
			SB2
Date Sampled	Aquatic Life	Drinking Water	2019-09-30
<b>Physical Tests mg/L</b>			
Hardness (as CaCO3)	-	-	385
<b>Total Metals mg/L</b>			
Aluminum (Al)-Total	-	-	1.58
Antimony (Sb)-Total	-	-	<0.00020
Arsenic (As)-Total	-	-	<0.00050
Barium (Ba)-Total	-	-	0.0284
Beryllium (Be)-Total	-	-	<0.00010
Bismuth (Bi)- Total	-	-	<0.00010
Boron (B)-Total	-	-	0.042
Cadmium (Cd)-Total	-	-	<0.000010
Calcium (Ca)-Total	-	-	129
Chromium (Cr)-Total	-	-	0.00281
Cobalt (Co)-Total	-	-	0.00135
Copper (Cu)-Total	-	-	0.00624
Iron (Fe)-Total	-	-	1.85
Lead (Pb)-Total	-	-	0.00052
Lithium (Li)-Total	-	-	0.00079
Magnesium (Mg)-Total	-	-	22.5
Manganese (Mn)-Total	-	-	0.0735
Mercury (Hg)-Total	-	-	<0.000010
Molybdenum (Mo)-Total	-	-	0.00093
Nickel (Ni)-Total	-	-	0.0018
Phosphorus(P)-Total	-	-	0.081
Potassium (K)-Total	-	-	2.54
Selenium (Se)-Total	-	-	<0.00050
Silicon (Si)-Total	-	-	8.9
Silver (Ag)-Total	-	-	<0.000050
Sodium (Na)-Total	-	-	81.5
Strontium (Sr)-Total	-	-	0.428
Sulfur (S)-Total	-	-	60.3
Tellurium (Te)-Total	-	-	<0.00050
Thallium (Tl)-Total	-	-	<0.000020
Thorium (Th)-Total	-	-	<0.00010
Tin (Sn)-Total	-	-	<0.00020
Titanium (Ti)-Total	-	-	0.0945
Uranium (U)-Total	-	-	0.00277
Vanadium (V)-Total	-	-	0.005
Zinc (Zn)-Total	-	-	0.0075
Zirconium (Zr)-Total	-	-	0.00016

Notes: Refer to Table Endnotes (attached)

Table 3: Analytical Results for Dissolved Metals

Sample Location	CSR Standards <sup>(1)</sup>		SB2
As-built Well Depths			3.28m
Sample ID			9100387-05
			SB2
Date Sampled	Aquatic Life	Drinking Water	2019-09-30
Physical Tests mg/L			
Hardness (as CaCO <sub>3</sub> )	-	-	385
Dissolved Metals mg/L			
Aluminum (Al)-Dissolved	-	9.5	0.0057
Antimony (Sb)-Dissolved	0.2	0.006	<0.00020
Arsenic (As)-Dissolved	0.05	0.01	<0.00050
Barium (Ba)-Dissolved	10	1	0.0209
Beryllium (Be)-Dissolved	0.053	-	<0.00010
Bismuth (Bi)-Dissolved	-	-	<0.00010
Boron (B)-Dissolved	50	5	0.0383
Cadmium (Cd)-Dissolved	0.0001 (H<30)	0.005	
	0.0003 (H=30 ~<90)		
	0.0005 (H=90 ~<150)		
	0.0006 (H=150 ~<210)		0.00013
Calcium (Ca)-Dissolved	-	-	120
Chromium (Cr)-Dissolved	0.01	0.05	0.00122
Colbalt (Co)-Dissolved	0.04	-	<0.00010
Copper (Cu)-Dissolved	0.02 (H<50)	1	
	0.03 (H=50 ~<75)		
	0.04 (H=75 ~<100)		
	0.05 (H=100 ~<125)		
	0.06 (H=125 ~<150)		
	0.07 (H=150 ~<175)		
	0.08 (H=175 ~<200)		
0.09 (H>200)	0.0011		
Iron (Fe)-Dissolved	-	6.5	0.011
Lead (Pb)-Dissolved	0.04 (H<50)	0.01	
	0.05 (H=50 ~<100)		
	0.06 (H=100 ~<200)		
	0.11 (H=200 ~<300)		<0.00020
Lithium (Li)-Dissolved	-	-	0.00018
Magnesium (Mg)-Dissolved	-	100	20.9
Manganese (Mn)-Dissolved	-	0.55	0.00068
Mercury (Hg)-Dissolved	0.001	0.001	<0.000010
Molybdenum (Mo)-Dissolved	10	0.25	0.00111
Nickel (Ni)-Dissolved	0.25 (H<60)	-	
	0.65 (H=60 ~<120)		
	1.1 (H=120 ~<180)		
	1.5 (H=180)		0.00063
Phosphorus(P)-Dissolved	-	-	<0.050
Potassium (K)-Dissolved	-	-	2.27
Selenium (Se)-Dissolved	0.01	0.01	<0.00050
Silicon (Si)-Dissolved	-	-	6.3
Silver (Ag)-Dissolved	0.0005 (H<=100)	-	
	0.015 (H>100)		<0.000050
Sodium (Na)-Dissolved	-	200	76.9
Strontium (Sr)-Dissolved	-	-	0.399
Sulfur (S)-Dissolved	-	-	57.6
Tellurium (Te)-Dissolved	-	-	<0.00050
Thallium (Tl)-Dissolved	0.003	-	<0.000020
Thorium (Th)-Dissolved	-	-	<0.00010
Tin (Sn)-Dissolved	-	-	<0.00020
Titanium (Ti)-Dissolved	1	-	<0.00050
Uranium (U)-Dissolved	3	0.02	0.0025
Vanadium (V)-Dissolved	-	-	<0.0010
Zinc (Zn)-Dissolved	0.075 (H<90)	5	
	0.150 (H=90 ~<100)		
	0.900 (H=100 ~<200)		
	1.650 (H=200 ~<300)		0.0053
Zirconium (Zr)-Dissolved	-	-	<0.00010

Notes: Refer to Table Endnotes (attached)

**Table 4: Analytical Results for Hydrocarbons and PAHs**

Sample Location	CSR Standards <sup>(1)</sup>		SB2
As-built Well Depths			3.28m
Sample ID			9100387-05
			SB2
Date Sampled	Aquatic Life	Drinking Water	2019-09-30
Turbidity (NTU)	-	-	
<b>Hydrocarbons ug/L</b>			
EPH10-19	5000	5000	<250
EPH10-19 (SG)	5000	5000	
EPH19-32	-	-	<250
EPH19-32 (SG)	-	-	
LEPH	500	-	<250
HEPH	-	-	<250
<b>Polycyclic Aromatic Hydrocarbons ug/L</b>			
Acenaphthene	60	-	<0.050
Acenaphthylene	-	-	<0.200
Acridine	0.5	-	<0.050
Anthracene	1	-	<0.010
Benz(a)anthracene	1	-	<0.010
Benzo(a)pyrene	0.1	0.01	<0.010
Benzo(b)fluoranthene	-	-	-
Benzo(b+j)fluoranthene	-	-	<0.050
Benzo(g,h,i)perylene	-	-	<0.050
Benzo(k)fluoranthene	-	-	<0.050
2-Chloronaphthalene			-
Chrysene	1	-	<0.050
Dibenz(a,h)anthracene	-	-	<0.010
Fluoranthene	2	-	<0.030
Fluorene	120	-	<0.050
Indeno(1,2,3-c,d)pyrene	-	-	<0.050
1-Methylnaphthalene			<0.100
2-Methylnaphthalene			<0.100
Naphthalene	10	-	<0.200
Phenanthrene	3	-	<0.100
Pyrene	0.2	-	<0.040
Quinoline	34	-	<0.050

Notes: Refer to Table Endnotes (attached)

## Analytical Table Footnotes: Analytical Results for Groundwater and Seepage Blanket Water

All concentrations in mg/L, except pH or as indicated.

- "<" less than the laboratory detection limit indicated.
- "-" means not analyzed or no standard or guideline applies.
- \* RPDs are not normally calculated where one or more concentrations are less than five times MDL.
- (1) A compendium of CSR Schedules 6 and 10 guidelines with respect to Drinking Water (DW) and Freshwater Aquatic Life (AW).
- (2) Standard is dissolved Chloride-dependent.

<b>BOLD, UNDERLINE</b>	Laboratory Detection Limit exceeds one or more applicable Standard
<b>BLUE SHADING</b>	Concentration greater than CSR Aquatic Life (AW) Standard
<b>BOLD, BEIGE TEXT</b>	Concentration greater than CSR Drinking Water (DW) Standard

**CARO Analytical Services**  
**FINAL Analytical Testing Report**  
**Work Order: 9100387**  
**Report Date: 2019-12-16 16:43:44**

**Client Allterra Construction**  
**Attention Rahim Gaidhar**  
**Project P17-932**  
**Project info [none]**

*Note: This is not the original data. Please refer to PDF / Hardcopy report.*

<b>LAB ID</b>	9100387-01	9100387-02	9100387-03	9100387-04	9100387-05	9100387-06	9100387-07			
<b>CLIENT ID</b>	MW6	MW3S	MW3D	MW2	SB2	LE-1	SW1			
<b>DATE SAMPLED</b>	2019-09-30	2019-09-30	2019-09-30	2019-09-30	2019-09-30	2019-09-30	2019-09-30			
<b>DATE RECEIVED</b>	2019-10-02	2019-10-02	2019-10-02	2019-10-02	2019-10-02	2019-10-02	2019-10-02			
<b>MATRIX</b>	Water	Water	Water	Water	Water	Water	Water			
<b>General Method</b>										
Anions	Chloride	mg/L	0.1	37.4	17.6	2.72	5.93	106	5730	20.3
Anions	Fluoride	mg/L	0.1	0.11	<0.10	0.11	<0.10	<0.10	<0.10	<0.10
Anions	Nitrate+Nitrite (as N)	mg/L	0.005	0.0059	0.0099	<0.0050	<0.0050	0.53	2.47	0.287
Anions	Nitrite (as N)	mg/L	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Anions	Sulfate	mg/L	1	62.4	40.4	18.6	14.8	157	2090	155
BCMOE Aggregate Hydrocarbons	EPHW10-19	ug/L	250	<250	<250	<250	<250	<250	<250	<250
BCMOE Aggregate Hydrocarbons	EPHW19-32	ug/L	250	<250	<250	<250	<250	<250	<250	<250
BCMOE Aggregate Hydrocarbons	LEPHw	ug/L	250	<250	<250	<250	<250	<250	<250	<250
BCMOE Aggregate Hydrocarbons	HEPHw	ug/L	250	<250	<250	<250	<250	<250	<250	<250
Calculated Parameters	Hardness, Total (as CaCO3)	mg/L	0.5	536	150	99.6	124	385	3910	262
Calculated Parameters	Nitrate (as N)	mg/L	0.01	<0.0100	<0.0100	<0.0100	<0.0100	0.53	2.47	0.287
Dissolved Metals	Lithium, dissolved	mg/L	0.0001	0.00959	0.00014	<0.00010	<0.00010	0.00018	0.00122	0.00019
Dissolved Metals	Aluminum, dissolved	mg/L	0.005	<0.0050	<0.0050	<0.0050	0.0079	0.0057	<0.0500	<0.0050
Dissolved Metals	Antimony, dissolved	mg/L	0.0002	0.00037	<0.00020	<0.00020	0.00022	<0.00020	<0.00020	0.0002
Dissolved Metals	Arsenic, dissolved	mg/L	0.0005	0.00457	0.00175	0.00171	0.00209	<0.00050	<0.00500	<0.00050
Dissolved Metals	Barium, dissolved	mg/L	0.005	0.0735	0.0328	0.0223	0.0288	0.0209	<0.0500	0.017
Dissolved Metals	Beryllium, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00100	<0.00010
Dissolved Metals	Bismuth, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00100	<0.00010
Dissolved Metals	Boron, dissolved	mg/L	0.005	0.0581	0.0192	0.0201	0.0207	0.0383	0.243	0.0164
Dissolved Metals	Cadmium, dissolved	mg/L	1E-05	<0.000010	<0.000010	<0.000010	<0.000010	0.000013	0.000972	<0.000010
Dissolved Metals	Calcium, dissolved	mg/L	0.2	160	47.5	31	37.7	120	1020	85.7
Dissolved Metals	Chromium, dissolved	mg/L	0.0005	0.00112	<0.00050	<0.00050	<0.00050	0.00122	0.00988	<0.00050
Dissolved Metals	Cobalt, dissolved	mg/L	0.0001	0.00197	0.00068	0.00041	0.00028	<0.00010	<0.00100	<0.00010
Dissolved Metals	Copper, dissolved	mg/L	0.0004	0.00266	<0.00040	<0.00040	<0.00040	0.0011	<0.00400	0.00121
Dissolved Metals	Iron, dissolved	mg/L	0.01	4.05	0.382	0.295	0.389	0.011	<0.100	<0.010
Dissolved Metals	Lead, dissolved	mg/L	0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00200	<0.00020
Dissolved Metals	Magnesium, dissolved	mg/L	0.01	33	7.59	5.4	7.28	20.9	329	11.5
Dissolved Metals	Manganese, dissolved	mg/L	0.0002	1.99	0.514	0.411	0.51	0.00668	17	0.00269
Dissolved Metals	Mercury, dissolved	mg/L	1E-05	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Dissolved Metals	Molybdenum, dissolved	mg/L	0.0001	0.00054	0.00644	0.00589	0.00385	0.00111	<0.00100	0.00091
Dissolved Metals	Nickel, dissolved	mg/L	0.0004	0.00252	0.00097	0.00091	0.00054	0.00063	0.0232	0.00049
Dissolved Metals	Phosphorus, dissolved	mg/L	0.05	<0.050	0.115	0.142	0.162	<0.050	<0.500	<0.050
Dissolved Metals	Potassium, dissolved	mg/L	0.1	2.84	0.93	0.58	0.67	2.27	31.6	0.87
Dissolved Metals	Selenium, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00500	<0.00050
Dissolved Metals	Silicon, dissolved	mg/L	1	10.4	5.7	5.6	6.1	6.3	<10.0	5.6
Dissolved Metals	Silver, dissolved	mg/L	5E-05	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000500	<0.000050
Dissolved Metals	Sodium, dissolved	mg/L	0.1	50.5	15.2	9.96	9.13	76.9	2630	11.1
Dissolved Metals	Strontium, dissolved	mg/L	0.001	0.614	0.234	0.193	0.166	0.399	5.64	0.239
Dissolved Metals	Sulfur, dissolved	mg/L	3	16.9	13.3	6.5	4.4	57.6	708	53
Dissolved Metals	Tellurium, dissolved	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00500	<0.00050
Dissolved Metals	Thallium, dissolved	mg/L	2E-05	<0.000020	<0.000020	<0.000020	<0.000020	<0.000200	<0.000200	<0.000020
Dissolved Metals	Thorium, dissolved	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00100	<0.00100	<0.00010
Dissolved Metals	Tin, dissolved	mg/L	0.0002	<0.00020	<0.00020	<0.00020	0.00028	<0.00020	<0.00200	0.00054
Dissolved Metals	Titanium, dissolved	mg/L	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0500	<0.0050
Dissolved Metals	Tungsten, dissolved	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0100	<0.0010
Dissolved Metals	Uranium, dissolved	mg/L	2E-05	0.00549	0.00103	0.00059	0.00076	0.0025	<0.000200	0.00142
Dissolved Metals	Vanadium, dissolved	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0100	<0.0100	<0.0010
Dissolved Metals	Zinc, dissolved	mg/L	0.004	0.0056	<0.0040	<0.0040	<0.0040	0.0053	0.0425	<0.0040
Dissolved Metals	Zirconium, dissolved	mg/L	0.0001	0.00021	<0.00010	<0.00010	0.0001	<0.00010	<0.00100	<0.00010
General Parameters	Colour, True	CU	5	5.8	<5.0	5.2	6	<5.0	<5.0	<5.0
General Parameters	Alkalinity, Total (as CaCO3)	mg/L	1	627	133	109	130	260	24.2	119
General Parameters	Alkalinity, Phenolphthalein (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Bicarbonate (as CaCO3)	mg/L	1	627	133	109	130	260	24.2	119
General Parameters	Alkalinity, Carbonate (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
General Parameters	Alkalinity, Hydroxide (as CaCO3)	mg/L	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
General Parameters	Solids, Total Suspended	mg/L	2	14	8.6	10	21.7	46.8	12.8	<2.0
General Parameters	Turbidity	NTU	0.1	25.2	4.84	8.03	6.29	4.52	<0.10	<0.10
General Parameters	pH	pH units	0.1	7.57	7.98	7.85	7.81	7.49	6.98	7.79
General Parameters	Conductivity (EC)	uS/cm	2	1200	366	233	256	1100	18000	572
Polycyclic Aromatic Hydrocarbons (PAH)	Acenaphthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Acenaphthylene	ug/L	0.2	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Polycyclic Aromatic Hydrocarbons (PAH)	Acridine	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benz(a)anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(a)pyrene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(b+j)fluoranthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(g,h,i)perylene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Benzo(k)fluoranthene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Chrysene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Dibenz(a,h)anthracene	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Polycyclic Aromatic Hydrocarbons (PAH)	Fluoranthene	ug/L	0.03	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Polycyclic Aromatic Hydrocarbons (PAH)	Fluorene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	Indeno(1,2,3-cd)pyrene	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Polycyclic Aromatic Hydrocarbons (PAH)	1-Methylnaphthalene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	2-Methylnaphthalene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	Naphthalene	ug/L	0.2	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
Polycyclic Aromatic Hydrocarbons (PAH)	Phenanthrene	ug/L	0.1	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Polycyclic Aromatic Hydrocarbons (PAH)	Pyrene	ug/L	0.035	<0.040	<0.035	<0.040	<0.035	<0.040	<0.050	<0.040
Polycyclic Aromatic Hydrocarbons (PAH)	Quinoline	ug/L	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Metals	Aluminum, total	mg/L	0.005	0.0601	0.0732	0.0847	0.264	1.58	<0.0500	0.0145
Total Metals	Antimony, total	mg/L	0.0002	0.00045	<0.00020	0.0002	0.00045	<0.00020	<0.00200	<0.00020

CARO Analytical Services  
 FINAL Analytical Testing Report  
 Work Order: 9100387  
 Report Date: 2019-12-16 16:43:44

Client Allterra Construction  
 Attention Rahim Gaidhar  
 Project P17-932  
 Project info [none]

Note: This is not the original data. Please refer to PDF / Hardcopy report.

LAB ID	9100387-01 9100387-02 9100387-03 9100387-04 9100387-05 9100387-06 9100387-07									
CLIENT ID	MW6	MW3S	MW3D	MW2	SB2	LE-1	SW1			
DATE SAMPLED	2019-09-30	2019-09-30	2019-09-30	2019-09-30	2019-09-30	2019-09-30	2019-09-30			
DATE RECEIVED	2019-10-02	2019-10-02	2019-10-02	2019-10-02	2019-10-02	2019-10-02	2019-10-02			
MATRIX	Water	Water	Water	Water	Water	Water	Water			
General Method	Analyte	Units	RL							
Total Metals	Arsenic, total	mg/L	0.0005	0.00513	0.00181	0.00178	0.0024	<0.00050	<0.00500	<0.00050
Total Metals	Barium, total	mg/L	0.005	0.101	0.0336	0.0219	0.031	0.0284	<0.0500	0.0181
Total Metals	Beryllium, total	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00100	<0.00010
Total Metals	Bismuth, total	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00100	<0.00010
Total Metals	Boron, total	mg/L	0.005	0.0621	0.02	0.0204	0.022	0.042	0.26	0.0172
Total Metals	Cadmium, total	mg/L	1E-05	0.00002	0.000054	0.000258	0.000088	<0.000010	0.00103	0.000014
Total Metals	Calcium, total	mg/L	0.2	170	49.2	31.5	38.9	129	1110	88.9
Total Metals	Chromium, total	mg/L	0.0005	0.00154	<0.00050	<0.00050	0.00067	0.00281	0.0107	0.00122
Total Metals	Cobalt, total	mg/L	0.0001	0.00319	0.0008	0.00068	0.00086	0.00135	<0.00100	<0.00010
Total Metals	Copper, total	mg/L	0.0004	0.00084	0.00091	0.00062	0.00126	0.00624	<0.00400	0.0016
Total Metals	Iron, total	mg/L	0.01	5.45	0.482	0.438	0.925	1.85	<0.100	0.019
Total Metals	Lead, total	mg/L	0.0002	0.00024	<0.00020	<0.00020	0.00107	0.00052	<0.00200	<0.00020
Total Metals	Lithium, total	mg/L	0.0001	0.0102	0.00028	0.00024	0.00021	0.00079	0.00146	0.00029
Total Metals	Magnesium, total	mg/L	0.01	35.3	7.93	5.61	7.75	22.5	356	12
Total Metals	Manganese, total	mg/L	0.0002	2.08	0.531	0.413	0.534	0.0735	18.6	0.0143
Total Metals	Mercury, total	mg/L	1E-05	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Total Metals	Molybdenum, total	mg/L	0.0001	0.00105	0.00703	0.00749	0.00491	0.00093	<0.00100	0.00094
Total Metals	Nickel, total	mg/L	0.0004	0.00591	0.00133	0.00237	0.002	0.0018	0.0242	0.00075
Total Metals	Phosphorus, total	mg/L	0.05	<0.050	0.118	0.155	0.211	0.081	<0.500	<0.050
Total Metals	Potassium, total	mg/L	0.1	3.04	0.98	0.59	0.74	2.54	34.4	0.93
Total Metals	Selenium, total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00500	<0.00050
Total Metals	Silicon, total	mg/L	1	11.2	5.9	5.7	6.8	8.9	<10.0	5.7
Total Metals	Silver, total	mg/L	5E-05	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000500	<0.000050
Total Metals	Sodium, total	mg/L	0.1	53.8	15.9	10.2	9.71	81.5	2840	11.6
Total Metals	Strontium, total	mg/L	0.001	0.631	0.239	0.192	0.169	0.428	6.08	0.244
Total Metals	Sulfur, total	mg/L	3	19.6	14.5	7.9	6.7	60.3	794	54.9
Total Metals	Tellurium, total	mg/L	0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00500	<0.00050
Total Metals	Thallium, total	mg/L	2E-05	0.00004	0.000057	0.000035	0.000029	<0.000020	<0.000200	<0.000020
Total Metals	Thorium, total	mg/L	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00100	<0.00010
Total Metals	Tin, total	mg/L	0.0002	0.0005	0.00037	0.00045	0.00026	<0.00020	<0.00200	<0.00020
Total Metals	Titanium, total	mg/L	0.005	<0.0050	<0.0050	<0.0050	0.008	0.0945	<0.0500	<0.0050
Total Metals	Tungsten, total	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0100	<0.0010
Total Metals	Uranium, total	mg/L	2E-05	0.0056	0.00111	0.000671	0.000935	0.00277	<0.000200	0.0015
Total Metals	Vanadium, total	mg/L	0.001	<0.0010	<0.0010	0.0011	0.0018	0.005	<0.0100	0.0013
Total Metals	Zinc, total	mg/L	0.004	<0.0040	<0.0040	<0.0040	0.0081	0.0075	<0.0400	<0.0040
Total Metals	Zirconium, total	mg/L	0.0001	0.00017	0.00014	0.0002	0.00012	0.00016	<0.00100	<0.00010



## CERTIFICATE OF ANALYSIS

**REPORTED TO** Allterra Construction  
2158 Millstream Road  
Victoria, BC V9B 6H4

**ATTENTION** Rahim Gaidhar

**PO NUMBER** P15-06 SIRM

**PROJECT** P17-932

**PROJECT INFO**

**WORK ORDER** 9100387

**RECEIVED / TEMP** 2019-10-02 09:00 / 5°C

**REPORTED** 2019-12-17 14:05

**COC NUMBER** September 2019

### 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.

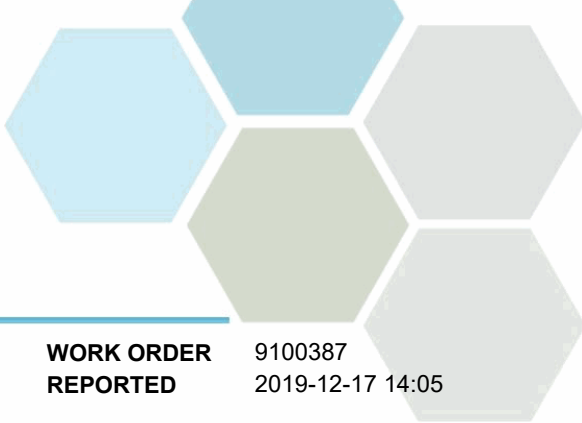
If you have any questions or concerns, please contact me at [bshaw@caro.ca](mailto:bshaw@caro.ca)

#### Authorized By:

Bryan Shaw, Ph.D., P.Chem.  
Client Service Coordinator

1-888-311-8846 | [www.caro.ca](http://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

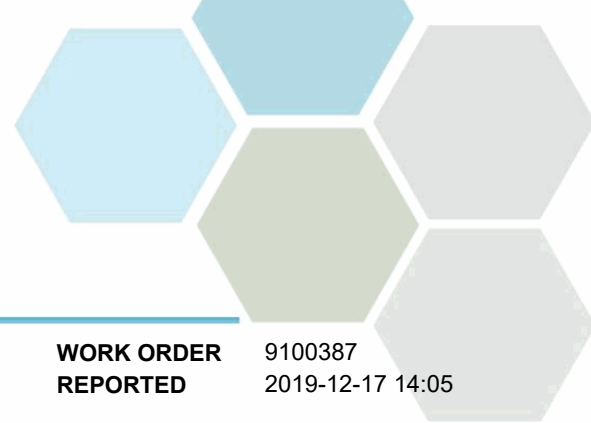


## TEST RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL	Units	Analyzed	Qualifier
<b>SB2 (9100387-05)   Matrix: Water   Sampled: 2019-09-30 15:00</b>					
<b>Anions</b>					
Chloride	106	0.10	mg/L	2019-10-05	
Fluoride	< 0.10	0.10	mg/L	2019-10-05	
Nitrate+Nitrite (as N)	0.530	0.0050	mg/L	2019-10-04	HT1
Nitrite (as N)	< 0.0050	0.0050	mg/L	2019-10-03	
Sulfate	157	1.0	mg/L	2019-10-05	
<b>Calculated Parameters</b>					
Hardness, Total (as CaCO3)	385	0.500	mg/L	N/A	
Nitrate (as N)	0.530	0.0100	mg/L	N/A	
<b>Dissolved Metals</b>					
Lithium, dissolved	0.00018	0.00010	mg/L	2019-10-08	
Aluminum, dissolved	0.0057	0.0050	mg/L	2019-10-08	
Antimony, dissolved	< 0.00020	0.00020	mg/L	2019-10-08	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2019-10-08	
Barium, dissolved	0.0209	0.0050	mg/L	2019-10-08	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
Boron, dissolved	0.0383	0.0050	mg/L	2019-10-08	
Cadmium, dissolved	0.000013	0.000010	mg/L	2019-10-08	
Calcium, dissolved	120	0.20	mg/L	2019-10-08	
Chromium, dissolved	0.00122	0.00050	mg/L	2019-10-08	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
Copper, dissolved	0.00110	0.00040	mg/L	2019-10-08	
Iron, dissolved	0.011	0.010	mg/L	2019-10-08	
Lead, dissolved	< 0.00020	0.00020	mg/L	2019-10-08	
Magnesium, dissolved	20.9	0.010	mg/L	2019-10-08	
Manganese, dissolved	0.00068	0.00020	mg/L	2019-10-08	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2019-10-07	
Molybdenum, dissolved	0.00111	0.00010	mg/L	2019-10-08	
Nickel, dissolved	0.00063	0.00040	mg/L	2019-10-08	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2019-10-08	
Potassium, dissolved	2.27	0.10	mg/L	2019-10-08	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2019-10-08	
Silicon, dissolved	6.3	1.0	mg/L	2019-10-08	
Silver, dissolved	< 0.000050	0.000050	mg/L	2019-10-08	
Sodium, dissolved	76.9	0.10	mg/L	2019-10-08	
Strontium, dissolved	0.399	0.0010	mg/L	2019-10-08	
Sulfur, dissolved	57.6	3.0	mg/L	2019-10-08	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2019-10-08	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2019-10-08	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
Tin, dissolved	< 0.00020	0.00020	mg/L	2019-10-08	

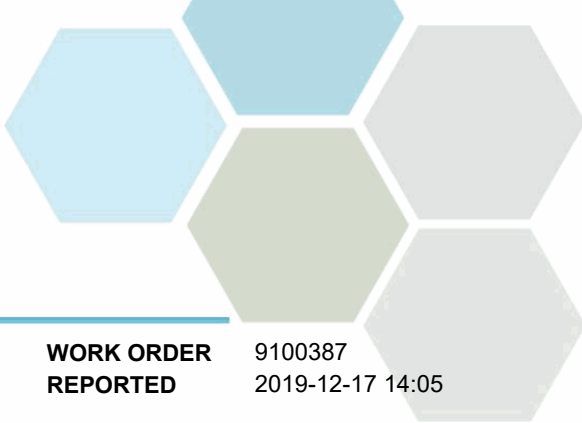


## TEST RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL	Units	Analyzed	Qualifier
<b>SB2 (9100387-05)   Matrix: Water   Sampled: 2019-09-30 15:00, Continued</b>					
<i>Dissolved Metals, Continued</i>					
Titanium, dissolved	< 0.0050	0.0050	mg/L	2019-10-08	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2019-10-08	
Uranium, dissolved	<b>0.00250</b>	0.000020	mg/L	2019-10-08	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2019-10-08	
Zinc, dissolved	<b>0.0053</b>	0.0040	mg/L	2019-10-08	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
<i>General Parameters</i>					
Alkalinity, Total (as CaCO3)	<b>260</b>	1.0	mg/L	2019-10-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2019-10-04	
Alkalinity, Bicarbonate (as CaCO3)	<b>260</b>	1.0	mg/L	2019-10-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2019-10-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2019-10-04	
Colour, True	< 5.0	5.0	CU	2019-10-04	HT1
Conductivity (EC)	<b>1100</b>	2.0	µS/cm	2019-10-04	
pH	<b>7.49</b>	0.10	pH units	2019-10-04	HT2
Solids, Total Suspended	<b>46.8</b>	2.0	mg/L	2019-10-08	HT1
Turbidity	<b>4.52</b>	0.10	NTU	2019-10-03	
<i>Total Metals</i>					
Aluminum, total	<b>1.58</b>	0.0050	mg/L	2019-10-08	
Antimony, total	< 0.00020	0.00020	mg/L	2019-10-08	
Arsenic, total	< 0.00050	0.00050	mg/L	2019-10-08	
Barium, total	<b>0.0284</b>	0.0050	mg/L	2019-10-08	
Beryllium, total	< 0.00010	0.00010	mg/L	2019-10-08	
Bismuth, total	< 0.00010	0.00010	mg/L	2019-10-08	
Boron, total	<b>0.0420</b>	0.0050	mg/L	2019-10-08	
Cadmium, total	< 0.000010	0.000010	mg/L	2019-10-08	
Calcium, total	<b>129</b>	0.20	mg/L	2019-10-08	
Chromium, total	<b>0.00281</b>	0.00050	mg/L	2019-10-08	
Cobalt, total	<b>0.00135</b>	0.00010	mg/L	2019-10-08	
Copper, total	<b>0.00624</b>	0.00040	mg/L	2019-10-08	
Iron, total	<b>1.85</b>	0.010	mg/L	2019-10-08	
Lead, total	<b>0.00052</b>	0.00020	mg/L	2019-10-08	
Lithium, total	<b>0.00079</b>	0.00010	mg/L	2019-10-08	
Magnesium, total	<b>22.5</b>	0.010	mg/L	2019-10-08	
Manganese, total	<b>0.0735</b>	0.00020	mg/L	2019-10-08	
Mercury, total	< 0.000010	0.000010	mg/L	2019-10-07	
Molybdenum, total	<b>0.00093</b>	0.00010	mg/L	2019-10-08	
Nickel, total	<b>0.00180</b>	0.00040	mg/L	2019-10-08	
Phosphorus, total	<b>0.081</b>	0.050	mg/L	2019-10-08	
Potassium, total	<b>2.54</b>	0.10	mg/L	2019-10-08	
Selenium, total	< 0.00050	0.00050	mg/L	2019-10-08	



# TEST RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

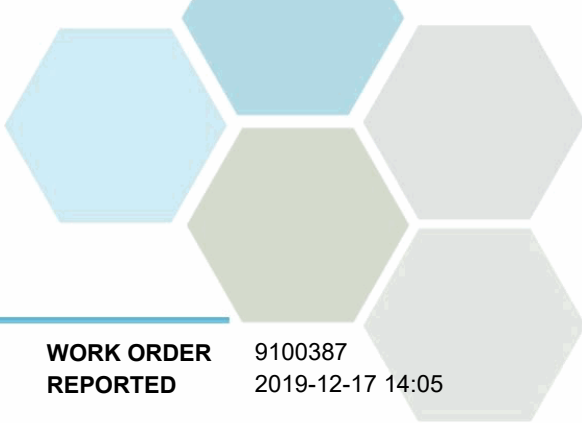
Analyte	Result	RL	Units	Analyzed	Qualifier
<b>SB2 (9100387-05)   Matrix: Water   Sampled: 2019-09-30 15:00, Continued</b>					
<i>Total Metals, Continued</i>					
Silicon, total	8.9	1.0	mg/L	2019-10-08	
Silver, total	< 0.000050	0.000050	mg/L	2019-10-08	
Sodium, total	81.5	0.10	mg/L	2019-10-08	
Strontium, total	0.428	0.0010	mg/L	2019-10-08	
Sulfur, total	60.3	3.0	mg/L	2019-10-08	
Tellurium, total	< 0.00050	0.00050	mg/L	2019-10-08	
Thallium, total	< 0.000020	0.000020	mg/L	2019-10-08	
Thorium, total	< 0.00010	0.00010	mg/L	2019-10-08	
Tin, total	< 0.00020	0.00020	mg/L	2019-10-08	
Titanium, total	0.0945	0.0050	mg/L	2019-10-08	
Tungsten, total	< 0.0010	0.0010	mg/L	2019-10-08	
Uranium, total	0.00277	0.000020	mg/L	2019-10-08	
Vanadium, total	0.0050	0.0010	mg/L	2019-10-08	
Zinc, total	0.0075	0.0040	mg/L	2019-10-08	
Zirconium, total	0.00016	0.00010	mg/L	2019-10-08	

**SW1 (9100387-07) | Matrix: Water | Sampled: 2019-09-30 13:45**

<i>Anions</i>					
Chloride	20.3	0.10	mg/L	2019-10-05	
Fluoride	< 0.10	0.10	mg/L	2019-10-05	
Nitrate+Nitrite (as N)	0.287	0.0050	mg/L	2019-10-04	HT1
Nitrite (as N)	< 0.0050	0.0050	mg/L	2019-10-03	
Sulfate	155	1.0	mg/L	2019-10-05	

<i>Calculated Parameters</i>					
Hardness, Total (as CaCO3)	262	0.500	mg/L	N/A	
Nitrate (as N)	0.287	0.0100	mg/L	N/A	

<i>Dissolved Metals</i>					
Lithium, dissolved	0.00019	0.00010	mg/L	2019-10-08	
Aluminum, dissolved	< 0.0050	0.0050	mg/L	2019-10-08	
Antimony, dissolved	0.00020	0.00020	mg/L	2019-10-08	
Arsenic, dissolved	< 0.00050	0.00050	mg/L	2019-10-08	
Barium, dissolved	0.0170	0.0050	mg/L	2019-10-08	
Beryllium, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
Bismuth, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
Boron, dissolved	0.0164	0.0050	mg/L	2019-10-08	
Cadmium, dissolved	< 0.000010	0.000010	mg/L	2019-10-08	
Calcium, dissolved	85.7	0.20	mg/L	2019-10-08	
Chromium, dissolved	< 0.00050	0.00050	mg/L	2019-10-08	
Cobalt, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
Copper, dissolved	0.00121	0.00040	mg/L	2019-10-08	



# TEST RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL	Units	Analyzed	Qualifier
---------	--------	----	-------	----------	-----------

**SW1 (9100387-07) | Matrix: Water | Sampled: 2019-09-30 13:45, Continued**

**Dissolved Metals, Continued**

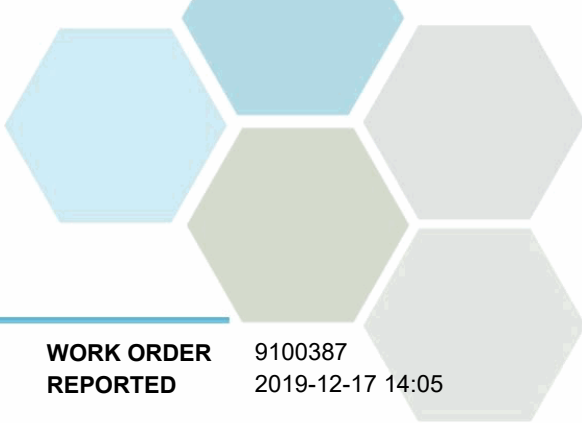
Iron, dissolved	< 0.010	0.010	mg/L	2019-10-08	
Lead, dissolved	< 0.00020	0.00020	mg/L	2019-10-08	
Magnesium, dissolved	<b>11.5</b>	0.010	mg/L	2019-10-08	
Manganese, dissolved	<b>0.00269</b>	0.00020	mg/L	2019-10-08	
Mercury, dissolved	< 0.000010	0.000010	mg/L	2019-10-07	
Molybdenum, dissolved	<b>0.00091</b>	0.00010	mg/L	2019-10-08	
Nickel, dissolved	<b>0.00049</b>	0.00040	mg/L	2019-10-08	
Phosphorus, dissolved	< 0.050	0.050	mg/L	2019-10-08	
Potassium, dissolved	<b>0.87</b>	0.10	mg/L	2019-10-08	
Selenium, dissolved	< 0.00050	0.00050	mg/L	2019-10-08	
Silicon, dissolved	<b>5.6</b>	1.0	mg/L	2019-10-08	
Silver, dissolved	< 0.000050	0.000050	mg/L	2019-10-08	
Sodium, dissolved	<b>11.1</b>	0.10	mg/L	2019-10-08	
Strontium, dissolved	<b>0.239</b>	0.0010	mg/L	2019-10-08	
Sulfur, dissolved	<b>53.0</b>	3.0	mg/L	2019-10-08	
Tellurium, dissolved	< 0.00050	0.00050	mg/L	2019-10-08	
Thallium, dissolved	< 0.000020	0.000020	mg/L	2019-10-08	
Thorium, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	
Tin, dissolved	<b>0.00054</b>	0.00020	mg/L	2019-10-08	
Titanium, dissolved	< 0.0050	0.0050	mg/L	2019-10-08	
Tungsten, dissolved	< 0.0010	0.0010	mg/L	2019-10-08	
Uranium, dissolved	<b>0.00142</b>	0.000020	mg/L	2019-10-08	
Vanadium, dissolved	< 0.0010	0.0010	mg/L	2019-10-08	
Zinc, dissolved	< 0.0040	0.0040	mg/L	2019-10-08	
Zirconium, dissolved	< 0.00010	0.00010	mg/L	2019-10-08	

**General Parameters**

Alkalinity, Total (as CaCO3)	<b>119</b>	1.0	mg/L	2019-10-04	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0	mg/L	2019-10-04	
Alkalinity, Bicarbonate (as CaCO3)	<b>119</b>	1.0	mg/L	2019-10-04	
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0	mg/L	2019-10-04	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0	mg/L	2019-10-04	
Colour, True	< 5.0	5.0	CU	2019-10-04	HT1
Conductivity (EC)	<b>572</b>	2.0	µS/cm	2019-10-04	
pH	<b>7.79</b>	0.10	pH units	2019-10-04	HT2
Solids, Total Suspended	< 2.0	2.0	mg/L	2019-10-08	HT1
Turbidity	< 0.10	0.10	NTU	2019-10-03	

**Total Metals**

Aluminum, total	<b>0.0145</b>	0.0050	mg/L	2019-10-08	
Antimony, total	< 0.00020	0.00020	mg/L	2019-10-08	
Arsenic, total	< 0.00050	0.00050	mg/L	2019-10-08	
Barium, total	<b>0.0181</b>	0.0050	mg/L	2019-10-08	



# TEST RESULTS

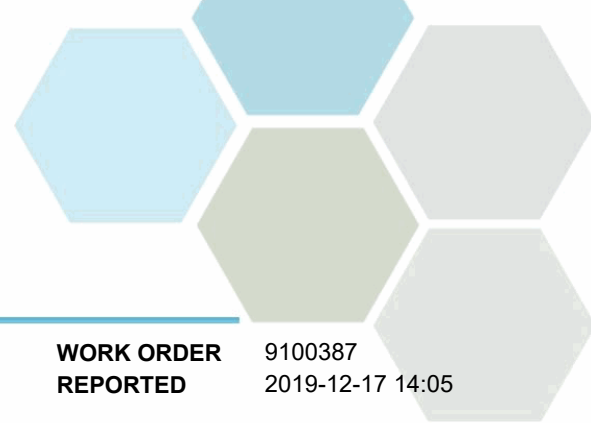
**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL	Units	Analyzed	Qualifier
<b>SW1 (9100387-07)   Matrix: Water   Sampled: 2019-09-30 13:45, Continued</b>					
<i>Total Metals, Continued</i>					
Beryllium, total	< 0.00010	0.00010	mg/L	2019-10-08	
Bismuth, total	< 0.00010	0.00010	mg/L	2019-10-08	
Boron, total	<b>0.0172</b>	0.0050	mg/L	2019-10-08	
Cadmium, total	<b>0.000014</b>	0.000010	mg/L	2019-10-08	
Calcium, total	<b>88.9</b>	0.20	mg/L	2019-10-08	
Chromium, total	<b>0.00122</b>	0.00050	mg/L	2019-10-08	
Cobalt, total	< 0.00010	0.00010	mg/L	2019-10-08	
Copper, total	<b>0.00160</b>	0.00040	mg/L	2019-10-08	
Iron, total	<b>0.019</b>	0.010	mg/L	2019-10-08	
Lead, total	< 0.00020	0.00020	mg/L	2019-10-08	
Lithium, total	<b>0.00029</b>	0.00010	mg/L	2019-10-08	
Magnesium, total	<b>12.0</b>	0.010	mg/L	2019-10-08	
Manganese, total	<b>0.0143</b>	0.00020	mg/L	2019-10-08	
Mercury, total	< 0.000010	0.000010	mg/L	2019-10-07	
Molybdenum, total	<b>0.00094</b>	0.00010	mg/L	2019-10-08	
Nickel, total	<b>0.00075</b>	0.00040	mg/L	2019-10-08	
Phosphorus, total	< 0.050	0.050	mg/L	2019-10-08	
Potassium, total	<b>0.93</b>	0.10	mg/L	2019-10-08	
Selenium, total	< 0.00050	0.00050	mg/L	2019-10-08	
Silicon, total	<b>5.7</b>	1.0	mg/L	2019-10-08	
Silver, total	< 0.000050	0.000050	mg/L	2019-10-08	
Sodium, total	<b>11.6</b>	0.10	mg/L	2019-10-08	
Strontium, total	<b>0.244</b>	0.0010	mg/L	2019-10-08	
Sulfur, total	<b>54.9</b>	3.0	mg/L	2019-10-08	
Tellurium, total	< 0.00050	0.00050	mg/L	2019-10-08	
Thallium, total	< 0.000020	0.000020	mg/L	2019-10-08	
Thorium, total	< 0.00010	0.00010	mg/L	2019-10-08	
Tin, total	< 0.00020	0.00020	mg/L	2019-10-08	
Titanium, total	< 0.0050	0.0050	mg/L	2019-10-08	
Tungsten, total	< 0.0010	0.0010	mg/L	2019-10-08	
Uranium, total	<b>0.00150</b>	0.000020	mg/L	2019-10-08	
Vanadium, total	<b>0.0013</b>	0.0010	mg/L	2019-10-08	
Zinc, total	< 0.0040	0.0040	mg/L	2019-10-08	
Zirconium, total	< 0.00010	0.00010	mg/L	2019-10-08	

**Sample Qualifiers:**

- 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** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analysis Description	Method Ref.	Technique	Location
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	Kelowna
Anions in Water	SM 4110 B (2017)	Ion Chromatography	Kelowna
Colour, True in Water	SM 2120 C (2017)	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	Kelowna
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Mercury, dissolved in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Nitrate+Nitrite in Water	SM 4500-NO3- F (2017)	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrite in Water	SM 4500-NO2 B (2017)	Colorimetry	Richmond
pH in Water	SM 4500-H+ B (2017)	Electrometry	Kelowna
Solids, Total Suspended in Water	SM 2540 D* (2017)	Gravimetry (Dried at 103-105C)	Kelowna
Total Metals in Water	EPA 200.2* / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
Turbidity in Water	SM 2130 B (2017)	Nephelometry	Richmond

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

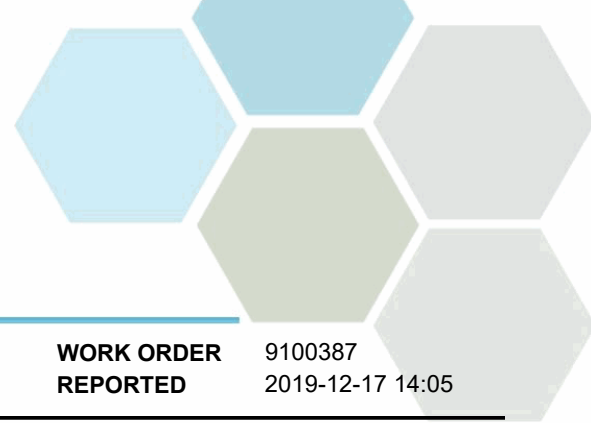
### Glossary of Terms:

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
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.

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 not 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: [bshaw@caro.ca](mailto:bshaw@caro.ca)



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

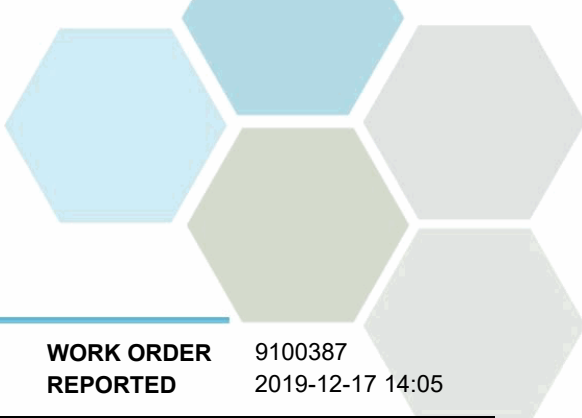
The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **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
<b>Anions, Batch B9J0392</b>									
<b>Blank (B9J0392-BLK1)</b>			Prepared: 2019-10-03, Analyzed: 2019-10-03						
Nitrite (as N)	< 0.0050	0.0050 mg/L							
<b>LCS (B9J0392-BS1)</b>			Prepared: 2019-10-03, Analyzed: 2019-10-03						
Nitrite (as N)	0.0462	0.0050 mg/L	0.0500		92	90-110			
<b>Anions, Batch B9J0434</b>									
<b>Blank (B9J0434-BLK1)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Nitrate+Nitrite (as N)	< 0.0050	0.0050 mg/L							
<b>Blank (B9J0434-BLK2)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Nitrate+Nitrite (as N)	< 0.0050	0.0050 mg/L							
<b>LCS (B9J0434-BS1)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Nitrate+Nitrite (as N)	0.508	0.0050 mg/L	0.500		102	91-108			
<b>LCS (B9J0434-BS2)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Nitrate+Nitrite (as N)	0.505	0.0050 mg/L	0.500		101	91-108			
<b>Anions, Batch B9J0492</b>									
<b>Blank (B9J0492-BLK1)</b>			Prepared: 2019-10-05, Analyzed: 2019-10-05						
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Sulfate	< 1.0	1.0 mg/L							
<b>Blank (B9J0492-BLK2)</b>			Prepared: 2019-10-05, Analyzed: 2019-10-05						
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Sulfate	< 1.0	1.0 mg/L							
<b>LCS (B9J0492-BS1)</b>			Prepared: 2019-10-05, Analyzed: 2019-10-05						
Chloride	16.2	0.10 mg/L	16.0		101	90-110			
Fluoride	4.04	0.10 mg/L	4.00		101	88-108			
Sulfate	16.0	1.0 mg/L	16.0		100	90-110			





## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

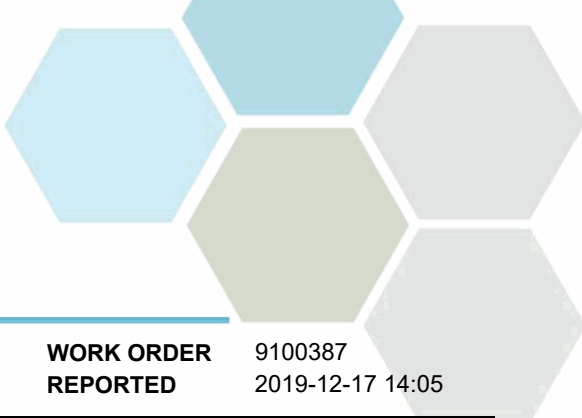
**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Anions, Batch B9J0492, Continued</b>									
<b>LCS (B9J0492-BS2)</b>					Prepared: 2019-10-05, Analyzed: 2019-10-05				
Chloride	16.2	0.10 mg/L	16.0		101	90-110			
Fluoride	4.05	0.10 mg/L	4.00		101	88-108			
Sulfate	15.8	1.0 mg/L	16.0		99	90-110			

**Dissolved Metals, Batch B9J0518**

<b>Blank (B9J0518-BLK1)</b>			Prepared: 2019-10-08, Analyzed: 2019-10-08						
Lithium, dissolved	< 0.00010	0.00010 mg/L							
Aluminum, dissolved	< 0.0050	0.0050 mg/L							
Antimony, dissolved	< 0.00020	0.00020 mg/L							
Arsenic, dissolved	< 0.00050	0.00050 mg/L							
Barium, dissolved	< 0.0050	0.0050 mg/L							
Beryllium, dissolved	< 0.00010	0.00010 mg/L							
Bismuth, dissolved	< 0.00010	0.00010 mg/L							
Boron, dissolved	< 0.0050	0.0050 mg/L							
Cadmium, dissolved	< 0.000010	0.000010 mg/L							
Calcium, dissolved	< 0.20	0.20 mg/L							
Chromium, dissolved	< 0.00050	0.00050 mg/L							
Cobalt, dissolved	< 0.00010	0.00010 mg/L							
Copper, dissolved	< 0.00040	0.00040 mg/L							
Iron, dissolved	< 0.010	0.010 mg/L							
Lead, dissolved	< 0.00020	0.00020 mg/L							
Magnesium, dissolved	< 0.010	0.010 mg/L							
Manganese, dissolved	< 0.00020	0.00020 mg/L							
Molybdenum, dissolved	< 0.00010	0.00010 mg/L							
Nickel, dissolved	< 0.00040	0.00040 mg/L							
Phosphorus, dissolved	< 0.050	0.050 mg/L							
Potassium, dissolved	< 0.10	0.10 mg/L							
Selenium, dissolved	< 0.00050	0.00050 mg/L							
Silicon, dissolved	< 1.0	1.0 mg/L							
Silver, dissolved	< 0.000050	0.000050 mg/L							
Sodium, dissolved	< 0.10	0.10 mg/L							
Strontium, dissolved	< 0.0010	0.0010 mg/L							
Sulfur, dissolved	< 3.0	3.0 mg/L							
Tellurium, dissolved	< 0.00050	0.00050 mg/L							
Thallium, dissolved	< 0.000020	0.000020 mg/L							
Thorium, dissolved	< 0.00010	0.00010 mg/L							
Tin, dissolved	< 0.00020	0.00020 mg/L							
Titanium, dissolved	< 0.0050	0.0050 mg/L							
Tungsten, dissolved	< 0.0010	0.0010 mg/L							
Uranium, dissolved	< 0.000020	0.000020 mg/L							
Vanadium, dissolved	< 0.0010	0.0010 mg/L							
Zinc, dissolved	< 0.0040	0.0040 mg/L							
Zirconium, dissolved	< 0.00010	0.00010 mg/L							

<b>Blank (B9J0518-BLK2)</b>			Prepared: 2019-10-08, Analyzed: 2019-10-08						
Lithium, dissolved	< 0.00010	0.00010 mg/L							
Aluminum, dissolved	< 0.0050	0.0050 mg/L							
Antimony, dissolved	< 0.00020	0.00020 mg/L							
Arsenic, dissolved	< 0.00050	0.00050 mg/L							
Barium, dissolved	< 0.0050	0.0050 mg/L							
Beryllium, dissolved	< 0.00010	0.00010 mg/L							
Bismuth, dissolved	< 0.00010	0.00010 mg/L							
Boron, dissolved	< 0.0050	0.0050 mg/L							
Cadmium, dissolved	< 0.000010	0.000010 mg/L							

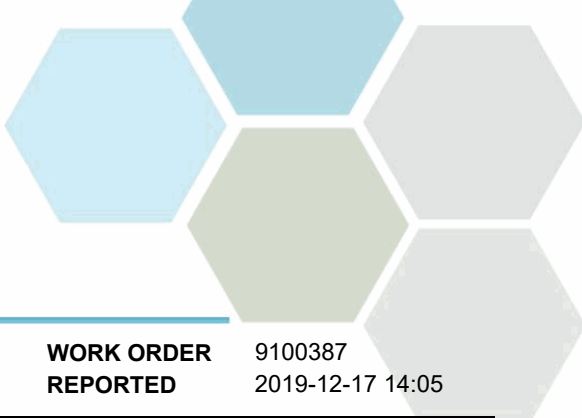


## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Dissolved Metals, Batch B9J0518, Continued</b>									
<b>Blank (B9J0518-BLK2), Continued</b>					Prepared: 2019-10-08, Analyzed: 2019-10-08				
Calcium, dissolved	< 0.20	0.20 mg/L							
Chromium, dissolved	< 0.00050	0.00050 mg/L							
Cobalt, dissolved	< 0.00010	0.00010 mg/L							
Copper, dissolved	< 0.00040	0.00040 mg/L							
Iron, dissolved	< 0.010	0.010 mg/L							
Lead, dissolved	< 0.00020	0.00020 mg/L							
Magnesium, dissolved	< 0.010	0.010 mg/L							
Manganese, dissolved	< 0.00020	0.00020 mg/L							
Molybdenum, dissolved	< 0.00010	0.00010 mg/L							
Nickel, dissolved	< 0.00040	0.00040 mg/L							
Phosphorus, dissolved	< 0.050	0.050 mg/L							
Potassium, dissolved	< 0.10	0.10 mg/L							
Selenium, dissolved	< 0.00050	0.00050 mg/L							
Silicon, dissolved	< 1.0	1.0 mg/L							
Silver, dissolved	< 0.000050	0.000050 mg/L							
Sodium, dissolved	< 0.10	0.10 mg/L							
Strontium, dissolved	< 0.0010	0.0010 mg/L							
Sulfur, dissolved	< 3.0	3.0 mg/L							
Tellurium, dissolved	< 0.00050	0.00050 mg/L							
Thallium, dissolved	< 0.000020	0.000020 mg/L							
Thorium, dissolved	< 0.00010	0.00010 mg/L							
Tin, dissolved	< 0.00020	0.00020 mg/L							
Titanium, dissolved	< 0.0050	0.0050 mg/L							
Tungsten, dissolved	< 0.0010	0.0010 mg/L							
Uranium, dissolved	< 0.000020	0.000020 mg/L							
Vanadium, dissolved	< 0.0010	0.0010 mg/L							
Zinc, dissolved	< 0.0040	0.0040 mg/L							
Zirconium, dissolved	< 0.00010	0.00010 mg/L							
<b>LCS (B9J0518-BS1)</b>					Prepared: 2019-10-08, Analyzed: 2019-10-08				
Lithium, dissolved	0.0210	0.00010 mg/L	0.0200		105	80-120			
Aluminum, dissolved	0.0215	0.0050 mg/L	0.0199		108	80-120			
Antimony, dissolved	0.0207	0.00020 mg/L	0.0200		103	80-120			
Arsenic, dissolved	0.0195	0.00050 mg/L	0.0200		97	80-120			
Barium, dissolved	0.0188	0.0050 mg/L	0.0198		95	80-120			
Beryllium, dissolved	0.0198	0.00010 mg/L	0.0198		100	80-120			
Bismuth, dissolved	0.0202	0.00010 mg/L	0.0200		101	80-120			
Boron, dissolved	0.0198	0.0050 mg/L	0.0200		99	80-120			
Cadmium, dissolved	0.0195	0.000010 mg/L	0.0199		98	80-120			
Calcium, dissolved	1.95	0.20 mg/L	2.02		96	80-120			
Chromium, dissolved	0.0195	0.00050 mg/L	0.0198		98	80-120			
Cobalt, dissolved	0.0195	0.00010 mg/L	0.0199		98	80-120			
Copper, dissolved	0.0209	0.00040 mg/L	0.0200		104	80-120			
Iron, dissolved	1.90	0.010 mg/L	2.02		94	80-120			
Lead, dissolved	0.0201	0.00020 mg/L	0.0199		101	80-120			
Magnesium, dissolved	1.93	0.010 mg/L	2.02		95	80-120			
Manganese, dissolved	0.0194	0.00020 mg/L	0.0199		97	80-120			
Molybdenum, dissolved	0.0191	0.00010 mg/L	0.0200		96	80-120			
Nickel, dissolved	0.0195	0.00040 mg/L	0.0200		97	80-120			
Phosphorus, dissolved	2.00	0.050 mg/L	2.00		100	80-120			
Potassium, dissolved	1.89	0.10 mg/L	2.02		94	80-120			
Selenium, dissolved	0.0202	0.00050 mg/L	0.0200		101	80-120			
Silicon, dissolved	1.9	1.0 mg/L	2.00		94	80-120			
Silver, dissolved	0.0196	0.000050 mg/L	0.0200		98	80-120			
Sodium, dissolved	1.96	0.10 mg/L	2.02		97	80-120			
Strontium, dissolved	0.0187	0.0010 mg/L	0.0200		94	80-120			



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
---------	--------	----------	-------------	---------------	-------	-----------	-------	-----------	-----------

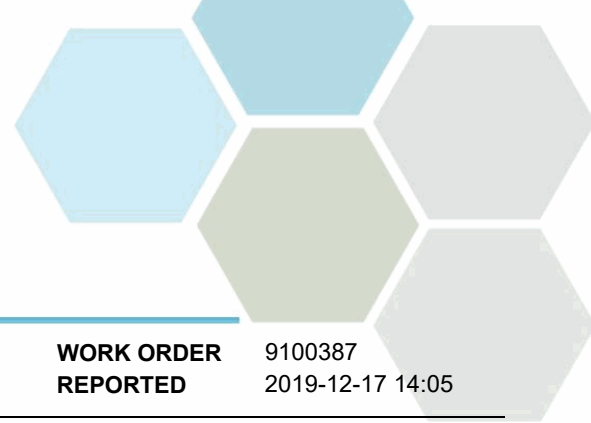
**Dissolved Metals, Batch B9J0518, Continued**

<b>LCS (B9J0518-BS1), Continued</b>				Prepared: 2019-10-08, Analyzed: 2019-10-08					
Sulfur, dissolved	4.3	3.0 mg/L	5.00		87	80-120			
Tellurium, dissolved	0.0212	0.00050 mg/L	0.0200		106	80-120			
Thallium, dissolved	0.0199	0.000020 mg/L	0.0199		100	80-120			
Thorium, dissolved	0.0189	0.00010 mg/L	0.0200		95	80-120			
Tin, dissolved	0.0192	0.00020 mg/L	0.0200		96	80-120			
Titanium, dissolved	0.0190	0.0050 mg/L	0.0200		95	80-120			
Tungsten, dissolved	0.0199	0.0010 mg/L	0.0200		100	80-120			
Uranium, dissolved	0.0193	0.000020 mg/L	0.0200		97	80-120			
Vanadium, dissolved	0.0190	0.0010 mg/L	0.0200		95	80-120			
Zinc, dissolved	0.0219	0.0040 mg/L	0.0200		110	80-120			
Zirconium, dissolved	0.0196	0.00010 mg/L	0.0200		98	80-120			

<b>Reference (B9J0518-SRM1)</b>				Prepared: 2019-10-08, Analyzed: 2019-10-08					
Lithium, dissolved	0.105	0.00010 mg/L	0.100		105	77-127			
Aluminum, dissolved	0.241	0.0050 mg/L	0.235		102	79-114			
Antimony, dissolved	0.0447	0.00020 mg/L	0.0431		104	89-123			
Arsenic, dissolved	0.428	0.00050 mg/L	0.423		101	87-113			
Barium, dissolved	2.93	0.0050 mg/L	3.30		89	85-114			
Beryllium, dissolved	0.210	0.00010 mg/L	0.209		101	79-122			
Boron, dissolved	1.61	0.0050 mg/L	1.65		98	79-117			
Cadmium, dissolved	0.218	0.000010 mg/L	0.221		99	89-112			
Calcium, dissolved	7.64	0.20 mg/L	7.72		99	85-120			
Chromium, dissolved	0.427	0.00050 mg/L	0.434		98	87-113			
Cobalt, dissolved	0.125	0.00010 mg/L	0.124		101	90-117			
Copper, dissolved	0.841	0.00040 mg/L	0.815		103	90-115			
Iron, dissolved	1.30	0.010 mg/L	1.27		102	86-112			
Lead, dissolved	0.112	0.00020 mg/L	0.110		101	90-113			
Magnesium, dissolved	6.65	0.010 mg/L	6.59		101	84-116			
Manganese, dissolved	0.330	0.00020 mg/L	0.342		96	85-113			
Molybdenum, dissolved	0.411	0.00010 mg/L	0.404		102	87-112			
Nickel, dissolved	0.836	0.00040 mg/L	0.835		100	90-114			
Phosphorus, dissolved	0.489	0.050 mg/L	0.499		98	74-119			
Potassium, dissolved	2.88	0.10 mg/L	2.88		100	78-119			
Selenium, dissolved	0.0334	0.00050 mg/L	0.0324		103	89-123			
Sodium, dissolved	18.0	0.10 mg/L	18.0		100	81-117			
Strontium, dissolved	0.898	0.0010 mg/L	0.935		96	82-111			
Thallium, dissolved	0.0393	0.000020 mg/L	0.0385		102	90-113			
Uranium, dissolved	0.251	0.000020 mg/L	0.258		97	87-113			
Vanadium, dissolved	0.841	0.0010 mg/L	0.873		96	85-110			
Zinc, dissolved	0.826	0.0040 mg/L	0.848		97	88-114			

**Dissolved Metals, Batch B9J0671**

<b>Blank (B9J0671-BLK1)</b>				Prepared: 2019-10-07, Analyzed: 2019-10-07					
Mercury, dissolved	< 0.000010	0.000010 mg/L							
<b>Blank (B9J0671-BLK2)</b>				Prepared: 2019-10-07, Analyzed: 2019-10-07					
Mercury, dissolved	< 0.000010	0.000010 mg/L							
<b>Reference (B9J0671-SRM1)</b>				Prepared: 2019-10-07, Analyzed: 2019-10-07					
Mercury, dissolved	0.00492	0.000010 mg/L	0.00489		101	80-120			
<b>Reference (B9J0671-SRM2)</b>				Prepared: 2019-10-07, Analyzed: 2019-10-07					
Mercury, dissolved	0.00435	0.000010 mg/L	0.00489		89	80-120			

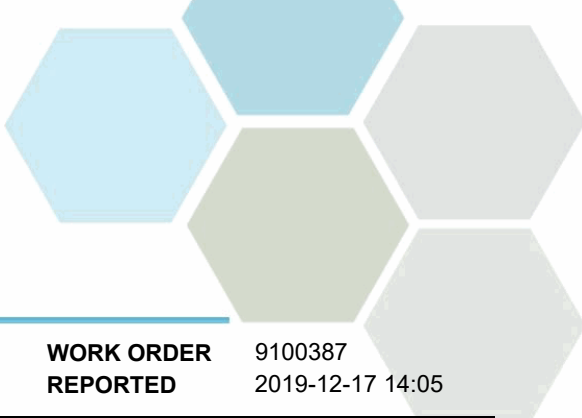


## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>General Parameters, Batch B9J0418</b>									
<b>Blank (B9J0418-BLK1)</b>			Prepared: 2019-10-03, Analyzed: 2019-10-03						
Turbidity	< 0.10	0.10 NTU							
<b>General Parameters, Batch B9J0496</b>									
<b>Blank (B9J0496-BLK1)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Colour, True	< 5.0	5.0 CU							
<b>LCS (B9J0496-BS1)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Colour, True	20	5.0 CU	20.0		99	85-115			
<b>General Parameters, Batch B9J0543</b>									
<b>Blank (B9J0543-BLK1)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0 mg/L							
Conductivity (EC)	< 2.0	2.0 µS/cm							
<b>LCS (B9J0543-BS1)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Alkalinity, Total (as CaCO3)	102	1.0 mg/L	100		102	80-120			
<b>LCS (B9J0543-BS4)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
Conductivity (EC)	1390	2.0 µS/cm	1410		98	95-104			
<b>Reference (B9J0543-SRM1)</b>			Prepared: 2019-10-04, Analyzed: 2019-10-04						
pH	6.99	0.10 pH units	7.01		100	98-102			
<b>General Parameters, Batch B9J0800</b>									
<b>Blank (B9J0800-BLK1)</b>			Prepared: 2019-10-08, Analyzed: 2019-10-08						
Solids, Total Suspended	< 2.0	2.0 mg/L							
<b>Blank (B9J0800-BLK2)</b>			Prepared: 2019-10-08, Analyzed: 2019-10-08						
Solids, Total Suspended	< 2.0	2.0 mg/L							
<b>LCS (B9J0800-BS1)</b>			Prepared: 2019-10-08, Analyzed: 2019-10-08						
Solids, Total Suspended	85.0	10.0 mg/L	100		85	85-115			
<b>LCS (B9J0800-BS2)</b>			Prepared: 2019-10-08, Analyzed: 2019-10-08						
Solids, Total Suspended	100	10.0 mg/L	100		100	85-115			
<b>Total Metals, Batch B9J0613</b>									
<b>Blank (B9J0613-BLK1)</b>			Prepared: 2019-10-06, Analyzed: 2019-10-08						
Aluminum, total	< 0.0050	0.0050 mg/L							
Antimony, total	< 0.00020	0.00020 mg/L							
Arsenic, total	< 0.00050	0.00050 mg/L							
Barium, total	< 0.0050	0.0050 mg/L							
Beryllium, total	< 0.00010	0.00010 mg/L							
Bismuth, total	< 0.00010	0.00010 mg/L							
Boron, total	< 0.0050	0.0050 mg/L							
Cadmium, total	< 0.000010	0.000010 mg/L							



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
---------	--------	----------	-------------	---------------	-------	-----------	-------	-----------	-----------

**Total Metals, Batch B9J0613, Continued**

**Blank (B9J0613-BLK1), Continued**

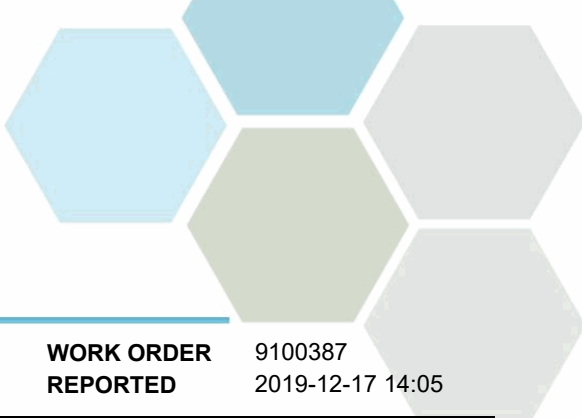
Prepared: 2019-10-06, Analyzed: 2019-10-08

Calcium, total	< 0.20	0.20 mg/L							
Chromium, total	< 0.00050	0.00050 mg/L							
Cobalt, total	< 0.00010	0.00010 mg/L							
Copper, total	< 0.00040	0.00040 mg/L							
Iron, total	< 0.010	0.010 mg/L							
Lead, total	< 0.00020	0.00020 mg/L							
Lithium, total	< 0.00010	0.00010 mg/L							
Magnesium, total	< 0.010	0.010 mg/L							
Manganese, total	< 0.00020	0.00020 mg/L							
Molybdenum, total	< 0.00010	0.00010 mg/L							
Nickel, total	< 0.00040	0.00040 mg/L							
Phosphorus, total	< 0.050	0.050 mg/L							
Potassium, total	< 0.10	0.10 mg/L							
Selenium, total	< 0.00050	0.00050 mg/L							
Silicon, total	< 1.0	1.0 mg/L							
Silver, total	< 0.000050	0.000050 mg/L							
Sodium, total	< 0.10	0.10 mg/L							
Strontium, total	< 0.0010	0.0010 mg/L							
Sulfur, total	< 3.0	3.0 mg/L							
Tellurium, total	< 0.00050	0.00050 mg/L							
Thallium, total	< 0.000020	0.000020 mg/L							
Thorium, total	< 0.00010	0.00010 mg/L							
Tin, total	< 0.00020	0.00020 mg/L							
Titanium, total	< 0.0050	0.0050 mg/L							
Tungsten, total	< 0.0010	0.0010 mg/L							
Uranium, total	< 0.000020	0.000020 mg/L							
Vanadium, total	< 0.0010	0.0010 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							
Zirconium, total	< 0.00010	0.00010 mg/L							

**Blank (B9J0613-BLK2)**

Prepared: 2019-10-06, Analyzed: 2019-10-08

Aluminum, total	< 0.0050	0.0050 mg/L							
Antimony, total	< 0.00020	0.00020 mg/L							
Arsenic, total	< 0.00050	0.00050 mg/L							
Barium, total	< 0.0050	0.0050 mg/L							
Beryllium, total	< 0.00010	0.00010 mg/L							
Bismuth, total	< 0.00010	0.00010 mg/L							
Boron, total	< 0.0050	0.0050 mg/L							
Cadmium, total	< 0.000010	0.000010 mg/L							
Calcium, total	< 0.20	0.20 mg/L							
Chromium, total	< 0.00050	0.00050 mg/L							
Cobalt, total	< 0.00010	0.00010 mg/L							
Copper, total	< 0.00040	0.00040 mg/L							
Iron, total	< 0.010	0.010 mg/L							
Lead, total	< 0.00020	0.00020 mg/L							
Lithium, total	< 0.00010	0.00010 mg/L							
Magnesium, total	< 0.010	0.010 mg/L							
Manganese, total	< 0.00020	0.00020 mg/L							
Molybdenum, total	< 0.00010	0.00010 mg/L							
Nickel, total	< 0.00040	0.00040 mg/L							
Phosphorus, total	< 0.050	0.050 mg/L							
Potassium, total	< 0.10	0.10 mg/L							
Selenium, total	< 0.00050	0.00050 mg/L							
Silicon, total	< 1.0	1.0 mg/L							
Silver, total	< 0.000050	0.000050 mg/L							
Sodium, total	< 0.10	0.10 mg/L							

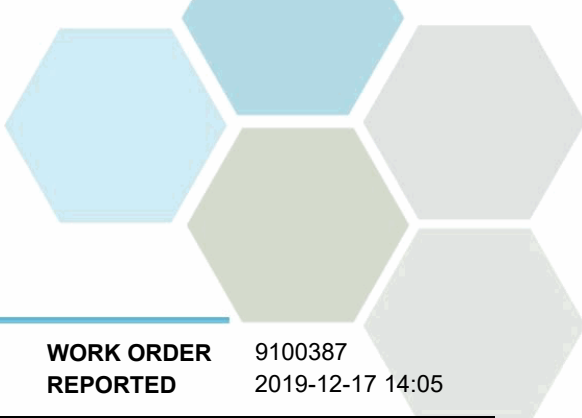


## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Total Metals, Batch B9J0613, Continued</b>									
<b>Blank (B9J0613-BLK2), Continued</b>					Prepared: 2019-10-06, Analyzed: 2019-10-08				
Strontium, total	< 0.0010	0.0010 mg/L							
Sulfur, total	< 3.0	3.0 mg/L							
Tellurium, total	< 0.00050	0.00050 mg/L							
Thallium, total	< 0.000020	0.000020 mg/L							
Thorium, total	< 0.00010	0.00010 mg/L							
Tin, total	< 0.00020	0.00020 mg/L							
Titanium, total	< 0.0050	0.0050 mg/L							
Tungsten, total	< 0.0010	0.0010 mg/L							
Uranium, total	< 0.000020	0.000020 mg/L							
Vanadium, total	< 0.0010	0.0010 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							
Zirconium, total	< 0.00010	0.00010 mg/L							
<b>Blank (B9J0613-BLK3)</b>					Prepared: 2019-10-06, Analyzed: 2019-10-08				
Aluminum, total	< 0.0050	0.0050 mg/L							
Antimony, total	< 0.00020	0.00020 mg/L							
Arsenic, total	< 0.00050	0.00050 mg/L							
Barium, total	< 0.0050	0.0050 mg/L							
Beryllium, total	< 0.00010	0.00010 mg/L							
Bismuth, total	< 0.00010	0.00010 mg/L							
Boron, total	< 0.0050	0.0050 mg/L							
Cadmium, total	< 0.000010	0.000010 mg/L							
Calcium, total	< 0.20	0.20 mg/L							
Chromium, total	< 0.00050	0.00050 mg/L							
Cobalt, total	< 0.00010	0.00010 mg/L							
Copper, total	< 0.00040	0.00040 mg/L							
Iron, total	< 0.010	0.010 mg/L							
Lead, total	< 0.00020	0.00020 mg/L							
Lithium, total	< 0.00010	0.00010 mg/L							
Magnesium, total	< 0.010	0.010 mg/L							
Manganese, total	< 0.00020	0.00020 mg/L							
Molybdenum, total	< 0.00010	0.00010 mg/L							
Nickel, total	< 0.00040	0.00040 mg/L							
Phosphorus, total	< 0.050	0.050 mg/L							
Potassium, total	< 0.10	0.10 mg/L							
Selenium, total	< 0.00050	0.00050 mg/L							
Silicon, total	< 1.0	1.0 mg/L							
Silver, total	< 0.000050	0.000050 mg/L							
Sodium, total	< 0.10	0.10 mg/L							
Strontium, total	< 0.0010	0.0010 mg/L							
Sulfur, total	< 3.0	3.0 mg/L							
Tellurium, total	< 0.00050	0.00050 mg/L							
Thallium, total	< 0.000020	0.000020 mg/L							
Thorium, total	< 0.00010	0.00010 mg/L							
Tin, total	< 0.00020	0.00020 mg/L							
Titanium, total	< 0.0050	0.0050 mg/L							
Tungsten, total	< 0.0010	0.0010 mg/L							
Uranium, total	< 0.000020	0.000020 mg/L							
Vanadium, total	< 0.0010	0.0010 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							
Zirconium, total	< 0.00010	0.00010 mg/L							
<b>LCS (B9J0613-BS1)</b>					Prepared: 2019-10-06, Analyzed: 2019-10-08				
Aluminum, total	0.0214	0.0050 mg/L	0.0199		108	80-120			
Antimony, total	0.0234	0.00020 mg/L	0.0200		117	80-120			
Arsenic, total	0.0209	0.00050 mg/L	0.0200		104	80-120			



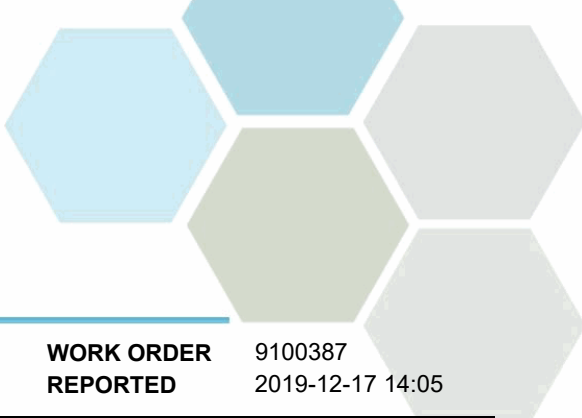
## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Total Metals, Batch B9J0613, Continued</b>									
<b>LCS (B9J0613-BS1), Continued</b>					Prepared: 2019-10-06, Analyzed: 2019-10-08				
Barium, total	0.0199	0.0050 mg/L	0.0198		101	80-120			
Beryllium, total	0.0212	0.00010 mg/L	0.0198		107	80-120			
Bismuth, total	0.0218	0.00010 mg/L	0.0200		109	80-120			
Boron, total	0.0218	0.0050 mg/L	0.0200		109	80-120			
Cadmium, total	0.0209	0.000010 mg/L	0.0199		105	80-120			
Calcium, total	2.08	0.20 mg/L	2.02		103	80-120			
Chromium, total	0.0211	0.00050 mg/L	0.0198		107	80-120			
Cobalt, total	0.0213	0.00010 mg/L	0.0199		107	80-120			
Copper, total	0.0222	0.00040 mg/L	0.0200		111	80-120			
Iron, total	2.08	0.010 mg/L	2.02		103	80-120			
Lead, total	0.0218	0.00020 mg/L	0.0199		110	80-120			
Lithium, total	0.0224	0.00010 mg/L	0.0200		112	80-120			
Magnesium, total	2.08	0.010 mg/L	2.02		103	80-120			
Manganese, total	0.0209	0.00020 mg/L	0.0199		105	80-120			
Molybdenum, total	0.0208	0.00010 mg/L	0.0200		104	80-120			
Nickel, total	0.0213	0.00040 mg/L	0.0200		106	80-120			
Phosphorus, total	2.15	0.050 mg/L	2.00		108	80-120			
Potassium, total	2.03	0.10 mg/L	2.02		100	80-120			
Selenium, total	0.0219	0.00050 mg/L	0.0200		109	80-120			
Silicon, total	2.0	1.0 mg/L	2.00		100	80-120			
Silver, total	0.0214	0.000050 mg/L	0.0200		107	80-120			
Sodium, total	2.14	0.10 mg/L	2.02		106	80-120			
Strontium, total	0.0202	0.0010 mg/L	0.0200		101	80-120			
Sulfur, total	5.6	3.0 mg/L	5.00		112	80-120			
Tellurium, total	0.0218	0.00050 mg/L	0.0200		109	80-120			
Thallium, total	0.0216	0.000020 mg/L	0.0199		109	80-120			
Thorium, total	0.0208	0.00010 mg/L	0.0200		104	80-120			
Tin, total	0.0206	0.00020 mg/L	0.0200		103	80-120			
Titanium, total	0.0214	0.0050 mg/L	0.0200		107	80-120			
Tungsten, total	0.0213	0.0010 mg/L	0.0200		107	80-120			
Uranium, total	0.0210	0.000020 mg/L	0.0200		105	80-120			
Vanadium, total	0.0217	0.0010 mg/L	0.0200		108	80-120			
Zinc, total	0.0224	0.0040 mg/L	0.0200		112	80-120			
Zirconium, total	0.0205	0.00010 mg/L	0.0200		102	80-120			

<b>Reference (B9J0613-SRM1)</b>					Prepared: 2019-10-06, Analyzed: 2019-10-08				
Aluminum, total	0.326	0.0050 mg/L	0.303		108	82-114			
Antimony, total	0.0526	0.00020 mg/L	0.0511		103	88-115			
Arsenic, total	0.121	0.00050 mg/L	0.118		103	88-111			
Barium, total	0.779	0.0050 mg/L	0.823		95	83-110			
Beryllium, total	0.0510	0.00010 mg/L	0.0496		103	80-119			
Boron, total	3.45	0.0050 mg/L	3.45		100	80-118			
Cadmium, total	0.0506	0.000010 mg/L	0.0495		102	90-110			
Calcium, total	11.2	0.20 mg/L	11.6		97	85-113			
Chromium, total	0.262	0.00050 mg/L	0.250		105	88-111			
Cobalt, total	0.0404	0.00010 mg/L	0.0377		107	90-114			
Copper, total	0.535	0.00040 mg/L	0.486		110	90-117			
Iron, total	0.528	0.010 mg/L	0.488		108	90-116			
Lead, total	0.210	0.00020 mg/L	0.204		103	90-110			
Lithium, total	0.421	0.00010 mg/L	0.403		105	79-118			
Magnesium, total	3.95	0.010 mg/L	3.79		104	88-116			
Manganese, total	0.108	0.00020 mg/L	0.109		99	88-108			
Molybdenum, total	0.203	0.00010 mg/L	0.198		102	88-110			
Nickel, total	0.259	0.00040 mg/L	0.249		104	90-112			
Phosphorus, total	0.238	0.050 mg/L	0.227		105	72-118			
Potassium, total	7.25	0.10 mg/L	7.21		101	87-116			



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 9100387  
2019-12-17 14:05

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Total Metals, Batch B9J0613, Continued</b>									
<b>Reference (B9J0613-SRM1), Continued</b>					Prepared: 2019-10-06, Analyzed: 2019-10-08				
Selenium, total	0.129	0.00050 mg/L	0.121		107	90-122			
Sodium, total	7.74	0.10 mg/L	7.54		103	86-118			
Strontium, total	0.371	0.0010 mg/L	0.375		99	86-110			
Thallium, total	0.0836	0.000020 mg/L	0.0805		104	90-113			
Uranium, total	0.0314	0.000020 mg/L	0.0306		103	88-112			
Vanadium, total	0.395	0.0010 mg/L	0.386		102	87-110			
Zinc, total	2.48	0.0040 mg/L	2.49		99	90-113			

**Total Metals, Batch B9J0706**

<b>Blank (B9J0706-BLK1)</b>					Prepared: 2019-10-07, Analyzed: 2019-10-07				
Mercury, total	< 0.000010	0.000010 mg/L							
<b>Blank (B9J0706-BLK2)</b>					Prepared: 2019-10-07, Analyzed: 2019-10-07				
Mercury, total	< 0.000010	0.000010 mg/L							
<b>Reference (B9J0706-SRM1)</b>					Prepared: 2019-10-07, Analyzed: 2019-10-07				
Mercury, total	0.00480	0.000010 mg/L	0.00489		98	80-120			
<b>Reference (B9J0706-SRM2)</b>					Prepared: 2019-10-07, Analyzed: 2019-10-07				
Mercury, total	0.00439	0.000010 mg/L	0.00489		90	80-120			





CARO.ca 1-888-311-8846

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

REPORT TO:
COMPANY: ALLTERRA Construction
ADDRESS: 2158 Millstream Road
Victoria, BC V9B 6H4

INVOICE TO:
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:

DELIVERY METHOD:
DATA FORMAT:
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #: 17-932

\*\* If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, please check here: [ ]

Table with columns: MATRIX, SAMPLING, DATE, TIME, COMMENTS

Table with columns: CLIENT SAMPLE ID, DATE, TIME, COMMENTS, ANALYSES REQUESTED (VOC, EPH, PCB, METALS, etc.), POSSIBLE SAMPLE HAZARD CODE(S)

SHIPPING INSTRUCTIONS:
Return Cooler(s) [ ]
Supplies Needed:
SAMPLE RETENTION:
30 Days (default) [ ]
60 Days [ ]
90 Days [ ]
Other (surcharges will apply):

\* OTHER INSTRUCTIONS:
SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): ICE: Y [ ] N [ ]
COOLER 2 (°C): ICE: Y [ ] N [ ]
COOLER 3 (°C): ICE: Y [ ] N [ ]
CUSTODY SEALS INTACT: NA [ ] Y [ ]

If you would like to talk to a real live Scientist about your project requirements, please check here: [ ]