

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

TEL (250) 508-0726
FAX

ATTENTION Rahim Gaidhar

WORK ORDER 7011234

PO NUMBER P15-06 SIRM
PROJECT SIRM 460 Stebbings
PROJECT INFO

RECEIVED / TEMP 2017-01-20 10:30 / 8°C
REPORTED 2017-01-27
COC NUMBER 20170119-A

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition 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.



Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Account Manager

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

Locations:

#110 4011 Viking Way
Richmond, BC V6V 2K9
Tel: 604-279-1499

#102 3677 Highway 97N
Kelowna, BC V1X 5C3
Tel: 250-765-9646

17225 109 Avenue
Edmonton, AB T5S 1H7
Tel: 780-489-9100

www.caro.ca

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Analysis Description	Method Reference	Technique	Location
Alkalinity in Water	APHA 2320 B*	Titration with H2SO4	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Chromium, Hexavalent (Total) in Water	APHA 3500-Cr B	Colorimetry	Richmond
Colour, True in Water	APHA 2120 C	Spectrophotometry (456 nm)	Kelowna
Conductivity in Water	APHA 2510 B	Conductivity Meter	Kelowna
Dissolved Metals by ICPMS in Water	APHA 3030 B / APHA 3125 B	0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Glycols in Water	EPA 8015B*	Gas Chromatography (GC-FID)	Richmond
Hardness (as CaCO3) in Water	APHA 2340 B	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
Hardness (as CaCO3) in Water	APHA 2340 B*	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Estimated)	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Mercury, dissolved by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
Mercury, total by CVAFS in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	Richmond
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MS (SIM)	Richmond
Solids, Total Dissolved in Water	APHA 2540 C*	Gravimetry (Dried at 103-105C)	Kelowna
Solids, Total Suspended in Water	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Kelowna
Total Metals by ICPMS in Water	APHA 3030E* / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
Turbidity in Water	APHA 2130 B	Nephelometry	Kelowna
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260B	Purge&Trap / GC-MS (SIM)	Richmond

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

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
 BCMOE British Columbia Environmental Laboratory Manual, 2013, British Columbia Ministry of Environment
 EPA United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL Method Reporting Limit
 < Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
 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

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Analyte	Result / Estimate of Recovery	Uncertainty	MRL / Limits	Units	Prepared	Analyzed	Notes
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Sample ID: 1-Weir (7011234-01) [Water] Sampled: 2017-01-19 09:15

Anions

Chloride	35.3	± 1.6	0.10	mg/L	N/A	2017-01-22	
Fluoride	< 0.10		0.10	mg/L	N/A	2017-01-22	
Nitrate (as N)	0.195	± 0.025	0.010	mg/L	N/A	2017-01-22	
Nitrite (as N)	< 0.010		0.010	mg/L	N/A	2017-01-22	
Sulfate	44.2	± 5.2	1.0	mg/L	N/A	2017-01-22	

General Parameters

Alkalinity, Total (as CaCO3)	37	± 2	1	mg/L	N/A	2017-01-22	
Alkalinity, Phenolphthalein (as CaCO3)	< 1		1	mg/L	N/A	2017-01-22	
Alkalinity, Bicarbonate (as CaCO3)	37	± 2	1	mg/L	N/A	2017-01-22	
Alkalinity, Carbonate (as CaCO3)	< 1		1	mg/L	N/A	2017-01-22	
Alkalinity, Hydroxide (as CaCO3)	< 1		1	mg/L	N/A	2017-01-22	
Chromium, Hexavalent	< 0.001		0.001	mg/L	N/A	2017-01-26	
Colour, True	< 5		5	CU	N/A	2017-01-22	
Conductivity (EC)	276	± 4	2	µS/cm	N/A	2017-01-22	
pH	7.56	± 0.02	0.01	pH units	N/A	2017-01-22	HT2
Solids, Total Dissolved	152	± 16	10	mg/L	N/A	2017-01-24	
Solids, Total Suspended	14	± 1	2	mg/L	N/A	2017-01-24	
Turbidity	23.1	± 1.1	0.10	NTU	N/A	2017-01-21	

Calculated Parameters

Chromium, Trivalent	0.0016		0.0010	mg/L	N/A	N/A	
Hardness, Total (as CaCO3)	83.6		0.50	mg/L	N/A	N/A	

Dissolved Metals

Aluminum, dissolved	0.005	± 0.002	0.005	mg/L	N/A	2017-01-23	
Antimony, dissolved	0.0002	± 0.0001	0.0001	mg/L	N/A	2017-01-23	
Arsenic, dissolved	< 0.0005		0.0005	mg/L	N/A	2017-01-23	
Barium, dissolved	< 0.005		0.005	mg/L	N/A	2017-01-23	
Beryllium, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Bismuth, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Boron, dissolved	0.013	± 0.002	0.004	mg/L	N/A	2017-01-23	
Cadmium, dissolved	< 0.00001		0.00001	mg/L	N/A	2017-01-23	
Calcium, dissolved	25.2	± 4.1	0.2	mg/L	N/A	2017-01-23	
Chromium, dissolved	< 0.0005		0.0005	mg/L	N/A	2017-01-23	
Cobalt, dissolved	< 0.00005		0.00005	mg/L	N/A	2017-01-23	
Copper, dissolved	0.0007	± 0.0003	0.0002	mg/L	N/A	2017-01-23	
Iron, dissolved	< 0.010		0.010	mg/L	N/A	2017-01-23	
Lead, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Lithium, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Magnesium, dissolved	5.04	± 0.85	0.01	mg/L	N/A	2017-01-23	
Manganese, dissolved	0.0217	± 0.0026	0.0002	mg/L	N/A	2017-01-23	
Mercury, dissolved	< 0.00002		0.00002	mg/L	2017-01-23	2017-01-24	
Molybdenum, dissolved	0.0005	± 0.0001	0.0001	mg/L	N/A	2017-01-23	
Nickel, dissolved	0.0004	± 0.0002	0.0002	mg/L	N/A	2017-01-23	
Phosphorus, dissolved	< 0.02		0.02	mg/L	N/A	2017-01-23	

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Sample ID: 1-Weir (7011234-01) [Water] Sampled: 2017-01-19 09:15, Continued

Dissolved Metals, Continued

Potassium, dissolved	0.77	± 0.11	0.02	mg/L	N/A	2017-01-23	
Selenium, dissolved	< 0.0005		0.0005	mg/L	N/A	2017-01-23	
Silicon, dissolved	1.1	± 0.5	0.5	mg/L	N/A	2017-01-23	
Silver, dissolved	< 0.00005		0.00005	mg/L	N/A	2017-01-23	
Sodium, dissolved	16.9	± 2.6	0.02	mg/L	N/A	2017-01-23	
Strontium, dissolved	0.090	± 0.010	0.001	mg/L	N/A	2017-01-23	
Sulfur, dissolved	14	± 30	1	mg/L	N/A	2017-01-23	
Tellurium, dissolved	< 0.0002		0.0002	mg/L	N/A	2017-01-23	
Thallium, dissolved	< 0.00002		0.00002	mg/L	N/A	2017-01-23	
Thorium, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Tin, dissolved	< 0.0002		0.0002	mg/L	N/A	2017-01-23	
Titanium, dissolved	< 0.005		0.005	mg/L	N/A	2017-01-23	
Uranium, dissolved	0.00013	± 0.00002	0.00002	mg/L	N/A	2017-01-23	
Vanadium, dissolved	< 0.001		0.001	mg/L	N/A	2017-01-23	
Zinc, dissolved	< 0.004		0.004	mg/L	N/A	2017-01-23	
Zirconium, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	

Total Metals

Aluminum, total	0.900	± 0.164	0.005	mg/L	2017-01-23	2017-01-23	
Antimony, total	0.0002	± 0.0001	0.0001	mg/L	2017-01-23	2017-01-23	
Arsenic, total	< 0.0005		0.0005	mg/L	2017-01-23	2017-01-23	
Barium, total	0.009	± 0.001	0.005	mg/L	2017-01-23	2017-01-23	
Beryllium, total	< 0.0001		0.0001	mg/L	2017-01-23	2017-01-23	
Bismuth, total	< 0.0001		0.0001	mg/L	2017-01-23	2017-01-23	
Boron, total	0.014	± 0.004	0.004	mg/L	2017-01-23	2017-01-23	
Cadmium, total	< 0.00001		0.00001	mg/L	2017-01-23	2017-01-23	
Calcium, total	27.2	± 3.3	0.2	mg/L	2017-01-23	2017-01-23	
Chromium, total	0.0016	± 0.0002	0.0005	mg/L	2017-01-23	2017-01-23	
Cobalt, total	0.00043	± 0.00004	0.00005	mg/L	2017-01-23	2017-01-23	
Copper, total	0.0026	± 0.0003	0.0002	mg/L	2017-01-23	2017-01-23	
Iron, total	0.93	± 0.18	0.01	mg/L	2017-01-23	2017-01-23	
Lead, total	0.0005	± 0.0001	0.0001	mg/L	2017-01-23	2017-01-23	
Lithium, total	0.0006	± 0.0001	0.0001	mg/L	2017-01-23	2017-01-23	
Magnesium, total	5.08	± 0.77	0.01	mg/L	2017-01-23	2017-01-23	
Manganese, total	0.0340	± 0.0031	0.0002	mg/L	2017-01-23	2017-01-23	
Mercury, total	< 0.00002		0.00002	mg/L	2017-01-23	2017-01-24	
Molybdenum, total	0.0005		0.0001	mg/L	2017-01-23	2017-01-23	
Nickel, total	0.0017	± 0.0002	0.0002	mg/L	2017-01-23	2017-01-23	
Phosphorus, total	< 0.02		0.02	mg/L	2017-01-23	2017-01-23	
Potassium, total	0.88	± 0.10	0.02	mg/L	2017-01-23	2017-01-23	
Selenium, total	< 0.0005		0.0005	mg/L	2017-01-23	2017-01-23	
Silicon, total	3.7	± 1.0	0.5	mg/L	2017-01-23	2017-01-23	
Silver, total	0.00010	± 0.00006	0.00005	mg/L	2017-01-23	2017-01-23	
Sodium, total	17.2	± 2.5	0.02	mg/L	2017-01-23	2017-01-23	
Strontium, total	0.090	± 0.008	0.001	mg/L	2017-01-23	2017-01-23	
Sulfur, total	12	± 77	1	mg/L	2017-01-23	2017-01-23	

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Sample ID: 1-Weir (7011234-01) [Water] Sampled: 2017-01-19 09:15, Continued

Total Metals, Continued

Tellurium, total	< 0.0002		0.0002	mg/L	2017-01-23	2017-01-23	
Thallium, total	< 0.00002		0.00002	mg/L	2017-01-23	2017-01-23	
Thorium, total	< 0.0001		0.0001	mg/L	2017-01-23	2017-01-23	
Tin, total	< 0.0002		0.0002	mg/L	2017-01-23	2017-01-23	
Titanium, total	0.049	± 0.007	0.005	mg/L	2017-01-23	2017-01-23	
Uranium, total	0.00016	± 0.00001	0.00002	mg/L	2017-01-23	2017-01-23	
Vanadium, total	0.003		0.001	mg/L	2017-01-23	2017-01-23	
Zinc, total	< 0.004		0.004	mg/L	2017-01-23	2017-01-23	
Zirconium, total	0.0005	± 0.0001	0.0001	mg/L	2017-01-23	2017-01-23	

BCMEOE Aggregate Hydrocarbons

EPHw10-19	< 250		250	µg/L	2017-01-25	2017-01-26	
EPHw19-32	< 250		250	µg/L	2017-01-25	2017-01-26	
LEPHw	< 250		250	µg/L	N/A	N/A	
HEPHw	< 250		250	µg/L	N/A	N/A	
<i>Surrogate: 2-Methylnonane</i>	<i>104</i>		<i>60-140</i>	<i>%</i>	<i>2017-01-25</i>	<i>2017-01-26</i>	

Glycols

Propylene glycol	< 5		5	mg/L	N/A	2017-01-25	
Ethylene glycol	< 5		5	mg/L	N/A	2017-01-25	
Diethylene glycol	< 5		5	mg/L	N/A	2017-01-25	
Triethylene glycol	< 5		5	mg/L	N/A	2017-01-25	
<i>Surrogate: Tetramethylene Glycol</i>	<i>119</i>		<i>66-125</i>	<i>%</i>	<i>N/A</i>	<i>2017-01-25</i>	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Acenaphthylene	< 0.20		0.20	µg/L	2017-01-25	2017-01-26	
Acridine	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Anthracene	< 0.01		0.01	µg/L	2017-01-25	2017-01-26	
Benz (a) anthracene	< 0.01		0.01	µg/L	2017-01-25	2017-01-26	
Benzo (a) pyrene	< 0.01		0.01	µg/L	2017-01-25	2017-01-26	
Benzo (b) fluoranthene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Benzo (b+j) fluoranthene	< 0.10		0.10	µg/L	2017-01-25	2017-01-26	
Benzo (g,h,i) perylene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Benzo (k) fluoranthene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Chrysene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Dibenz (a,h) anthracene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Fluoranthene	< 0.03		0.03	µg/L	2017-01-25	2017-01-26	
Fluorene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Indeno (1,2,3-cd) pyrene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Naphthalene	< 0.20		0.20	µg/L	2017-01-25	2017-01-26	
Phenanthrene	< 0.10		0.10	µg/L	2017-01-25	2017-01-26	
Pyrene	< 0.02		0.02	µg/L	2017-01-25	2017-01-26	
Quinoline	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
<i>Surrogate: Acridine-d9</i>	<i>92</i>		<i>60-130</i>	<i>%</i>	<i>2017-01-25</i>	<i>2017-01-26</i>	
<i>Surrogate: Naphthalene-d8</i>	<i>84</i>		<i>60-130</i>	<i>%</i>	<i>2017-01-25</i>	<i>2017-01-26</i>	
<i>Surrogate: Perylene-d12</i>	<i>105</i>		<i>60-130</i>	<i>%</i>	<i>2017-01-25</i>	<i>2017-01-26</i>	

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Sample ID: 1-Weir (7011234-01) [Water] Sampled: 2017-01-19 09:15, Continued

Volatile Organic Compounds (VOC)

Benzene	< 0.5		0.5	µg/L	N/A	2017-01-22	
Bromodichloromethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
Bromoform	< 1.0		1.0	µg/L	N/A	2017-01-22	
Bromomethane	< 2.0		2.0	µg/L	N/A	2017-01-22	
Carbon tetrachloride	< 0.5		0.5	µg/L	N/A	2017-01-22	
Chlorobenzene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Chloroethane	< 2.0		2.0	µg/L	N/A	2017-01-22	
Chloroform	< 1.0		1.0	µg/L	N/A	2017-01-22	
Chloromethane	< 2.0		2.0	µg/L	N/A	2017-01-22	
Dibromochloromethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,2-Dibromoethane	< 0.2		0.2	µg/L	N/A	2017-01-22	
Dibromomethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,2-Dichlorobenzene	< 0.5		0.5	µg/L	N/A	2017-01-22	
1,3-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,4-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1-Dichloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,2-Dichloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1-Dichloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
cis-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
trans-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,2-Dichloropropane	< 1.0		1.0	µg/L	N/A	2017-01-22	
cis-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2017-01-22	
trans-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Ethylbenzene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Methyl tert-butyl ether	< 1.0		1.0	µg/L	N/A	2017-01-22	
Methylene chloride	< 3.0		3.0	µg/L	N/A	2017-01-22	
Styrene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1,1,2-Tetrachloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1,2,2-Tetrachloroethane	< 0.5		0.5	µg/L	N/A	2017-01-22	
Tetrachloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Toluene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1,1-Trichloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1,2-Trichloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
Trichloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Trichlorofluoromethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
Vinyl chloride	< 1.0		1.0	µg/L	N/A	2017-01-22	
Xylenes (total)	< 2.0		2.0	µg/L	N/A	2017-01-22	
Surrogate: Toluene-d8	105		70-130	%	N/A	2017-01-22	
Surrogate: 4-Bromofluorobenzene	99		70-130	%	N/A	2017-01-22	
Surrogate: 1,4-Dichlorobenzene-d4	88		70-130	%	N/A	2017-01-22	

Sample ID: 2-SW1 (7011234-02) [Water] Sampled: 2017-01-19 09:30

Anions

Chloride	39.0 ± 1.8		0.10	mg/L	N/A	2017-01-22	
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Sample ID: 2-SW1 (7011234-02) [Water] Sampled: 2017-01-19 09:30, Continued

Anions, Continued

Fluoride	< 0.10		0.10	mg/L	N/A	2017-01-22	
Nitrate (as N)	0.395	± 0.049	0.010	mg/L	N/A	2017-01-22	
Nitrite (as N)	< 0.010		0.010	mg/L	N/A	2017-01-22	
Sulfate	55.0	± 6.5	1.0	mg/L	N/A	2017-01-22	

General Parameters

Alkalinity, Total (as CaCO ₃)	52	± 3	1	mg/L	N/A	2017-01-22	
Alkalinity, Phenolphthalein (as CaCO ₃)	< 1		1	mg/L	N/A	2017-01-22	
Alkalinity, Bicarbonate (as CaCO ₃)	52	± 3	1	mg/L	N/A	2017-01-22	
Alkalinity, Carbonate (as CaCO ₃)	< 1		1	mg/L	N/A	2017-01-22	
Alkalinity, Hydroxide (as CaCO ₃)	< 1		1	mg/L	N/A	2017-01-22	
Chromium, Hexavalent	< 0.001		0.001	mg/L	N/A	2017-01-26	
Colour, True	< 5		5	CU	N/A	2017-01-22	
Conductivity (EC)	337	± 5	2	µS/cm	N/A	2017-01-22	
pH	7.56	± 0.02	0.01	pH units	N/A	2017-01-22	HT2
Solids, Total Dissolved	189	± 19	10	mg/L	N/A	2017-01-24	
Solids, Total Suspended	3	± 1	2	mg/L	N/A	2017-01-24	
Turbidity	4.40	± 0.21	0.10	NTU	N/A	2017-01-21	

Calculated Parameters

Chromium, Trivalent	< 0.0010		0.0010	mg/L	N/A	N/A	
Hardness, Total (as CaCO ₃)	114		0.50	mg/L	N/A	N/A	

Dissolved Metals

Aluminum, dissolved	< 0.005		0.005	mg/L	N/A	2017-01-23	
Antimony, dissolved	0.0002	± 0.0001	0.0001	mg/L	N/A	2017-01-23	
Arsenic, dissolved	< 0.0005		0.0005	mg/L	N/A	2017-01-23	
Barium, dissolved	0.007	± 0.001	0.005	mg/L	N/A	2017-01-23	
Beryllium, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Bismuth, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Boron, dissolved	0.012	± 0.002	0.004	mg/L	N/A	2017-01-23	
Cadmium, dissolved	< 0.00001		0.00001	mg/L	N/A	2017-01-23	
Calcium, dissolved	35.5	± 5.7	0.2	mg/L	N/A	2017-01-23	
Chromium, dissolved	< 0.0005		0.0005	mg/L	N/A	2017-01-23	
Cobalt, dissolved	< 0.00005		0.00005	mg/L	N/A	2017-01-23	
Copper, dissolved	0.0008	± 0.0003	0.0002	mg/L	N/A	2017-01-23	
Iron, dissolved	< 0.010		0.010	mg/L	N/A	2017-01-23	
Lead, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Lithium, dissolved	0.0001		0.0001	mg/L	N/A	2017-01-23	
Magnesium, dissolved	6.05	± 1.03	0.01	mg/L	N/A	2017-01-23	
Manganese, dissolved	0.0046	± 0.0006	0.0002	mg/L	N/A	2017-01-23	
Mercury, dissolved	< 0.00002		0.00002	mg/L	2017-01-23	2017-01-24	
Molybdenum, dissolved	0.0007	± 0.0001	0.0001	mg/L	N/A	2017-01-23	
Nickel, dissolved	0.0005	± 0.0002	0.0002	mg/L	N/A	2017-01-23	
Phosphorus, dissolved	< 0.02		0.02	mg/L	N/A	2017-01-23	
Potassium, dissolved	0.82	± 0.12	0.02	mg/L	N/A	2017-01-23	

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Sample ID: 2-SW1 (7011234-02) [Water] Sampled: 2017-01-19 09:30, Continued

Dissolved Metals, Continued

Selenium, dissolved	< 0.0005		0.0005	mg/L	N/A	2017-01-23	
Silicon, dissolved	2.1	± 1.0	0.5	mg/L	N/A	2017-01-23	
Silver, dissolved	< 0.00005		0.00005	mg/L	N/A	2017-01-23	
Sodium, dissolved	16.7	± 2.6	0.02	mg/L	N/A	2017-01-23	
Strontium, dissolved	0.110	± 0.012	0.001	mg/L	N/A	2017-01-23	
Sulfur, dissolved	17	± 37	1	mg/L	N/A	2017-01-23	
Tellurium, dissolved	< 0.0002		0.0002	mg/L	N/A	2017-01-23	
Thallium, dissolved	< 0.00002		0.00002	mg/L	N/A	2017-01-23	
Thorium, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	
Tin, dissolved	< 0.0002		0.0002	mg/L	N/A	2017-01-23	
Titanium, dissolved	< 0.005		0.005	mg/L	N/A	2017-01-23	
Uranium, dissolved	0.00026	± 0.00004	0.00002	mg/L	N/A	2017-01-23	
Vanadium, dissolved	< 0.001		0.001	mg/L	N/A	2017-01-23	
Zinc, dissolved	< 0.004		0.004	mg/L	N/A	2017-01-23	
Zirconium, dissolved	< 0.0001		0.0001	mg/L	N/A	2017-01-23	

Total Metals

Aluminum, total	0.107	± 0.021	0.005	mg/L	2017-01-23	2017-01-23	
Antimony, total	0.0002	± 0.0001	0.0001	mg/L	2017-01-23	2017-01-23	
Arsenic, total	< 0.0005		0.0005	mg/L	2017-01-23	2017-01-23	
Barium, total	0.007	± 0.001	0.005	mg/L	2017-01-23	2017-01-23	
Beryllium, total	< 0.0001		0.0001	mg/L	2017-01-23	2017-01-23	
Bismuth, total	< 0.0001		0.0001	mg/L	2017-01-23	2017-01-23	
Boron, total	0.013	± 0.003	0.004	mg/L	2017-01-23	2017-01-23	
Cadmium, total	< 0.00001		0.00001	mg/L	2017-01-23	2017-01-23	
Calcium, total	37.2	± 4.5	0.2	mg/L	2017-01-23	2017-01-23	
Chromium, total	< 0.0005		0.0005	mg/L	2017-01-23	2017-01-23	
Cobalt, total	0.00011	± 0.00001	0.00005	mg/L	2017-01-23	2017-01-23	
Copper, total	0.0012	± 0.0002	0.0002	mg/L	2017-01-23	2017-01-23	
Iron, total	0.11	± 0.02	0.01	mg/L	2017-01-23	2017-01-23	
Lead, total	0.0001	± 0.0001	0.0001	mg/L	2017-01-23	2017-01-23	
Lithium, total	0.0002		0.0001	mg/L	2017-01-23	2017-01-23	
Magnesium, total	5.76	± 0.88	0.01	mg/L	2017-01-23	2017-01-23	
Manganese, total	0.0067	± 0.0006	0.0002	mg/L	2017-01-23	2017-01-23	
Mercury, total	< 0.00002		0.00002	mg/L	2017-01-23	2017-01-24	
Molybdenum, total	0.0006	± 0.0001	0.0001	mg/L	2017-01-23	2017-01-23	
Nickel, total	0.0006	± 0.0001	0.0002	mg/L	2017-01-23	2017-01-23	
Phosphorus, total	< 0.02		0.02	mg/L	2017-01-23	2017-01-23	
Potassium, total	0.81	± 0.10	0.02	mg/L	2017-01-23	2017-01-23	
Selenium, total	< 0.0005		0.0005	mg/L	2017-01-23	2017-01-23	
Silicon, total	2.9	± 0.7	0.5	mg/L	2017-01-23	2017-01-23	
Silver, total	0.00008	± 0.00005	0.00005	mg/L	2017-01-23	2017-01-23	
Sodium, total	16.6	± 2.5	0.02	mg/L	2017-01-23	2017-01-23	
Strontium, total	0.107	± 0.010	0.001	mg/L	2017-01-23	2017-01-23	
Sulfur, total	16	± 100	1	mg/L	2017-01-23	2017-01-23	
Tellurium, total	< 0.0002		0.0002	mg/L	2017-01-23	2017-01-23	

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Sample ID: 2-SW1 (7011234-02) [Water] Sampled: 2017-01-19 09:30, Continued

Total Metals, Continued

Thallium, total	< 0.00002		0.00002	mg/L	2017-01-23	2017-01-23	
Thorium, total	< 0.0001		0.0001	mg/L	2017-01-23	2017-01-23	
Tin, total	< 0.0002		0.0002	mg/L	2017-01-23	2017-01-23	
Titanium, total	< 0.005		0.005	mg/L	2017-01-23	2017-01-23	
Uranium, total	0.00028	± 0.00002	0.00002	mg/L	2017-01-23	2017-01-23	
Vanadium, total	< 0.001		0.001	mg/L	2017-01-23	2017-01-23	
Zinc, total	< 0.004		0.004	mg/L	2017-01-23	2017-01-23	
Zirconium, total	< 0.0001		0.0001	mg/L	2017-01-23	2017-01-23	

BCMOE Aggregate Hydrocarbons

EPHw10-19	< 250		250	µg/L	2017-01-25	2017-01-26	
EPHw19-32	< 250		250	µg/L	2017-01-25	2017-01-26	
LEPHw	< 250		250	µg/L	N/A	N/A	
HEPHw	< 250		250	µg/L	N/A	N/A	
<i>Surrogate: 2-Methylnonane</i>	100		60-140	%	2017-01-25	2017-01-26	

Glycols

Propylene glycol	< 5		5	mg/L	N/A	2017-01-25	
Ethylene glycol	< 5		5	mg/L	N/A	2017-01-25	
Diethylene glycol	< 5		5	mg/L	N/A	2017-01-25	
Triethylene glycol	< 5		5	mg/L	N/A	2017-01-25	
<i>Surrogate: Tetramethylene Glycol</i>	114		66-125	%	N/A	2017-01-25	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Acenaphthylene	< 0.20		0.20	µg/L	2017-01-25	2017-01-26	
Acridine	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Anthracene	< 0.01		0.01	µg/L	2017-01-25	2017-01-26	
Benz (a) anthracene	< 0.01		0.01	µg/L	2017-01-25	2017-01-26	
Benzo (a) pyrene	< 0.01		0.01	µg/L	2017-01-25	2017-01-26	
Benzo (b) fluoranthene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Benzo (b+j) fluoranthene	< 0.10		0.10	µg/L	2017-01-25	2017-01-26	
Benzo (g,h,i) perylene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Benzo (k) fluoranthene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Chrysene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Dibenz (a,h) anthracene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Fluoranthene	< 0.03		0.03	µg/L	2017-01-25	2017-01-26	
Fluorene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Indeno (1,2,3-cd) pyrene	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
Naphthalene	< 0.20		0.20	µg/L	2017-01-25	2017-01-26	
Phenanthrene	< 0.10		0.10	µg/L	2017-01-25	2017-01-26	
Pyrene	< 0.02		0.02	µg/L	2017-01-25	2017-01-26	
Quinoline	< 0.05		0.05	µg/L	2017-01-25	2017-01-26	
<i>Surrogate: Acridine-d9</i>	90		60-130	%	2017-01-25	2017-01-26	
<i>Surrogate: Naphthalene-d8</i>	83		60-130	%	2017-01-25	2017-01-26	
<i>Surrogate: Perylene-d12</i>	104		60-130	%	2017-01-25	2017-01-26	

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Sample ID: 2-SW1 (7011234-02) [Water] Sampled: 2017-01-19 09:30, Continued

Volatile Organic Compounds (VOC)							
Benzene	< 0.5		0.5	µg/L	N/A	2017-01-22	
Bromodichloromethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
Bromoform	< 1.0		1.0	µg/L	N/A	2017-01-22	
Bromomethane	< 2.0		2.0	µg/L	N/A	2017-01-22	
Carbon tetrachloride	< 0.5		0.5	µg/L	N/A	2017-01-22	
Chlorobenzene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Chloroethane	< 2.0		2.0	µg/L	N/A	2017-01-22	
Chloroform	< 1.0		1.0	µg/L	N/A	2017-01-22	
Chloromethane	< 2.0		2.0	µg/L	N/A	2017-01-22	
Dibromochloromethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,2-Dibromoethane	< 0.2		0.2	µg/L	N/A	2017-01-22	
Dibromomethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,2-Dichlorobenzene	< 0.5		0.5	µg/L	N/A	2017-01-22	
1,3-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,4-Dichlorobenzene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1-Dichloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,2-Dichloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1-Dichloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
cis-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
trans-1,2-Dichloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,2-Dichloropropane	< 1.0		1.0	µg/L	N/A	2017-01-22	
cis-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2017-01-22	
trans-1,3-Dichloropropene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Ethylbenzene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Methyl tert-butyl ether	< 1.0		1.0	µg/L	N/A	2017-01-22	
Methylene chloride	< 3.0		3.0	µg/L	N/A	2017-01-22	
Styrene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1,1,2-Tetrachloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1,2,2-Tetrachloroethane	< 0.5		0.5	µg/L	N/A	2017-01-22	
Tetrachloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Toluene	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1,1-Trichloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
1,1,2-Trichloroethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
Trichloroethene	< 1.0		1.0	µg/L	N/A	2017-01-22	
Trichlorofluoromethane	< 1.0		1.0	µg/L	N/A	2017-01-22	
Vinyl chloride	< 1.0		1.0	µg/L	N/A	2017-01-22	
Xylenes (total)	< 2.0		2.0	µg/L	N/A	2017-01-22	
Surrogate: Toluene-d8	103		70-130	%	N/A	2017-01-22	
Surrogate: 4-Bromofluorobenzene	97		70-130	%	N/A	2017-01-22	
Surrogate: 1,4-Dichlorobenzene-d4	84		70-130	%	N/A	2017-01-22	

Sample / Analysis Qualifiers:

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

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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):** Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup):** Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS):** A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM):** A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are 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 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	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
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Anions, Batch B7A1026

Blank (B7A1026-BLK1)

Prepared: 2017-01-22, Analyzed: 2017-01-22

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 (B7A1026-BS1)

Prepared: 2017-01-22, Analyzed: 2017-01-22

Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	4.04	0.10 mg/L	4.00		101	88-108			
Nitrate (as N)	3.92	0.010 mg/L	4.00		98	93-108			
Nitrite (as N)	2.02	0.010 mg/L	2.00		101	83-110			
Sulfate	15.9	1.0 mg/L	16.0		99	91-109			

BCMOE Aggregate Hydrocarbons, Batch B7A1123

Blank (B7A1123-BLK1)

Prepared: 2017-01-25, Analyzed: 2017-01-26

EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane	454	µg/L	444		102	60-140			

LCS (B7A1123-BS2)

Prepared: 2017-01-25, Analyzed: 2017-01-26

EPHw10-19	15000	250 µg/L	15500		97	70-130			
EPHw19-32	17300	250 µg/L	22200		78	70-130			
Surrogate: 2-Methylnonane	457	µg/L	444		103	60-140			

Dissolved Metals, Batch B7A1054

Blank (B7A1054-BLK1)

Prepared: 2017-01-23, Analyzed: 2017-01-23

Aluminum, dissolved	< 0.005	0.005 mg/L							
Antimony, dissolved	< 0.0001	0.0001 mg/L							
Arsenic, dissolved	< 0.0005	0.0005 mg/L							

APPENDIX 1: QUALITY CONTROL DATA

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B7A1054, Continued									
Blank (B7A1054-BLK1), Continued					Prepared: 2017-01-23, Analyzed: 2017-01-23				
Barium, dissolved	< 0.005	0.005 mg/L							
Beryllium, dissolved	< 0.0001	0.0001 mg/L							
Bismuth, dissolved	< 0.0001	0.0001 mg/L							
Boron, dissolved	< 0.004	0.004 mg/L							
Cadmium, dissolved	< 0.00001	0.00001 mg/L							
Calcium, dissolved	< 0.2	0.2 mg/L							
Chromium, dissolved	< 0.0005	0.0005 mg/L							
Cobalt, dissolved	< 0.00005	0.00005 mg/L							
Copper, dissolved	< 0.0002	0.0002 mg/L							
Iron, dissolved	< 0.010	0.010 mg/L							
Lead, dissolved	< 0.0001	0.0001 mg/L							
Lithium, dissolved	< 0.0001	0.0001 mg/L							
Magnesium, dissolved	< 0.01	0.01 mg/L							
Manganese, dissolved	< 0.0002	0.0002 mg/L							
Molybdenum, dissolved	< 0.0001	0.0001 mg/L							
Nickel, dissolved	< 0.0002	0.0002 mg/L							
Phosphorus, dissolved	< 0.02	0.02 mg/L							
Potassium, dissolved	< 0.02	0.02 mg/L							
Selenium, dissolved	< 0.0005	0.0005 mg/L							
Silicon, dissolved	< 0.5	0.5 mg/L							
Silver, dissolved	< 0.00005	0.00005 mg/L							
Sodium, dissolved	< 0.02	0.02 mg/L							
Strontium, dissolved	< 0.001	0.001 mg/L							
Sulfur, dissolved	< 1	1 mg/L							
Tellurium, dissolved	< 0.0002	0.0002 mg/L							
Thallium, dissolved	< 0.00002	0.00002 mg/L							
Thorium, dissolved	< 0.0001	0.0001 mg/L							
Tin, dissolved	< 0.0002	0.0002 mg/L							
Titanium, dissolved	< 0.005	0.005 mg/L							
Uranium, dissolved	< 0.00002	0.00002 mg/L							
Vanadium, dissolved	< 0.001	0.001 mg/L							
Zinc, dissolved	< 0.004	0.004 mg/L							
Zirconium, dissolved	< 0.0001	0.0001 mg/L							
Matrix Spike (B7A1054-MS1)									
Source: 7011234-01			Prepared: 2017-01-23, Analyzed: 2017-01-23						
Antimony, dissolved	0.417	0.0001 mg/L	0.400	0.0002	104	76-114			
Arsenic, dissolved	0.198	0.0005 mg/L	0.200	< 0.0005	99	81-115			
Barium, dissolved	0.959	0.005 mg/L	1.00	< 0.005	95	80-113			
Beryllium, dissolved	0.0978	0.0001 mg/L	0.100	< 0.0001	98	69-109			
Cadmium, dissolved	0.0969	0.00001 mg/L	0.100	< 0.00001	97	83-110			
Chromium, dissolved	0.386	0.0005 mg/L	0.400	< 0.0005	96	85-115			
Cobalt, dissolved	0.388	0.00005 mg/L	0.400	< 0.00005	97	86-114			
Copper, dissolved	0.402	0.0002 mg/L	0.400	0.0007	100	82-119			
Iron, dissolved	1.94	0.010 mg/L	2.00	< 0.010	97	80-116			
Lead, dissolved	0.197	0.0001 mg/L	0.200	< 0.0001	98	83-112			
Manganese, dissolved	0.397	0.0002 mg/L	0.400	0.0217	94	62-131			
Nickel, dissolved	0.388	0.0002 mg/L	0.400	0.0004	97	81-115			
Selenium, dissolved	0.101	0.0005 mg/L	0.100	< 0.0005	101	79-115			
Silver, dissolved	0.0874	0.00005 mg/L	0.100	< 0.00005	87	69-121			
Thallium, dissolved	0.101	0.00002 mg/L	0.100	< 0.00002	101	84-115			
Vanadium, dissolved	0.385	0.001 mg/L	0.400	< 0.001	96	83-113			
Zinc, dissolved	1.01	0.004 mg/L	1.00	< 0.004	101	82-115			
Reference (B7A1054-SRM1)									
Prepared: 2017-01-23, Analyzed: 2017-01-23									
Aluminum, dissolved	0.231	0.005 mg/L	0.233		99	58-142			
Antimony, dissolved	0.0474	0.0001 mg/L	0.0430		110	75-125			
Arsenic, dissolved	0.435	0.0005 mg/L	0.438		99	81-119			

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Dissolved Metals, Batch B7A1054, Continued									
Reference (B7A1054-SRM1), Continued					Prepared: 2017-01-23, Analyzed: 2017-01-23				
Barium, dissolved	3.28	0.005 mg/L	3.35		98	83-117			
Beryllium, dissolved	0.226	0.0001 mg/L	0.213		106	80-120			
Boron, dissolved	1.77	0.004 mg/L	1.74		101	74-117			
Cadmium, dissolved	0.221	0.00001 mg/L	0.224		99	83-117			
Calcium, dissolved	8.2	0.2 mg/L	7.69		107	76-124			
Chromium, dissolved	0.435	0.0005 mg/L	0.437		100	81-119			
Cobalt, dissolved	0.128	0.00005 mg/L	0.128		100	76-124			
Copper, dissolved	0.860	0.0002 mg/L	0.844		102	84-116			
Iron, dissolved	1.27	0.010 mg/L	1.29		98	74-126			
Lead, dissolved	0.114	0.0001 mg/L	0.112		102	72-128			
Lithium, dissolved	0.107	0.0001 mg/L	0.104		103	60-140			
Magnesium, dissolved	6.79	0.01 mg/L	6.92		98	81-119			
Manganese, dissolved	0.340	0.0002 mg/L	0.345		98	84-116			
Molybdenum, dissolved	0.438	0.0001 mg/L	0.426		103	83-117			
Nickel, dissolved	0.844	0.0002 mg/L	0.840		101	74-126			
Phosphorus, dissolved	0.45	0.02 mg/L	0.495		90	68-132			
Potassium, dissolved	3.19	0.02 mg/L	3.19		100	74-126			
Selenium, dissolved	0.0358	0.0005 mg/L	0.0331		108	70-130			
Sodium, dissolved	18.6	0.02 mg/L	19.1		98	72-128			
Strontium, dissolved	0.887	0.001 mg/L	0.916		97	84-113			
Thallium, dissolved	0.0401	0.00002 mg/L	0.0393		102	57-143			
Uranium, dissolved	0.265	0.00002 mg/L	0.266		100	85-115			
Vanadium, dissolved	0.839	0.001 mg/L	0.869		97	87-113			
Zinc, dissolved	0.891	0.004 mg/L	0.881		101	72-128			

Dissolved Metals, Batch B7A1101

Blank (B7A1101-BLK1)					Prepared: 2017-01-23, Analyzed: 2017-01-24				
Mercury, dissolved	< 0.00002	0.00002 mg/L							
Reference (B7A1101-SRM1)					Prepared: 2017-01-23, Analyzed: 2017-01-24				
Mercury, dissolved	0.00483	0.00002 mg/L	0.00489		99	50-150			

General Parameters, Batch B7A1028

Blank (B7A1028-BLK1)					Prepared: 2017-01-21, Analyzed: 2017-01-21				
Turbidity	< 0.10	0.10 NTU							
Blank (B7A1028-BLK2)					Prepared: 2017-01-21, Analyzed: 2017-01-21				
Turbidity	< 0.10	0.10 NTU							
LCS (B7A1028-BS1)					Prepared: 2017-01-21, Analyzed: 2017-01-21				
Turbidity	40.1	0.10 NTU	40.0		100	90-110			
LCS (B7A1028-BS2)					Prepared: 2017-01-21, Analyzed: 2017-01-21				
Turbidity	40.7	0.10 NTU	40.0		102	90-110			

General Parameters, Batch B7A1037

Blank (B7A1037-BLK1)					Prepared: 2017-01-22, Analyzed: 2017-01-22				
Colour, True	< 5	5 CU							
LCS (B7A1037-BS1)					Prepared: 2017-01-22, Analyzed: 2017-01-22				
Colour, True	11	5 CU	10.0		105	85-115			

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7A1041									
Blank (B7A1041-BLK1)			Prepared: 2017-01-22, Analyzed: 2017-01-22						
Alkalinity, Total (as CaCO3)	< 1	1 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	1 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	1 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	1 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	1 mg/L							
Conductivity (EC)	< 2	2 µS/cm							
Blank (B7A1041-BLK2)			Prepared: 2017-01-22, Analyzed: 2017-01-22						
Alkalinity, Total (as CaCO3)	< 1	1 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1	1 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1	1 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1	1 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1	1 mg/L							
Conductivity (EC)	< 2	2 µS/cm							
LCS (B7A1041-BS1)			Prepared: 2017-01-22, Analyzed: 2017-01-22						
Alkalinity, Total (as CaCO3)	106	1 mg/L	100		106	92-106			
LCS (B7A1041-BS2)			Prepared: 2017-01-22, Analyzed: 2017-01-22						
Conductivity (EC)	1400	2 µS/cm	1410		99	95-104			
LCS (B7A1041-BS3)			Prepared: 2017-01-22, Analyzed: 2017-01-22						
Alkalinity, Total (as CaCO3)	104	1 mg/L	100		104	92-106			
LCS (B7A1041-BS4)			Prepared: 2017-01-22, Analyzed: 2017-01-22						
Conductivity (EC)	1410	2 µS/cm	1410		100	95-104			
Reference (B7A1041-SRM1)			Prepared: 2017-01-22, Analyzed: 2017-01-22						
pH	7.00	0.01 pH units	7.00		100	98-102			
Reference (B7A1041-SRM2)			Prepared: 2017-01-22, Analyzed: 2017-01-22						
pH	7.00	0.01 pH units	7.00		100	98-102			
General Parameters, Batch B7A1063									
Blank (B7A1063-BLK1)			Prepared: 2017-01-24, Analyzed: 2017-01-24						
Solids, Total Suspended	< 1	2 mg/L							
Blank (B7A1063-BLK2)			Prepared: 2017-01-24, Analyzed: 2017-01-24						
Solids, Total Suspended	< 1	2 mg/L							
LCS (B7A1063-BS1)			Prepared: 2017-01-24, Analyzed: 2017-01-24						
Solids, Total Suspended	51	2 mg/L	50.0		101	91-106			
LCS (B7A1063-BS2)			Prepared: 2017-01-24, Analyzed: 2017-01-24						
Solids, Total Suspended	51	2 mg/L	50.0		102	91-106			
General Parameters, Batch B7A1111									
Blank (B7A1111-BLK1)			Prepared: 2017-01-24, Analyzed: 2017-01-24						
Solids, Total Dissolved	< 10	10 mg/L							
Reference (B7A1111-SRM1)			Prepared: 2017-01-24, Analyzed: 2017-01-24						
Solids, Total Dissolved	233	10 mg/L	240		97	85-115			
General Parameters, Batch B7A1303									

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7A1303, Continued									
Blank (B7A1303-BLK1)			Prepared: 2017-01-26, Analyzed: 2017-01-26						
Chromium, Hexavalent	< 0.001	0.001 mg/L							
LCS (B7A1303-BS1)			Prepared: 2017-01-26, Analyzed: 2017-01-26						
Chromium, Hexavalent	0.100	0.001 mg/L	0.100		100	90-111			
Glycols, Batch B7A1165									
Blank (B7A1165-BLK1)			Prepared: 2017-01-25, Analyzed: 2017-01-25						
Propylene glycol	< 5	5 mg/L							
Ethylene glycol	< 5	5 mg/L							
Diethylene glycol	< 5	5 mg/L							
Triethylene glycol	< 5	5 mg/L							
Surrogate: Tetramethylene Glycol	114	mg/L	95.6		119	66-125			
LCS (B7A1165-BS1)			Prepared: 2017-01-25, Analyzed: 2017-01-25						
Propylene glycol	46	5 mg/L	50.0		93	71-114			
Ethylene glycol	51	5 mg/L	49.9		103	82-124			
Diethylene glycol	48	5 mg/L	50.0		96	80-116			
Triethylene glycol	51	5 mg/L	49.8		103	73-120			
Surrogate: Tetramethylene Glycol	115	mg/L	95.6		121	66-125			
LCS Dup (B7A1165-BSD1)			Prepared: 2017-01-25, Analyzed: 2017-01-25						
Propylene glycol	44	5 mg/L	50.0		89	71-114	4	20	
Ethylene glycol	57	5 mg/L	49.9		114	82-124	10	20	
Diethylene glycol	49	5 mg/L	50.0		99	80-116	3	20	
Triethylene glycol	51	5 mg/L	49.8		103	73-120	< 1	20	
Surrogate: Tetramethylene Glycol	115	mg/L	95.6		121	66-125			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B7A1123									
Blank (B7A1123-BLK1)			Prepared: 2017-01-25, Analyzed: 2017-01-26						
Acenaphthene	< 0.05	0.05 µg/L							
Acenaphthylene	< 0.20	0.20 µg/L							
Acridine	< 0.05	0.05 µg/L							
Anthracene	< 0.01	0.01 µg/L							
Benz (a) anthracene	< 0.01	0.01 µg/L							
Benzo (a) pyrene	< 0.01	0.01 µg/L							
Benzo (b) fluoranthene	< 0.05	0.05 µg/L							
Benzo (b+j) fluoranthene	< 0.10	0.10 µg/L							
Benzo (g,h,i) perylene	< 0.05	0.05 µg/L							
Benzo (k) fluoranthene	< 0.05	0.05 µg/L							
Chrysene	< 0.05	0.05 µg/L							
Dibenz (a,h) anthracene	< 0.05	0.05 µg/L							
Fluoranthene	< 0.03	0.03 µg/L							
Fluorene	< 0.05	0.05 µg/L							
Indeno (1,2,3-cd) pyrene	< 0.05	0.05 µg/L							
Naphthalene	< 0.20	0.20 µg/L							
Phenanthrene	< 0.10	0.10 µg/L							
Pyrene	< 0.02	0.02 µg/L							
Quinoline	< 0.05	0.05 µg/L							
Surrogate: Acridine-d9	3.87	µg/L	4.44		87	60-130			
Surrogate: Naphthalene-d8	3.48	µg/L	4.44		78	60-130			
Surrogate: Perylene-d12	4.75	µg/L	4.44		107	60-130			
LCS (B7A1123-BS1)			Prepared: 2017-01-25, Analyzed: 2017-01-26						
Acenaphthene	3.50	0.05 µg/L	4.44		79	70-130			

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
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Polycyclic Aromatic Hydrocarbons (PAH), Batch B7A1123, Continued

LCS (B7A1123-BS1), Continued

Prepared: 2017-01-25, Analyzed: 2017-01-26

Acenaphthylene	3.54	0.20 µg/L	4.44		80	70-130			
Acridine	3.56	0.05 µg/L	4.44		80	60-130			
Anthracene	4.16	0.01 µg/L	4.44		94	70-130			
Benz (a) anthracene	3.60	0.01 µg/L	4.44		81	70-130			
Benzo (a) pyrene	3.73	0.01 µg/L	4.44		84	70-130			
Benzo (b) fluoranthene	4.20	0.05 µg/L	4.44		95	70-130			
Benzo (b+j) fluoranthene	8.23	0.10 µg/L	8.89		93	70-130			
Benzo (g,h,i) perylene	4.25	0.05 µg/L	4.44		96	70-130			
Benzo (k) fluoranthene	4.23	0.05 µg/L	4.44		95	70-130			
Chrysene	3.57	0.05 µg/L	4.44		80	70-130			
Dibenz (a,h) anthracene	3.97	0.05 µg/L	4.44		89	70-130			
Fluoranthene	4.54	0.03 µg/L	4.44		102	70-130			
Fluorene	3.55	0.05 µg/L	4.44		80	70-130			
Indeno (1,2,3-cd) pyrene	4.07	0.05 µg/L	4.44		92	70-130			
Naphthalene	3.71	0.20 µg/L	4.44		83	70-130			
Phenanthrene	4.08	0.10 µg/L	4.44		92	70-130			
Pyrene	4.59	0.02 µg/L	4.44		103	70-130			
Quinoline	4.82	0.05 µg/L	4.44		109	70-130			
Surrogate: Acridine-d9	3.83	µg/L	4.44		86	60-130			
Surrogate: Naphthalene-d8	3.95	µg/L	4.44		89	60-130			
Surrogate: Perylene-d12	4.49	µg/L	4.44		101	60-130			

LCS Dup (B7A1123-BSD1)

Prepared: 2017-01-25, Analyzed: 2017-01-26

Acenaphthene	3.72	0.05 µg/L	4.44		84	70-130	6	20	
Acenaphthylene	3.79	0.20 µg/L	4.44		85	70-130	7	20	
Acridine	3.83	0.05 µg/L	4.44		86	60-130	7	20	
Anthracene	4.40	0.01 µg/L	4.44		99	70-130	5	20	
Benz (a) anthracene	3.78	0.01 µg/L	4.44		85	70-130	5	20	
Benzo (a) pyrene	4.02	0.01 µg/L	4.44		90	70-130	7	20	
Benzo (b) fluoranthene	4.45	0.05 µg/L	4.44		100	70-130	6	20	
Benzo (b+j) fluoranthene	8.71	0.10 µg/L	8.89		98	70-130	6	20	
Benzo (g,h,i) perylene	4.56	0.05 µg/L	4.44		103	70-130	7	20	
Benzo (k) fluoranthene	4.46	0.05 µg/L	4.44		100	70-130	5	20	
Chrysene	3.79	0.05 µg/L	4.44		85	70-130	6	20	
Dibenz (a,h) anthracene	4.32	0.05 µg/L	4.44		97	70-130	8	20	
Fluoranthene	4.91	0.03 µg/L	4.44		110	70-130	8	20	
Fluorene	3.79	0.05 µg/L	4.44		85	70-130	7	20	
Indeno (1,2,3-cd) pyrene	4.44	0.05 µg/L	4.44		100	70-130	9	20	
Naphthalene	3.86	0.20 µg/L	4.44		87	70-130	4	20	
Phenanthrene	4.34	0.10 µg/L	4.44		98	70-130	6	20	
Pyrene	4.80	0.02 µg/L	4.44		108	70-130	4	20	
Quinoline	4.70	0.05 µg/L	4.44		106	70-130	2	20	
Surrogate: Acridine-d9	4.73	µg/L	4.44		93	60-130			
Surrogate: Naphthalene-d8	4.09	µg/L	4.44		92	60-130			
Surrogate: Perylene-d12	4.94	µg/L	4.44		111	60-130			

Total Metals, Batch B7A1050

Blank (B7A1050-BLK1)

Prepared: 2017-01-23, Analyzed: 2017-01-23

Aluminum, total	< 0.005	0.005 mg/L							
Antimony, total	< 0.0001	0.0001 mg/L							
Arsenic, total	< 0.0005	0.0005 mg/L							
Barium, total	< 0.005	0.005 mg/L							
Beryllium, total	< 0.0001	0.0001 mg/L							
Bismuth, total	< 0.0001	0.0001 mg/L							
Boron, total	< 0.004	0.004 mg/L							

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
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Total Metals, Batch B7A1050, Continued

Blank (B7A1050-BLK1), Continued

Prepared: 2017-01-23, Analyzed: 2017-01-23

Cadmium, total	< 0.00001	0.00001 mg/L							
Calcium, total	< 0.2	0.2 mg/L							
Chromium, total	< 0.0005	0.0005 mg/L							
Cobalt, total	< 0.00005	0.00005 mg/L							
Copper, total	< 0.0002	0.0002 mg/L							
Iron, total	< 0.01	0.01 mg/L							
Lead, total	< 0.0001	0.0001 mg/L							
Lithium, total	< 0.0001	0.0001 mg/L							
Magnesium, total	< 0.01	0.01 mg/L							
Manganese, total	< 0.0002	0.0002 mg/L							
Molybdenum, total	< 0.0001	0.0001 mg/L							
Nickel, total	< 0.0002	0.0002 mg/L							
Phosphorus, total	< 0.02	0.02 mg/L							
Potassium, total	< 0.02	0.02 mg/L							
Selenium, total	< 0.0005	0.0005 mg/L							
Silicon, total	< 0.5	0.5 mg/L							
Silver, total	< 0.00005	0.00005 mg/L							
Sodium, total	< 0.02	0.02 mg/L							
Strontium, total	< 0.001	0.001 mg/L							
Sulfur, total	< 1	1 mg/L							
Tellurium, total	< 0.0002	0.0002 mg/L							
Thallium, total	< 0.00002	0.00002 mg/L							
Thorium, total	< 0.0001	0.0001 mg/L							
Tin, total	< 0.0002	0.0002 mg/L							
Titanium, total	< 0.005	0.005 mg/L							
Uranium, total	< 0.00002	0.00002 mg/L							
Vanadium, total	< 0.001	0.001 mg/L							
Zinc, total	< 0.004	0.004 mg/L							
Zirconium, total	< 0.0001	0.0001 mg/L							

Matrix Spike (B7A1050-MS1)

Source: 7011234-01

Prepared: 2017-01-23, Analyzed: 2017-01-23

Antimony, total	0.414	0.0001 mg/L	0.400	0.0002	103	84-125			
Arsenic, total	0.197	0.0005 mg/L	0.200	< 0.0005	99	85-116			
Barium, total	0.985	0.005 mg/L	1.00	0.009	98	87-114			
Beryllium, total	0.103	0.0001 mg/L	0.100	< 0.0001	103	72-116			
Cadmium, total	0.0981	0.00001 mg/L	0.100	< 0.00001	98	90-112			
Chromium, total	0.394	0.0005 mg/L	0.400	0.0016	98	89-120			
Cobalt, total	0.393	0.00005 mg/L	0.400	0.00043	98	88-120			
Copper, total	0.413	0.0002 mg/L	0.400	0.0026	102	88-125			
Iron, total	3.13	0.01 mg/L	2.00	0.93	110	88-119			
Lead, total	0.213	0.0001 mg/L	0.200	0.0005	106	89-118			
Manganese, total	0.420	0.0002 mg/L	0.400	0.0340	97	84-120			
Nickel, total	0.396	0.0002 mg/L	0.400	0.0017	99	87-119			
Selenium, total	0.108	0.0005 mg/L	0.100	< 0.0005	108	85-113			
Silver, total	0.0828	0.00005 mg/L	0.100	0.00010	83	89-119			SPK1
Thallium, total	0.109	0.00002 mg/L	0.100	< 0.00002	109	92-119			
Vanadium, total	0.395	0.001 mg/L	0.400	0.003	98	87-117			
Zinc, total	1.01	0.004 mg/L	1.00	0.004	100	85-116			

Reference (B7A1050-SRM1)

Prepared: 2017-01-23, Analyzed: 2017-01-23

Aluminum, total	0.303	0.005 mg/L	0.303		100	81-129			
Antimony, total	0.0551	0.0001 mg/L	0.0511		108	88-114			
Arsenic, total	0.119	0.0005 mg/L	0.118		101	88-114			
Barium, total	0.789	0.005 mg/L	0.823		96	72-104			
Beryllium, total	0.0533	0.0001 mg/L	0.0496		107	76-131			
Boron, total	3.59	0.004 mg/L	3.45		104	75-121			
Cadmium, total	0.0502	0.00001 mg/L	0.0495		101	89-111			

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Total Metals, Batch B7A1050, Continued									
Reference (B7A1050-SRM1), Continued					Prepared: 2017-01-23, Analyzed: 2017-01-23				
Calcium, total	12.1	0.2 mg/L	11.6		104	86-121			
Chromium, total	0.254	0.0005 mg/L	0.250		102	89-114			
Cobalt, total	0.0393	0.00005 mg/L	0.0377		104	91-113			
Copper, total	0.522	0.0002 mg/L	0.486		107	91-115			
Iron, total	0.51	0.01 mg/L	0.488		105	77-124			
Lead, total	0.210	0.0001 mg/L	0.204		103	92-113			
Lithium, total	0.423	0.0001 mg/L	0.403		105	85-115			
Magnesium, total	3.93	0.01 mg/L	3.79		104	78-120			
Manganese, total	0.108	0.0002 mg/L	0.109		99	90-114			
Molybdenum, total	0.207	0.0001 mg/L	0.198		104	90-111			
Nickel, total	0.255	0.0002 mg/L	0.249		103	90-111			
Phosphorus, total	0.24	0.02 mg/L	0.227		106	85-115			
Potassium, total	7.58	0.02 mg/L	7.21		105	84-113			
Selenium, total	0.134	0.0005 mg/L	0.121		110	85-115			
Sodium, total	7.82	0.02 mg/L	7.54		104	82-123			
Strontium, total	0.373	0.001 mg/L	0.375		99	88-112			
Thallium, total	0.0858	0.00002 mg/L	0.0805		107	91-114			
Uranium, total	0.0314	0.00002 mg/L	0.0306		103	85-120			
Vanadium, total	0.385	0.001 mg/L	0.386		100	86-111			
Zinc, total	2.59	0.004 mg/L	2.49		104	85-111			

Total Metals, Batch B7A1102

Blank (B7A1102-BLK1)					Prepared: 2017-01-23, Analyzed: 2017-01-24				
Mercury, total	< 0.00002	0.00002 mg/L							
Reference (B7A1102-SRM1)					Prepared: 2017-01-23, Analyzed: 2017-01-24				
Mercury, total	0.00461	0.00002 mg/L	0.00489		94	50-150			

Volatile Organic Compounds (VOC), Batch B7A1002

Blank (B7A1002-BLK1)					Prepared: 2017-01-21, Analyzed: 2017-01-21				
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Bromomethane	< 2.0	2.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Chloromethane	< 2.0	2.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.2	0.2 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
cis-1,3-Dichloropropene	< 1.0	1.0 µg/L							
trans-1,3-Dichloropropene	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							

APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 7011234
2017-01-27

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B7A1002, Continued									
Blank (B7A1002-BLK1), Continued					Prepared: 2017-01-21, Analyzed: 2017-01-21				
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Methylene chloride	< 3.0	3.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,1,2-Tetrachloroethane	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	27.2	µg/L	25.0		109	70-130			
Surrogate: 4-Bromofluorobenzene	25.9	µg/L	25.0		104	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	23.2	µg/L	25.0		93	70-130			
LCS (B7A1002-BS1)					Prepared: 2017-01-21, Analyzed: 2017-01-21				
Benzene	20.2	0.5 µg/L	20.0		101	70-130			
Bromodichloromethane	21.2	1.0 µg/L	20.0		106	70-130			
Bromoform	19.7	1.0 µg/L	20.0		98	70-130			
Bromomethane	18.6	2.0 µg/L	20.0		93	70-130			
Carbon tetrachloride	19.7	0.5 µg/L	20.0		99	70-130			
Chlorobenzene	22.0	1.0 µg/L	20.0		110	70-130			
Chloroethane	17.1	2.0 µg/L	20.0		85	70-130			
Chloroform	22.2	1.0 µg/L	20.0		111	70-130			
Chloromethane	20.6	2.0 µg/L	20.0		103	70-130			
Dibromochloromethane	19.7	1.0 µg/L	20.0		99	70-130			
1,2-Dibromoethane	20.2	0.2 µg/L	20.0		101	70-130			
Dibromomethane	20.9	1.0 µg/L	20.0		105	70-130			
1,2-Dichlorobenzene	21.6	0.5 µg/L	20.0		108	70-130			
1,3-Dichlorobenzene	20.7	1.0 µg/L	20.0		103	70-130			
1,4-Dichlorobenzene	21.6	1.0 µg/L	20.0		108	70-130			
1,1-Dichloroethane	21.1	1.0 µg/L	20.0		106	70-130			
1,2-Dichloroethane	22.3	1.0 µg/L	20.0		112	70-130			
1,1-Dichloroethene	18.2	1.0 µg/L	20.0		91	70-130			
cis-1,2-Dichloroethene	20.9	1.0 µg/L	20.0		105	70-130			
trans-1,2-Dichloroethene	19.7	1.0 µg/L	20.0		98	70-130			
1,2-Dichloropropane	22.2	1.0 µg/L	20.0		111	70-130			
cis-1,3-Dichloropropene	19.2	1.0 µg/L	20.0		96	70-130			
trans-1,3-Dichloropropene	18.3	1.0 µg/L	20.0		91	70-130			
Ethylbenzene	20.6	1.0 µg/L	20.0		103	70-130			
Methyl tert-butyl ether	19.6	1.0 µg/L	20.0		98	70-130			
Methylene chloride	20.9	3.0 µg/L	20.0		105	70-130			
Styrene	21.1	1.0 µg/L	20.0		105	70-130			
1,1,1,2-Tetrachloroethane	19.5	1.0 µg/L	20.0		97	70-130			
1,1,2,2-Tetrachloroethane	21.8	0.5 µg/L	20.0		109	70-130			
Tetrachloroethene	21.3	1.0 µg/L	20.0		106	70-130			
Toluene	20.4	1.0 µg/L	20.0		102	70-130			
1,1,1-Trichloroethane	20.7	1.0 µg/L	20.0		104	70-130			
1,1,2-Trichloroethane	22.1	1.0 µg/L	20.0		110	70-130			
Trichloroethene	20.6	1.0 µg/L	20.0		103	70-130			
Trichlorofluoromethane	20.9	1.0 µg/L	20.0		105	70-130			
Vinyl chloride	19.1	1.0 µg/L	20.0		96	70-130			
Xylenes (total)	57.9	2.0 µg/L	60.0		97	70-130			
Surrogate: Toluene-d8	28.2	µg/L	25.0		113	70-130			

APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 7011234
2017-01-27

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
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Volatile Organic Compounds (VOC), Batch B7A1002, Continued

LCS (B7A1002-BS1), Continued

Prepared: 2017-01-21, Analyzed: 2017-01-21

Surrogate: 4-Bromofluorobenzene	27.0	µg/L	25.0		108	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	29.1	µg/L	25.0		117	70-130			

QC Qualifiers:

SPK1 The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 7011234
2017-01-27

		7011234-01	7011234-02
		Water	Water
		2017-01-19	2017-01-19
		1-Weir	2-SW1
Anions	Chloride (mg/L)	35.3	39.0
	Fluoride (mg/L)	< 0.10	< 0.10
	Nitrate (as N) (mg/L)	0.195	0.395
	Nitrite (as N) (mg/L)	< 0.010	< 0.010
	Sulfate (mg/L)	44.2	55.0
General Parameters	Alkalinity, Total (as CaCO3) (mg/L)	37	52
	Alkalinity, Phenolphthalein (as CaCO3) (mg/	< 1	< 1
	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	37	52
	Alkalinity, Carbonate (as CaCO3) (mg/L)	< 1	< 1
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	< 1	< 1
	Chromium, Hexavalent (mg/L)	< 0.001	< 0.001
	Colour, True (CU)	< 5	< 5
	Conductivity (EC) (uS/cm)	276	337
	pH (pH units)	7.56	7.56
	Solids, Total Dissolved (mg/L)	152	189
	Solids, Total Suspended (mg/L)	14	3
	Turbidity (NTU)	23.1	4.40
Calculated Parameters	Chromium, Trivalent (mg/L)	0.0016	< 0.0010
	Hardness, Total (as CaCO3) (mg/L)	83.6	114
Dissolved Metals	Aluminum, dissolved (mg/L)	0.005	< 0.005
	Antimony, dissolved (mg/L)	0.0002	0.0002
	Arsenic, dissolved (mg/L)	< 0.0005	< 0.0005
	Barium, dissolved (mg/L)	< 0.005	0.007
	Beryllium, dissolved (mg/L)	< 0.0001	< 0.0001
	Bismuth, dissolved (mg/L)	< 0.0001	< 0.0001
	Boron, dissolved (mg/L)	0.013	0.012
	Cadmium, dissolved (mg/L)	< 0.00001	< 0.00001
	Calcium, dissolved (mg/L)	25.2	35.5
	Chromium, dissolved (mg/L)	< 0.0005	< 0.0005
	Cobalt, dissolved (mg/L)	< 0.00005	< 0.00005
	Copper, dissolved (mg/L)	0.0007	0.0008
	Iron, dissolved (mg/L)	< 0.010	< 0.010
	Lead, dissolved (mg/L)	< 0.0001	< 0.0001
	Lithium, dissolved (mg/L)	< 0.0001	0.0001
	Magnesium, dissolved (mg/L)	5.04	6.05
	Manganese, dissolved (mg/L)	0.0217	0.0046
	Mercury, dissolved (mg/L)	< 0.00002	< 0.00002
	Molybdenum, dissolved (mg/L)	0.0005	0.0007
	Nickel, dissolved (mg/L)	0.0004	0.0005
	Phosphorus, dissolved (mg/L)	< 0.02	< 0.02
	Potassium, dissolved (mg/L)	0.77	0.82
	Selenium, dissolved (mg/L)	< 0.0005	< 0.0005
	Silicon, dissolved (mg/L)	1.1	2.1
	Silver, dissolved (mg/L)	< 0.00005	< 0.00005

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 7011234
2017-01-27

		7011234-01	7011234-02
		Water	Water
		2017-01-19	2017-01-19
		1-Weir	2-SW1
Dissolved Metals	Sodium, dissolved (mg/L)	16.9	16.7
	Strontium, dissolved (mg/L)	0.090	0.110
	Sulfur, dissolved (mg/L)	14	17
	Tellurium, dissolved (mg/L)	< 0.0002	< 0.0002
	Thallium, dissolved (mg/L)	< 0.00002	< 0.00002
	Thorium, dissolved (mg/L)	< 0.0001	< 0.0001
	Tin, dissolved (mg/L)	< 0.0002	< 0.0002
	Titanium, dissolved (mg/L)	< 0.005	< 0.005
	Uranium, dissolved (mg/L)	0.00013	0.00026
	Vanadium, dissolved (mg/L)	< 0.001	< 0.001
	Zinc, dissolved (mg/L)	< 0.004	< 0.004
	Zirconium, dissolved (mg/L)	< 0.0001	< 0.0001
	Total Metals	Aluminum, total (mg/L)	0.900
Antimony, total (mg/L)		0.0002	0.0002
Arsenic, total (mg/L)		< 0.0005	< 0.0005
Barium, total (mg/L)		0.009	0.007
Beryllium, total (mg/L)		< 0.0001	< 0.0001
Bismuth, total (mg/L)		< 0.0001	< 0.0001
Boron, total (mg/L)		0.014	0.013
Cadmium, total (mg/L)		< 0.00001	< 0.00001
Calcium, total (mg/L)		27.2	37.2
Chromium, total (mg/L)		0.0016	< 0.0005
Cobalt, total (mg/L)		0.00043	0.00011
Copper, total (mg/L)		0.0026	0.0012
Iron, total (mg/L)		0.93	0.11
Lead, total (mg/L)		0.0005	0.0001
Lithium, total (mg/L)		0.0006	0.0002
Magnesium, total (mg/L)		5.08	5.76
Manganese, total (mg/L)		0.0340	0.0067
Mercury, total (mg/L)		< 0.00002	< 0.00002
Molybdenum, total (mg/L)		0.0005	0.0006
Nickel, total (mg/L)		0.0017	0.0006
Phosphorus, total (mg/L)		< 0.02	< 0.02
Potassium, total (mg/L)		0.88	0.81
Selenium, total (mg/L)		< 0.0005	< 0.0005
Silicon, total (mg/L)		3.7	2.9
Silver, total (mg/L)		0.00010	0.00008
Sodium, total (mg/L)		17.2	16.6
Strontium, total (mg/L)		0.090	0.107
Sulfur, total (mg/L)		12	16
Tellurium, total (mg/L)		< 0.0002	< 0.0002
Thallium, total (mg/L)		< 0.00002	< 0.00002
Thorium, total (mg/L)		< 0.0001	< 0.0001
Tin, total (mg/L)		< 0.0002	< 0.0002
Titanium, total (mg/L)		0.049	< 0.005

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 7011234
2017-01-27

		7011234-01	7011234-02
		Water	Water
		2017-01-19	2017-01-19
		1-Weir	2-SW1
Total Metals	Uranium, total (mg/L)	0.00016	0.00028
	Vanadium, total (mg/L)	0.003	< 0.001
	Zinc, total (mg/L)	< 0.004	< 0.004
	Zirconium, total (mg/L)	0.0005	< 0.0001
BCMOE Aggregate Hydrocarbons	EPHw10-19 (ug/L)	< 250	< 250
	EPHw19-32 (ug/L)	< 250	< 250
	LEPHw (ug/L)	< 250	< 250
	HEPHw (ug/L)	< 250	< 250
	Sur: 2-Methylnonane (%)	104	100
Glycols	Propylene glycol (mg/L)	< 5	< 5
	Ethylene glycol (mg/L)	< 5	< 5
	Diethylene glycol (mg/L)	< 5	< 5
	Triethylene glycol (mg/L)	< 5	< 5
	Sur: Tetramethylene Glycol (%)	119	114
Polycyclic Aromatic Hydrocarbons (PAH)	Acenaphthene (ug/L)	< 0.05	< 0.05
	Acenaphthylene (ug/L)	< 0.20	< 0.20
	Acridine (ug/L)	< 0.05	< 0.05
	Anthracene (ug/L)	< 0.01	< 0.01
	Benz (a) anthracene (ug/L)	< 0.01	< 0.01
	Benzo (a) pyrene (ug/L)	< 0.01	< 0.01
	Benzo (b) fluoranthene (ug/L)	< 0.05	< 0.05
	Benzo (b+j) fluoranthene (ug/L)	< 0.10	< 0.10
	Benzo (g,h,i) perylene (ug/L)	< 0.05	< 0.05
	Benzo (k) fluoranthene (ug/L)	< 0.05	< 0.05
	Chrysene (ug/L)	< 0.05	< 0.05
	Dibenz (a,h) anthracene (ug/L)	< 0.05	< 0.05
	Fluoranthene (ug/L)	< 0.03	< 0.03
	Fluorene (ug/L)	< 0.05	< 0.05
	Indeno (1,2,3-cd) pyrene (ug/L)	< 0.05	< 0.05
	Naphthalene (ug/L)	< 0.20	< 0.20
	Phenanthrene (ug/L)	< 0.10	< 0.10
	Pyrene (ug/L)	< 0.02	< 0.02
	Quinoline (ug/L)	< 0.05	< 0.05
	Sur: Acridine-d9 (%)	92	90
Sur: Naphthalene-d8 (%)	84	83	
Sur: Perylene-d12 (%)	105	104	
Volatile Organic Compounds (VOC)	Benzene (ug/L)	< 0.5	< 0.5
	Bromodichloromethane (ug/L)	< 1.0	< 1.0
	Bromoform (ug/L)	< 1.0	< 1.0
	Bromomethane (ug/L)	< 2.0	< 2.0
	Carbon tetrachloride (ug/L)	< 0.5	< 0.5
	Chlorobenzene (ug/L)	< 1.0	< 1.0
	Chloroethane (ug/L)	< 2.0	< 2.0
	Chloroform (ug/L)	< 1.0	< 1.0
	Chloromethane (ug/L)	< 2.0	< 2.0

REPORTED TO PROJECT Allterra Construction
SIRM 460 Stebbings

WORK ORDER REPORTED 7011234
2017-01-27

		7011234-01	7011234-02
		Water	Water
		2017-01-19	2017-01-19
		1-Weir	2-SW1
Volatile Organic Compounds (VOC)	Dibromochloromethane (ug/L)	< 1.0	< 1.0
	1,2-Dibromoethane (ug/L)	< 0.2	< 0.2
	Dibromomethane (ug/L)	< 1.0	< 1.0
	1,2-Dichlorobenzene (ug/L)	< 0.5	< 0.5
	1,3-Dichlorobenzene (ug/L)	< 1.0	< 1.0
	1,4-Dichlorobenzene (ug/L)	< 1.0	< 1.0
	1,1-Dichloroethane (ug/L)	< 1.0	< 1.0
	1,2-Dichloroethane (ug/L)	< 1.0	< 1.0
	1,1-Dichloroethene (ug/L)	< 1.0	< 1.0
	cis-1,2-Dichloroethene (ug/L)	< 1.0	< 1.0
	trans-1,2-Dichloroethene (ug/L)	< 1.0	< 1.0
	1,2-Dichloropropane (ug/L)	< 1.0	< 1.0
	cis-1,3-Dichloropropene (ug/L)	< 1.0	< 1.0
	trans-1,3-Dichloropropene (ug/L)	< 1.0	< 1.0
	Ethylbenzene (ug/L)	< 1.0	< 1.0
	Methyl tert-butyl ether (ug/L)	< 1.0	< 1.0
	Methylene chloride (ug/L)	< 3.0	< 3.0
	Styrene (ug/L)	< 1.0	< 1.0
	1,1,1,2-Tetrachloroethane (ug/L)	< 1.0	< 1.0
	1,1,2,2-Tetrachloroethane (ug/L)	< 0.5	< 0.5
	Tetrachloroethene (ug/L)	< 1.0	< 1.0
	Toluene (ug/L)	< 1.0	< 1.0
	1,1,1-Trichloroethane (ug/L)	< 1.0	< 1.0
	1,1,2-Trichloroethane (ug/L)	< 1.0	< 1.0
	Trichloroethene (ug/L)	< 1.0	< 1.0
	Trichlorofluoromethane (ug/L)	< 1.0	< 1.0
	Vinyl chloride (ug/L)	< 1.0	< 1.0
	Xylenes (total) (ug/L)	< 2.0	< 2.0
	Sur: Toluene-d8 (%)	105	103
	Sur: 4-Bromofluorobenzene (%)	99	97
Sur: 1,4-Dichlorobenzene-d4 (%)	88	84	

Client Information Allterra Construction 2158 Millstream Road Victoria BC V9B 6H4 Phone: (250) 508-0726	Project Information SIRM 460 Stebbings Number: [none] Sample count: 2 TAT: 5	Laboratory Information CARO Analytical Services #110 - 4011 Viking Way Richmond BC V6V 2K9 Phone: (604) 279-1499 Fax: (604) 279-1599	COC Information Number: 20170119-A Shipped via: Other
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#1	1-Weir (Template: 01) 01/19/2017 09:15 Grab / Water	<p style="text-align: center;">Analyses</p> Alkalinity, all (KEL) TAT: 5 Anions in Water by IC, 5 Analytes (KEL) TAT: 5 Colour, True - 456 nm (KEL) TAT: 5 Conductivity in Water (KEL) TAT: 5 Glycols in Water (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss CVAFS Reg & Low (RMD) TAT: 5 Mercury, total CVAFS Reg & Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: CR speciation required pH in Water (KEL) TAT: 5 Solids, Total Dissolved (KEL) TAT: 5 Solids, Total Suspended (KEL) TAT: 5 Turbidity (KEL) TAT: 5 VOC in Water (RMD) TAT: 5	<p style="text-align: center;">Containers</p> C03_250 mL Glass (EPH/PAH) (1) C04_40 mL Vial (VOC Water) (2) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) C19_40 mL Vial (General CG) (2) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1) C09_125 mL Plastic (CN/Cr6) (1)
#2	2-SW1 (Template: 01) 01/19/2017 09:30 Grab / Water	<p style="text-align: center;">Analyses</p> Alkalinity, all (KEL) TAT: 5 Anions in Water by IC, 5 Analytes (KEL) TAT: 5 Colour, True - 456 nm (KEL) TAT: 5 Conductivity in Water (KEL) TAT: 5 Glycols in Water (RMD) TAT: 5 L/HEPH in Water (RMD) TAT: 5 Mercury, diss CVAFS Reg & Low (RMD) TAT: 5 Mercury, total CVAFS Reg & Low (RMD) TAT: 5 Metals, dissolved, All, Low (RMD) TAT: 5 Metals, total, All, Low (RMD) TAT: 5 Comments: CR speciation required pH in Water (KEL) TAT: 5 Solids, Total Dissolved (KEL) TAT: 5 Solids, Total Suspended (KEL) TAT: 5 Turbidity (KEL) TAT: 5 VOC in Water (RMD) TAT: 5	<p style="text-align: center;">Containers</p> C03_250 mL Glass (EPH/PAH) (1) C04_40 mL Vial (VOC Water) (2) C05_125 mL Plastic (Metals) (1) C06_40 mL Vial (Mercury) (1) C10_125 mL Plastic (H2SO4) (1) C11_1 L Plastic (General) (1) C19_40 mL Vial (General CG) (2) S05_125 mL Plastic (Metals-F) (1) S06_40 mL Vial (Mercury-F) (1) C09_125 mL Plastic (CN/Cr6) (1)

Relinquished by	Date/Time	Accepted by	Date/Time