

CERTIFICATE OF ANALYSIS

REPORTED TO Allterra Construction

> 2158 Millstream Road (250) 508-0726 TEL

Victoria, BC V9B 6H4 **FAX**

ATTENTION Rahim Gaidhar **WORK ORDER** 6101529

PO NUMBER P15-06 SIRM **RECEIVED / TEMP** 2016-10-24 09:00 / 10°C

SIRM 460 Stebbings 2016-10-31 **PROJECT REPORTED** B34000 **PROJECT INFO COC NUMBER**

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:

Brent Coates, B.Sc.

Division Manager, Richmond

Z+ LL

If you have any questions or concerns, please contact your Account Manager: Bryan Shaw, Ph.D. (bshaw@caro.ca)

Locations:

#110 4011 Viking Way Richmond, BC V6V 2K9

Tel: 604-279-1499 Fax: 604-279-1599

#102 3677 Highway 97N Kelowna, BC V1X 5C3

Tel: 250-765-9646 Fax: 250-765-3893

17225 109 Avenue Edmonton, AB T5S 1H7

Tel: 780-489-9100 Fax: 780-489-9700

www.caro.ca



TABLE OF CONTENTS

REPORTED TO PROJECT	Allterra Construction SIRM 460 Stebbings	WORK ORDER REPORTED	6101529 2016-10-31
Analysis Informa Analysis Desc	ation riptions, Method References, Glossary of Terms		Page 3
Sample Analytic Test Results,	al Data Reporting Limits, Analysis Dates, Sample & Analysis Notes		Page 4
Quality Control	Data s, Duplicates, Spikes, Reference Materials		Appendix 1
Chain of Custod Analysis instru	y Document uctions provided by client		Appendix 5



ANALYSIS INFORMATION

REPORTED TOAllterra ConstructionWORK ORDER6101529PROJECTSIRM 460 StebbingsREPORTED2016-10-31

Analysis Description	Method Reference	Technique	Location
Colour, True in Water	APHA 2120 C	Spectrophotometry (456 nm)	Kelowna
Solids, Total Suspended in Water	APHA 2540 D*	Gravimetry (Dried at 103-105C)	Kelowna
Turbidity in Water	APHA 2130 B	Nephelometry	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

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



SAMPLE ANALYTICAL DATA

REPORTED TO Allterra Construction WORK ORDER 6101529 **PROJECT** SIRM 460 Stebbings **REPORTED** 2016-10-31

Analyte	Result / Estimate of Recovery Uncertainty	MRL / Units Limits	Prepared	Analyzed	Notes
Sample ID: Bridge (6101529-01)	[Water] Sampled: 2016-10-21 15:16				
General Parameters					
Colour, True	34 ± 10	5 CU	N/A	2016-10-24	
Solids, Total Suspended	25 ± 2	2 mg/L	N/A	2016-10-26	
Turbidity	17.8 ± 2.2	0.10 NTU	N/A	2016-10-24	



APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT

Allterra Construction SIRM 460 Stebbings

WORK ORDER REPORTED 6101529 2016-10-31

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
General Parameters, Batch B6J1520									
Blank (B6J1520-BLK1)			Prepared	l: 2016-10-	24, Analy	zed: 2016	-10-24		
Turbidity	< 0.10	0.10 NTU							
LCS (B6J1520-BS1)			Prepared	l: 2016-10-	24, Analy	zed: 2016	-10-24		
Turbidity	9.69	0.10 NTU	10.0		97	82-115			
General Parameters, Batch B6J1671									
Blank (B6J1671-BLK1)			Prepared	l: 2016-10-	26, Analy	zed: 2016	-10-26		
Solids, Total Suspended	< 1	2 mg/L							
Blank (B6J1671-BLK2)			Prepared	l: 2016-10-	26, Analy	zed: 2016	-10-26		
Solids, Total Suspended	< 1	2 mg/L							
LCS (B6J1671-BS1)			Prepared	l: 2016-10-	26, Analy	zed: 2016	-10-26		
Solids, Total Suspended	51	2 mg/L	50.0		102	85-110			
LCS (B6J1671-BS2)			Prepared	l: 2016-10-	26, Analy	zed: 2016	-10-26		
Solids, Total Suspended	51	2 mg/L	50.0		102	85-110			
General Parameters, Batch B6J1718									
Blank (B6J1718-BLK1)			Prepared	l: 2016-10-	26, Analy	zed: 2016	-10-26		
Colour, True	< 5	5 CU					<u> </u>		
LCS (B6J1718-BS1)			Prepared	l: 2016-10-	26, Analy	zed: 2016	-10-26		
Colour, True	11	5 CU	10.0		108	85-115			



 Submission key D297-IAH-323E
 On 10/23/2016 08:07
 By Rahim Gaidhar
 Page 1/1

Client Information	Project Information	Laboratory Information	COC Information
Allterra Construction	SIRM 460 Stebbings	CARO Analytical Services	Number: B34000
2158 Millstream Road	Number: [none]	#110 - 4011 Viking Way	Shipped via: Harbour Air
Victoria BC V9B 6H4	Sample count: 1	Richmond BC V6V 2K9	
Phone: (250) 508-0726	TAT: 5	Phone: (604) 279-1499	
		Fax: (604) 279-1599	

#1	Bridge (Template: 01)	Analyses	Containers
	10/21/2016 15:16	Colour, True - 456 nm (KEL) TAT: 5	C03_250 mL Glass (EPH/PAH) (1)
	Grab / Water	Solids, Total Suspended (KEL) TAT: 5	C04_40 mL Vial (VOC Water) (1)
		Turbidity (KEL) TAT: 5	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) (1)
			S05_125 mL Plastic (Metals-F) (1)
			S06_40 mL Vial (Mercury-F) (1)

Relinquished by	Date/Time	Accepted by	Date/Time

EnviroChain[®] By Promium

 Submission key D297-IAH-323E
 On 10/23/2016 08:07
 By Rahim Gaidhar
 Page 1/1

Client Information	Project Information	Laboratory Information	COC Information
Allterra Construction	SIRM 460 Stebbings	CARO Analytical Services	Number: B34000
2158 Millstream Road	Number: [none]	#110 - 4011 Viking Way	Shipped via: Harbour Air
Victoria BC V9B 6H4	Sample count: 1	Richmond BC V6V 2K9	
Phone: (250) 508-0726	TAT: 5	Phone: (604) 279-1499	
, ,		Fax: (604) 279-1599	

#1 Bridge (Template: 01)	Analyses	Containers
10/21/2016 15:16	Colour, True - 456 nm (KEL.) TAT: 5	C03_250 mL Glass (EPH/PAH) (1)
Grab / Water	Solids, Total Suspended (KEL) TAT: 5	C04_40 mL Vial (VOC Water) (1)
	Turbidity (KEL) TAT: 5	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) (1)
		S05_125 mL Plastic (Metals-F) (1)
		S06_40 mL Vial (Mercury-F) (1)

Relinquished by	Date/Time	State Communication of the Com	Accepted by		Date/Time
			9.6	HA	10/04//
				(',	9:00

