



CERTIFICATE OF ANALYSIS

REPORTED TO Parksville, City of

100 Jensen Avenue East Parksville. BC V9P 2H3

ATTENTION Barbara Silenieks

PO NUMBER 3695

PROJECT 361341 - THM Quarterly (Island Health)

PROJECT INFO

WORK ORDER 0011819

RECEIVED / TEMP 2020-01-28 08:45 / 10°C

REPORTED 2020-02-04 15:28

COC NUMBER B83492

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



We've Got Chemistry



Ahead of the Curve



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.

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.

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 rsundar@caro.ca

Authorized By:

Rochita Sundar Junior Account Manager Rochita.

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



TEST RESULTS

REPORTED TO PROJECT	Parksville, City of 361341 - THM Quarter	rly (Island Health)		WORK ORDER REPORTED		0011819 2020-02-04 15:28	
Analyte		Result	Guideline	RL	Units	Analyzed	Qualifier
Community Park	(0011819-01) Matrix: V	/ater Sampled: 20)20-01-27 09:10				
Calculated Parame	ters						
Total Trihalometha	nes	0.0450		0.00400	mg/L	N/A	
Volatile Organic Co	omnounds (VOC)						
Bromodichloromet		0.0061		0.0010	ma/l	2020 02 04	
	inane			0.0010		2020-02-04	
Bromoform Chloroform		< 0.0010				2020-02-04	
		0.0366		0.0010		2020-02-04	
Dibromochlorome		0.0024		0.0010 70-130	%	2020-02-04	
Surrogate: Toluen Surrogate: 4-Bron		87 97		70-130	%	2020-02-04	
Calculated Parame Total Trihalometha		0.0120		0.00400	ma/l	N/A	
		0.0120		0.00400	ilig/L	IN/PA	
Volatile Organic Co				0.0040		0000 00 04	
Bromodichloromet	inane	0.0030		0.0010		2020-02-04	
Bromoform		0.0015		0.0010		2020-02-04	
Chloroform Dibromochlorome	thana	0.0033		0.0010		2020-02-04	
Surrogate: Toluen		0.0042 86		0.0010 70-130		2020-02-04	
Surrogate: 4-Bron		96		70-130		2020-02-04	
Ermineskin (0011	819-03) Matrix: Water	Sampled: 2020-01	1-27 09:30				
Calculated Parame	ters						
Total Trihalometha	anes	0.00797		0.00400	mg/L	N/A	
Volatile Organic Co	ompounds (VOC)						
Bromodichloromet	thane	0.0017		0.0010	mg/L	2020-02-04	
Bromoform		0.0017		0.0010	mg/L	2020-02-04	
Chloroform		0.0016		0.0010	mg/L	2020-02-04	
Dibromochlorome	thane	0.0030		0.0010	mg/L	2020-02-04	
Surrogate: Toluen	e-d8	86		70-130		2020-02-04	
Surrogate: 4-Bron	nofluorobenzene	96		70-130	%	2020-02-04	
Public Works (00	11819-04) Matrix: Wate	r Sampled: 2020-	01-27 09:45				
	ters						
Calculated Parame							
Total Trihalometha	anes	0.0339		0.00400	mg/L	N/A	
		0.0339		0.00400	mg/L	N/A	



TEST RESULTS

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PROJECT 361341 - THM Quarterly (Island Health) REPORTED 2020-02-04 15:28

PROJECT 301341 - Trilli Quarte	y (Island Ficalur)		REPORTE	2020-02-0	2020-02-04 13.20	
Analyte	Result	Guideline	RL Units	Analyzed	Qualifier	
Public Works (0011819-04) Matrix: Wat		01-27 09:45, Conti	nued			
Volatile Organic Compounds (VOC), Contin Bromoform	ued < 0.0010		0.0010 mg/L	2020-02-04		
Chloroform	0.0276		0.0010 mg/L	2020-02-04		
Dibromochloromethane	0.0029		0.0010 mg/L	2020-02-04		
Surrogate: Toluene-d8	87		70-130 %	2020-02-04		
Surrogate: 4-Bromofluorobenzene	97		70-130 %	2020-02-04		



APPENDIX 1: SUPPORTING INFORMATION

Parksville, City of **REPORTED TO PROJECT**

361341 - THM Quarterly (Island Health)

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Analysis Description	Method Ref.	Technique	Location
Trihalomethanes in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond

Glossary of Terms:

Reporting Limit (default) RL

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

mg/L Milligrams per litre

EPA United States Environmental Protection Agency Test Methods

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:rsundar@caro.ca



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Parksville, City of

PROJECT 361341 - THM Quarterly (Island Health)

WORK ORDER

0011819

REPORTED 2020-02-04 15:28

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
Volatile Organic Compounds (VOC),	Batch B0B0105								
Blank (B0B0105-BLK1)			Prepared	: 2020-02-0	3, Analyze	d: 2020-0	02-04		
Bromodichloromethane	< 0.0010	0.0010 mg/L							
Bromoform	< 0.0010	0.0010 mg/L							
Chloroform	< 0.0010	0.0010 mg/L							
Dibromochloromethane	< 0.0010	0.0010 mg/L							
Surrogate: Toluene-d8	0.0232	mg/L	0.0265		87	70-130			
Surrogate: 4-Bromofluorobenzene	0.0242	mg/L	0.0250		97	70-130			
LCS (B0B0105-BS1)			Prepared	: 2020-02-0	3, Analyze	d: 2020-0	02-04		
Bromodichloromethane	0.0218	0.0010 mg/L	0.0201		108	70-130			
Bromoform	0.0202	0.0010 mg/L	0.0201		101	70-130			
Chloroform	0.0220	0.0010 mg/L	0.0201		109	70-130			
Dibromochloromethane	0.0218	0.0010 mg/L	0.0202		108	70-130			
Surrogate: Toluene-d8	0.0207	mg/L	0.0265		78	70-130			
Surrogate: 4-Bromofluorobenzene	0.0282	mg/L	0.0250		113	70-130			

(CARO	
	ANALYTICAL SERVICES	9
	Caring About Results, Obviously.	

REPORT TO:

#110 #102 1722 #108

INVOICE TO:



3846

[5S 1H7

5G 4X4

SAME AS REPORT TO

1X 5C3 RELINQUISHED BY:

CARO BC COC, Rev 2019-0 6V 2K9 CHAIN OF CUSTODY RECORD COC# B 83492 PAGE

RELINQUISHED BY: DATE: 13	m 7.7 RECEIVED BY:	DATE: 1/2
Borb Silenieks TIME: 10		TIME: 9/15
		TIVIL. DA
TURNAROUND TIME REQUESTED:	REGULATORY APPLICATION:	Show on Repor
Routine: (5-7 Days) 🔀	Canadian Drinking Water Quality B	C WQG BC HW
Rush: 1 Dav* 🗀 2 Dav* 🗀 3 Dav* 🗀	BC CSR Soil: WLT ALT PLT RI-L	DE RI-HDE CLE

	ACCUSE.	AL PL RL-LD RL-HD C
Contact Lab To Confirm Surcharge May Apply	CCME.	Other

COMPANY: City of Parksuille COMPANY:		Rush: 1 Day* 2 Day* 3 Day*	OF RL-HD CL IL			
ADDRESS:	ADDDECC	Other* *Contact Lab To Confirm. Surcharge May Apply	BC CSR Water: AW IW LW DW Oliv CCME: Other:			
CONTACT:		PROJECT NUMBER / INFO:	A: Biohazard D: Asbestos B: Cyanide E: Heavy Metals	G: Strong Odour H: High Contamination		
TEL/FAX:	TEL/FAX:	ANALY	/SES REQUESTED:	I: Other (please specify*)		
DELIVERY METHOD: EMAIL ONLINE OTHER* DATA FORMAT: EXCEL WATERTRAX ESdat EQUIS BC EMS OTHER* EMAIL 1: BS: ENICKS@ packsville. Ca EMAIL 2: EMAIL 3:	DELIVERY METHOD: EMAIL ONLINE OTHER* EMAIL 1: EMAIL 2: EMAIL 3:		GE	AZARD CODE(S)		
** If you would like to sign up for ClientConnect and/or Enviro	oChain, CARO's online service offerings, please check here:	2-F4	ALK TOG	1 1		
SAMPLED BY: Berb Sileniers MATRI WATER WATER WATER OF THE WATER AND THE WATER		BTEX VPH PHC F1 VOC VPH PHC F1 EPH PHC F2-F4 PHENOLS Chlorinated Non-Chlor. PCB GLYCOLS HAA THM PESTICIDES ACID HERBICIDES METALS - WATER TOTAL H9 METALS - WATER DISSOLVED H9 METALS - SOLL (SALM) inc. pH	PH EC ALK ANIONS TSS VSS TDS BOD COD TOG MOG TN NH3 TKN FECAL COLIFORMS E. coli TOTAL COLIFORMS E. coli ESSENTIAL DRINKING WATER PACKA ASBESTOS	HOLD POSSIBLE SAMPLE HAZARD CODE(S)		
Community Park V	2 2020-01-279:10	V				
Temple	2 200-01-27 9:20					
Ermineskin V	2 2020-01-27 9:30	V				
Roblic Works V	22020-01-27 9:45					
3.						
			-			
SHIPPING INSTRUCTIONS: Return Cooler(s) [7] SAMPLE	F RETENTION: * OTHER INSTRUCTIONS.		SAMPLE RECEIPT CON	IDITION:		

Supplies Needed:

30 Days (default) 60 Days ☐ 90 Days ☐

Other (surcharges will apply):

PO 3695

COOLER 2 (°C): COOLER 3 (°C):

ICE: Y [

CUSTODY SEALS INTACT: NA TYNT N T

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