

## **CERTIFICATE OF ANALYSIS**

REPORTED TO	Parksville, City of P O Box 1390, 100 Jensen Avenue East Parksville, BC V9P 2H3	TEL FAX	(250) 951-2489
ATTENTION	Barbara Silenieks	WORK ORDER	6050239
PO NUMBER PROJECT PROJECT INFO	PO002126 361341 - THM Quarterly (Island Health)	RECEIVED / TEMP REPORTED COC NUMBER	2016-05-03 08:45 / 20°C 2016-05-10 No COC#

#### 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.

S+LL

Authorized By:

Brent Coates, B.Sc. Division Manager, Richmond

*If you have any questions or concerns, please contact your Account Manager: Kathleen Fyffe, Dipl T (kfyffe@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 www.caro.ca 17225 109 Avenue Edmonton, AB T5S 1H7 Tel: 780-489-9100 Fax: 780-489-9700



# **ANALYSIS INFORMATION**

REPORTED TO       Parksville, City of         PROJECT       361341 - THM Quarterly (Island Health)			WORK ORDER         6050           REPORTED         2016							
Analysis Descrip	otion	Method Reference	Technique		Location					
Trihalomethanes in Water EPA 5030B / APHA Purge&Trap / Purge and Trap Ca 6200 B GC-MSD		Purge&Trap / Purge and Trap Capillary GC-MSD	/ Column	Richmond						
Method Reference EPA	ce Descriptions: United States Enviror	Fest Methods								
Glossary of Tern	ıs:									
MRL	Method Reporting Lir	nit								
<	Less than the Report as dilutions, limited sa	ed Detection Limit (RDL) - t ample volume, high moistur	he RDL may be higher than the MRL due t e, or interferences	to various factors such						
mg/L	Milligrams per litre									



## SAMPLE ANALYTICAL DATA

REPORTED TO PROJECT	Parksville, City o 361341 - THM Q	f uarterly (Island H	ealth)	WORK REPO	6050239 2016-05-10			
Analyte		Result / <i>Recovery</i>	Standard / Guideline	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: 770 So	orie (6050239-01)	[Water] Sampled	: 2016-05-02 09	:50				
Calculated Parame	ters							
Total Trihalomethan	es	0.009	N/A	0.004	mg/L	N/A	N/A	
Volatile Organic Co	ompounds (VOC)							
Bromodichlorometh	ane	0.002	N/A	0.001	mg/L	N/A	2016-05-04	
Bromoform		0.001	N/A	0.001	mg/L	N/A	2016-05-04	
Chloroform		0.003	N/A	0.001	mg/L	N/A	2016-05-04	
Dibromochlorometh	ane	0.003	N/A	0.001	mg/L	N/A	2016-05-04	
Surrogate: Toluene-	-d8	94		70-130	%	N/A	2016-05-04	
Surrogate: 4-Bromo	ofluorobenzene	94		70-130	%	N/A	2016-05-04	

#### Sample ID: Hwy @ Temple (6050239-02) [Water] Sampled: 2016-05-02 09:45

Calculated Parameters						
Total Trihalomethanes	0.007	N/A	0.004 mg/L	N/A	N/A	
Volatile Organic Compounds (VOC)						
Bromodichloromethane	0.002	N/A	0.001 mg/L	N/A	2016-05-04	
Bromoform	< 0.001	N/A	0.001 mg/L	N/A	2016-05-04	
Chloroform	0.004	N/A	0.001 mg/L	N/A	2016-05-04	
Dibromochloromethane	0.002	N/A	0.001 mg/L	N/A	2016-05-04	
Surrogate: Toluene-d8	96		70-130 %	N/A	2016-05-04	
Surrogate: 4-Bromofluorobenzene	93		70-130 %	N/A	2016-05-04	

#### Sample ID: Top of Moilliet (6050239-03) [Water] Sampled: 2016-05-02 10:05

Calculated Parameters						
Total Trihalomethanes	0.010	N/A	0.004 mg/L	N/A	N/A	
Volatile Organic Compounds (VOC)						
Bromodichloromethane	0.001	N/A	0.001 mg/L	N/A	2016-05-04	
Bromoform	< 0.001	N/A	0.001 mg/L	N/A	2016-05-04	
Chloroform	0.009	N/A	0.001 mg/L	N/A	2016-05-04	
Dibromochloromethane	< 0.001	N/A	0.001 mg/L	N/A	2016-05-04	
Surrogate: Toluene-d8	94		70-130 %	N/A	2016-05-04	
Surrogate: 4-Bromofluorobenzene	92		70-130 %	N/A	2016-05-04	

#### Sample ID: Hwy @ Arbutus Park (6050239-04) [Water] Sampled: 2016-05-02 08:45

Calculated Parameters						
Total Trihalomethanes	0.013	N/A	0.004 mg/L	N/A	N/A	
Volatile Organic Compounds (VOC)						
Bromodichloromethane	0.001	N/A	0.001 mg/L	N/A	2016-05-05	
Bromoform	< 0.001	N/A	0.001 mg/L	N/A	2016-05-05	
Chloroform	0.012	N/A	0.001 mg/L	N/A	2016-05-05	
Dibromochloromethane	< 0.001	N/A	0.001 mg/L	N/A	2016-05-05	
Surrogate: Toluene-d8	95		70-130 %	N/A	2016-05-05	
Surrogate: 4-Bromofluorobenzene	92		70-130 %	N/A	2016-05-05	

**CARO Analytical Services** 

Rev 2016-04-01



# SAMPLE ANALYTICAL DATA

REPORTED TO	Parksville, City of	WORK	6050239			
PROJECT	361341 - THM Quarterly (Island I	REPO	2016-05-10			
Analyte	Result / Recovery	Standard / Guideline	MRL / Units <i>Limits</i>	Prepared	Analyzed	Notes



### **APPENDIX 1: QUALITY CONTROL DATA**

# **REPORTED TO**Parksville, City of**PROJECT**361341 - THM Quarterly (Island Health)

WORK ORDER	6050239
REPORTED	2016-05-10

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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#### Volatile Organic Compounds (VOC), Batch B6E0198

Blank (B6E0198-BLK1)			Prepared: 201	6-05-04, Analyz	zed: 2016-05-04	ļ					
Bromodichloromethane	< 0.001	0.001 mg/L									
Bromoform	< 0.001	0.001 mg/L									
Chloroform	< 0.001	0.001 mg/L		2016-05-04, Analyzed: 2016-05-04							
Dibromochloromethane	< 0.001	0.001 mg/L									
Surrogate: Toluene-d8	0.0221	mg/L	0.0250	88	70-130						
Surrogate: 4-Bromofluorobenzene	0.0222	mg/L	0.0250	89	70-130						
LCS (B6E0198-BS1)			Prepared: 201	6-05-04, Analyz	zed: 2016-05-04	ŀ					
Bromodichloromethane	0.020	0.001 mg/L	0.0200	99	70-130						
Bromoform	0.020	0.001 mg/L	0.0200	102	70-130						
Chloroform	0.021	0.001 mg/L	0.0200	107	70-130						
Dibromochloromethane	0.019	0.001 mg/L	0.0200	94	70-130						
Surrogate: Toluene-d8	0.0221	mg/L	0.0250	88	70-130						
Surrogate: 4-Bromofluorobenzene	0.0237	mg/L	0.0250	95	70-130						

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CONTACT: Barbara Silenieks			ACT:					*Co	ntact L	ab To	Confi	rm. Su	urchar	ge Ma	y Appi	AL	Г	PL 🦵	RL	Γ	CL 🦵	IL <b>F</b>	AW	- IW	E LW	/ 🗖
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