

CERTIFICATE OF ANALYSIS

REPORTED TO Parksville, City of

> P O Box 1390, 100 Jensen Avenue East (250) 951-2489 TEL

Parksville, BC V9P 2H3 **FAX**

ATTENTION Barbara Silenieks **WORK ORDER** 6080151

PO NUMBER 002215 **RECEIVED / TEMP** 2016-08-03 09:00 / 10°C

PROJECT 361341 - THM Quarterly (Island Health) **REPORTED** 2016-08-10

NO# **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

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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

17225 109 Avenue Edmonton, AB T5S 1H7

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

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ANALYSIS INFORMATION

REPORTED TOParksville, City ofWORK ORDER6080151PROJECT361341 - THM Quarterly (Island Health)REPORTED2016-08-10

Analysis Description	Method Reference	Technique	Location
Trihalomethanes in Water	EPA 5030B / APHA 6200 B	Purge&Trap / Purge and Trap Capillary Column GC-MSD	Richmond

Method Reference Descriptions:

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

mg/L Milligrams per litre



SAMPLE ANALYTICAL DATA

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Analyte	Result / Recovery	Standard / Guideline	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: Works Yard (6080151-01) [Water] Sampl	ed: 2016-08-02	10:30				
Calculated Parameters							
Total Trihalomethanes	0.012	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	2016-08-07	
Bromoform	< 0.001	N/A	0.001		N/A	2016-08-07	
Chloroform	0.010	N/A	0.001		N/A	2016-08-07	
Dibromochloromethane	< 0.001	N/A	0.001		N/A	2016-08-07	
Surrogate: Toluene-d8	96		70-130		N/A	2016-08-07	
Surrogate: 4-Bromofluorobenzene	100		70-130	%	N/A	2016-08-07	
Sample ID: Parkview (6080151-02) Calculated Parameters					N/A	NI/A	
Total Trihalomethanes	0.020	N/A	0.004	rng/L	N/A	N/A	
Volatile Organic Compounds (VOC)						0045 55 55	
Bromodichloromethane	0.004	N/A	0.001		N/A	2016-08-07	
Bromoform	< 0.001	N/A	0.001		N/A	2016-08-07	
Chloroform	0.016	N/A	0.001		N/A	2016-08-07	
Dibromochloromethane	< 0.001	N/A	0.001		N/A	2016-08-07	
Surrogate: Toluene-d8	93		70-130	%	N/A	2016-08-07	
Sample ID: Temple 859 (6080151-03) [Water] Sampl	ed: 2016-08-02 (09:15				
Calculated Parameters Total Trihalomethanes	0.007	N/A	0.004	ma/l	N/A	N/A	
	0.007	14/7	0.004	mg/L	14// (14/7	
Volatile Organic Compounds (VOC) Bromodichloromethane	0.002	N/A	0.001	ma/l	N/A	2016-08-07	
Bromoform		N/A	0.001		N/A		
Chloroform	0.001	N/A N/A	0.001		N/A N/A	2016-08-07	
Dibromochloromethane	0.002	N/A	0.001		N/A N/A	2016-08-07	
Surrogate: Toluene-d8	93	IN/A	70-130		N/A N/A	2016-08-07	
Surrogate: 101uene-08 Surrogate: 4-Bromofluorobenzene	93		70-130		N/A N/A	2016-08-07	
Sample ID: Ermineskin 760 (608015		mpled: 2016-08		70	1071	2070 00 07	
Total Trihalomethanes	< 0.004	N/A	0.004	mg/L	N/A	N/A	
Volatile Organic Compounds (VOC)							
Bromodichloromethane	< 0.001	N/A	0.001	ma/l	N/A	2016-08-07	
Bromoform	< 0.001	N/A	0.001		N/A	2016-08-07	
Chloroform	< 0.001	N/A	0.001		N/A	2016-08-07	
Dibromochloromethane	< 0.001	N/A	0.001		N/A	2016-08-07	
Surrogate: Toluene-d8	96	IW/A	70-130		N/A	2016-08-07	
Surroyate. Totalette-uo	90		70-130	/0	IV/A	2010-00-07	

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Surrogate: 4-Bromofluorobenzene

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N/A

70-130 %

2016-08-07



SAMPLE ANALYTICAL DATA

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Analyte Result / Standard / MRL / Units Prepared Analyzed Notes

Recovery Guideline **Limits**



APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT

Parksville, City of

361341 - THM Quarterly (Island Health)

WORK ORDER REPORTED

6080151 2016-08-10

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
Volatile Organic Compounds (VOC), L	Batch B6H0356								
Blank (B6H0356-BLK1)		Prepared: 2016-08-07, Analyzed: 2016-08-07							
Bromodichloromethane	< 0.001	0.001 mg/L							
Bromoform	< 0.001	0.001 mg/L							
Chloroform	< 0.001	0.001 mg/L							
Dibromochloromethane	< 0.001	0.001 mg/L							
Surrogate: Toluene-d8	0.0235	mg/L	0.0250		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0246	mg/L	0.0250		99	70-130			
LCS (B6H0356-BS1)		Prepared: 2016-08-07, Analyzed: 2016-08-07							
Bromodichloromethane	0.018	0.001 mg/L	0.0200		90	70-130			
Bromoform	0.018	0.001 mg/L	0.0200		91	70-130			
Chloroform	0.020	0.001 mg/L	0.0200		101	70-130			
Dibromochloromethane	0.018	0.001 mg/L	0.0200		89	70-130			
Surrogate: Toluene-d8	0.0244	mg/L	0.0250		97	70-130			
Surrogate: 4-Bromofluorobenzene	0.0250	mg/L	0.0250		100	70-130			





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CHAIN OF CUSTODY RECORD COC#

CARO BC COC, Rev 2015-09

PAGE OF RELINQUISHED BY:
BJ6 Sile Niethe: 10:35 PURO DATE: (9) 163 KF TIME: 9:00

Curing About Ne	<i></i>	PROJECT:	PROJECT INFO;
REPORT TO:	INVOICE TO: SAME AS REPORT TO	Island Health Quarterly THMs	
COMPANY: City of Parksville	COMPANY:	TURNAROUND TIME REQUESTED:	REGULATORY APPLICATION: Regs on
ADDRESS: 1116 Herring Gull Way	ADDRESS:	Routine: (5-7 Days)	REGULATORY APPLICATION: Canadian Drinking Water Quality Guidelines Report?
Parksville, BC, V9P 1R2		Rush: 1 Day* 7 2 Day* 7 3 Day* 7 Other*	BC Drinking Water Protection Act / Reg. BC CSR AB TIER 1 CCME OTHER*
CONTACT: Barbara Silenieks	CONTACT:	*Contact Lab To Confirm. Surcharge May Apply	AL PL RL CL IL AW IW LW
TEL/FAX: 250.951.2489 250.248.6140	TEL/FAX:	ANAL	YSES REQUESTED:
DELIVERY METHOD: EMAIL 💢 MAIL 🦲 OTHER* 🦳 DATA FORMAT: EXCEL 🧮 WATERTRAX 🗀 ESdat 🧮	DELIVERY METHOD: EMAIL MAIL OTHER*		
EQUIS BC EMS OTHER*	EMAIL 2:		
MAIL 1: bsilenieks@parksville.ca	EMAIL 3:	Non-Chlor: HAA ERBICIDES HG HG HG HG HG HG HG HG HG HG	HPC T
EMAIL 2:EMAIL 3:	PO #:		SCT HPC
** NEW ** If you would like to sign up for ClientConnect and/or Env		VPH☐ PHC F1☐ VPH☐ PHC F2-F4 ☐ L/HEPH ☐ Non-Chlor. CLOST ☐ HAA ☐ S ☐ ACID HERBICIDES WATER TOTAL H9 WATER DISSOLVED H9 SOIL (SALM) ☐ inc. pH	
MATRI	X: SAMPLING: COMMENTS:	VPH PYPH PYPH PHC F2-F4 L/HEPH Chlorinated GLYCOLS ES ACI ACI WATER DIS SOIL (SALM	
TER TER		VPT	T VSS T T COD T COLIFORM STOS
NGW	DATE TIME WWW (e.g. flow/volume	C C C C C C C C C C C C C C C C C C C	
CLIENT SAMPLE ID: CLIENT SAMPLE ID: CLIENT SAMPLE ID:	DD-MMM-YY HH:MM HD CHORINATED DD-WWW-AXI (e.g. flow/volume media ID/notes)	BTEX	TSS TSS TDS TOS TOS TOS TOS TOS TOS TOS TOS TOS TO
Works Yard /	2 02-Ang-18 10:30		/
Barkview M	202-Acg-16 9:50		/ / /
Temple 859	2 02-Aug-16 9:15		/
Ermineskin 760 Y	2 0 2-Ay-169:35		
2007/00 2007/00			
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10 mg/s			
8848			
upplies Needed: 60 Days	RETENTION INSTRUCTIONS (Discarded 30 days after Report 90 Days Longer Date (Surcharges will Apply): INSTRUCTIONS:	CP CP DD	AYMENT: SAMPLE RECEIPT CONDITION: COOLER 1 (°C): COOLER 2 (°C): COOLER 3 (°C): COOLER 3 (°C): COOLER 3 (°C): COOLER 4 (°C): COOLER 5 (°C): COOLER 6 (°C): COOLER 7 (°C): COOLER 7 (°C): COOLER 7 (°C): COOLER 8 (°C): COOLER 9 (°