CERTIFICATE OF ANALYSIS

REPORTED TO	Newell Regional Services Corporation P.O. Box 638 Brooks, AB T1R 1B6		
ATTENTION	Ryan Melrose	**WORK ORDER**	24G2077
PO NUMBER		**RECEIVED / TEMP**	2024-07-17 08:50 / 18.4°C
PROJECT	TMH/HAA	**REPORTED**	2024-07-23 14:21
PROJECT INFO	WTP 2024 THM&HAA (JULY)	**COC NUMBER**	NO #

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/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

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.

We've Got Chemistry

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.

Ahead of the Curve

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.

By engaging our services, you are agreeing to CARO Analytical Service's Standard Terms and Conditions outlined here: https://www.caro.ca/terms-conditions

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

Authorized By:

Echo Fex
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	24G2077
PROJECT	TMH/HAA	**REPORTED**	2024-07-23 14:21

Analyte	Result	RL	Units	Analyzed	Qualifier
Header #1 (24G2077-01) | Matrix: Water | Sampled: 2024-07-16 09:35					
Calculated Parameters					
Total Trihalomethanes	**0.0436**	0.00400	mg/L	N/A	
Haloacetic Acids					
Monochloroacetic Acid	< 0.0020	0.0020	mg/L	2024-07-21	
Monobromoacetic Acid	< 0.0020	0.0020	mg/L	2024-07-21	
Dichloroacetic Acid	**0.0146**	0.0020	mg/L	2024-07-21	
Trichloroacetic Acid	**0.0095**	0.0020	mg/L	2024-07-21	
Dibromoacetic Acid	< 0.0020	0.0020	mg/L	2024-07-21	
Total Haloacetic Acids (HAA5)	**0.0241**	0.00200	mg/L	N/A	
Surrogate: 2-Bromopropionic Acid	*75*	*70-130*	%	*2024-07-21*	
Volatile Organic Compounds (VOC)					
Bromodichloromethane	**0.0057**	0.0010	mg/L	2024-07-19	
Bromoform	< 0.0010	0.0010	mg/L	2024-07-19	
Chloroform	**0.0378**	0.0010	mg/L	2024-07-19	
Dibromochloromethane	< 0.0010	0.0010	mg/L	2024-07-19	
Surrogate: Toluene-d8	*118*	*70-130*	%	*2024-07-19*	
Surrogate: 4-Bromofluorobenzene	*114*	*70-130*	%	*2024-07-19*	
Header #2 (24G2077-02) | Matrix: Water | Sampled: 2024-07-16 09:25					
Calculated Parameters					
Total Trihalomethanes	**0.0399**	0.00400	mg/L	N/A	
Haloacetic Acids					
Monochloroacetic Acid	< 0.0020	0.0020	mg/L	2024-07-21	
Monobromoacetic Acid	< 0.0020	0.0020	mg/L	2024-07-21	
Dichloroacetic Acid	**0.0137**	0.0020	mg/L	2024-07-21	
Trichloroacetic Acid	**0.0088**	0.0020	mg/L	2024-07-21	
Dibromoacetic Acid	< 0.0020	0.0020	mg/L	2024-07-21	
Total Haloacetic Acids (HAA5)	**0.0224**	0.00200	mg/L	N/A	
Surrogate: 2-Bromopropionic Acid	*90*	*70-130*	%	*2024-07-21*	
Volatile Organic Compounds (VOC)					
Bromodichloromethane	**0.0053**	0.0010	mg/L	2024-07-19	
Bromoform	< 0.0010	0.0010	mg/L	2024-07-19	
Chloroform	**0.0346**	0.0010	mg/L	2024-07-19	
Dibromochloromethane	< 0.0010	0.0010	mg/L	2024-07-19	
Surrogate: Toluene-d8	*115*	*70-130*	%	*2024-07-19*	
Surrogate: 4-Bromofluorobenzene	*109*	*70-130*	%	*2024-07-19*	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	24G2077
PROJECT	TMH/HAA	**REPORTED**	2024-07-23 14:21

Analysis Description	Method Ref.	Technique	Accredited	Location
Haloacetic Acids in Water	EPA 552.3*	Liquid-Liquid Microextraction, Derivatization and GC-ECD	✓	Richmond
Trihalomethanes in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Edmonton

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

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
EPA	United States Environmental Protection Agency Test Methods

General Comments:

The results in this report apply to the received 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. Caro will dispose of all samples within 30 days of sample receipt, unless otherwise agreed.

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:efex@caro.ca

Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline(s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	24G2077
PROJECT	TMH/HAA	**REPORTED**	2024-07-23 14:21

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 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
Haloacetic Acids, Batch B4G3554										
Blank (B4G3554-BLK1)				Prepared: 2024-07-20, Analyzed: 2024-07-21						
Monochloroacetic Acid	< 0.0020	0.0020	mg/L							
Monobromoacetic Acid	< 0.0020	0.0020	mg/L							
Dichloroacetic Acid	< 0.0020	0.0020	mg/L							
Trichloroacetic Acid	< 0.0020	0.0020	mg/L							
Dibromoacetic Acid	< 0.0020	0.0020	mg/L							
Surrogate: 2-Bromopropionic Acid	*0.0106*		*mg/L*	0.0116		*91*	*70-130*			
LCS (B4G3554-BS1)				Prepared: 2024-07-20, Analyzed: 2024-07-21						
Monochloroacetic Acid	0.0527	0.0020	mg/L	0.0564		93	75-117			
Monobromoacetic Acid	0.0366	0.0020	mg/L	0.0374		98	83-113			
Dichloroacetic Acid	0.0543	0.0020	mg/L	0.0558		97	78-112			
Trichloroacetic Acid	0.0180	0.0020	mg/L	0.0186		97	81-110			
Dibromoacetic Acid	0.0194	0.0020	mg/L	0.0187		104	89-112			
Surrogate: 2-Bromopropionic Acid	*0.0109*		*mg/L*	0.0116		*94*	*70-130*			
LCS Dup (B4G3554-BSD1)				Prepared: 2024-07-20, Analyzed: 2024-07-21						
Monochloroacetic Acid	0.0599	0.0020	mg/L	0.0564		106	75-117	13	30	
Monobromoacetic Acid	0.0385	0.0020	mg/L	0.0374		103	83-113	5	30	
Dichloroacetic Acid	0.0578	0.0020	mg/L	0.0558		104	78-112	6	30	
Trichloroacetic Acid	0.0194	0.0020	mg/L	0.0186		104	81-110	8	30	
Dibromoacetic Acid	0.0182	0.0020	mg/L	0.0187		97	89-112	6	30	
Surrogate: 2-Bromopropionic Acid	*0.0124*		*mg/L*	0.0116		*106*	*70-130*			
Volatile Organic Compounds (VOC), Batch B4G3387										
Blank (B4G3387-BLK1)				Prepared: 2024-07-18, Analyzed: 2024-07-19						
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	*0.0208*		*mg/L*	0.0188		*110*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0208*		*mg/L*	0.0199		*105*	*70-130*			
LCS (B4G3387-BS1)				Prepared: 2024-07-18, Analyzed: 2024-07-19						
Bromodichloromethane	0.0235	0.0010	mg/L	0.0201		117	70-130			
Bromoform	0.0235	0.0010	mg/L	0.0201		117	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	24G2077
PROJECT	TMH/HAA	**REPORTED**	2024-07-23 14:21

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B4G3387, Continued										
LCS (B4G3387-BS1), Continued				Prepared: 2024-07-18, Analyzed: 2024-07-19						
Chloroform	0.0211	0.0010	mg/L	0.0201		105	70-130			
Dibromochloromethane	0.0237	0.0010	mg/L	0.0201		118	70-130			
Surrogate: Toluene-d8	*0.0189*		*mg/L*	0.0188		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0196*		*mg/L*	0.0199		*98*	*70-130*			

CARO SERVICES *Obviously.*

* 2 4 6 2 0 7 7 *

CARO.ca 1-888-311-8846

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7
#108 – 4475 Wayburne Drive, Burnaby, BC V5G 4X4

CHAIN OF CUSTODY RECORD

CARO AB COC, Rev 2022-08

By engaging our services, you are agreeing to CARO's Standard Terms and Conditions outlined here: https://www.caro.ca/terms-conditions

COC#: PAGE OF

RELINQUISHED BY:	DATE: 2024/7/16	RECEIVED BY:	DATE: 17/7
Kyle Zu[illegible]	TIME: 9:45	J.K (Puro)	TIME: 8:50

REPORT TO:

COMPANY: [illegible]ices Corp
ADDRESS: 530 Canal St, Po Box 638, Brooks AB, T1R 1B7
CONTACT: Ryan Melrose
TEL/FAX: 403-793-3177
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☑ ESdat ☐ EQuIS ☐ AEP EMS ☐ OTHER* ☐
EMAIL 1: rMelrose@NRSC.ca
EMAIL 2: CRobinson@NRSC.ca
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☑

COMPANY:
ADDRESS:
CONTACT: Ryan Melrose
TEL/FAX: 403-793-3177
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
EMAIL 1: Tdrake@NRSC.ca
EMAIL 2:
EMAIL 3:
PO #:

** If you would like to sign up for CARO's online service offerings, please check here: ☐

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* 7 day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION:
Canadian Drinking Water Quality ☐
AB T1 SOIL/GW: NA ☐ AG ☐ RES/PL ☐ CL ☐ IL ☐
AB SWQG: FWAL ☐ IW ☐ LW ☐
CCME.
Other:
Show on Report ☐
AB WCR Class 9.3 ☐

PROJECT NUMBER / INFO: WTP 2024 THM&HAA (July)

A: Biohazard, B: Cyanide, C: PCBs, D: Asbestos, E: Heavy Metals, F: Flammable, G: Strong Odour, H: High Contamination, I: Other (please specify*)

SAMPLED BY:

ANALYSES REQUESTED: SOIL PHC F1-F4 (BTEX ☐); WATER PHC F1-F2 (BTEX ☐); VOC ☐ THM ☑ PAH ☐ HAA ☑; DISSOLVED METALS (Hg ☐ Cr6 ☐); TOTAL METALS (Hg ☐ Cr6 ☐); SOIL METALS SatP B ☐ Cr6 ☐ Hg ☐; SOIL SALINITY BASIC ☐ DETAILED ☐; CLASS 2 LANDFILL; ROUTINE WATER; COD ☐ BOD ☐ TOC ☐ DOC ☐; TSS ☐ TDS ☐ VSS ☐; AMMONIA ☐ TKN ☐ TP ☐; TO&G ☐ PHENOLICS ☐; TCOL ☐ E. Coli ☐ FCOL ☐ HPC ☐; TOXICITY TROUT ☐ DAPHNIA ☐; PSA HYDROMETER ☐ 75 um SIEVE ☐; HOLD; POSSIBLE SAMPLE HAZARD CODE(S)

	CLIENT SAMPLE ID	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	CONTAINER QTY	DATE (YYYY-MM-DD)	TIME (HH:MM)	CHLORINATED	FILTERED	PRESERVED	COMMENTS (e.g. flow/volume media ID/notes)	ANALYSES
C15 C17	Header #1	✓					2024-07-16	09:35	✓		✓		VOC/THM/PAH/HAA ✓
C15 C17	Header #2	✓					2024-07-16	09:25	✓		✓		VOC/THM/PAH/HAA ✓

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply):

*** OTHER INSTRUCTIONS:**
(C15X2, C17X2) 2

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

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 18.4 ICE: Y ☐ N ☐
COOLER 2 (°C): ICE: Y ☐ N ☐
COOLER 3 (°C): ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐