CERTIFICATE OF ANALYSIS

REPORTED TO	Newell Regional Services Corporation P.O. Box 638 Brooks, AB T1R 1B6		
ATTENTION	Kole Steinley	**WORK ORDER**	22A3006
PO NUMBER	4343	**RECEIVED / TEMP**	2022-01-26 09:00 / 3.8°C
PROJECT	Schedule 4	**REPORTED**	2022-02-11 10:10
PROJECT INFO	Winter Analysis 2022	**COC NUMBER**	13065

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.

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

Authorized By:

Regan Pshyk
Junior Account Manager

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO Newell Regional Services Corporation
PROJECT Schedule 4

WORK ORDER 22A3006
REPORTED 2022-02-11 10:10

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WTP Header #1 (22A3006-01) | Matrix: Water | Sampled: 2022-01-25						
Acid Herbicides						
2,4-D	< 0.10	MAC = 100	0.10	µg/L	2022-02-06	
MCPA	< 0.02	MAC = 100	0.02	µg/L	2022-02-06	
2,4,5-T	< 0.10	N/A	0.10	µg/L	2022-02-06	
Dicamba	< 0.10	MAC = 120	0.10	µg/L	2022-02-06	
Picloram	< 0.10	MAC = 190	0.10	µg/L	2022-02-06	
Dinoseb	< 0.10	N/A	0.10	µg/L	2022-02-06	
Anions						
Bromate	< 0.010	MAC = 0.01	0.010	mg/L	2022-02-02	
Chlorate	< 0.50	MAC = 1	0.50	mg/L	2022-01-26	
Chloride	**14.4**	AO ≤ 250	0.50	mg/L	2022-01-26	
Chlorite	< 0.50	MAC = 1	0.50	mg/L	2022-01-26	
Fluoride	**0.13**	MAC = 1.5	0.10	mg/L	2022-01-26	
Nitrate (as N)	< 0.050	MAC = 10	0.050	mg/L	2022-01-26	
Nitrite (as N)	< 0.050	MAC = 1	0.050	mg/L	2022-01-26	
Sulfate	**54.9**	AO ≤ 500	1.0	mg/L	2022-01-26	
Calculated Parameters						
Chloramines	**0.210**	MAC = 3	0.0600	mg/L	N/A	
Hardness, Total (as CaCO3)	**188**	None Required	0.541	mg/L	N/A	
Solids, Total Dissolved	**251**	AO ≤ 500	3.35	mg/L	N/A	
Chlorinated Phenols						
2-Chlorophenol	< 0.10	N/A	0.10	µg/L	2022-01-30	
3 & 4-Chlorophenol	< 0.10	N/A	0.10	µg/L	2022-01-30	
4-Chloro-3-Methylphenol	< 0.50	N/A	0.50	µg/L	2022-01-30	
2,3-Dichlorophenol	< 0.20	N/A	0.20	µg/L	2022-01-30	
2,4 & 2,5-Dichlorophenol	< 0.20	AO ≤ 0.3	0.20	µg/L	2022-01-30	
2,6-Dichlorophenol	< 0.20	N/A	0.20	µg/L	2022-01-30	
3,4-Dichlorophenol	< 0.20	N/A	0.20	µg/L	2022-01-30	
3,5-Dichlorophenol	< 0.20	N/A	0.20	µg/L	2022-01-30	
2,3,4-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2022-01-30	
2,3,5-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2022-01-30	
2,3,6-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2022-01-30	
2,4,5-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2022-01-30	
2,4,6-Trichlorophenol	< 0.50	AO ≤ 2	0.50	µg/L	2022-01-30	
3,4,5-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2022-01-30	
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	< 0.50	N/A	0.50	µg/L	2022-01-30	
2,3,4,6-Tetrachlorophenol	< 0.50	AO ≤ 1	0.50	µg/L	2022-01-30	
Pentachlorophenol	< 0.50	AO ≤ 30	0.50	µg/L	2022-01-30	
Surrogate: 2,4-Dibromophenol	*64*		*60-130*	%	*2022-01-30*	
Surrogate: 2,4,6-Tribromophenol	*65*		*60-130*	%	*2022-01-30*	
General Parameters						

TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WTP Header #1 (22A3006-01) | Matrix: Water | Sampled: 2022-01-25, Continued						
General Parameters, Continued						
Alkalinity, Total (as CaCO3)	**154**	N/A	2.0	mg/L	2022-01-28	
Bicarbonate (HCO3)	**188**	N/A	2.0	mg/L	2022-01-28	
Carbonate (CO3)	< 2.0	N/A	2.0	mg/L	2022-01-28	
Hydroxide (OH)	< 2.0	N/A	2.0	mg/L	2022-01-28	
Ammonia, Total (as N)	< 0.050	None Required	0.050	mg/L	2022-01-31	
Carbon, Total Organic	**2.27**	N/A	0.50	mg/L	2022-01-31	
Chlorine, Total	**2.00**	None Required	0.02	mg/L	2022-01-27	HT2
Chlorine, Free	**1.79**	N/A	0.02	mg/L	2022-01-27	HT2
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2022-01-27	
Conductivity (EC)	**446**	N/A	2.0	µS/cm	2022-01-31	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2022-01-29	
Nitrilotriacetic Acid	< 0.20	MAC = 0.4	0.20	mg/L	2022-02-01	
pH	**7.87**	7.0-10.5	0.10	pH units	2022-01-28	HT2
Sulfide, Total	< 0.020	AO ≤ 0.05	0.020	mg/L	2022-01-27	
Turbidity	**0.37**	OG < 1	0.10	NTU	2022-01-28	
Microbiological Parameters						
Microcystin, total	< 0.05	MAC = 1.5	0.05	µg/L	2022-02-09	
Miscellaneous Herbicides						
Glyphosate	< 0.050	MAC = 0.28	0.050	mg/L	2022-02-06	
Miscellaneous Organics						
N-Nitrosodimethylamine	< 0.0016	MAC = 0.04	0.0016	µg/L	2022-02-08	
Miscellaneous Subcontracted Parameters						
Refer to Appendix	**Refer to appendix for full report**	N/A		-	2022-02-07	
Pesticides, Herbicides, and Fungicides						
Alachlor	< 0.100	N/A	0.100	µg/L	2022-02-05	
Aldrin	< 0.006	N/A	0.006	µg/L	2022-02-05	
Atrazine and metabolites	< 0.100	MAC = 5	0.100	µg/L	2022-02-05	CST2
Azinphos-methyl	< 0.200	MAC = 20	0.200	µg/L	2022-02-05	
alpha-BHC	< 0.010	N/A	0.010	µg/L	2022-02-05	
beta-BHC	< 0.050	N/A	0.050	µg/L	2022-02-05	
delta-BHC	< 0.050	N/A	0.050	µg/L	2022-02-05	
gamma-BHC (Lindane)	< 0.050	N/A	0.050	µg/L	2022-02-05	
Bromacil	< 0.100	N/A	0.100	µg/L	2022-02-05	
Bromoxynil	< 0.200	MAC = 5	0.200	µg/L	2022-02-05	
Butachlor	< 0.020	N/A	0.020	µg/L	2022-02-05	
Captan	< 0.100	N/A	0.100	µg/L	2022-02-05	
Chlordane (cis + trans)	< 0.050	N/A	0.050	µg/L	2022-02-05	
Chlorothalonil	< 0.050	N/A	0.050	µg/L	2022-02-05	

TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WTP Header #1 (22A3006-01) | Matrix: Water | Sampled: 2022-01-25, Continued						
Pesticides, Herbicides, and Fungicides, Continued						
Chlorpyrifos	< 0.010	MAC = 90	0.010	µg/L	2022-02-05	
Cyanazine	< 0.100	N/A	0.100	µg/L	2022-02-05	CST2
DDT, Total	< 0.010	N/A	0.010	µg/L	2022-02-05	
Deltamethrin	< 0.100	N/A	0.100	µg/L	2022-02-05	
Diazinon	< 0.020	MAC = 20	0.020	µg/L	2022-02-05	
Dichlorvos	< 0.100	N/A	0.100	µg/L	2022-02-05	
Diclofop-methyl	< 0.100	MAC = 9	0.100	µg/L	2022-02-05	
Dieldrin	< 0.010	N/A	0.010	µg/L	2022-02-05	
Dimethoate	< 0.200	MAC = 20	0.200	µg/L	2022-02-05	
Disulfoton	< 0.100	N/A	0.100	µg/L	2022-02-05	
Diuron	< 0.200	MAC = 150	0.200	µg/L	2022-02-05	
Endosulfan I + II	< 0.010	N/A	0.010	µg/L	2022-02-05	
Endosulfan sulfate	< 0.050	N/A	0.050	µg/L	2022-02-05	
Endrin	< 0.020	N/A	0.020	µg/L	2022-02-05	
Endrin aldehyde	< 0.020	N/A	0.020	µg/L	2022-02-05	
Endrin ketone	< 0.020	N/A	0.020	µg/L	2022-02-05	
Fenchlorphos (Ronnel)	< 0.100	N/A	0.100	µg/L	2022-02-05	
Heptachlor	< 0.010	N/A	0.010	µg/L	2022-02-05	
Heptachlor epoxide	< 0.010	N/A	0.010	µg/L	2022-02-05	
Linuron	< 0.050	N/A	0.050	µg/L	2022-02-05	
Malathion	< 0.100	MAC = 190	0.100	µg/L	2022-02-05	
Methoxychlor	< 0.050	N/A	0.050	µg/L	2022-02-05	
Methyl parathion	< 0.100	N/A	0.100	µg/L	2022-02-05	
Metolachlor	< 0.100	MAC = 50	0.100	µg/L	2022-02-05	
Metribuzin	< 0.200	MAC = 80	0.200	µg/L	2022-02-05	CST2
Parathion	< 0.100	N/A	0.100	µg/L	2022-02-05	
Pentachloronitrobenzene	< 0.100	N/A	0.100	µg/L	2022-02-05	
Permethrin	< 0.010	N/A	0.010	µg/L	2022-02-05	
Phorate	< 0.100	MAC = 2	0.100	µg/L	2022-02-05	
Prometon	< 0.300	N/A	0.300	µg/L	2022-02-05	CST2
Prometryne	< 0.100	N/A	0.100	µg/L	2022-02-05	CST2
Simazine	< 0.200	MAC = 10	0.200	µg/L	2022-02-05	CST2
Sulfotep	< 0.100	N/A	0.100	µg/L	2022-02-05	
Tebuthiuron	< 0.200	N/A	0.200	µg/L	2022-02-05	CST2
Temephos (Abate)	< 0.500	N/A	0.500	µg/L	2022-02-05	CST2
Terbufos	< 0.100	MAC = 1	0.100	µg/L	2022-02-05	
Triallate	< 0.100	N/A	0.100	µg/L	2022-02-05	
Trifluralin	< 0.200	MAC = 45	0.200	µg/L	2022-02-05	
Surrogate: Tributyl Phosphate	*76*		*50-140*	%	*2022-02-05*	
Surrogate: 4-chloro-3-nitrobenzotrifluoride	*65*		*50-140*	%	*2022-02-05*	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.050	N/A	0.050	µg/L	2022-02-01	

TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WTP Header #1 (22A3006-01) | Matrix: Water | Sampled: 2022-01-25, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Acenaphthylene	< 0.200	N/A	0.200	µg/L	2022-02-01	
Acridine	< 0.050	N/A	0.050	µg/L	2022-02-01	
Anthracene	< 0.010	N/A	0.010	µg/L	2022-02-01	
Benz(a)anthracene	< 0.010	N/A	0.010	µg/L	2022-02-01	
Benzo(a)pyrene	< 0.010	MAC = 0.04	0.010	µg/L	2022-02-01	
Benzo(b+j)fluoranthene	< 0.050	N/A	0.050	µg/L	2022-02-01	
Benzo(g,h,i)perylene	< 0.050	N/A	0.050	µg/L	2022-02-01	
Benzo(k)fluoranthene	< 0.050	N/A	0.050	µg/L	2022-02-01	
2-Chloronaphthalene	< 0.100	N/A	0.100	µg/L	2022-02-01	
Chrysene	< 0.050	N/A	0.050	µg/L	2022-02-01	
Dibenz(a,h)anthracene	< 0.010	N/A	0.010	µg/L	2022-02-01	
Fluoranthene	< 0.030	N/A	0.030	µg/L	2022-02-01	
Fluorene	< 0.050	N/A	0.050	µg/L	2022-02-01	
Indeno(1,2,3-cd)pyrene	< 0.050	N/A	0.050	µg/L	2022-02-01	
1-Methylnaphthalene	< 0.100	N/A	0.100	µg/L	2022-02-01	
2-Methylnaphthalene	< 0.100	N/A	0.100	µg/L	2022-02-01	
Naphthalene	< 0.200	N/A	0.200	µg/L	2022-02-01	
Phenanthrene	< 0.100	N/A	0.100	µg/L	2022-02-01	
Pyrene	< 0.020	N/A	0.020	µg/L	2022-02-01	
Quinoline	< 0.050	N/A	0.050	µg/L	2022-02-01	
Surrogate: Acridine-d9	*86*		*50-140*	%	*2022-02-01*	
Surrogate: Naphthalene-d8	*92*		*50-140*	%	*2022-02-01*	
Surrogate: Perylene-d12	*79*		*50-140*	%	*2022-02-01*	
Total Metals						
Aluminum, total	**0.0481**	OG < 0.1	0.0050	mg/L	2022-01-30	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2022-01-30	
Arsenic, total	**0.00086**	MAC = 0.01	0.00050	mg/L	2022-01-30	
Barium, total	**0.0894**	MAC = 2	0.0050	mg/L	2022-01-30	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2022-01-30	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2022-01-30	
Calcium, total	**43.2**	None Required	0.20	mg/L	2022-01-30	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2022-01-30	
Copper, total	**0.00066**	MAC = 2	0.00040	mg/L	2022-01-30	
Iron, total	**0.015**	AO ≤ 0.3	0.010	mg/L	2022-01-30	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2022-01-30	
Magnesium, total	**19.4**	None Required	0.010	mg/L	2022-01-30	
Manganese, total	**0.00079**	MAC = 0.12	0.00020	mg/L	2022-01-30	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2022-02-01	
Potassium, total	**2.20**	N/A	0.10	mg/L	2022-01-30	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2022-01-30	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2022-01-30	
Sodium, total	**22.3**	AO ≤ 200	0.10	mg/L	2022-01-30	

TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
WTP Header #1 (22A3006-01) | Matrix: Water | Sampled: 2022-01-25, Continued						
Total Metals, Continued						
Strontium, total	**0.244**	MAC = 7	0.0010	mg/L	2022-01-30	
Uranium, total	**0.000779**	MAC = 0.02	0.000020	mg/L	2022-01-30	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2022-01-30	

Sample Qualifiers:

CST2	Results for this analyte may be biased low.
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	22A3006
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Analysis Description	Method Ref.	Technique	Accredited	Location
Acid Herbicides in Water in Water	In-House	N/A	✓	Richmond
Alkalinity in Water	SM 2320 B* (2017)	Titration with H2SO4	✓	Edmonton
Ammonia, Total in Water	SM 4500-NH3 D* (2017)	Ion Selective Electrode	✓	Edmonton
Anions in Water	SM 4110 B (2017)	Ion Chromatography	✓	Edmonton
Bromate in Water	SM 4110 B (2017)	Ion Chromatography	✓	Sublet
Carbon, Total Organic in Water	SM 5310 B (2017)	Combustion, Infrared CO2 Detection	✓	Kelowna
Chlorine, Free in Water	SM 4500-Cl G (2017)	Colorimetry (DPD)	✓	Edmonton
Chlorine, Total in Water	SM 4500-Cl G (2017)	Colorimetry (DPD)	✓	Edmonton
Colour, True in Water	SM 2120 C (2017)	Spectrophotometry (456 nm)	✓	Edmonton
Conductivity in Water	SM 2510 B (2017)	Conductivity Meter	✓	Edmonton
Cyanide, SAD in Water	ASTM D7511-12	Flow Injection with In-Line UV Digestion and Amperometry	✓	Kelowna
Cyanobacterial Toxins in Water	EPA 546*	Adda Enzyme-Linked Immunosorbent Assay (ELISA)	✓	Sublet
Glyphosate in Water	EPA 547*	Direct Aqueous Injection HPLC with Post-Column Derivatization and Fluorescence Detection	✓	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	✓	N/A
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Nitrilotriacetic Acid in Water	EPA 430.1	Manual Colorimetry (Zinc-Zincon)		Kelowna
N-Nitrosodimethylamine in Water	In-House	N/A	✓	Sublet
Pesticides in Water	EPA 3510C* / EPA 8270D*	Liquid-Liquid DCM Extraction (B/N) / GC-MSD (SIM)	✓	Richmond
pH in Water	SM 4500-H+ B (2017)	Electrometry	✓	Edmonton
Phenols, Chlorinated in Water	EPA 3510C* / EPA 8270D	Liquid-Liquid DCM Extraction (Acidic) / GC-MSD (SIM)	✓	Richmond
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MSD (SIM)	✓	Richmond
Solids, Total Dissolved in Water	SM 1030 E (2017)	SM 1030 E (2011)	✓	N/A
Sulfide, Total in Water	SM 4500-S2 D* (2017)	Colorimetry (Methylene Blue)	✓	Edmonton
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Turbidity in Water	SM 2130 B (2017)	Nephelometry	✓	Edmonton

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

APPENDIX 1: SUPPORTING INFORMATION

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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
AO	Aesthetic Objective
CU	Colour Units (referenced against a platinum cobalt standard)
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
NTU	Nephelometric Turbidity Units
OG	Operational Guideline (treated water)
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre
ASTM	ASTM International Test Methods
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

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 or once samples expire, whichever comes first. Longer hold is possible if 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:rpshyk@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**	22A3006
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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
Acid Herbicides, Batch B2B0640										
Blank (B2B0640-BLK1)				Prepared: 2022-02-05, Analyzed: 2022-02-05						
2,4-D	< 0.10	0.10	µg/L							
MCPA	< 0.02	0.02	µg/L							
2,4,5-T	< 0.10	0.10	µg/L							
Dicamba	< 0.10	0.10	µg/L							
Picloram	< 0.10	0.10	µg/L							
Dinoseb	< 0.10	0.10	µg/L							
LCS (B2B0640-BS1)				Prepared: 2022-02-05, Analyzed: 2022-02-05						
2,4-D	5.58	0.10	µg/L	5.05		111	70-130			
MCPA	5.57	0.02	µg/L	5.00		111	70-130			
2,4,5-T	5.73	0.10	µg/L	5.15		111	70-130			
Dicamba	5.13	0.10	µg/L	5.05		102	70-130			
Picloram	4.98	0.10	µg/L	5.10		98	70-130			
Dinoseb	5.06	0.10	µg/L	5.10		99	70-130			
LCS Dup (B2B0640-BSD1)				Prepared: 2022-02-05, Analyzed: 2022-02-05						
2,4-D	5.46	0.10	µg/L	5.05		108	70-130	2	30	
MCPA	5.39	0.02	µg/L	5.00		108	70-130	3	30	
2,4,5-T	5.49	0.10	µg/L	5.15		107	70-130	4	30	
Dicamba	5.15	0.10	µg/L	5.05		102	70-130	< 1	30	
Picloram	5.11	0.10	µg/L	5.10		100	70-130	3	30	
Dinoseb	4.99	0.10	µg/L	5.10		98	70-130	1	30	
Anions, Batch B2A2233										
Blank (B2A2233-BLK1)				Prepared: 2022-01-26, Analyzed: 2022-01-26						
Chlorate	< 0.50	0.50	mg/L							
Chloride	< 0.50	0.50	mg/L							
Chlorite	< 0.50	0.50	mg/L							
Fluoride	< 0.10	0.10	mg/L							
Nitrate (as N)	< 0.050	0.050	mg/L							
Nitrite (as N)	< 0.050	0.050	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B2A2233-BS1)				Prepared: 2022-01-26, Analyzed: 2022-01-26						
Chlorate	9.73	0.50	mg/L	10.0		97	89-112			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	22A3006
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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B2A2233, Continued										
LCS (B2A2233-BS1), Continued				Prepared: 2022-01-26, Analyzed: 2022-01-26						
Chloride	9.22	0.50	mg/L	10.0		92	90-110			
Chlorite	9.89	0.50	mg/L	10.0		99	80-120			
Fluoride	1.01	0.10	mg/L	1.00		101	85-115			
Nitrate (as N)	0.921	0.050	mg/L	1.00		92	92-108			
Nitrite (as N)	0.503	0.050	mg/L	0.500		101	85-115			
Sulfate	50.2	1.0	mg/L	50.0		100	90-110			
Chlorinated Phenols, Batch B2A2556										
Blank (B2A2556-BLK1)				Prepared: 2022-01-30, Analyzed: 2022-01-30						
2-Chlorophenol	< 0.10	0.10	µg/L							
3 & 4-Chlorophenol	< 0.10	0.10	µg/L							
4-Chloro-3-Methylphenol	< 0.20	0.20	µg/L							
2,3-Dichlorophenol	< 0.20	0.20	µg/L							
2,4 & 2,5-Dichlorophenol	< 0.20	0.20	µg/L							
2,6-Dichlorophenol	< 0.20	0.20	µg/L							
3,4-Dichlorophenol	< 0.20	0.20	µg/L							
3,5-Dichlorophenol	< 0.20	0.20	µg/L							
2,3,4-Trichlorophenol	< 0.50	0.50	µg/L							
2,3,5-Trichlorophenol	< 0.50	0.50	µg/L							
2,3,6-Trichlorophenol	< 0.50	0.50	µg/L							
2,4,5-Trichlorophenol	< 0.50	0.50	µg/L							
2,4,6-Trichlorophenol	< 0.50	0.50	µg/L							
3,4,5-Trichlorophenol	< 0.50	0.50	µg/L							
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	< 0.50	0.50	µg/L							
2,3,4,6-Tetrachlorophenol	< 0.50	0.50	µg/L							
Pentachlorophenol	< 0.50	0.50	µg/L							
Surrogate: 2,4-Dibromophenol	*1.22*		*µg/L*	2.00		*61*	*60-130*			
Surrogate: 2,4,6-Tribromophenol	*1.36*		*µg/L*	2.00		*68*	*60-130*			
LCS (B2A2556-BS1)				Prepared: 2022-01-30, Analyzed: 2022-01-30						
2-Chlorophenol	7.44	0.10	µg/L	10.0		74	60-130			
3 & 4-Chlorophenol	15.0	0.10	µg/L	20.1		75	60-130			
4-Chloro-3-Methylphenol	7.75	0.20	µg/L	10.0		77	60-130			
2,3-Dichlorophenol	7.35	0.20	µg/L	10.0		74	60-130			
2,4 & 2,5-Dichlorophenol	15.0	0.20	µg/L	20.2		74	60-130			
2,6-Dichlorophenol	7.36	0.20	µg/L	10.0		74	60-130			
3,4-Dichlorophenol	7.11	0.20	µg/L	10.0		71	60-130			
3,5-Dichlorophenol	7.03	0.20	µg/L	10.0		70	60-130			
2,3,4-Trichlorophenol	7.41	0.50	µg/L	10.0		74	60-130			
2,3,5-Trichlorophenol	7.84	0.50	µg/L	10.0		78	60-130			
2,3,6-Trichlorophenol	7.87	0.50	µg/L	10.0		79	60-130			
2,4,5-Trichlorophenol	7.70	0.50	µg/L	10.0		77	60-130			
2,4,6-Trichlorophenol	7.46	0.50	µg/L	10.0		74	60-130			
3,4,5-Trichlorophenol	7.14	0.50	µg/L	10.0		71	60-130			
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	14.8	0.50	µg/L	20.0		74	60-130			
2,3,4,6-Tetrachlorophenol	8.20	0.50	µg/L	10.0		82	60-130			
Pentachlorophenol	7.43	0.50	µg/L	10.0		74	60-130			
Surrogate: 2,4-Dibromophenol	*1.37*		*µg/L*	2.00		*68*	*60-130*			
Surrogate: 2,4,6-Tribromophenol	*1.23*		*µg/L*	2.00		*62*	*60-130*			
LCS Dup (B2A2556-BSD1)				Prepared: 2022-01-30, Analyzed: 2022-01-30						
2-Chlorophenol	7.32	0.10	µg/L	10.0		73	60-130	2	40	
3 & 4-Chlorophenol	15.3	0.10	µg/L	20.1		76	60-130	2	40	
4-Chloro-3-Methylphenol	8.10	0.20	µg/L	10.0		81	60-130	4	40	
2,3-Dichlorophenol	7.45	0.20	µg/L	10.0		75	60-130	1	40	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	22A3006
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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Chlorinated Phenols, Batch B2A2556, Continued										
LCS Dup (B2A2556-BSD1), Continued				Prepared: 2022-01-30, Analyzed: 2022-01-30						
2,4 & 2,5-Dichlorophenol	15.1	0.20	µg/L	20.2		75	60-130	< 1	40	
2,6-Dichlorophenol	7.41	0.20	µg/L	10.0		74	60-130	< 1	40	
3,4-Dichlorophenol	7.55	0.20	µg/L	10.0		75	60-130	6	40	
3,5-Dichlorophenol	7.57	0.20	µg/L	10.0		76	60-130	7	40	
2,3,4-Trichlorophenol	7.71	0.50	µg/L	10.0		77	60-130	4	40	
2,3,5-Trichlorophenol	8.19	0.50	µg/L	10.0		82	60-130	4	40	
2,3,6-Trichlorophenol	8.13	0.50	µg/L	10.0		81	60-130	3	40	
2,4,5-Trichlorophenol	8.11	0.50	µg/L	10.0		81	60-130	5	40	
2,4,6-Trichlorophenol	7.82	0.50	µg/L	10.0		78	60-130	5	40	
3,4,5-Trichlorophenol	8.04	0.50	µg/L	10.0		80	60-130	12	40	
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	16.1	0.50	µg/L	20.0		80	60-130	8	40	
2,3,4,6-Tetrachlorophenol	8.67	0.50	µg/L	10.0		86	60-130	6	40	
Pentachlorophenol	8.63	0.50	µg/L	10.0		86	60-130	15	40	
Surrogate: 2,4-Dibromophenol	*1.38*		*µg/L*	2.00		*69*	*60-130*			
Surrogate: 2,4,6-Tribromophenol	*1.36*		*µg/L*	2.00		*68*	*60-130*			
General Parameters, Batch B2A2202										
Blank (B2A2202-BLK1)				Prepared: 2022-01-27, Analyzed: 2022-01-27						
Chlorine, Total	< 0.02	0.02	mg/L							
Chlorine, Free	< 0.02	0.02	mg/L							
Reference (B2A2202-SRM1)				Prepared: 2022-01-27, Analyzed: 2022-01-27						
Chlorine, Total	1.56	0.02	mg/L	1.59		98	91.2-108.8			
Chlorine, Free	1.56	0.02	mg/L	1.59		98	91.2-108.8			
General Parameters, Batch B2A2283										
Blank (B2A2283-BLK1)				Prepared: 2022-01-27, Analyzed: 2022-01-27						
Colour, True	< 5.0	5.0	CU							
LCS (B2A2283-BS1)				Prepared: 2022-01-27, Analyzed: 2022-01-27						
Colour, True	25	5.0	CU	25.0		101	90-109			
Duplicate (B2A2283-DUP1)		**Source: 22A3006-01**		Prepared: 2022-01-27, Analyzed: 2022-01-27						
Colour, True	< 5.0	5.0	CU		< 5.0				8	
General Parameters, Batch B2A2295										
Blank (B2A2295-BLK1)				Prepared: 2022-01-27, Analyzed: 2022-01-27						
Sulfide, Total	< 0.020	0.020	mg/L							
LCS (B2A2295-BS1)				Prepared: 2022-01-27, Analyzed: 2022-01-27						
Sulfide, Total	0.531	0.020	mg/L	0.498		107	80-120			
General Parameters, Batch B2A2307										
Blank (B2A2307-BLK1)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B2A2307-BLK2)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B2A2307-BLK3)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Carbon, Total Organic	< 0.50	0.50	mg/L							

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B2A2307, Continued										
LCS (B2A2307-BS1)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Carbon, Total Organic	9.81	0.50	mg/L	10.0		98	78-116			
LCS (B2A2307-BS2)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Carbon, Total Organic	9.92	0.50	mg/L	10.0		99	78-116			
LCS (B2A2307-BS3)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Carbon, Total Organic	9.76	0.50	mg/L	10.0		98	78-116			
General Parameters, Batch B2A2392										
Blank (B2A2392-BLK1)				Prepared: 2022-01-28, Analyzed: 2022-01-28						
Turbidity	< 0.10	0.10	NTU							
LCS (B2A2392-BS1)				Prepared: 2022-01-28, Analyzed: 2022-01-28						
Turbidity	38.7	0.10	NTU	40.0		97	90-110			
General Parameters, Batch B2A2447										
Blank (B2A2447-BLK1)				Prepared: 2022-01-28, Analyzed: 2022-01-28						
Alkalinity, Total (as CaCO3)	< 2.0	2.0	mg/L							
Bicarbonate (HCO3)	< 2.0	2.0	mg/L							
Carbonate (CO3)	< 2.0	2.0	mg/L							
Hydroxide (OH)	< 2.0	2.0	mg/L							
LCS (B2A2447-BS1)				Prepared: 2022-01-28, Analyzed: 2022-01-28						
Alkalinity, Total (as CaCO3)	246	2.0	mg/L	250		98	94-108			
Reference (B2A2447-SRM1)				Prepared: 2022-01-28, Analyzed: 2022-01-28						
pH	7.08	0.10	pH units	7.00		101	98-102			HT2
General Parameters, Batch B2A2504										
Blank (B2A2504-BLK1)				Prepared: 2022-01-29, Analyzed: 2022-01-29						
Cyanide, Total	< 0.0020	0.0020	mg/L							
LCS (B2A2504-BS1)				Prepared: 2022-01-29, Analyzed: 2022-01-29						
Cyanide, Total	0.0190	0.0020	mg/L	0.0200		95	82-120			
LCS Dup (B2A2504-BSD1)				Prepared: 2022-01-29, Analyzed: 2022-01-29						
Cyanide, Total	0.0190	0.0020	mg/L	0.0200		95	82-120	< 1	10	
General Parameters, Batch B2A2585										
Blank (B2A2585-BLK1)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
LCS (B2A2585-BS1)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Ammonia, Total (as N)	0.214	0.050	mg/L	0.200		107	85-115			
General Parameters, Batch B2A2650										
Blank (B2A2650-BLK1)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Conductivity (EC)	< 2.0	2.0	µS/cm							

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B2A2650, Continued										
LCS (B2A2650-BS1)				Prepared: 2022-01-31, Analyzed: 2022-01-31						
Conductivity (EC)	1000	2.0	µS/cm	1000		100	95-105			
General Parameters, Batch B2B0123										
Blank (B2B0123-BLK1)				Prepared: 2022-02-01, Analyzed: 2022-02-01						
Nitrilotriacetic Acid	< 0.20	0.20	mg/L							
LCS (B2B0123-BS1)				Prepared: 2022-02-01, Analyzed: 2022-02-01						
Nitrilotriacetic Acid	1.02	0.20	mg/L	1.00		102	80-120			
LCS Dup (B2B0123-BSD1)				Prepared: 2022-02-01, Analyzed: 2022-02-01						
Nitrilotriacetic Acid	0.96	0.20	mg/L	1.00		96	80-120	6	20	
Miscellaneous Herbicides, Batch B2B0348										
Blank (B2B0348-BLK1)				Prepared: 2022-02-06, Analyzed: 2022-02-06						
Glyphosate	< 0.050	0.050	mg/L							
LCS (B2B0348-BS1)				Prepared: 2022-02-06, Analyzed: 2022-02-06						
Glyphosate	0.214	0.050	mg/L	0.252		85	70-130			
LCS Dup (B2B0348-BSD1)				Prepared: 2022-02-06, Analyzed: 2022-02-06						
Glyphosate	0.211	0.050	mg/L	0.252		84	70-130	1	20	
Pesticides, Herbicides, and Fungicides, Batch B2A2571										
Blank (B2A2571-BLK1)				Prepared: 2022-01-30, Analyzed: 2022-02-05						
Alachlor	< 0.100	0.100	µg/L							
Aldrin	< 0.006	0.006	µg/L							
Atrazine and metabolites	< 0.100	0.100	µg/L							CST2
Azinphos-methyl	< 0.200	0.200	µg/L							
alpha-BHC	< 0.010	0.010	µg/L							
beta-BHC	< 0.050	0.050	µg/L							
delta-BHC	< 0.050	0.050	µg/L							
gamma-BHC (Lindane)	< 0.050	0.050	µg/L							
Bromacil	< 0.100	0.100	µg/L							
Bromoxynil	< 0.200	0.200	µg/L							
Butachlor	< 0.020	0.020	µg/L							
Captan	< 0.100	0.100	µg/L							
Chlordane (cis + trans)	< 0.050	0.050	µg/L							
Chlorothalonil	< 0.050	0.050	µg/L							
Chlorpyrifos	< 0.010	0.010	µg/L							
Cyanazine	< 0.100	0.100	µg/L							CST2
DDT, Total	< 0.010	0.010	µg/L							
Deltamethrin	0.102	0.100	µg/L							BLK
Diazinon	< 0.020	0.020	µg/L							
Dichlorvos	< 0.100	0.100	µg/L							
Diclofop-methyl	< 0.100	0.100	µg/L							
Dieldrin	< 0.010	0.010	µg/L							
Dimethoate	< 0.200	0.200	µg/L							
Disulfoton	< 0.100	0.100	µg/L							
Diuron	< 0.200	0.200	µg/L							
Endosulfan I + II	< 0.010	0.010	µg/L							
Endosulfan sulfate	< 0.050	0.050	µg/L							
Endrin	< 0.020	0.020	µg/L							

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REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	22A3006
PROJECT	Schedule 4	**REPORTED**	2022-02-11 10:10

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B2A2571, Continued										
Blank (B2A2571-BLK1), Continued				Prepared: 2022-01-30, Analyzed: 2022-02-05						
Endrin aldehyde	< 0.020	0.020	µg/L							
Endrin ketone	< 0.020	0.020	µg/L							
Fenchlorphos (Ronnel)	< 0.100	0.100	µg/L							
Heptachlor	< 0.010	0.010	µg/L							
Heptachlor epoxide	< 0.010	0.010	µg/L							
Linuron	< 0.050	0.050	µg/L							
Malathion	< 0.100	0.100	µg/L							
Methoxychlor	< 0.050	0.050	µg/L							
Methyl parathion	< 0.100	0.100	µg/L							
Metolachlor	< 0.100	0.100	µg/L							
Metribuzin	< 0.200	0.200	µg/L							CST2
Parathion	< 0.100	0.100	µg/L							
Pentachloronitrobenzene	< 0.100	0.100	µg/L							
Permethrin	0.010	0.010	µg/L							BLK
Phorate	< 0.100	0.100	µg/L							
Prometon	< 0.300	0.300	µg/L							CST2
Prometryne	< 0.100	0.100	µg/L							CST2
Simazine	< 0.200	0.200	µg/L							CST2
Sulfotep	< 0.100	0.100	µg/L							
Tebuthiuron	< 0.200	0.200	µg/L							CST2
Temephos (Abate)	< 0.500	0.500	µg/L							CST2
Terbufos	< 0.100	0.100	µg/L							
Triallate	< 0.100	0.100	µg/L							
Trifluralin	< 0.200	0.200	µg/L							
Surrogate: Tributyl Phosphate	*0.797*		*µg/L*	0.998		*80*	*50-140*			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	*0.709*		*µg/L*	1.00		*71*	*50-140*			
LCS (B2A2571-BS1)				Prepared: 2022-01-30, Analyzed: 2022-02-05						
Alachlor	0.826	0.100	µg/L	1.01		82	50-140			
Aldrin	0.814	0.006	µg/L	1.00		81	50-140			
Atrazine	0.173	0.100	µg/L	1.01		17	50-140			SPK
Atrazine-desethyl	< 0.100	0.100	µg/L	1.01		3	50-140			SPK
Azinphos-methyl	0.963	0.200	µg/L	1.00		96	50-140			
alpha-BHC	0.854	0.010	µg/L	1.01		85	50-140			
beta-BHC	0.931	0.050	µg/L	1.01		92	50-140			
delta-BHC	0.898	0.050	µg/L	1.00		90	50-140			
gamma-BHC (Lindane)	0.879	0.050	µg/L	1.00		88	50-140			
Bromacil	0.843	0.100	µg/L	1.01		83	50-140			
Bromoxynil	0.828	0.200	µg/L	1.02		81	50-140			
Butachlor	0.932	0.020	µg/L	1.01		92	50-140			
Captan	0.895	0.100	µg/L	0.992		90	50-140			
Chlordane (cis + trans)	1.85	0.050	µg/L	2.01		92	50-140			
Chlorothalonil	0.882	0.050	µg/L	0.978		90	50-140			
Chlorpyrifos	0.960	0.010	µg/L	1.00		96	50-140			
Cyanazine	< 0.100	0.100	µg/L	1.01		5	50-140			SPK
DDT, Total	5.71	0.010	µg/L	5.02		114	50-140			
Deltamethrin	9.91	0.100	µg/L	10.0		99	50-140			
Diazinon	0.624	0.020	µg/L	1.01		62	50-140			
Dichlorvos	0.819	0.100	µg/L	1.01		81	50-140			
Diclofop-methyl	1.02	0.100	µg/L	1.02		100	50-140			
Dieldrin	0.887	0.010	µg/L	1.00		89	50-140			
Dimethoate	0.694	0.200	µg/L	1.00		69	50-140			
Disulfoton	0.932	0.100	µg/L	1.04		90	50-140			
Diuron	1.07	0.200	µg/L	1.02		105	50-140			
Endosulfan I + II	1.82	0.010	µg/L	2.01		91	50-140			
Endosulfan sulfate	0.946	0.050	µg/L	1.01		94	50-140			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	22A3006
PROJECT	Schedule 4	**REPORTED**	2022-02-11 10:10

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B2A2571, Continued										
LCS (B2A2571-BS1), Continued				Prepared: 2022-01-30, Analyzed: 2022-02-05						
Endrin	0.645	0.020	µg/L	1.01		64	50-140			
Endrin aldehyde	0.706	0.020	µg/L	1.00		71	50-140			
Endrin ketone	1.27	0.020	µg/L	1.01		125	50-140			
Fenchlorphos (Ronnel)	0.952	0.100	µg/L	1.07		89	50-140			
Heptachlor	0.877	0.010	µg/L	1.01		87	50-140			
Heptachlor epoxide	0.912	0.010	µg/L	1.01		90	50-140			
Linuron	1.41	0.050	µg/L	1.05		134	50-140			
Malathion	1.07	0.100	µg/L	1.00		107	50-140			
Methoxychlor	0.974	0.050	µg/L	1.01		96	50-140			
Methyl parathion	0.861	0.100	µg/L	1.02		84	50-140			
Metolachlor	0.985	0.100	µg/L	1.00		98	50-140			
Metribuzin	< 0.200	0.200	µg/L	1.00		7	50-140			SPK
Parathion	0.952	0.100	µg/L	1.00		95	50-140			
Pentachloronitrobenzene	0.760	0.100	µg/L	1.00		76	50-140			
Permethrin	0.931	0.010	µg/L	1.03		90	50-140			
Phorate	0.850	0.100	µg/L	1.02		83	50-140			
Prometon	< 0.300	0.300	µg/L	1.00		18	50-140			SPK
Prometryne	0.381	0.100	µg/L	1.00		38	50-140			SPK
Simazine	< 0.200	0.200	µg/L	1.01		5	50-140			SPK
Sulfotep	0.921	0.100	µg/L	1.00		92	50-140			
Tebuthiuron	< 0.200	0.200	µg/L	1.01		12	50-140			SPK
Temephos (Abate)	1.89	0.500	µg/L	10.7		18	50-140			SPK
Terbufos	0.849	0.100	µg/L	0.990		86	50-140			
Triallate	0.877	0.100	µg/L	1.04		84	50-140			
Trifluralin	0.839	0.200	µg/L	1.00		84	50-140			
Surrogate: Tributyl Phosphate	*0.876*		*µg/L*	0.998		*88*	*50-140*			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	*0.766*		*µg/L*	1.00		*77*	*50-140*			
LCS Dup (B2A2571-BSD1)				Prepared: 2022-01-30, Analyzed: 2022-02-05						
Alachlor	0.540	0.100	µg/L	1.01		53	50-140	42	30	RPD
Aldrin	0.787	0.006	µg/L	1.00		79	50-140	3	30	
Atrazine	< 0.100	0.100	µg/L	1.01		0.6	50-140	186	30	SPK
Atrazine-desethyl	< 0.100	0.100	µg/L	1.01		2	50-140	15	30	SPK
Azinphos-methyl	0.537	0.200	µg/L	1.00		54	50-140	57	30	RPD
alpha-BHC	0.861	0.010	µg/L	1.01		85	50-140	< 1	30	
beta-BHC	0.868	0.050	µg/L	1.01		86	50-140	7	30	
delta-BHC	0.862	0.050	µg/L	1.00		86	50-140	4	30	
gamma-BHC (Lindane)	0.861	0.050	µg/L	1.00		86	50-140	2	30	
Bromacil	0.728	0.100	µg/L	1.01		72	50-140	15	30	
Bromoxynil	0.713	0.200	µg/L	1.02		70	50-140	15	30	
Butachlor	0.690	0.020	µg/L	1.01		68	50-140	30	30	
Captan	0.747	0.100	µg/L	0.992		75	50-140	18	30	
Chlordane (cis + trans)	1.77	0.050	µg/L	2.01		88	50-140	5	30	
Chlorothalonil	0.797	0.050	µg/L	0.978		81	50-140	10	30	
Chlorpyrifos	0.873	0.010	µg/L	1.00		87	50-140	9	30	
Cyanazine	< 0.100	0.100	µg/L	1.01		1	50-140	116	30	SPK
DDT, Total	5.24	0.010	µg/L	5.02		104	50-140	9	30	
Deltamethrin	7.77	0.100	µg/L	10.0		78	50-140	24	30	
Diazinon	0.224	0.020	µg/L	1.01		22	50-140	94	30	SPK1
Dichlorvos	0.860	0.100	µg/L	1.01		85	50-140	5	30	
Diclofop-methyl	0.853	0.100	µg/L	1.02		84	50-140	17	30	
Dieldrin	0.714	0.010	µg/L	1.00		71	50-140	22	30	
Dimethoate	0.523	0.200	µg/L	1.00		52	50-140	28	30	
Disulfoton	0.828	0.100	µg/L	1.04		80	50-140	12	30	
Diuron	1.05	0.200	µg/L	1.02		103	50-140	2	30	
Endosulfan I + II	1.71	0.010	µg/L	2.01		85	50-140	7	30	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Newell Regional Services Corporation
PROJECT Schedule 4

WORK ORDER 22A3006
REPORTED 2022-02-11 10:10

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B2A2571, Continued										
LCS Dup (B2A2571-BSD1), Continued				Prepared: 2022-01-30, Analyzed: 2022-02-05						
Endosulfan sulfate	0.904	0.050	µg/L	1.01		90	50-140	5	30	
Endrin	0.353	0.020	µg/L	1.01		35	50-140	59	30	SPK1
Endrin aldehyde	0.530	0.020	µg/L	1.00		53	50-140	29	30	
Endrin ketone	1.68	0.020	µg/L	1.01		166	50-140	28	30	SPK1
Fenchlorphos (Ronnel)	0.857	0.100	µg/L	1.07		80	50-140	11	30	
Heptachlor	0.840	0.010	µg/L	1.01		83	50-140	4	30	
Heptachlor epoxide	0.882	0.010	µg/L	1.01		87	50-140	3	30	
Linuron	1.20	0.050	µg/L	1.05		114	50-140	16	30	
Malathion	0.944	0.100	µg/L	1.00		94	50-140	13	30	
Methoxychlor	0.982	0.050	µg/L	1.01		97	50-140	< 1	30	
Methyl parathion	0.754	0.100	µg/L	1.02		74	50-140	13	30	
Metolachlor	0.904	0.100	µg/L	1.00		90	50-140	9	30	
Metribuzin	< 0.200	0.200	µg/L	1.00		2	50-140	113	30	SPK
Parathion	0.829	0.100	µg/L	1.00		83	50-140	14	30	
Pentachloronitrobenzene	0.721	0.100	µg/L	1.00		72	50-140	5	30	
Permethrin	0.903	0.010	µg/L	1.03		88	50-140	3	30	
Phorate	0.716	0.100	µg/L	1.02		70	50-140	17	30	
Prometon	< 0.300	0.300	µg/L	1.00		6	50-140	96	30	SPK
Prometryne	0.169	0.100	µg/L	1.00		17	50-140	77	30	SPK
Simazine	< 0.200	0.200	µg/L	1.01			50-140		30	SPK
Sulfotep	0.902	0.100	µg/L	1.00		90	50-140	2	30	
Tebuthiuron	< 0.200	0.200	µg/L	1.01		3	50-140	120	30	SPK
Temephos (Abate)	1.48	0.500	µg/L	10.7		14	50-140	24	30	SPK
Terbufos	0.653	0.100	µg/L	0.990		66	50-140	26	30	
Triallate	0.845	0.100	µg/L	1.04		81	50-140	4	30	
Trifluralin	0.861	0.200	µg/L	1.00		86	50-140	3	30	
Surrogate: Tributyl Phosphate	*0.897*		*µg/L*	0.998		*90*	*50-140*			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	*0.747*		*µg/L*	1.00		*75*	*50-140*			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B2A2682										
Blank (B2A2682-BLK1)				Prepared: 2022-01-31, Analyzed: 2022-02-01						
Acenaphthene	< 0.050	0.050	µg/L							
Acenaphthylene	< 0.200	0.200	µg/L							
Acridine	< 0.050	0.050	µg/L							
Anthracene	< 0.010	0.010	µg/L							
Benz(a)anthracene	< 0.010	0.010	µg/L							
Benzo(a)pyrene	< 0.010	0.010	µg/L							
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L							
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L							
Benzo(k)fluoranthene	< 0.050	0.050	µg/L							
2-Chloronaphthalene	< 0.100	0.100	µg/L							
Chrysene	< 0.050	0.050	µg/L							
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L							
Fluoranthene	< 0.030	0.030	µg/L							
Fluorene	< 0.050	0.050	µg/L							
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L							
1-Methylnaphthalene	< 0.100	0.100	µg/L							
2-Methylnaphthalene	< 0.100	0.100	µg/L							
Naphthalene	< 0.200	0.200	µg/L							
Phenanthrene	< 0.100	0.100	µg/L							
Pyrene	< 0.020	0.020	µg/L							
Quinoline	0.085	0.050	µg/L							BLK
Surrogate: Acridine-d9	*19.6*		*µg/L*	22.9		*86*	*50-140*			
Surrogate: Naphthalene-d8	*20.7*		*µg/L*	22.2		*93*	*50-140*			
Surrogate: Perylene-d12	*18.1*		*µg/L*	22.2		*81*	*50-140*			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	22A3006
PROJECT	Schedule 4	**REPORTED**	2022-02-11 10:10

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B2A2682, Continued										
LCS (B2A2682-BS1)				Prepared: 2022-01-31, Analyzed: 2022-02-01						
Acenaphthene	20.7	0.050	µg/L	22.2		93	50-140			
Acenaphthylene	19.9	0.200	µg/L	22.2		90	50-140			
Acridine	20.0	0.050	µg/L	21.9		92	50-140			
Anthracene	22.1	0.010	µg/L	22.2		100	50-140			
Benz(a)anthracene	27.7	0.010	µg/L	22.2		124	50-140			
Benzo(a)pyrene	24.3	0.010	µg/L	22.2		109	50-140			
Benzo(b+j)fluoranthene	51.3	0.050	µg/L	44.0		117	50-140			
Benzo(g,h,i)perylene	23.3	0.050	µg/L	22.2		105	50-140			
Benzo(k)fluoranthene	25.6	0.050	µg/L	22.2		115	50-140			
2-Chloronaphthalene	19.5	0.100	µg/L	22.1		88	50-140			
Chrysene	26.8	0.050	µg/L	22.2		121	50-140			
Dibenz(a,h)anthracene	23.8	0.010	µg/L	22.2		107	50-140			
Fluoranthene	23.0	0.030	µg/L	22.2		104	50-140			
Fluorene	21.6	0.050	µg/L	22.2		97	50-140			
Indeno(1,2,3-cd)pyrene	24.4	0.050	µg/L	22.2		110	50-140			
1-Methylnaphthalene	21.3	0.100	µg/L	22.0		97	50-140			
2-Methylnaphthalene	21.8	0.100	µg/L	22.0		99	50-140			
Naphthalene	22.2	0.200	µg/L	22.2		100	50-140			
Phenanthrene	21.1	0.100	µg/L	22.2		95	50-140			
Pyrene	22.0	0.020	µg/L	22.2		99	50-140			
Quinoline	14.4	0.050	µg/L	22.1		65	50-140			
Surrogate: Acridine-d9	*36.2*		*µg/L*	45.8		*79*	*50-140*			
Surrogate: Naphthalene-d8	*39.6*		*µg/L*	44.4		*89*	*50-140*			
Surrogate: Perylene-d12	*34.6*		*µg/L*	44.4		*78*	*50-140*			
LCS Dup (B2A2682-BSD1)				Prepared: 2022-01-31, Analyzed: 2022-02-01						
Acenaphthene	20.9	0.050	µg/L	22.2		94	50-140	< 1	30	
Acenaphthylene	19.7	0.200	µg/L	22.2		89	50-140	< 1	30	
Acridine	20.2	0.050	µg/L	21.9		92	50-140	< 1	30	
Anthracene	22.2	0.010	µg/L	22.2		100	50-140	< 1	30	
Benz(a)anthracene	27.1	0.010	µg/L	22.2		122	50-140	2	30	
Benzo(a)pyrene	24.0	0.010	µg/L	22.2		108	50-140	1	30	
Benzo(b+j)fluoranthene	50.6	0.050	µg/L	44.0		115	50-140	1	30	
Benzo(g,h,i)perylene	23.0	0.050	µg/L	22.2		104	50-140	1	30	
Benzo(k)fluoranthene	25.9	0.050	µg/L	22.2		117	50-140	1	30	
2-Chloronaphthalene	19.4	0.100	µg/L	22.1		88	50-140	< 1	30	
Chrysene	27.6	0.050	µg/L	22.2		124	50-140	3	30	
Dibenz(a,h)anthracene	23.5	0.010	µg/L	22.2		106	50-140	1	30	
Fluoranthene	22.9	0.030	µg/L	22.2		103	50-140	< 1	30	
Fluorene	21.4	0.050	µg/L	22.2		96	50-140	< 1	30	
Indeno(1,2,3-cd)pyrene	24.1	0.050	µg/L	22.2		109	50-140	1	30	
1-Methylnaphthalene	21.1	0.100	µg/L	22.0		96	50-140	1	30	
2-Methylnaphthalene	21.8	0.100	µg/L	22.0		99	50-140	< 1	30	
Naphthalene	22.3	0.200	µg/L	22.2		100	50-140	< 1	30	
Phenanthrene	21.6	0.100	µg/L	22.2		97	50-140	3	30	
Pyrene	21.9	0.020	µg/L	22.2		99	50-140	< 1	30	
Quinoline	28.4	0.050	µg/L	22.1		129	50-140	66	30	RPD1
Surrogate: Acridine-d9	*15.7*		*µg/L*	22.9		*68*	*50-140*			
Surrogate: Naphthalene-d8	*19.9*		*µg/L*	22.2		*90*	*50-140*			
Surrogate: Perylene-d12	*16.7*		*µg/L*	22.2		*75*	*50-140*			
Total Metals, Batch B2A2505										
Blank (B2A2505-BLK1)				Prepared: 2022-01-29, Analyzed: 2022-01-30						
Aluminum, total	< 0.0050	0.0050	mg/L							
Antimony, total	< 0.00020	0.00020	mg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	22A3006
PROJECT	Schedule 4	**REPORTED**	2022-02-11 10:10

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B2A2505, Continued										
Blank (B2A2505-BLK1), Continued				Prepared: 2022-01-29, Analyzed: 2022-01-30						
Arsenic, total	< 0.00050	0.00050	mg/L							
Barium, total	< 0.0050	0.0050	mg/L							
Boron, total	< 0.0500	0.0500	mg/L							
Cadmium, total	< 0.000010	0.000010	mg/L							
Calcium, total	< 0.20	0.20	mg/L							
Chromium, total	< 0.00050	0.00050	mg/L							
Copper, total	< 0.00040	0.00040	mg/L							
Iron, total	< 0.010	0.010	mg/L							
Lead, total	< 0.00020	0.00020	mg/L							
Magnesium, total	< 0.010	0.010	mg/L							
Manganese, total	< 0.00020	0.00020	mg/L							
Potassium, total	< 0.10	0.10	mg/L							
Selenium, total	< 0.00050	0.00050	mg/L							
Silver, total	< 0.000050	0.000050	mg/L							
Sodium, total	< 0.10	0.10	mg/L							
Strontium, total	< 0.0010	0.0010	mg/L							
Uranium, total	< 0.000020	0.000020	mg/L							
Zinc, total	< 0.0040	0.0040	mg/L							
LCS (B2A2505-BS1)				Prepared: 2022-01-29, Analyzed: 2022-01-30						
Aluminum, total	0.0226	0.0050	mg/L	0.0200		113	80-120			
Antimony, total	0.0204	0.00020	mg/L	0.0200		102	80-120			
Arsenic, total	0.0186	0.00050	mg/L	0.0200		93	80-120			
Barium, total	0.0184	0.0050	mg/L	0.0200		92	80-120			
Boron, total	< 0.0500	0.0500	mg/L	0.0200		96	80-120			
Cadmium, total	0.0185	0.000010	mg/L	0.0200		93	80-120			
Calcium, total	1.81	0.20	mg/L	2.00		91	80-120			
Chromium, total	0.0193	0.00050	mg/L	0.0200		97	80-120			
Copper, total	0.0206	0.00040	mg/L	0.0200		103	80-120			
Iron, total	1.98	0.010	mg/L	2.00		99	80-120			
Lead, total	0.0199	0.00020	mg/L	0.0200		99	80-120			
Magnesium, total	1.91	0.010	mg/L	2.00		96	80-120			
Manganese, total	0.0188	0.00020	mg/L	0.0200		94	80-120			
Potassium, total	1.86	0.10	mg/L	2.00		93	80-120			
Selenium, total	0.0189	0.00050	mg/L	0.0200		95	80-120			
Silver, total	0.0189	0.000050	mg/L	0.0200		94	80-120			
Sodium, total	1.87	0.10	mg/L	2.00		94	80-120			
Strontium, total	0.0182	0.0010	mg/L	0.0200		91	80-120			
Uranium, total	0.0189	0.000020	mg/L	0.0200		95	80-120			
Zinc, total	0.0191	0.0040	mg/L	0.0200		95	80-120			
Reference (B2A2505-SRM1)				Prepared: 2022-01-29, Analyzed: 2022-01-30						
Aluminum, total	0.195	0.0050	mg/L	0.198		98	70-130			
Antimony, total	0.0247	0.00020	mg/L	0.0230		107	70-130			
Arsenic, total	0.0192	0.00050	mg/L	0.0200		96	70-130			
Barium, total	0.0151	0.0050	mg/L	0.0161		94	70-130			
Boron, total	0.182	0.0500	mg/L	0.191		95	70-130			
Cadmium, total	0.00377	0.000010	mg/L	0.00404		93	70-130			
Calcium, total	0.90	0.20	mg/L	0.938		96	70-130			
Chromium, total	0.0259	0.00050	mg/L	0.0256		101	70-130			
Copper, total	0.0332	0.00040	mg/L	0.0322		103	70-130			
Iron, total	0.061	0.010	mg/L	0.0580		105	70-130			
Lead, total	0.00834	0.00020	mg/L	0.00796		105	70-130			
Magnesium, total	0.117	0.010	mg/L	0.112		105	70-130			
Manganese, total	0.0113	0.00020	mg/L	0.0120		94	70-130			
Potassium, total	0.77	0.10	mg/L	0.820		94	70-130			
Selenium, total	0.113	0.00050	mg/L	0.117		96	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	22A3006
PROJECT	Schedule 4	**REPORTED**	2022-02-11 10:10

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B2A2505, Continued										
Reference (B2A2505-SRM1), Continued				Prepared: 2022-01-29, Analyzed: 2022-01-30						
Sodium, total	0.49	0.10	mg/L	0.490		99	70-130			
Strontium, total	0.260	0.0010	mg/L	0.276		94	70-130			
Uranium, total	0.00927	0.000020	mg/L	0.00970		96	70-130			
Zinc, total	0.0825	0.0040	mg/L	0.0884		93	70-130			
Total Metals, Batch B2B0162										
Blank (B2B0162-BLK1)				Prepared: 2022-02-01, Analyzed: 2022-02-01						
Mercury, total	< 0.000010	0.000010	mg/L							
Blank (B2B0162-BLK2)				Prepared: 2022-02-01, Analyzed: 2022-02-01						
Mercury, total	< 0.000010	0.000010	mg/L							
Matrix Spike (B2B0162-MS1)		**Source: 22A3006-01**		Prepared: 2022-02-01, Analyzed: 2022-02-01						
Mercury, total	0.000225	0.000010	mg/L	0.000250	< 0.000010	90	70-130			
Reference (B2B0162-SRM1)				Prepared: 2022-02-01, Analyzed: 2022-02-01						
Mercury, total	0.000477	0.000010	mg/L	0.000500		95	0-200			
Reference (B2B0162-SRM2)				Prepared: 2022-02-01, Analyzed: 2022-02-01						
Mercury, total	0.000471	0.000010	mg/L	0.000500		94	0-200			

QC Qualifiers:

BLK	Analyte concentration in the Method Blank is above the Reporting Limit (RL).
CST2	Results for this analyte may be biased low.
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
RPD	Relative percent difference (RPD) of duplicate analysis are outside of control limits for unknown reason(s).
RPD1	Relative percent difference(s) (RPD) of one or more analytes on duplicate analysis are outside of control limits due to sample heterogeneity.
SPK	The recovery of this analyte was outside of established control limits.
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **VA22A1837**	Page	: 1 of 4
Client	: **Caro Analytical Services**	Laboratory	: Vancouver - Environmental
Contact	: Caro Analytical	Account Manager	: Tasnia Tarannum
Address	: Suite 102 3677 Highway 97N Kelowna BC Canada V1X 5C3	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: WO# 22A3006	Date Samples Received	: 31-Jan-2022 13:50
PO	:	Date Analysis Commenced	: 03-Feb-2022
C-O-C number	:	Issue Date	: 07-Feb-2022 11:04
Sampler	: ----		
Site	: ----		
Quote number	: Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Rebecca Sit	Supervisor - Organics Extractions	Organics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
µg/L	micrograms per litre

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	22A3006-01	----	----	----	----
					Client sampling date / time	25-Jan-2022	----	----	----	----
						VA22A1837-001	--------	--------	--------	--------
						Result	----	----	----	----
Volatile Organic Compounds										
chlorobenzene	108-90-7	E611C	0.50	µg/L		<0.50	----	----	----	----
dibromomethane	74-95-3	E611H	1.0	µg/L		<1.0	----	----	----	----
dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L		<0.50	----	----	----	----
dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L		<0.50	----	----	----	----
dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L		<0.50	----	----	----	----
dichloropropane, 1,2-	78-87-5	E611C	0.50	µg/L		<0.50	----	----	----	----
dichloropropylene, cis+trans-1,3-	542-75-6	E611C	0.75	µg/L		<0.75	----	----	----	----
dichloropropylene, cis-1,3-	10061-01-5	E611C	0.50	µg/L		<0.50	----	----	----	----
tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.20	µg/L		<0.20	----	----	----	----
trichloroethane, 1,1,2-	79-00-5	E611C	0.50	µg/L		<0.50	----	----	----	----
trichlorofluoromethane	75-69-4	E611C	0.50	µg/L		<0.50	----	----	----	----
Volatile Organic Compounds [Drycleaning]										
carbon tetrachloride	56-23-5	E611C	0.50	µg/L		<0.50	----	----	----	----
chloroethane	75-00-3	E611C	0.50	µg/L		<0.50	----	----	----	----
dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L		<0.50	----	----	----	----
dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L		<0.50	----	----	----	----
dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L		<0.50	----	----	----	----
dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L		<0.50	----	----	----	----
dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L		<0.50	----	----	----	----
dichloromethane	75-09-2	E611C	1.0	µg/L		<1.0	----	----	----	----
dichloropropylene, trans-1,3-	10061-02-6	E611C	0.50	µg/L		<0.50	----	----	----	----
tetrachloroethylene	127-18-4	E611C	0.50	µg/L		<0.50	----	----	----	----
trichloroethane, 1,1,1-	71-55-6	E611C	0.50	µg/L		<0.50	----	----	----	----
trichloroethylene	79-01-6	E611C	0.50	µg/L		<0.50	----	----	----	----
vinyl chloride	75-01-4	E611C	0.40	µg/L		<0.40	----	----	----	----
Volatile Organic Compounds [Fuels]										
benzene	71-43-2	E611C	0.50	µg/L		<0.50	----	----	----	----
dibromoethane, 1,2-	106-93-4	E611H	0.20	µg/L		<0.20	----	----	----	----
ethylbenzene	100-41-4	E611C	0.50	µg/L		<0.50	----	----	----	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.50	µg/L		<0.50	----	----	----	----
styrene	100-42-5	E611C	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: **Water** (Matrix: **Water**)					Client sample ID	**22A3006-01**	----	----	----	----
					Client sampling date / time	25-Jan-2022	----	----	----	----
Analyte	*CAS Number*	*Method*	*LOR*	*Unit*		**VA22A1837-001**	--------	--------	--------	--------
						Result	----	----	----	----
Volatile Organic Compounds [Fuels]										
toluene	108-88-3	E611C	0.40	µg/L		<0.40	----	----	----	----
xylene, m+p-	179601-23-1	E611C	0.40	µg/L		<0.40	----	----	----	----
xylene, o-	95-47-6	E611C	0.30	µg/L		<0.30	----	----	----	----
xylenes, total	1330-20-7	E611C	0.50	µg/L		<0.50	----	----	----	----
Volatile Organic Compounds [THMs]										
bromodichloromethane	75-27-4	E611C	0.50	µg/L		5.47	----	----	----	----
bromoform	75-25-2	E611C	0.50	µg/L		<0.50	----	----	----	----
chloroform	67-66-3	E611C	0.50	µg/L		32.6	----	----	----	----
dibromochloromethane	124-48-1	E611C	0.50	µg/L		0.58	----	----	----	----
Volatile Organic Compounds Surrogates										
bromofluorobenzene, 4-	460-00-4	E611C	1.0	%		87.5	----	----	----	----
bromofluorobenzene, 4-	460-00-4	E611H	1.0	%		87.5	----	----	----	----
difluorobenzene, 1,4-	540-36-3	E611C	1.0	%		94.4	----	----	----	----
difluorobenzene, 1,4-	540-36-3	E611H	1.0	%		94.4	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA22A1837**	Page	: 1 of 4
Client	: **Caro Analytical Services**	Laboratory	: Vancouver - Environmental
Contact	: Caro Analytical	Account Manager	: Tasnia Tarannum
Address	: Suite 102 3677 Highway 97N Kelowna BC Canada V1X 5C3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: WO# 22A3006	Date Samples Received	: 31-Jan-2022 13:50
PO	:	Issue Date	: 07-Feb-2022 11:04
C-O-C number	:		
Sampler	: ----		
Site	: ----		
Quote number	: Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Volatile Organic Compounds : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) 22A3006-01	E611C	25-Jan-2022	03-Feb-2022	----	----		04-Feb-2022	----	----	
Volatile Organic Compounds : VOCs (Regular Full + BC Special List) by Headspace GC-MS										
Glass vial (sodium bisulfate) 22A3006-01	E611H	25-Jan-2022	03-Feb-2022	----	----		04-Feb-2022	----	----	
Volatile Organic Compounds [Drycleaning] : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) 22A3006-01	E611C	25-Jan-2022	03-Feb-2022	----	----		04-Feb-2022	----	----	
Volatile Organic Compounds [Fuels] : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) 22A3006-01	E611C	25-Jan-2022	03-Feb-2022	----	----		04-Feb-2022	14 days	10 days	✓
Volatile Organic Compounds [Fuels] : VOCs (Regular Full + BC Special List) by Headspace GC-MS										
Glass vial (sodium bisulfate) 22A3006-01	E611H	25-Jan-2022	03-Feb-2022	----	----		04-Feb-2022	14 days	10 days	✓
Volatile Organic Compounds [THMs] : VOCs (BC List) by Headspace GC-MS										
Glass vial (sodium bisulfate) 22A3006-01	E611C	25-Jan-2022	03-Feb-2022	----	----		04-Feb-2022	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
VOCs (BC List) by Headspace GC-MS	E611C	401832	1	19	5.2	5.0	✓
VOCs (Regular Full + BC Special List) by Headspace GC-MS	E611H	401833	1	19	5.2	5.0	✓
Laboratory Control Samples (LCS)							
VOCs (BC List) by Headspace GC-MS	E611C	401832	1	19	5.2	5.0	✓
VOCs (Regular Full + BC Special List) by Headspace GC-MS	E611H	401833	1	19	5.2	5.0	✓
Method Blanks (MB)							
VOCs (BC List) by Headspace GC-MS	E611C	401832	1	19	5.2	5.0	✓
VOCs (Regular Full + BC Special List) by Headspace GC-MS	E611H	401833	1	19	5.2	5.0	✓
Matrix Spikes (MS)							
VOCs (BC List) by Headspace GC-MS	E611C	401832	1	19	5.2	5.0	✓
VOCs (Regular Full + BC Special List) by Headspace GC-MS	E611H	401833	1	19	5.2	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs (BC List) by Headspace GC-MS	E611C Vancouver - Environmental	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
VOCs (Regular Full + BC Special List) by Headspace GC-MS	E611H Vancouver - Environmental	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs Preparation for Headspace Analysis	EP581 Vancouver - Environmental	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into the GC/MS-FID system.

QUALITY CONTROL REPORT

Work Order	: **VA22A1837**	Page	: 1 of 10
Client	: Caro Analytical Services	Laboratory	: Vancouver - Environmental
Contact	: Caro Analytical	Account Manager	: Tasnia Tarannum
Address	: Suite 102 3677 Highway 97N Kelowna BC Canada V1X 5C3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: WO# 22A3006	Date Samples Received	: 31-Jan-2022 13:50
PO	:	Date Analysis Commenced	: 03-Feb-2022
C-O-C number	:	Issue Date	: 07-Feb-2022 11:04
Sampler	: ----		
Site	: ----		
Quote number	: Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Rebecca Sit	Supervisor - Organics Extractions	Organics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Volatile Organic Compounds (QC Lot: 401832)											
VA22A1836-001	Anonymous	benzene	71-43-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		bromodichloromethane	75-27-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		bromoform	75-25-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		carbon tetrachloride	56-23-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		chlorobenzene	108-90-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		chloroethane	75-00-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		chloroform	67-66-3	E611C	0.50	µg/L	2.92	2.86	0.05	Diff <2x LOR	----
		dibromochloromethane	124-48-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichlorobenzene, 1,2-	95-50-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichlorobenzene, 1,3-	541-73-1	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichlorobenzene, 1,4-	106-46-7	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethane, 1,1-	75-34-3	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethane, 1,2-	107-06-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethylene, 1,1-	75-35-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethylene, cis-1,2-	156-59-2	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloroethylene, trans-1,2-	156-60-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloromethane	75-09-2	E611C	1.0	µg/L	1.4	1.4	0.01	Diff <2x LOR	----
		dichloropropane, 1,2-	78-87-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloropropylene, cis-1,3-	10061-01-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		dichloropropylene, trans-1,3-	10061-02-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		ethylbenzene	100-41-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		styrene	100-42-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		tetrachloroethylene	127-18-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		toluene	108-88-3	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		trichloroethane, 1,1,1-	71-55-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichloroethane, 1,1,2-	79-00-5	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichloroethylene	79-01-6	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		trichlorofluoromethane	75-69-4	E611C	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		vinyl chloride	75-01-4	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		xylene, m+p-	179601-23-1	E611C	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Volatile Organic Compounds (QC Lot: 401832) - continued											
VA22A1836-001	Anonymous	xylene, o-	95-47-6	E611C	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 401833)											
VA22A1836-001	Anonymous	dibromoethane, 1,2-	106-93-4	E611H	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		dibromomethane	74-95-3	E611H	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 401832)						
benzene	71-43-2	E611C	0.5	µg/L	<0.50	----
bromodichloromethane	75-27-4	E611C	0.5	µg/L	<0.50	----
bromoform	75-25-2	E611C	0.5	µg/L	<0.50	----
carbon tetrachloride	56-23-5	E611C	0.5	µg/L	<0.50	----
chlorobenzene	108-90-7	E611C	0.5	µg/L	<0.50	----
chloroethane	75-00-3	E611C	0.5	µg/L	<0.50	----
chloroform	67-66-3	E611C	0.5	µg/L	<0.50	----
dibromochloromethane	124-48-1	E611C	0.5	µg/L	<0.50	----
dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	<0.50	----
dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	<0.50	----
dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	<0.50	----
dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	<0.50	----
dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	<0.50	----
dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	<0.50	----
dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	<0.50	----
dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	<0.50	----
dichloromethane	75-09-2	E611C	1	µg/L	<1.0	----
dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	<0.50	----
dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	<0.50	----
dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	<0.50	----
ethylbenzene	100-41-4	E611C	0.5	µg/L	<0.50	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	<0.50	----
styrene	100-42-5	E611C	0.5	µg/L	<0.50	----
tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	<0.20	----
tetrachloroethylene	127-18-4	E611C	0.5	µg/L	<0.50	----
toluene	108-88-3	E611C	0.4	µg/L	<0.40	----
trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	<0.50	----
trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	<0.50	----
trichloroethylene	79-01-6	E611C	0.5	µg/L	<0.50	----
trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	<0.50	----
vinyl chloride	75-01-4	E611C	0.4	µg/L	<0.40	----
xylene, m+p-	179601-23-1	E611C	0.4	µg/L	<0.40	----
xylene, o-	95-47-6	E611C	0.3	µg/L	<0.30	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 401833)						
dibromoethane, 1,2-	106-93-4	E611H	0.2	µg/L	<0.20	----
dibromomethane	74-95-3	E611H	1	µg/L	<1.0	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 401832)									
benzene	71-43-2	E611C	0.5	µg/L	100 µg/L	119	70.0	130	----
bromodichloromethane	75-27-4	E611C	0.5	µg/L	100 µg/L	113	70.0	130	----
bromoform	75-25-2	E611C	0.5	µg/L	100 µg/L	88.2	70.0	130	----
carbon tetrachloride	56-23-5	E611C	0.5	µg/L	100 µg/L	111	70.0	130	----
chlorobenzene	108-90-7	E611C	0.5	µg/L	100 µg/L	111	70.0	130	----
chloroethane	75-00-3	E611C	0.5	µg/L	100 µg/L	122	60.0	140	----
chloroform	67-66-3	E611C	0.5	µg/L	100 µg/L	122	70.0	130	----
dibromochloromethane	124-48-1	E611C	0.5	µg/L	100 µg/L	92.1	70.0	130	----
dichlorobenzene, 1,2-	95-50-1	E611C	0.5	µg/L	100 µg/L	115	70.0	130	----
dichlorobenzene, 1,3-	541-73-1	E611C	0.5	µg/L	100 µg/L	120	70.0	130	----
dichlorobenzene, 1,4-	106-46-7	E611C	0.5	µg/L	100 µg/L	118	70.0	130	----
dichloroethane, 1,1-	75-34-3	E611C	0.5	µg/L	100 µg/L	130	70.0	130	----
dichloroethane, 1,2-	107-06-2	E611C	0.5	µg/L	100 µg/L	106	70.0	130	----
dichloroethylene, 1,1-	75-35-4	E611C	0.5	µg/L	100 µg/L	116	70.0	130	----
dichloroethylene, cis-1,2-	156-59-2	E611C	0.5	µg/L	100 µg/L	130	70.0	130	----
dichloroethylene, trans-1,2-	156-60-5	E611C	0.5	µg/L	100 µg/L	125	70.0	130	----
dichloromethane	75-09-2	E611C	1	µg/L	100 µg/L	116	70.0	130	----
dichloropropane, 1,2-	78-87-5	E611C	0.5	µg/L	100 µg/L	119	70.0	130	----
dichloropropylene, cis-1,3-	10061-01-5	E611C	0.5	µg/L	100 µg/L	87.0	70.0	130	----
dichloropropylene, trans-1,3-	10061-02-6	E611C	0.5	µg/L	100 µg/L	75.7	70.0	130	----
ethylbenzene	100-41-4	E611C	0.5	µg/L	100 µg/L	115	70.0	130	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	0.5	µg/L	100 µg/L	115	70.0	130	----
styrene	100-42-5	E611C	0.5	µg/L	100 µg/L	102	70.0	130	----
tetrachloroethane, 1,1,2,2-	79-34-5	E611C	0.2	µg/L	100 µg/L	122	70.0	130	----
tetrachloroethylene	127-18-4	E611C	0.5	µg/L	100 µg/L	101	70.0	130	----
toluene	108-88-3	E611C	0.4	µg/L	100 µg/L	123	70.0	130	----
trichloroethane, 1,1,1-	71-55-6	E611C	0.5	µg/L	100 µg/L	122	70.0	130	----
trichloroethane, 1,1,2-	79-00-5	E611C	0.5	µg/L	100 µg/L	105	70.0	130	----
trichloroethylene	79-01-6	E611C	0.5	µg/L	100 µg/L	108	70.0	130	----
trichlorofluoromethane	75-69-4	E611C	0.5	µg/L	100 µg/L	127	60.0	140	----
vinyl chloride	75-01-4	E611C	0.4	µg/L	100 µg/L	124	60.0	140	----
xylene, m+p-	179601-23-1	E611C	0.4	µg/L	200 µg/L	115	70.0	130	----
xylene, o-	95-47-6	E611C	0.3	µg/L	100 µg/L	111	70.0	130	----
Volatile Organic Compounds (QCLot: 401833)									

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 401833) - continued									
dibromoethane, 1,2-	106-93-4	E611H	0.2	µg/L	100 µg/L	91.8	70.0	130	----
dibromomethane	74-95-3	E611H	1	µg/L	100 µg/L	75.4	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 401832)										
VA22A1836-002	Anonymous	benzene	71-43-2	E611C	120 µg/L	100 µg/L	120	70.0	130	----
		bromodichloromethane	75-27-4	E611C	114 µg/L	100 µg/L	114	70.0	130	----
		bromoform	75-25-2	E611C	95.2 µg/L	100 µg/L	95.2	70.0	130	----
		carbon tetrachloride	56-23-5	E611C	112 µg/L	100 µg/L	112	70.0	130	----
		chlorobenzene	108-90-7	E611C	118 µg/L	100 µg/L	118	70.0	130	----
		chloroethane	75-00-3	E611C	124 µg/L	100 µg/L	124	60.0	140	----
		chloroform	67-66-3	E611C	122 µg/L	100 µg/L	122	70.0	130	----
		dibromochloromethane	124-48-1	E611C	98.0 µg/L	100 µg/L	98.0	70.0	130	----
		dichlorobenzene, 1,2-	95-50-1	E611C	122 µg/L	100 µg/L	122	70.0	130	----
		dichlorobenzene, 1,3-	541-73-1	E611C	129 µg/L	100 µg/L	129	70.0	130	----
		dichlorobenzene, 1,4-	106-46-7	E611C	126 µg/L	100 µg/L	126	70.0	130	----
		dichloroethane, 1,1-	75-34-3	E611C	125 µg/L	100 µg/L	125	70.0	130	----
		dichloroethane, 1,2-	107-06-2	E611C	107 µg/L	100 µg/L	107	70.0	130	----
		dichloroethylene, 1,1-	75-35-4	E611C	129 µg/L	100 µg/L	129	70.0	130	----
		dichloroethylene, cis-1,2-	156-59-2	E611C	123 µg/L	100 µg/L	123	70.0	130	----
		dichloroethylene, trans-1,2-	156-60-5	E611C	128 µg/L	100 µg/L	128	70.0	130	----
		dichloromethane	75-09-2	E611C	117 µg/L	100 µg/L	117	70.0	130	----
		dichloropropane, 1,2-	78-87-5	E611C	120 µg/L	100 µg/L	120	70.0	130	----
		dichloropropylene, cis-1,3-	10061-01-5	E611C	88.9 µg/L	100 µg/L	88.9	70.0	130	----
		dichloropropylene, trans-1,3-	10061-02-6	E611C	82.3 µg/L	100 µg/L	82.3	70.0	130	----
		ethylbenzene	100-41-4	E611C	122 µg/L	100 µg/L	122	70.0	130	----
		methyl-tert-butyl ether [MTBE]	1634-04-4	E611C	126 µg/L	100 µg/L	126	70.0	130	----
		styrene	100-42-5	E611C	109 µg/L	100 µg/L	109	70.0	130	----
		tetrachloroethane, 1,1,2,2-	79-34-5	E611C	130 µg/L	100 µg/L	130	70.0	130	----
		tetrachloroethylene	127-18-4	E611C	108 µg/L	100 µg/L	108	70.0	130	----
		toluene	108-88-3	E611C	125 µg/L	100 µg/L	125	70.0	130	----
		trichloroethane, 1,1,1-	71-55-6	E611C	123 µg/L	100 µg/L	123	70.0	130	----
		trichloroethane, 1,1,2-	79-00-5	E611C	111 µg/L	100 µg/L	111	70.0	130	----
		trichloroethylene	79-01-6	E611C	109 µg/L	100 µg/L	109	70.0	130	----
		trichlorofluoromethane	75-69-4	E611C	129 µg/L	100 µg/L	129	70.0	130	----
		vinyl chloride	75-01-4	E611C	125 µg/L	100 µg/L	125	60.0	140	----
		xylene, m+p-	179601-23-1	E611C	243 µg/L	200 µg/L	122	70.0	130	

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 401832) - continued										
VA22A1836-002	Anonymous	xylene, o-	95-47-6	E611C	117 µg/L	100 µg/L	117	70.0	130	----
Volatile Organic Compounds (QCLot: 401833)										
VA22A1836-002	Anonymous	dibromoethane, 1,2-	106-93-4	E611H	97.4 µg/L	100 µg/L	97.4	60.0	140	----
		dibromomethane	74-95-3	E611H	76.1 µg/L	100 µg/L	76.1	60.0	140	----

CARO
ANALYTICAL SERVICES

SUBCONTRACT REQUEST (WO# 22A3006)

SENDING LABORATORY:

CARO Analytical Services
17225 109 Avenue NW
Edmonton, AB T5S 1H7
Phone: (780) 489-9100

Contact sublet@caro.ca

Invoiced To:

CARO Sublet
Email: sublet@caro.ca
CC: ap@caro.ca
PO#: 22A3006

RECEIVING LABORATORY:

ALS Environmental (Burnaby)
Suite 100 8081 Lougheed Highway
Burnaby, BC V5A 1W9
Phone: (604) 253-4188

☐ Rush TAT ☑ REGULAR TAT

Total Sample Count: 1
Requested Due Date:

Analysis / Method	Expires	Comments
CARO Sample ID: 22A3006-01 | Matrix: Water | Sampled: 2022-01-25 00:00		
Miscellaneous Subcontracted Analysis [N/A]	2022-02-22	VOCs: Specific list of analytes attached, expires 2022-02-08

Released By Date

JAN 31 2022
Received By Date

Environmental Division
Vancouver
Work Order Reference
VA22A1837

Telephone : +1 604 253 4188

22A3006:

Volatile Organic Compounds In Water	*Reference Method: EPA 5030B / EPA 8260D*		*Units: ug/L*
Benzene [0.5]	Bromodichloromethane [1]	Bromoform [1]	Carbon tetrachloride [0.5]
Chlorobenzene [1]	Chloroethane [2]	Chloroform [1]	Dibromochloromethane [1]
1,2-Dibromoethane [0.3]	Dibromomethane [1]	1,2-Dichlorobenzene [0.5]	1,3-Dichlorobenzene [1]
1,4-Dichlorobenzene [1]	1,1-Dichloroethane [1]	1,2-Dichloroethane [1]	1,1-Dichloroethylene [1]
cis-1,2-Dichloroethylene [1]	trans-1,2-Dichloroethylene [1]	Dichloromethane [3]	1,2-Dichloropropane [1]
1,3-Dichloropropene (cis + trans) [1]	Ethylbenzene [1]	Methyl tert-butyl ether [1]	Styrene [1]
1,1,2,2-Tetrachloroethane [0.5]	Tetrachloroethylene [1]	Toluene [1]	1,1,1-Trichloroethane [1]
1,1,2-Trichloroethane [1]	Trichloroethylene [1]	Trichlorofluoromethane [1]	Vinyl chloride [1]
Xylenes (total) [2]			

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 Dr, Burnaby, BC V5G 4X4

CARO AB COC, Rev 2020-01

CHAIN OF CUSTODY RECORD

COC# 13065 PAGE OF

RELINQUISHED BY: Caleb Robinson DATE: 2022/01/25 TIME: 10:15

RECEIVED BY: Megan Nura DATE: 01/26 TIME: 9

REPORT TO:
COMPANY: Newell Regional Services Corp.
ADDRESS: 330 Canal St. E. PO#1638
Brooks, AB T1R 1B6
CONTACT: Ryan Melrose
TEL/FAX: 403-793-3177
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☑ ESdat ☐ EQuIS ☐ AEP EMS ☐ OTHER* ☐
Copy of COC with report ☐
EMAIL 1: rmelrose@nrsc.ca
EMAIL 2: Ksteinley@nrsc.ca

INVOICE TO: SAME AS REPORT TO ☑
COMPANY:
ADDRESS:
CONTACT:
TEL:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: tdrake@nrsc.ca
EMAIL 2: rmelrose@nrsc.ca
Quote ID:
PO #: 4343

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

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☑
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* ☐
*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: NRSC Winter Analysis 2022

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: Caleb Robinson

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	CONTAINER QTY	SAMPLING: DATE	TIME	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume, media ID, upload ID, notes)
WTP Header #1	✓					2022/01/25		✓			

ANALYSES REQUESTED:

PHC F1 ☐ BTEX ☐	PHC F2-F4 ☐ PAH ☐	VOC ☐ THM ☐ HAA ☐	DISSOLVED METALS Hg ☐ Cr6 ☐	TOTAL METALS Hg ☐ Cr6 ☐	SOIL METALS SatP B ☐ Cr6 ☐ Hg ☐	SOIL SALINITY BASIC ☐ DETAILED ☐	PSA HYDROMETER ☐ 75 um SIEVE ☐	CLASS 2 LANDFILL	ROUTINE WATER Fe+Mn ☐	COD ☐ BOD ☐ TOC ☐ DOC ☐	TSS ☐ TDS ☐ VSS ☐	AMMONIA ☐ TKN ☐ TP ☐	TO&G ☐ PHENOLICS ☐	TCOL ☐ E. Coli ☐ FCOL ☐ HPC ☐	TOX TROUT MULTI CON. ☐ pH STAB ☐ P/F ☐	TOX DAPHNIA MULTI CON. ☐ P/F ☐	See attached Schedule 4	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
																	✓		

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

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

*** OTHER INSTRUCTIONS:**

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

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 3.8 ICE: Y ☐ N ☐
COOLER 2 (°C): ICE: Y ☐ N ☐
COOLER 3 (°C): ICE: Y ☐ N ☐
CUSTODY SEALS INTAC

SCHEDULE 4

Table of Physical, Inorganic chemicals, Organic chemicals and Pesticides

Substance	Specific Parameter
Physical Parameters (Primary and Secondary	Colour; pH; Total Dissolved Solids
Inorganic chemicals (Primary)	Antimony; Arsenic; Barium; Boron; Bromate; Cadmium; Chloramines; Chromium; Cyanide; Fluoride; Lead; Mercury; Nitrate; Nitrite; Selenium; and Uranium;
Inorganic and Organic Chemicals (Secondary	Aluminum; Ammonia; Calcium; Chloride; Copper; Total Hardness; Iron; Magnesium; Manganese; Silver; Sodium; Sulphate; Sulphide; Total Organic Carbon; Xylenes (total); and Zinc;

Substance	Specific Parameter
Organic Chemicals and Pesticides (Primary)	Atrazine + metabolites; Benzene; Benzo(a)pyrene; Bromoxynil; Carbon Tetrachloride; Chlorpyrifos; Cyanazine; Cyanobacterial toxins (as Total Microcystin); Diazinon; Dicamba; 1,2-Dichlorobenzene; 1,4-Dichlorobenzene; 1,2-Dichlorethane; Dichloromethane; 2,4-Dichlorophenol; 2,4-D; Diclofop-methyl; Diuron; Dimethoate; Ethylbenzene; Glyphosate; Malathion; Methoxychlor; Metolachlor; Metribuzin; Monochlorobenzene; Nitrilotriacetic Acid (NTA); Pentachlorophenol; Picloram; Simazine; Terbufos; Tetrachloroethylene; 2,3,4,6-Tetrachlorophenol; Toluene; Trichloroethylene; 2,4,6-Trichlorophenol; Trifluralin; and Vinyl Chloride.