CERTIFICATE OF ANALYSIS

REPORTED TO	Newell Regional Services Corporation P.O. Box 638 Brooks, AB T1R 1B6		
ATTENTION	Jaitik Berawala	**WORK ORDER**	0081011
PO NUMBER	3808	**RECEIVED / TEMP**	2020-08-12 08:45 / 17°C
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16
PROJECT INFO	Water Treatment Plant 2020	**COC NUMBER**	No Number

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 sgulenchyn@caro.ca

Authorized By:

Sara Gulenchyn, B.Sc, P.Chem.
Client Service Manager

TEST RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Analyzed	Qualifier
WTP Header #1 (0081011-01) | Matrix: Water | Sampled: 2020-08-11 11:00					
Acid Herbicides					
2,4,5-T	< 0.10	0.10	µg/L	2020-08-24	
2,4-D	< 0.10	0.10	µg/L	2020-08-24	
Dicamba	< 0.10	0.10	µg/L	2020-08-24	
Dinoseb	< 0.10	0.10	µg/L	2020-08-24	
MCPA	< 0.20	0.20	µg/L	2020-08-24	
Picloram	< 0.10	0.10	µg/L	2020-08-24	
Surrogate: 2,4-DCAA	*110*	*60-126*	%	*2020-08-24*	
Anions					
Bromate	< 0.010	0.010	mg/L	2020-08-13	
Chloride	**15.8**	0.50	mg/L	2020-08-12	
Fluoride	**0.15**	0.10	mg/L	2020-08-12	
Nitrate (as N)	< 0.050	0.050	mg/L	2020-08-12	
Nitrite (as N)	**0.077**	0.050	mg/L	2020-08-12	
Sulfate	**50.9**	1.0	mg/L	2020-08-12	
Calculated Parameters					
Total Trihalomethanes	**0.0845**	0.00400	mg/L	N/A	
Chloramines	**0.0900**	0.0400	mg/L	N/A	
Total Trihalomethanes	**0.0845**	0.00400	mg/L	N/A	
Hardness, Total (as CaCO3)	**164**	0.541	mg/L	N/A	
Solids, Total Dissolved	**223**	3.35	mg/L	N/A	
Chlorinated Phenols					
2-Chlorophenol	< 0.10	0.10	µg/L	2020-08-16	
3 & 4-Chlorophenol	< 0.10	0.10	µg/L	2020-08-16	
4-Chloro-3-Methylphenol	< 0.50	0.50	µg/L	2020-08-16	
2,3-Dichlorophenol	< 0.20	0.20	µg/L	2020-08-16	
2,4 & 2,5-Dichlorophenol	< 0.20	0.20	µg/L	2020-08-16	
2,6-Dichlorophenol	< 0.20	0.20	µg/L	2020-08-16	
3,4-Dichlorophenol	< 0.20	0.20	µg/L	2020-08-16	
3,5-Dichlorophenol	< 0.20	0.20	µg/L	2020-08-16	
2,3,4-Trichlorophenol	< 0.50	0.50	µg/L	2020-08-16	
2,3,5-Trichlorophenol	< 0.50	0.50	µg/L	2020-08-16	
2,3,6-Trichlorophenol	< 0.50	0.50	µg/L	2020-08-16	
2,4,5-Trichlorophenol	< 0.50	0.50	µg/L	2020-08-16	
2,4,6-Trichlorophenol	< 0.50	0.50	µg/L	2020-08-16	
3,4,5-Trichlorophenol	< 0.50	0.50	µg/L	2020-08-16	
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	< 0.50	0.50	µg/L	2020-08-16	
2,3,4,6-Tetrachlorophenol	< 0.50	0.50	µg/L	2020-08-16	
Pentachlorophenol	< 0.50	0.50	µg/L	2020-08-16	
Surrogate: 2,4-Dibromophenol	*66*	*60-130*	%	*2020-08-16*	
Surrogate: 2,4,6-Tribromophenol	*67*	*60-130*	%	*2020-08-16*	

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Analyte	Result	RL	Units	Analyzed	Qualifier
WTP Header #1 (0081011-01) | Matrix: Water | Sampled: 2020-08-11 11:00, Continued					
General Parameters					
Alkalinity, Total (as CaCO3)	**133**	2.0	mg/L	2020-08-13	
Bicarbonate (HCO3)	**162**	2.0	mg/L	2020-08-13	
Carbonate (CO3)	< 2.0	2.0	mg/L	2020-08-13	
Hydroxide (OH)	< 2.0	2.0	mg/L	2020-08-13	
Ammonia, Total (as N)	**0.087**	0.050	mg/L	2020-08-17	
Carbon, Total Organic	**2.12**	0.50	mg/L	2020-08-14	
Chlorine, Total	**0.64**	0.02	mg/L	2020-08-14	HT2
Chlorine, Free	**0.55**	0.02	mg/L	2020-08-14	HT2
Colour, True	< 5.0	5.0	CU	2020-08-12	
Conductivity (EC)	**389**	2.0	µS/cm	2020-08-14	
Cyanide, Total	< 0.0020	0.0020	mg/L	2020-08-14	
Nitrilotriacetic Acid	< 0.20	0.20	mg/L	2020-08-14	
pH	**7.91**	0.10	pH units	2020-08-13	HT2
Sulfide, Total	< 0.020	0.020	mg/L	2020-08-13	
Turbidity	**0.12**	0.10	NTU	2020-08-13	
Haloacetic Acids					
Monochloroacetic Acid	< 0.0020	0.0020	mg/L	2020-08-19	
Monobromoacetic Acid	< 0.0020	0.0020	mg/L	2020-08-19	
Dichloroacetic Acid	**0.0139**	0.0020	mg/L	2020-08-19	
Trichloroacetic Acid	**0.0116**	0.0020	mg/L	2020-08-19	
Dibromoacetic Acid	< 0.0020	0.0020	mg/L	2020-08-19	
Total Haloacetic Acids (HAA5)	**0.0254**	0.00200	mg/L	N/A	
Surrogate: 2-Bromopropionic Acid	*89*	*70-130*	%	*2020-08-19*	
Microbiological Parameters					
Microcystin, total	< 0.14	0.14	µg/L	2020-08-26	
Miscellaneous Herbicides					
Glyphosate	< 0.050	0.050	mg/L	2020-08-21	
Pesticides, Herbicides, and Fungicides					
Alachlor	< 0.100	0.100	µg/L	2020-08-23	
Aldrin	< 0.006	0.006	µg/L	2020-08-23	
Atrazine and metabolites	< 0.100	0.100	µg/L	2020-08-23	
Azinphos-methyl	< 0.200	0.200	µg/L	2020-08-23	
alpha-BHC	< 0.010	0.010	µg/L	2020-08-23	
beta-BHC	< 0.050	0.050	µg/L	2020-08-23	
delta-BHC	< 0.050	0.050	µg/L	2020-08-23	
gamma-BHC (Lindane)	< 0.050	0.050	µg/L	2020-08-23	
Bromacil	< 0.100	0.100	µg/L	2020-08-23	
Bromoxynil	< 0.200	0.200	µg/L	2020-08-23	
Butachlor	< 0.020	0.020	µg/L	2020-08-23	
Captan	< 0.100	0.100	µg/L	2020-08-23	

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WTP Header #1 (0081011-01) | Matrix: Water | Sampled: 2020-08-11 11:00, Continued					
Pesticides, Herbicides, and Fungicides, Continued					
Chlordane (cis + trans)	< 0.050	0.050	µg/L	2020-08-23	
Chlorothalonil	< 0.050	0.050	µg/L	2020-08-23	
Chlorpyrifos	< 0.010	0.010	µg/L	2020-08-23	
Cyanazine	< 0.100	0.100	µg/L	2020-08-23	
DDT, Total	< 0.010	0.010	µg/L	2020-08-23	
Deltamethrin	< 0.100	0.100	µg/L	2020-08-23	
Diazinon	< 0.020	0.020	µg/L	2020-08-23	
Dichlorvos	< 0.100	0.100	µg/L	2020-08-23	
Diclofop-methyl	< 0.100	0.100	µg/L	2020-08-23	
Dieldrin	< 0.010	0.010	µg/L	2020-08-23	
Dimethoate	< 0.200	0.200	µg/L	2020-08-23	
Disulfoton	< 0.100	0.100	µg/L	2020-08-23	
Diuron	< 0.200	0.200	µg/L	2020-08-23	
Endosulfan I + II	< 0.010	0.010	µg/L	2020-08-23	
Endosulfan sulfate	< 0.050	0.050	µg/L	2020-08-23	
Endrin	< 0.020	0.020	µg/L	2020-08-23	
Endrin aldehyde	< 0.020	0.020	µg/L	2020-08-23	
Endrin ketone	< 0.020	0.020	µg/L	2020-08-23	
Fenchlorphos (Ronnel)	< 0.100	0.100	µg/L	2020-08-23	
Heptachlor	< 0.010	0.010	µg/L	2020-08-23	
Heptachlor epoxide	< 0.010	0.010	µg/L	2020-08-23	
Linuron	< 0.050	0.050	µg/L	2020-08-23	
Malathion	< 0.100	0.100	µg/L	2020-08-23	
Methoxychlor	< 0.050	0.050	µg/L	2020-08-23	
Methyl parathion	< 0.100	0.100	µg/L	2020-08-23	
Metolachlor	< 0.100	0.100	µg/L	2020-08-23	
Metribuzin	< 0.200	0.200	µg/L	2020-08-23	
Parathion	< 0.100	0.100	µg/L	2020-08-23	
Pentachloronitrobenzene	< 0.100	0.100	µg/L	2020-08-23	
Permethrin	< 0.010	0.010	µg/L	2020-08-23	
Phorate	< 0.100	0.100	µg/L	2020-08-23	
Prometon	< 0.300	0.300	µg/L	2020-08-23	
Prometryne	< 0.100	0.100	µg/L	2020-08-23	
Simazine	< 0.200	0.200	µg/L	2020-08-23	
Sulfotep	< 0.100	0.100	µg/L	2020-08-23	
Tebuthiuron	< 0.200	0.200	µg/L	2020-08-23	
Temephos (Abate)	< 0.500	0.500	µg/L	2020-08-23	
Terbufos	< 0.100	0.100	µg/L	2020-08-23	
Triallate	< 0.100	0.100	µg/L	2020-08-23	
Trifluralin	< 0.200	0.200	µg/L	2020-08-23	
Surrogate: Tributyl Phosphate	*111*	*50-140*	%	*2020-08-23*	
Surrogate: 4-chloro-3-nitrobenzotrifluoride	*77*	*50-140*	%	*2020-08-23*	

TEST RESULTS

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WTP Header #1 (0081011-01) | Matrix: Water | Sampled: 2020-08-11 11:00, Continued					
Polycyclic Aromatic Hydrocarbons (PAH)					
Acenaphthene	< 0.050	0.050	µg/L	2020-08-16	
Acenaphthylene	< 0.200	0.200	µg/L	2020-08-16	
Acridine	< 0.050	0.050	µg/L	2020-08-16	
Anthracene	< 0.010	0.010	µg/L	2020-08-16	
Benz(a)anthracene	< 0.010	0.010	µg/L	2020-08-16	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2020-08-16	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2020-08-16	
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L	2020-08-16	
Benzo(k)fluoranthene	< 0.050	0.050	µg/L	2020-08-16	
2-Chloronaphthalene	< 0.100	0.100	µg/L	2020-08-16	
Chrysene	< 0.050	0.050	µg/L	2020-08-16	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2020-08-16	
Fluoranthene	< 0.030	0.030	µg/L	2020-08-16	
Fluorene	< 0.050	0.050	µg/L	2020-08-16	
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L	2020-08-16	
1-Methylnaphthalene	< 0.100	0.100	µg/L	2020-08-16	
2-Methylnaphthalene	< 0.100	0.100	µg/L	2020-08-16	
Naphthalene	< 0.200	0.200	µg/L	2020-08-16	
Phenanthrene	< 0.100	0.100	µg/L	2020-08-16	
Pyrene	< 0.020	0.020	µg/L	2020-08-16	
Quinoline	< 0.050	0.050	µg/L	2020-08-16	
Surrogate: Acridine-d9	*73*	*50-140*	%	*2020-08-16*	
Surrogate: Naphthalene-d8	*99*	*50-140*	%	*2020-08-16*	
Surrogate: Perylene-d12	*74*	*50-140*	%	*2020-08-16*	
Total Metals					
Aluminum, total	**0.197**	0.0050	mg/L	2020-08-15	
Antimony, total	< 0.00020	0.00020	mg/L	2020-08-15	
Arsenic, total	**0.00079**	0.00050	mg/L	2020-08-15	
Barium, total	**0.0703**	0.0050	mg/L	2020-08-15	
Boron, total	**0.0308**	0.0500	mg/L	2020-08-15	
Cadmium, total	< 0.000010	0.000010	mg/L	2020-08-15	
Calcium, total	**37.0**	0.20	mg/L	2020-08-15	
Chromium, total	< 0.00050	0.00050	mg/L	2020-08-15	
Copper, total	**0.00068**	0.00040	mg/L	2020-08-15	
Iron, total	< 0.010	0.010	mg/L	2020-08-15	
Lead, total	< 0.00020	0.00020	mg/L	2020-08-15	
Magnesium, total	**17.5**	0.010	mg/L	2020-08-15	
Manganese, total	**0.00068**	0.00020	mg/L	2020-08-15	
Mercury, total	< 0.000010	0.000010	mg/L	2020-08-13	
Potassium, total	**1.82**	0.10	mg/L	2020-08-15	
Selenium, total	< 0.00050	0.00050	mg/L	2020-08-15	
Silver, total	< 0.000050	0.000050	mg/L	2020-08-15	

CARO ANALYTICAL SERVICES

TEST RESULTS

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PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Analyzed	Qualifier
WTP Header #1 (0081011-01) | Matrix: Water | Sampled: 2020-08-11 11:00, Continued					
Total Metals, Continued					
Sodium, total	**18.7**	0.10	mg/L	2020-08-15	
Strontium, total	**0.215**	0.0010	mg/L	2020-08-15	
Uranium, total	**0.000629**	0.000020	mg/L	2020-08-15	
Zinc, total	< 0.0040	0.0040	mg/L	2020-08-15	
Volatile Organic Compounds (VOC)					S03
Benzene	< 0.5	0.5	µg/L	2020-08-16	
Bromodichloromethane	**11.9**	1.0	µg/L	2020-08-16	
Bromoform	**18.4**	1.0	µg/L	2020-08-16	
Carbon tetrachloride	< 0.5	0.5	µg/L	2020-08-16	
Chlorobenzene	< 1.0	1.0	µg/L	2020-08-16	
Chloroethane	< 2.0	2.0	µg/L	2020-08-16	
Chloroform	**47.0**	1.0	µg/L	2020-08-16	
Dibromochloromethane	**7.1**	1.0	µg/L	2020-08-16	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2020-08-16	
Dibromomethane	< 1.0	1.0	µg/L	2020-08-16	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	2020-08-16	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-16	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	2020-08-16	
1,1-Dichloroethane	< 1.0	1.0	µg/L	2020-08-16	
1,2-Dichloroethane	< 1.0	1.0	µg/L	2020-08-16	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-16	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-16	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2020-08-16	
Dichloromethane	< 3.0	3.0	µg/L	2020-08-16	
1,2-Dichloropropane	< 1.0	1.0	µg/L	2020-08-16	
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L	2020-08-16	
Ethylbenzene	< 1.0	1.0	µg/L	2020-08-16	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2020-08-16	
Styrene	< 1.0	1.0	µg/L	2020-08-16	
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L	2020-08-16	
Tetrachloroethylene	< 1.0	1.0	µg/L	2020-08-16	
Toluene	< 1.0	1.0	µg/L	2020-08-16	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2020-08-16	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	2020-08-16	
Trichloroethylene	< 1.0	1.0	µg/L	2020-08-16	
Trichlorofluoromethane	< 1.0	1.0	µg/L	2020-08-16	
Vinyl chloride	< 1.0	1.0	µg/L	2020-08-16	
Xylenes (total)	< 2.0	2.0	µg/L	2020-08-16	
Surrogate: Toluene-d8	*0.6*	*70-130*	%	*2020-08-16*	
Surrogate: 4-Bromofluorobenzene	*83*	*70-130*	%	*2020-08-16*	
Surrogate: 1,4-Dichlorobenzene-d4	*63*	*70-130*	%	*2020-08-16*	S02

TEST RESULTS

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Sample Qualifiers:

HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.
S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
S03	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analysis Description	Method Ref.	Technique	Accredited	Location
Acid Herbicides in Water	EPA 8151A*	DCM Extraction with Diazomethane Derivatization, GC-MS	✓	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
Haloacetic Acids in Water	EPA 552.3*	Liquid-Liquid Microextraction, Derivatization and GC-ECD	✓	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
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
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond

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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PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

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 unless otherwise agreed to in writing.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager:sgulenchyn@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

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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 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 B0H1774										
Blank (B0H1774-BLK1)				Prepared: 2020-08-21, Analyzed: 2020-08-24						
2,4,5-T	< 0.10	0.10	µg/L							
2,4-D	< 0.10	0.10	µg/L							
Dicamba	< 0.10	0.10	µg/L							
Dinoseb	< 0.10	0.10	µg/L							
MCPA	< 0.20	0.20	µg/L							
Picloram	< 0.10	0.10	µg/L							
Surrogate: 2,4-DCAA	*0.894*		*µg/L*	1.01		*89*	*60-126*			
LCS (B0H1774-BS1)				Prepared: 2020-08-21, Analyzed: 2020-08-24						
2,4,5-T	0.89	0.10	µg/L	0.992		90	75-110			
2,4-D	1.63	0.10	µg/L	0.992		164	71-110			SPK
Dicamba	0.87	0.10	µg/L	0.991		88	56-110			
Dinoseb	1.06	0.10	µg/L	1.09		97	52-110			
MCPA	62.9	2.00	µg/L	99.5		63	57-110			
Picloram	0.76	0.10	µg/L	0.991		76	50-110			
Surrogate: 2,4-DCAA	*0.998*		*µg/L*	1.01		*99*	*60-126*			
LCS Dup (B0H1774-BSD1)				Prepared: 2020-08-21, Analyzed: 2020-08-24						
2,4,5-T	0.87	0.10	µg/L	0.992		88	75-110	2	30	
2,4-D	1.08	0.10	µg/L	0.992		109	71-110	41	30	RPD
Dicamba	0.89	0.10	µg/L	0.991		90	56-110	2	30	
Dinoseb	1.16	0.10	µg/L	1.09		107	52-110	9	30	
MCPA	72.6	2.00	µg/L	99.5		73	57-110	14	30	
Picloram	0.68	0.10	µg/L	0.991		68	50-110	11	30	
Surrogate: 2,4-DCAA	*0.969*		*µg/L*	1.01		*96*	*60-126*			
Anions, Batch B0H0852										
Blank (B0H0852-BLK1)				Prepared: 2020-08-12, Analyzed: 2020-08-12						
Chloride	< 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							

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B0H0852, Continued										
Blank (B0H0852-BLK2)				Prepared: 2020-08-12, Analyzed: 2020-08-12						
Chloride	< 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 (B0H0852-BS1)				Prepared: 2020-08-12, Analyzed: 2020-08-12						
Chloride	9.97	0.50	mg/L	10.0		100	90-110			
Fluoride	1.05	0.10	mg/L	1.00		105	85-115			
Nitrate (as N)	0.960	0.050	mg/L	1.00		96	92-108			
Nitrite (as N)	0.534	0.050	mg/L	0.500		107	85-115			
Sulfate	50.2	1.0	mg/L	50.0		100	90-110			
LCS (B0H0852-BS2)				Prepared: 2020-08-12, Analyzed: 2020-08-12						
Chloride	10.2	0.50	mg/L	10.0		102	90-110			
Fluoride	1.03	0.10	mg/L	1.00		103	85-115			
Nitrate (as N)	0.990	0.050	mg/L	1.00		99	92-108			
Nitrite (as N)	0.516	0.050	mg/L	0.500		103	85-115			
Sulfate	51.6	1.0	mg/L	50.0		103	90-110			
Chlorinated Phenols, Batch B0H1067										
Blank (B0H1067-BLK1)				Prepared: 2020-08-13, Analyzed: 2020-08-15						
2-Chlorophenol	< 0.10	0.10	µg/L							
3 & 4-Chlorophenol	< 0.10	0.10	µg/L							
4-Chloro-3-Methylphenol	< 0.50	0.50	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	*1.59*		*µg/L*	2.03		*78*	*60-130*			
Surrogate: 2,4,6-Tribromophenol	*1.48*		*µg/L*	2.01		*73*	*60-130*			
LCS (B0H1067-BS1)				Prepared: 2020-08-13, Analyzed: 2020-08-15						
2-Chlorophenol	7.02	0.10	µg/L	10.1		70	60-108			
3 & 4-Chlorophenol	17.3	0.10	µg/L	19.9		87	60-120			
4-Chloro-3-Methylphenol	9.42	0.50	µg/L	10.1		93	60-140			
2,3-Dichlorophenol	7.92	0.20	µg/L	10.1		78	60-111			
2,4 & 2,5-Dichlorophenol	17.5	0.20	µg/L	20.4		86	60-116			
2,6-Dichlorophenol	7.42	0.20	µg/L	10.1		74	60-112			
3,4-Dichlorophenol	8.51	0.20	µg/L	10.1		84	60-120			
3,5-Dichlorophenol	6.50	0.20	µg/L	10.1		64	60-121			
2,3,4-Trichlorophenol	7.51	0.50	µg/L	10.1		74	60-122			
2,3,5-Trichlorophenol	9.07	0.50	µg/L	10.1		90	60-126			
2,3,6-Trichlorophenol	7.97	0.50	µg/L	10.1		79	60-130			
2,4,5-Trichlorophenol	8.71	0.50	µg/L	10.1		86	60-118			

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Chlorinated Phenols, Batch B0H1067, Continued										
LCS (B0H1067-BS1), Continued				Prepared: 2020-08-13, Analyzed: 2020-08-15						
2,4,6-Trichlorophenol	8.20	0.50	µg/L	10.1		81	60-120			
3,4,5-Trichlorophenol	9.67	0.50	µg/L	10.1		95	60-129			
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	18.0	0.50	µg/L	20.1		90	60-127			
2,3,4,6-Tetrachlorophenol	8.31	0.50	µg/L	10.1		82	60-127			
Pentachlorophenol	12.0	0.50	µg/L	10.1		119	60-130			
Surrogate: 2,4-Dibromophenol	*1.61*		*µg/L*	2.04		*79*	*60-130*			
Surrogate: 2,4,6-Tribromophenol	*1.62*		*µg/L*	2.02		*80*	*60-130*			
LCS Dup (B0H1067-BSD1)				Prepared: 2020-08-13, Analyzed: 2020-08-16						
2-Chlorophenol	7.43	0.10	µg/L	10.1		73	60-108	6	32	
3 & 4-Chlorophenol	17.5	0.10	µg/L	20.0		88	60-120	2	21	
4-Chloro-3-Methylphenol	8.23	0.50	µg/L	10.1		81	60-140	13	30	
2,3-Dichlorophenol	7.79	0.20	µg/L	10.1		77	60-111	2	27	
2,4 & 2,5-Dichlorophenol	17.4	0.20	µg/L	20.5		85	60-116	< 1	22	
2,6-Dichlorophenol	8.11	0.20	µg/L	10.1		80	60-112	9	27	
3,4-Dichlorophenol	7.83	0.20	µg/L	10.1		77	60-120	8	22	
3,5-Dichlorophenol	10.9	0.20	µg/L	10.1		108	60-121	51	23	RPD
2,3,4-Trichlorophenol	7.39	0.50	µg/L	10.1		73	60-122	2	26	
2,3,5-Trichlorophenol	8.22	0.50	µg/L	10.1		81	60-126	10	24	
2,3,6-Trichlorophenol	9.61	0.50	µg/L	10.1		95	60-130	19	26	
2,4,5-Trichlorophenol	7.76	0.50	µg/L	10.1		77	60-118	12	22	
2,4,6-Trichlorophenol	7.95	0.50	µg/L	10.2		78	60-120	3	26	
3,4,5-Trichlorophenol	9.55	0.50	µg/L	10.2		94	60-129	1	19	
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	19.5	0.50	µg/L	20.2		97	60-127	8	26	
2,3,4,6-Tetrachlorophenol	9.51	0.50	µg/L	10.2		93	60-127	13	23	
Pentachlorophenol	11.0	0.50	µg/L	10.1		109	60-130	8	17	
Surrogate: 2,4-Dibromophenol	*1.44*		*µg/L*	2.05		*70*	*60-130*			
Surrogate: 2,4,6-Tribromophenol	*1.44*		*µg/L*	2.03		*71*	*60-130*			
General Parameters, Batch B0H0808										
Blank (B0H0808-BLK1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B0H0808-BLK2)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Carbon, Total Organic	< 0.50	0.50	mg/L							
Blank (B0H0808-BLK3)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Carbon, Total Organic	< 0.50	0.50	mg/L							
LCS (B0H0808-BS1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Carbon, Total Organic	9.41	0.50	mg/L	10.0		94	78-116			
LCS (B0H0808-BS2)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Carbon, Total Organic	9.61	0.50	mg/L	10.0		96	78-116			
LCS (B0H0808-BS3)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Carbon, Total Organic	9.67	0.50	mg/L	10.0		97	78-116			
General Parameters, Batch B0H0922										
Blank (B0H0922-BLK1)				Prepared: 2020-08-12, Analyzed: 2020-08-12						
Colour, True	< 5.0	5.0	CU							
LCS (B0H0922-BS1)				Prepared: 2020-08-12, Analyzed: 2020-08-12						
Colour, True	19	5.0	CU	20.0		96	90-109			

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0H0925										
Blank (B0H0925-BLK1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
Sulfide, Total	< 0.020	0.020	mg/L							
LCS (B0H0925-BS1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
Sulfide, Total	0.516	0.020	mg/L	0.490		105	80-120			
General Parameters, Batch B0H0952										
Blank (B0H0952-BLK1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
Turbidity	< 0.10	0.10	NTU							
LCS (B0H0952-BS1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
Turbidity	38.3	0.10	NTU	40.0		96	90-110			
General Parameters, Batch B0H0972										
Blank (B0H0972-BLK1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Chlorine, Total	< 0.02	0.02	mg/L							
Chlorine, Free	< 0.02	0.02	mg/L							
Reference (B0H0972-SRM1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Chlorine, Total	1.55	0.02	mg/L	1.59		97	91.2-108.8			
Chlorine, Free	1.55	0.02	mg/L	1.59		97	91.2-108.8			
General Parameters, Batch B0H0989										
Blank (B0H0989-BLK1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Cyanide, Total	< 0.0020	0.0020	mg/L							
LCS (B0H0989-BS1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Cyanide, Total	0.0181	0.0020	mg/L	0.0200		90	82-120			
LCS Dup (B0H0989-BSD1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Cyanide, Total	0.0187	0.0020	mg/L	0.0200		93	82-120	3	10	
General Parameters, Batch B0H1057										
Blank (B0H1057-BLK1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
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 (B0H1057-BS1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
Alkalinity, Total (as CaCO3)	245	2.0	mg/L	250		98	94-108			
General Parameters, Batch B0H1058										
Reference (B0H1058-SRM1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
pH	7.00	0.10	pH units	7.00		100	98-102			
General Parameters, Batch B0H1097										
Blank (B0H1097-BLK1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Nitrilotriacetic Acid	< 0.20	0.20	mg/L							

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B0H1097, Continued										
LCS (B0H1097-BS1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Nitrilotriacetic Acid	1.04	0.20	mg/L	1.00		104	80-120			
LCS Dup (B0H1097-BSD1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Nitrilotriacetic Acid	1.02	0.20	mg/L	1.00		102	80-120	2	20	
General Parameters, Batch B0H1135										
Blank (B0H1135-BLK1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Conductivity (EC)	< 2.0	2.0	µS/cm							
LCS (B0H1135-BS1)				Prepared: 2020-08-14, Analyzed: 2020-08-14						
Conductivity (EC)	1000	2.0	µS/cm	1000		100	95-105			
General Parameters, Batch B0H1295										
Blank (B0H1295-BLK1)				Prepared: 2020-08-17, Analyzed: 2020-08-17						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
Blank (B0H1295-BLK2)				Prepared: 2020-08-17, Analyzed: 2020-08-17						
Ammonia, Total (as N)	< 0.050	0.050	mg/L							
LCS (B0H1295-BS1)				Prepared: 2020-08-17, Analyzed: 2020-08-17						
Ammonia, Total (as N)	0.202	0.050	mg/L	0.200		101	85-115			
LCS (B0H1295-BS2)				Prepared: 2020-08-17, Analyzed: 2020-08-17						
Ammonia, Total (as N)	0.196	0.050	mg/L	0.200		98	85-115			
Haloacetic Acids, Batch B0H1538										
Blank (B0H1538-BLK1)				Prepared: 2020-08-19, Analyzed: 2020-08-19						
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	*0.00949*		*mg/L*	0.0116		*82*	*70-130*			
LCS (B0H1538-BS1)				Prepared: 2020-08-19, Analyzed: 2020-08-19						
Monochloroacetic Acid	0.0885	0.0020	mg/L	0.0930		95	75-117			
Monobromoacetic Acid	0.0913	0.0020	mg/L	0.0940		97	83-113			
Dichloroacetic Acid	0.0917	0.0020	mg/L	0.0930		99	78-112			
Trichloroacetic Acid	0.0927	0.0020	mg/L	0.0930		100	81-110			
Dibromoacetic Acid	0.0926	0.0020	mg/L	0.0930		100	89-112			
Surrogate: 2-Bromopropionic Acid	*0.0114*		*mg/L*	0.0116		*98*	*70-130*			
LCS Dup (B0H1538-BSD1)				Prepared: 2020-08-19, Analyzed: 2020-08-19						
Monochloroacetic Acid	0.0973	0.0020	mg/L	0.0930		105	75-117	9	30	
Monobromoacetic Acid	0.0963	0.0020	mg/L	0.0940		103	83-113	5	30	
Dichloroacetic Acid	0.0942	0.0020	mg/L	0.0930		101	78-112	3	30	
Trichloroacetic Acid	0.0937	0.0020	mg/L	0.0930		101	81-110	1	30	
Dibromoacetic Acid	0.0938	0.0020	mg/L	0.0930		101	89-112	1	30	
Surrogate: 2-Bromopropionic Acid	*0.0118*		*mg/L*	0.0116		*101*	*70-130*			
Miscellaneous Herbicides, Batch B0H1831										

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Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Miscellaneous Herbicides, Batch B0H1831, Continued										
Blank (B0H1831-BLK1)				Prepared: 2020-08-21, Analyzed: 2020-08-21						
Glyphosate	< 0.050	0.050	mg/L							
LCS (B0H1831-BS1)				Prepared: 2020-08-21, Analyzed: 2020-08-21						
Glyphosate	0.272	0.050	mg/L	0.250		109	70-130			
LCS Dup (B0H1831-BSD1)				Prepared: 2020-08-21, Analyzed: 2020-08-21						
Glyphosate	0.277	0.050	mg/L	0.250		111	70-130	2	20	
Pesticides, Herbicides, and Fungicides, Batch B0H1207										
Blank (B0H1207-BLK1)				Prepared: 2020-08-15, Analyzed: 2020-08-23						
Alachlor	< 0.100	0.100	µg/L							
Aldrin	< 0.006	0.006	µg/L							
Atrazine and metabolites	< 0.100	0.100	µg/L							
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							
DDT, Total	< 0.010	0.010	µg/L							
Deltamethrin	< 0.100	0.100	µg/L							
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							
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							
Parathion	< 0.100	0.100	µg/L							
Pentachloronitrobenzene	< 0.100	0.100	µg/L							
Permethrin	< 0.010	0.010	µg/L							
Phorate	< 0.100	0.100	µg/L							
Prometon	< 0.300	0.300	µg/L							
Prometryne	< 0.100	0.100	µg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B0H1207, Continued										
Blank (B0H1207-BLK1), Continued				Prepared: 2020-08-15, Analyzed: 2020-08-23						
Simazine	< 0.200	0.200	µg/L							
Sulfotep	< 0.100	0.100	µg/L							
Tebuthiuron	< 0.200	0.200	µg/L							
Temephos (Abate)	< 0.500	0.500	µg/L							
Terbufos	< 0.100	0.100	µg/L							
Triallate	< 0.100	0.100	µg/L							
Trifluralin	< 0.200	0.200	µg/L							
Surrogate: Tributyl Phosphate	*0.787*		*µg/L*	1.00		*79*	*50-140*			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	*0.650*		*µg/L*	1.00		*65*	*50-140*			
LCS (B0H1207-BS1)				Prepared: 2020-08-15, Analyzed: 2020-08-23						
Alachlor	0.784	0.100	µg/L	1.00		78	65-118			
Aldrin	0.742	0.006	µg/L	1.00		74	58-107			
Atrazine	0.549	0.100	µg/L	1.00		55	61-122			SPK1
Atrazine-desethyl	< 0.100	0.100	µg/L	1.01		3	50-140			SPK
Azinphos-methyl	1.08	0.200	µg/L	1.00		108	53-127			
alpha-BHC	0.763	0.010	µg/L	1.01		76	54-134			
beta-BHC	0.748	0.050	µg/L	1.01		74	58-112			
delta-BHC	0.750	0.050	µg/L	1.00		75	58-119			
gamma-BHC (Lindane)	0.727	0.050	µg/L	1.00		73	59-113			
Bromacil	0.903	0.100	µg/L	1.00		90	52-123			
Bromoxynil	0.707	0.200	µg/L	1.02		69	50-132			
Butachlor	0.897	0.020	µg/L	1.01		89	50-140			
Captan	1.10	0.100	µg/L	0.986		112	63-137			
Chlordane (cis + trans)	1.57	0.050	µg/L	2.01		78	50-140			
Chlorothalonil	0.722	0.050	µg/L	1.07		67	50-110			
Chlorpyrifos	0.825	0.010	µg/L	1.00		83	61-121			
Cyanazine	0.225	0.100	µg/L	1.00		22	57-126			SPK
DDT, Total	4.92	0.010	µg/L	6.04		81	50-140			
Deltamethrin	9.71	0.100	µg/L	10.2		95	50-121			
Diazinon	0.713	0.020	µg/L	1.00		71	52-126			
Dichlorvos	0.799	0.100	µg/L	1.06		75	50-110			
Diclofop-methyl	0.853	0.100	µg/L	1.10		78	58-112			
Dieldrin	0.818	0.010	µg/L	1.00		82	64-112			
Dimethoate	0.870	0.200	µg/L	0.989		88	50-120			
Disulfoton	0.626	0.100	µg/L	1.01		62	50-122			
Diuron	0.867	0.200	µg/L	1.03		84	54-116			
Endosulfan I + II	1.66	0.010	µg/L	2.01		82	50-140			
Endosulfan sulfate	0.881	0.050	µg/L	1.01		87	64-110			
Endrin	0.948	0.020	µg/L	1.01		94	59-123			
Endrin aldehyde	0.847	0.020	µg/L	1.00		85	58-118			
Endrin ketone	0.760	0.020	µg/L	1.01		75	53-114			
Fenchlorphos (Ronnel)	0.677	0.100	µg/L	1.02		66	63-110			
Heptachlor	0.728	0.010	µg/L	1.01		72	58-128			
Heptachlor epoxide	0.790	0.010	µg/L	1.01		78	64-110			
Linuron	1.35	0.050	µg/L	1.06		128	59-140			
Malathion	0.978	0.100	µg/L	1.00		98	61-121			
Methoxychlor	0.896	0.050	µg/L	1.01		89	53-121			
Methyl parathion	0.879	0.100	µg/L	1.00		88	65-114			
Metolachlor	0.849	0.100	µg/L	1.01		84	65-112			
Metribuzin	0.462	0.200	µg/L	1.00		46	53-123			SPK
Parathion	0.934	0.100	µg/L	0.997		94	53-130			
Pentachloronitrobenzene	0.745	0.100	µg/L	1.00		75	54-136			
Permethrin	0.999	0.010	µg/L	1.01		99	50-130			
Phorate	0.772	0.100	µg/L	1.00		77	55-120			
Prometon	0.629	0.300	µg/L	1.00		63	57-124			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B0H1207, Continued										
LCS (B0H1207-BS1), Continued				Prepared: 2020-08-15, Analyzed: 2020-08-23						
Prometryne	0.723	0.100	µg/L	1.00		72	50-140			
Simazine	0.464	0.200	µg/L	1.00		46	54-119			SPK1
Sulfotep	0.795	0.100	µg/L	1.04		76	61-121			
Tebuthiuron	0.885	0.200	µg/L	1.01		88	50-127			
Temephos (Abate)	9.67	0.500	µg/L	10.2		95	67-135			
Terbufos	0.779	0.100	µg/L	0.993		78	51-122			
Triallate	0.728	0.100	µg/L	1.05		69	50-120			
Trifluralin	0.830	0.200	µg/L	1.00		83	52-129			
Surrogate: Tributyl Phosphate	*0.937*		*µg/L*	1.00		*94*	*50-140*			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	*0.677*		*µg/L*	1.00		*68*	*50-140*			
LCS Dup (B0H1207-BSD1)				Prepared: 2020-08-15, Analyzed: 2020-08-23						
Alachlor	0.918	0.100	µg/L	1.00		92	65-118	16	30	
Aldrin	0.823	0.006	µg/L	1.00		82	58-107	10	30	
Atrazine	0.704	0.100	µg/L	1.00		70	61-122	25	30	
Atrazine-desethyl	< 0.100	0.100	µg/L	1.01		6	50-140	65	30	SPK
Azinphos-methyl	1.03	0.200	µg/L	1.00		103	53-127	5	30	
alpha-BHC	0.813	0.010	µg/L	1.01		81	54-134	6	30	
beta-BHC	0.887	0.050	µg/L	1.01		88	58-112	17	30	
delta-BHC	0.874	0.050	µg/L	1.00		87	58-119	15	30	
gamma-BHC (Lindane)	0.857	0.050	µg/L	1.00		86	59-113	16	30	
Bromacil	0.994	0.100	µg/L	1.00		99	52-123	10	30	
Bromoxynil	0.777	0.200	µg/L	1.02		76	50-132	9	30	
Butachlor	1.01	0.020	µg/L	1.01		100	50-140	12	30	
Captan	1.24	0.100	µg/L	0.986		125	63-137	11	30	
Chlordane (cis + trans)	1.92	0.050	µg/L	2.01		96	50-140	20	30	
Chlorothalonil	0.813	0.050	µg/L	1.07		76	50-110	12	30	
Chlorpyrifos	0.920	0.010	µg/L	1.00		92	61-121	11	30	
Cyanazine	0.378	0.100	µg/L	1.00		38	57-126	51	30	SPK
DDT, Total	5.59	0.010	µg/L	6.04		92	50-140	13	30	
Deltamethrin	9.64	0.100	µg/L	10.2		95	50-121	< 1	30	
Diazinon	0.837	0.020	µg/L	1.00		84	52-126	16	30	
Dichlorvos	0.946	0.100	µg/L	1.06		89	50-110	17	30	
Diclofop-methyl	1.00	0.100	µg/L	1.10		91	58-112	16	30	
Dieldrin	0.934	0.010	µg/L	1.00		93	64-112	13	30	
Dimethoate	1.00	0.200	µg/L	0.989		101	50-120	14	30	
Disulfoton	0.743	0.100	µg/L	1.01		74	50-122	17	30	
Diuron	1.06	0.200	µg/L	1.03		103	54-116	20	30	
Endosulfan I + II	1.87	0.010	µg/L	2.01		93	50-140	12	30	
Endosulfan sulfate	0.979	0.050	µg/L	1.01		97	64-110	10	30	
Endrin	1.06	0.020	µg/L	1.01		105	59-123	11	30	
Endrin aldehyde	0.975	0.020	µg/L	1.00		97	58-118	14	30	
Endrin ketone	0.719	0.020	µg/L	1.01		71	53-114	6	30	
Fenchlorphos (Ronnel)	0.801	0.100	µg/L	1.02		79	63-110	17	30	
Heptachlor	0.854	0.010	µg/L	1.01		85	58-128	16	30	
Heptachlor epoxide	0.933	0.010	µg/L	1.01		92	64-110	17	30	
Linuron	1.46	0.050	µg/L	1.06		138	59-140	7	30	
Malathion	1.08	0.100	µg/L	1.00		108	61-121	10	30	
Methoxychlor	0.848	0.050	µg/L	1.01		84	53-121	5	30	
Methyl parathion	1.01	0.100	µg/L	1.00		101	65-114	14	30	
Metolachlor	0.961	0.100	µg/L	1.01		95	65-112	12	30	
Metribuzin	0.535	0.200	µg/L	1.00		53	53-123	15	30	
Parathion	1.05	0.100	µg/L	0.997		105	53-130	12	30	
Pentachloronitrobenzene	0.854	0.100	µg/L	1.00		85	54-136	14	30	
Permethrin	0.972	0.010	µg/L	1.01		96	50-130	3	30	
Phorate	0.858	0.100	µg/L	1.00		86	55-120	10	30	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B0H1207, Continued										
LCS Dup (B0H1207-BSD1), Continued				Prepared: 2020-08-15, Analyzed: 2020-08-23						
Prometon	0.595	0.300	µg/L	1.00		60	57-124	5	30	
Prometryne	0.760	0.100	µg/L	1.00		76	50-140	5	30	
Simazine	0.579	0.200	µg/L	1.00		58	54-119	22	30	
Sulfotep	0.928	0.100	µg/L	1.04		89	61-121	15	30	
Tebuthiuron	0.963	0.200	µg/L	1.01		95	50-127	9	30	
Temephos (Abate)	15.7	0.500	µg/L	10.2		154	67-135	47	30	SPK1
Terbufos	0.915	0.100	µg/L	0.993		92	51-122	16	30	
Triallate	0.852	0.100	µg/L	1.05		81	50-120	16	30	
Trifluralin	0.952	0.200	µg/L	1.00		95	52-129	14	30	
Surrogate: Tributyl Phosphate	*1.06*		*µg/L*	1.00		*106*	*50-140*			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	*0.819*		*µg/L*	1.00		*82*	*50-140*			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0H1242										
Blank (B0H1242-BLK1)				Prepared: 2020-08-15, Analyzed: 2020-08-15						
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	< 0.050	0.050	µg/L							
Surrogate: Acridine-d9	*3.72*		*µg/L*	4.47		*83*	*50-140*			
Surrogate: Naphthalene-d8	*4.78*		*µg/L*	4.44		*108*	*50-140*			
Surrogate: Perylene-d12	*3.98*		*µg/L*	4.44		*89*	*50-140*			
LCS (B0H1242-BS1)				Prepared: 2020-08-15, Analyzed: 2020-08-15						
Acenaphthene	4.29	0.050	µg/L	4.44		97	55-137			
Acenaphthylene	4.49	0.200	µg/L	4.44		101	53-140			
Acridine	3.15	0.050	µg/L	4.44		71	50-120			
Anthracene	4.18	0.010	µg/L	4.44		94	64-130			
Benz(a)anthracene	4.10	0.010	µg/L	4.44		92	57-140			
Benzo(a)pyrene	3.88	0.010	µg/L	4.44		87	63-133			
Benzo(b+j)fluoranthene	7.89	0.050	µg/L	8.89		89	60-129			
Benzo(g,h,i)perylene	4.13	0.050	µg/L	4.44		93	52-139			
Benzo(k)fluoranthene	3.81	0.050	µg/L	4.44		86	50-138			
2-Chloronaphthalene	4.15	0.100	µg/L	4.38		95	50-139			
Chrysene	3.93	0.050	µg/L	4.44		88	59-140			
Dibenz(a,h)anthracene	3.92	0.010	µg/L	4.44		88	53-136			
Fluoranthene	4.66	0.030	µg/L	4.44		105	67-135			
Fluorene	4.40	0.050	µg/L	4.44		99	57-134			
Indeno(1,2,3-cd)pyrene	3.91	0.050	µg/L	4.44		88	52-129			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B0H1242, Continued										
LCS (B0H1242-BS1), Continued				Prepared: 2020-08-15, Analyzed: 2020-08-15						
1-Methylnaphthalene	4.18	0.100	µg/L	4.44		94	50-140			
2-Methylnaphthalene	4.23	0.100	µg/L	4.44		95	50-140			
Naphthalene	4.33	0.200	µg/L	4.44		97	50-140			
Phenanthrene	4.56	0.100	µg/L	4.44		103	61-134			
Pyrene	4.59	0.020	µg/L	4.44		103	66-131			
Quinoline	2.93	0.050	µg/L	4.44		66	50-140			
Surrogate: Acridine-d9	*3.45*		*µg/L*	4.47		*77*	*50-140*			
Surrogate: Naphthalene-d8	*4.67*		*µg/L*	4.44		*105*	*50-140*			
Surrogate: Perylene-d12	*3.90*		*µg/L*	4.44		*88*	*50-140*			
LCS Dup (B0H1242-BSD1)				Prepared: 2020-08-15, Analyzed: 2020-08-15						
Acenaphthene	4.54	0.050	µg/L	4.44		102	55-137	6	18	
Acenaphthylene	4.77	0.200	µg/L	4.44		107	53-140	6	20	
Acridine	3.92	0.050	µg/L	4.44		88	50-120	22	30	
Anthracene	4.33	0.010	µg/L	4.44		97	64-130	4	15	
Benz(a)anthracene	4.19	0.010	µg/L	4.44		94	57-140	2	25	
Benzo(a)pyrene	3.95	0.010	µg/L	4.44		89	63-133	2	18	
Benzo(b+j)fluoranthene	8.02	0.050	µg/L	8.89		90	60-129	2	17	
Benzo(g,h,i)perylene	4.16	0.050	µg/L	4.44		94	52-139	< 1	22	
Benzo(k)fluoranthene	3.85	0.050	µg/L	4.44		87	50-138	1	26	
2-Chloronaphthalene	4.39	0.100	µg/L	4.38		100	50-139	6	23	
Chrysene	4.01	0.050	µg/L	4.44		90	59-140	2	23	
Dibenz(a,h)anthracene	3.93	0.010	µg/L	4.44		89	53-136	< 1	21	
Fluoranthene	4.70	0.030	µg/L	4.44		106	67-135	< 1	18	
Fluorene	4.69	0.050	µg/L	4.44		106	57-134	6	18	
Indeno(1,2,3-cd)pyrene	3.99	0.050	µg/L	4.44		90	52-129	2	21	
1-Methylnaphthalene	4.44	0.100	µg/L	4.44		100	50-140	6	20	
2-Methylnaphthalene	4.23	0.100	µg/L	4.44		95	50-140	< 1	21	
Naphthalene	4.58	0.200	µg/L	4.44		103	50-140	6	22	
Phenanthrene	4.73	0.100	µg/L	4.44		106	61-134	4	17	
Pyrene	4.60	0.020	µg/L	4.44		104	66-131	< 1	19	
Quinoline	3.23	0.050	µg/L	4.44		73	50-140	10	14	
Surrogate: Acridine-d9	*4.27*		*µg/L*	4.47		*96*	*50-140*			
Surrogate: Naphthalene-d8	*4.75*		*µg/L*	4.44		*107*	*50-140*			
Surrogate: Perylene-d12	*3.81*		*µg/L*	4.44		*86*	*50-140*			
Total Metals, Batch B0H1100										
Blank (B0H1100-BLK1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
Mercury, total	< 0.000010	0.000010	mg/L							
Reference (B0H1100-SRM1)				Prepared: 2020-08-13, Analyzed: 2020-08-13						
Mercury, total	0.00545	0.000010	mg/L	0.00581		94	70-130			
Total Metals, Batch B0H1222										
Blank (B0H1222-BLK1)				Prepared: 2020-08-15, Analyzed: 2020-08-15						
Aluminum, total	< 0.0050	0.0050	mg/L							
Antimony, total	< 0.00020	0.00020	mg/L							
Arsenic, total	< 0.00050	0.00050	mg/L							
Barium, total	< 0.0050	0.0050	mg/L							
Boron, total	< 0.0250	0.0250	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							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B0H1222, Continued										
Blank (B0H1222-BLK1), Continued				Prepared: 2020-08-15, Analyzed: 2020-08-15						
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 (B0H1222-BS1)				Prepared: 2020-08-15, Analyzed: 2020-08-15						
Aluminum, total	0.0215	0.0050	mg/L	0.0199		108	80-120			
Antimony, total	0.0215	0.00020	mg/L	0.0200		108	80-120			
Arsenic, total	0.0229	0.00050	mg/L	0.0200		114	80-120			
Barium, total	0.0195	0.0050	mg/L	0.0198		98	80-120			
Boron, total	< 0.0250	0.0250	mg/L	0.0200		98	80-120			
Cadmium, total	0.0211	0.000010	mg/L	0.0199		106	80-120			
Calcium, total	2.11	0.20	mg/L	2.02		105	80-120			
Chromium, total	0.0207	0.00050	mg/L	0.0198		104	80-120			
Copper, total	0.0210	0.00040	mg/L	0.0200		105	80-120			
Iron, total	2.20	0.010	mg/L	2.02		109	80-120			
Lead, total	0.0214	0.00020	mg/L	0.0199		108	80-120			
Magnesium, total	2.35	0.010	mg/L	2.02		116	80-120			
Manganese, total	0.0204	0.00020	mg/L	0.0199		103	80-120			
Potassium, total	2.17	0.10	mg/L	2.02		108	80-120			
Selenium, total	0.0214	0.00050	mg/L	0.0200		107	80-120			
Silver, total	0.0206	0.000050	mg/L	0.0200		103	80-120			
Sodium, total	2.29	0.10	mg/L	2.02		113	80-120			
Strontium, total	0.0206	0.0010	mg/L	0.0200		103	80-120			
Uranium, total	0.0219	0.000020	mg/L	0.0200		110	80-120			
Zinc, total	0.0220	0.0040	mg/L	0.0200		110	80-120			
Reference (B0H1222-SRM1)				Prepared: 2020-08-15, Analyzed: 2020-08-15						
Aluminum, total	0.338	0.0050	mg/L	0.299		113	70-130			
Antimony, total	0.0534	0.00020	mg/L	0.0517		103	70-130			
Arsenic, total	0.136	0.00050	mg/L	0.119		114	70-130			
Barium, total	0.800	0.0050	mg/L	0.801		100	70-130			
Boron, total	4.03	0.0250	mg/L	4.11		98	70-130			
Cadmium, total	0.0526	0.000010	mg/L	0.0503		104	70-130			
Calcium, total	10.8	0.20	mg/L	10.7		101	70-130			
Chromium, total	0.256	0.00050	mg/L	0.250		102	70-130			
Copper, total	0.509	0.00040	mg/L	0.487		104	70-130			
Iron, total	0.550	0.010	mg/L	0.504		109	70-130			
Lead, total	0.294	0.00020	mg/L	0.278		106	70-130			
Magnesium, total	4.22	0.010	mg/L	3.59		118	70-130			
Manganese, total	0.113	0.00020	mg/L	0.111		102	70-130			
Potassium, total	6.60	0.10	mg/L	5.89		112	70-130			
Selenium, total	0.134	0.00050	mg/L	0.120		111	70-130			
Sodium, total	9.97	0.10	mg/L	8.71		114	70-130			
Strontium, total	0.397	0.0010	mg/L	0.393		101	70-130			
Uranium, total	0.0367	0.000020	mg/L	0.0344		107	70-130			
Zinc, total	2.64	0.0040	mg/L	2.50		105	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0H1229										
Blank (B0H1229-BLK1)				Prepared: 2020-08-15, Analyzed: 2020-08-15						
Benzene	< 0.5	0.5	µg/L							
Bromodichloromethane	< 1.0	1.0	µg/L							
Bromoform	< 1.0	1.0	µg/L							
Carbon tetrachloride	< 0.5	0.5	µg/L							
Chlorobenzene	< 1.0	1.0	µg/L							
Chloroethane	< 2.0	2.0	µg/L							
Chloroform	< 1.0	1.0	µg/L							
Dibromochloromethane	< 1.0	1.0	µg/L							
1,2-Dibromoethane	< 0.3	0.3	µg/L							
Dibromomethane	< 1.0	1.0	µg/L							
1,2-Dichlorobenzene	< 0.5	0.5	µg/L							
1,3-Dichlorobenzene	< 1.0	1.0	µg/L							
1,4-Dichlorobenzene	< 1.0	1.0	µg/L							
1,1-Dichloroethane	< 1.0	1.0	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
1,1-Dichloroethylene	< 1.0	1.0	µg/L							
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L							
Dichloromethane	< 3.0	3.0	µg/L							
1,2-Dichloropropane	< 1.0	1.0	µg/L							
1,3-Dichloropropene (cis + trans)	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5	µg/L							
Tetrachloroethylene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
1,1,2-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethylene	< 1.0	1.0	µg/L							
Trichlorofluoromethane	< 1.0	1.0	µg/L							
Vinyl chloride	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
Surrogate: Toluene-d8	*26.4*		*µg/L*	26.5		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*19.6*		*µg/L*	24.9		*79*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*17.2*		*µg/L*	25.5		*67*	*70-130*			*S02*
LCS (B0H1229-BS1)				Prepared: 2020-08-16, Analyzed: 2020-08-16						
Benzene	17.9	0.5	µg/L	20.0		90	70-130			
Bromodichloromethane	23.7	1.0	µg/L	20.0		118	70-130			
Bromoform	25.6	1.0	µg/L	20.0		128	70-130			
Carbon tetrachloride	19.5	0.5	µg/L	20.2		96	70-130			
Chlorobenzene	18.0	1.0	µg/L	20.1		89	70-130			
Chloroethane	22.0	2.0	µg/L	20.0		110	60-140			
Chloroform	23.8	1.0	µg/L	20.0		119	70-130			
Dibromochloromethane	23.9	1.0	µg/L	20.2		118	70-130			
1,2-Dibromoethane	20.7	0.3	µg/L	20.0		104	70-130			
Dibromomethane	23.3	1.0	µg/L	20.0		116	70-130			
1,2-Dichlorobenzene	19.1	0.5	µg/L	20.0		95	70-130			
1,3-Dichlorobenzene	19.4	1.0	µg/L	20.0		97	70-130			
1,4-Dichlorobenzene	20.1	1.0	µg/L	20.1		100	70-130			
1,1-Dichloroethane	22.8	1.0	µg/L	20.1		113	70-130			
1,2-Dichloroethane	27.0	1.0	µg/L	20.0		135	70-130			SPK1
1,1-Dichloroethylene	19.2	1.0	µg/L	20.0		96	70-130			
cis-1,2-Dichloroethylene	18.7	1.0	µg/L	20.0		94	70-130			
trans-1,2-Dichloroethylene	18.0	1.0	µg/L	20.1		90	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Newell Regional Services Corporation	**WORK ORDER**	0081011
PROJECT	NRSC Summer Analysis	**REPORTED**	2020-09-10 18:16

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B0H1229, Continued										
LCS (B0H1229-BS1), Continued				Prepared: 2020-08-16, Analyzed: 2020-08-16						
Dichloromethane	22.0	3.0	µg/L	20.1		109	70-130			
1,2-Dichloropropane	20.6	1.0	µg/L	20.1		102	70-130			
1,3-Dichloropropene (cis + trans)	37.7	1.0	µg/L	40.0		94	70-130			
Ethylbenzene	13.6	1.0	µg/L	20.0		68	70-130			SPK1
Methyl tert-butyl ether	18.1	1.0	µg/L	20.0		90	70-130			
Styrene	13.2	1.0	µg/L	20.1		66	70-130			SPK1
1,1,2,2-Tetrachloroethane	22.2	0.5	µg/L	20.1		110	70-130			
Tetrachloroethylene	20.0	1.0	µg/L	20.1		99	70-130			
Toluene	17.4	1.0	µg/L	20.0		87	70-130			
1,1,1-Trichloroethane	19.3	1.0	µg/L	20.0		97	70-130			
1,1,2-Trichloroethane	21.8	1.0	µg/L	20.1		108	70-130			
Trichloroethylene	19.8	1.0	µg/L	20.1		98	70-130			
Trichlorofluoromethane	22.6	1.0	µg/L	20.0		113	60-140			
Vinyl chloride	24.2	1.0	µg/L	20.0		121	60-140			
Xylenes (total)	43.1	2.0	µg/L	60.3		72	70-130			
Surrogate: Toluene-d8	*21.7*		*µg/L*	26.5		*82*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.8*		*µg/L*	24.9		*100*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*27.1*		*µg/L*	25.5		*106*	*70-130*			

QC Qualifiers:

RPD	Relative percent difference (RPD) of duplicate analysis are outside of control limits for unknown reason(s).
S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
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.

Microcystin Test Results

Sample collected August 11, 2020

Final Report

September 10, 2020

Submitted to: **CARO Analytical Services**
Edmonton, AB

SAMPLE INFORMATION

Sample ID/ Internal ID	Dates			Receipt Temperature
	Collected	Received	Test Initiation	
0081011-01/ 1920-1904	11-Aug-20 at 1100h	13-Aug-20 at 0940h	26-Aug-20	18.6°C

METHODS

- Microcystin – Total
  - Test Protocol: Abraxis – Microcystin (ADDA) ELIZA kit (Cat #520011) user guide
  - W.J. Fischer, I. Garthwaite, C.O. Miles, K.M. Ross, J.B. Aggen, A.R. Chamberlin, N.A. Towers and D.R. Dietrich. Congener-Independent Immunoassay for Microcystins and Nodularins. Environ. Sci. Technol. 35, 2001, 4849-4858; Worldwide Patenting PCT WO 01-18059 A2, US Patent Number 6,967,240.

RESULTS

Test results

Sample ID	Microcystin - Total	MDL
	µg/L	µg/L
0081011-01	<0.14	0.14

MDL = Method Detection Limit

QA/QC

QA/QC summary	Internal ID	Microcystin – Total (µg/L)	Percent Recovery (%)	RPD	Limit
PCS		0.69	91%	NA	75%-125%
MB		<0.14	NA	NA	0.14 µg/L
DUP	1920-1953-01	<0.14	NA	RPD-NA	50%
Protocol deviations		None			
Test performance		Valid			

PCS = Positive Control Sample, MB = Method Blank, DUP = Duplicate, NA = Not Applicable

Report By:
Shae Cole, BSc
Biologist

Reviewed By:
Courtney Bogstie, BSc
Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Chain-of-custody form

CARO ANALYTICAL SERVICES

SUBCONTRACT REQUEST (WO# 0081011)

SENDING LABORATORY:

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

Contact sublet@caro.ca

RECEIVING LABORATORY:

Nautilus Environmental (Calgary)
#4, 6125 12th Street SE
Calgary, AB T2H 2K1
Phone: (403) 253-7121

REGULAR TAT

Analysis / Method	Expires	Comments
CARO Sample ID: 0081011-01 | Matrix: Water | Sampled: 2020-08-11 11:00		
Container(s) Submitted: Z = C38_125mL Glass (Microcystin)		
Cyanobacterial Toxins (Microcystin) [EPA 546*]	2020-08-16	

Released By — Date: Aug 11 / 20

Received By — Date: 1920-1904 2020/08/13

89:40
Purolator
3C
1x250mL amber bottle (treated)
NaS/N 6L
Good Condition
18.6°C

END OF REPORT

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

CARO BC COC, Rev 2017-05

CHAIN OF CUSTODY RECORD

COC# _____ PAGE OF

RELINQUISHED BY:	DATE: Aug 11/20	RECEIVED BY:	DATE: 08/12
Katrina Duberry	TIME: 11:30am	[illegible]	TIME: 8:15

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

REGULATORY APPLICATION: Show on Report ☐
Canadian Drinking Water Quality ☒ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: _____ Other: _____

PROJECT NUMBER / INFO: NRSC Summer Analysis '20

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

REPORT TO:
COMPANY: Newell Regional Services Corp.
ADDRESS: 330 Canal St East
Brooks AB, T1R 1B6, Box 638
CONTACT: Ryan Melrose
TEL/FAX: 403-793-3177
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☒ ESdat ☐ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: rmelrose@nrsc.ca
EMAIL 2: ksteinley@nrsc.ca
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #: 3808

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

SAMPLED BY: Brennan Levie

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐ | VOC ☐ VPH ☐ | EPH ☐ PHC F2-F4 ☐ | PAH ☐ L/HEPH ☐ | PHENOLS Chlorinated ☐ Non-Chlor. ☐ | PCB ☐ GLYCOLS ☐ HAA ☐ | PESTICIDES ☐ ACID HERBICIDES ☐ | METALS - WATER TOTAL Hg ☐ | METALS - WATER DISSOLVED Hg ☐ | METALS - SOIL (SALM) ☐ inc. pH ☐ | pH ☐ EC ☐ ALK ☐ | TSS ☐ VSS ☐ TDS ☐ | BOD ☐ COD ☐ | TOG ☐ MOG ☐ | FECAL COLIFORMS ☐ HPC ☐ | TOTAL COLIFORMS ☐ *E. coli* ☐ | ASBESTOS | HOLD | POSSIBLE SAMPLE HAZARD CODE(S)

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	CONTAINER QTY	SAMPLING: DATE YYYY-MM-DD	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)	
26	WTP Header #1	✓					2020-08-11	11:00	✓				26 Summer Analysis testing *see attached Schedule A. THM / HAA

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

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will 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): 17.4 ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

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.