

CERTIFICATE OF ANALYSIS

REPORTED TO Newell Regional Services Corporation
P.O. Box 638
Brooks, AB T1R 1B6

ATTENTION Kole Steinley

PO NUMBER 4003

PROJECT Schedule 4

PROJECT INFO WTP Winter Analysis 2021

WORK ORDER 21A1801

RECEIVED / TEMP 2021-01-21 08:50 / 12°C

REPORTED 2021-02-03 15:48

COC NUMBER 10306

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 acrump@caro.ca

Authorized By:

Alana Crump
Team Lead, Client Service



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TEST RESULTS

REPORTED TO PROJECT Newell Regional Services Corporation
Schedule 4

WORK ORDER REPORTED 21A1801
2021-02-03 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Header #1 (21A1801-01) Matrix: Water Sampled: 2021-01-20 11:15						
Acid Herbicides						
2,4-D	< 0.10	MAC = 100	0.10	µg/L	2021-02-01	
MCPA	< 0.02	MAC = 100	0.02	µg/L	2021-02-01	
2,4,5-T	< 0.10	N/A	0.10	µg/L	2021-02-01	
Dicamba	< 0.10	MAC = 120	0.10	µg/L	2021-02-01	
Picloram	< 0.10	MAC = 190	0.10	µg/L	2021-02-01	
Dinoseb	< 0.10	N/A	0.10	µg/L	2021-02-01	
Anions						
Bromate	< 0.010	MAC = 0.01	0.010	mg/L	2021-01-29	
Chlorate	< 0.50	MAC = 1	0.50	mg/L	2021-01-21	
Chloride	16.5	AO ≤ 250	0.50	mg/L	2021-01-21	
Chlorite	< 0.50	MAC = 1	0.50	mg/L	2021-01-21	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2021-01-21	
Nitrate (as N)	< 0.050	MAC = 10	0.050	mg/L	2021-01-21	
Nitrite (as N)	< 0.050	MAC = 1	0.050	mg/L	2021-01-21	
Sulfate	56.7	AO ≤ 500	1.0	mg/L	2021-01-21	
Calculated Parameters						
Chloramines	0.110	MAC = 3	0.0400	mg/L	N/A	
Total Trihalomethanes	0.0429	MAC = 0.1	0.00400	mg/L	N/A	
Hardness, Total (as CaCO3)	177	None Required	0.541	mg/L	N/A	
Solids, Total Dissolved	241	AO ≤ 500	3.35	mg/L	N/A	
Chlorinated Phenols						
2-Chlorophenol	< 0.10	N/A	0.10	µg/L	2021-01-26	
3 & 4-Chlorophenol	< 0.10	N/A	0.10	µg/L	2021-01-26	
4-Chloro-3-Methylphenol	< 0.50	N/A	0.50	µg/L	2021-01-26	
2,3-Dichlorophenol	< 0.20	N/A	0.20	µg/L	2021-01-26	
2,4 & 2,5-Dichlorophenol	< 0.20	AO ≤ 0.3	0.20	µg/L	2021-01-26	
2,6-Dichlorophenol	< 0.20	N/A	0.20	µg/L	2021-01-26	
3,4-Dichlorophenol	< 0.20	N/A	0.20	µg/L	2021-01-26	
3,5-Dichlorophenol	< 0.20	N/A	0.20	µg/L	2021-01-26	
2,3,4-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2021-01-26	
2,3,5-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2021-01-26	
2,3,6-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2021-01-26	
2,4,5-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2021-01-26	
2,4,6-Trichlorophenol	< 0.50	AO ≤ 2	0.50	µg/L	2021-01-26	
3,4,5-Trichlorophenol	< 0.50	N/A	0.50	µg/L	2021-01-26	
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	< 0.50	N/A	0.50	µg/L	2021-01-26	
2,3,4,6-Tetrachlorophenol	< 0.50	AO ≤ 1	0.50	µg/L	2021-01-26	
Pentachlorophenol	< 0.50	AO ≤ 30	0.50	µg/L	2021-01-26	
Surrogate: 2,4-Dibromophenol	69		60-130	%	2021-01-26	
Surrogate: 2,4,6-Tribromophenol	88		60-130	%	2021-01-26	

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2021-02-03 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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Header #1 (21A1801-01) | Matrix: Water | Sampled: 2021-01-20 11:15, Continued

General Parameters

Alkalinity, Total (as CaCO ₃)	140	N/A	2.0	mg/L	2021-01-26	
Bicarbonate (HCO ₃)	171	N/A	2.0	mg/L	2021-01-26	
Carbonate (CO ₃)	< 2.0	N/A	2.0	mg/L	2021-01-26	
Hydroxide (OH)	< 2.0	N/A	2.0	mg/L	2021-01-26	
Ammonia, Total (as N)	0.151	None Required	0.050	mg/L	2021-01-25	
Carbon, Total Organic	2.54	N/A	0.50	mg/L	2021-01-25	
Chlorine, Total	1.79	None Required	0.02	mg/L	2021-01-21	HT2
Chlorine, Free	1.68	N/A	0.02	mg/L	2021-01-21	HT2
Colour, True	< 5.0	AO ≤ 15	5.0	CU	2021-01-22	
Conductivity (EC)	413	N/A	2.0	µS/cm	2021-01-22	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020	mg/L	2021-01-25	
Nitritotriacetic Acid	< 0.20	MAC = 0.4	0.20	mg/L	2021-01-22	
pH	7.61	7.0-10.5	0.10	pH units	2021-01-26	HT2
Sulfide, Total	< 0.020	AO ≤ 0.05	0.020	mg/L	2021-01-22	
Turbidity	< 0.10	OG < 1	0.10	NTU	2021-01-21	

Haloacetic Acids

Monochloroacetic Acid	< 0.0020	N/A	0.0020	mg/L	2021-01-29	
Monobromoacetic Acid	< 0.0020	N/A	0.0020	mg/L	2021-01-29	
Dichloroacetic Acid	0.0125	N/A	0.0020	mg/L	2021-01-29	
Trichloroacetic Acid	0.0111	N/A	0.0020	mg/L	2021-01-29	
Dibromoacetic Acid	< 0.0020	N/A	0.0020	mg/L	2021-01-29	
Total Haloacetic Acids (HAA5)	0.0236	MAC = 0.08	0.00200	mg/L	N/A	
Surrogate: 2-Bromopropionic Acid	108		70-130	%	2021-01-29	

Microbiological Parameters

Microcystin, total	< 0.14	MAC = 1.5	0.14	µg/L	2021-01-27	
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Miscellaneous Herbicides

Glyphosate	< 0.050	MAC = 0.28	0.050	mg/L	2021-01-26	
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Miscellaneous Organics

N-Nitrosodimethylamine	< 0.0016	MAC = 0.04	0.0016	µg/L	2021-02-02	
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Pesticides, Herbicides, and Fungicides

Alachlor	< 0.100	N/A	0.100	µg/L	2021-01-30	
Aldrin	< 0.006	N/A	0.006	µg/L	2021-01-30	
Atrazine and metabolites	< 0.100	MAC = 5	0.100	µg/L	2021-01-30	
Azinphos-methyl	< 0.200	MAC = 20	0.200	µg/L	2021-01-30	
alpha-BHC	< 0.010	N/A	0.010	µg/L	2021-01-30	
beta-BHC	< 0.050	N/A	0.050	µg/L	2021-01-30	
delta-BHC	< 0.050	N/A	0.050	µg/L	2021-01-30	
gamma-BHC (Lindane)	< 0.050	N/A	0.050	µg/L	2021-01-30	
Bromacil	< 0.100	N/A	0.100	µg/L	2021-01-30	
Bromoxynil	< 0.200	MAC = 5	0.200	µg/L	2021-01-30	

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Header #1 (21A1801-01) Matrix: Water Sampled: 2021-01-20 11:15, Continued						
<i>Pesticides, Herbicides, and Fungicides, Continued</i>						
Butachlor	< 0.020	N/A	0.020	µg/L	2021-01-30	
Captan	< 0.100	N/A	0.100	µg/L	2021-01-30	
Chlordane (cis + trans)	< 0.050	N/A	0.050	µg/L	2021-01-30	
Chlorothalonil	< 0.050	N/A	0.050	µg/L	2021-01-30	
Chlorpyrifos	< 0.010	MAC = 90	0.010	µg/L	2021-01-30	
Cyanazine	< 0.100	N/A	0.100	µg/L	2021-01-30	
DDT, Total	< 0.010	N/A	0.010	µg/L	2021-01-30	
Deltamethrin	< 0.100	N/A	0.100	µg/L	2021-01-30	
Diazinon	< 0.020	MAC = 20	0.020	µg/L	2021-01-30	
Dichlorvos	< 0.100	N/A	0.100	µg/L	2021-01-30	
Diclofop-methyl	< 0.100	MAC = 9	0.100	µg/L	2021-01-30	
Dieldrin	< 0.010	N/A	0.010	µg/L	2021-01-30	
Dimethoate	< 0.200	MAC = 20	0.200	µg/L	2021-01-30	
Disulfoton	< 0.100	N/A	0.100	µg/L	2021-01-30	
Diuron	< 0.200	MAC = 150	0.200	µg/L	2021-01-30	
Endosulfan I + II	< 0.010	N/A	0.010	µg/L	2021-01-30	
Endosulfan sulfate	< 0.050	N/A	0.050	µg/L	2021-01-30	
Endrin	< 0.020	N/A	0.020	µg/L	2021-01-30	
Endrin aldehyde	< 0.020	N/A	0.020	µg/L	2021-01-30	
Endrin ketone	< 0.020	N/A	0.020	µg/L	2021-01-30	
Fenchlorphos (Ronnel)	< 0.100	N/A	0.100	µg/L	2021-01-30	
Heptachlor	< 0.010	N/A	0.010	µg/L	2021-01-30	
Heptachlor epoxide	< 0.010	N/A	0.010	µg/L	2021-01-30	
Linuron	< 0.050	N/A	0.050	µg/L	2021-01-30	
Malathion	< 0.100	MAC = 190	0.100	µg/L	2021-01-30	
Methoxychlor	< 0.050	N/A	0.050	µg/L	2021-01-30	
Methyl parathion	< 0.100	N/A	0.100	µg/L	2021-01-30	
Metolachlor	< 0.100	MAC = 50	0.100	µg/L	2021-01-30	
Metribuzin	< 0.200	MAC = 80	0.200	µg/L	2021-01-30	
Parathion	< 0.100	N/A	0.100	µg/L	2021-01-30	
Pentachloronitrobenzene	< 0.100	N/A	0.100	µg/L	2021-01-30	
Permethrin	< 0.010	N/A	0.010	µg/L	2021-01-30	
Phorate	< 0.100	MAC = 2	0.100	µg/L	2021-01-30	
Prometon	< 0.300	N/A	0.300	µg/L	2021-01-30	
Prometryne	< 0.100	N/A	0.100	µg/L	2021-01-30	
Simazine	< 0.200	MAC = 10	0.200	µg/L	2021-01-30	
Sulfotep	< 0.100	N/A	0.100	µg/L	2021-01-30	
Tebuthiuron	< 0.200	N/A	0.200	µg/L	2021-01-30	
Temephos (Abate)	< 0.500	N/A	0.500	µg/L	2021-01-30	
Terbufos	< 0.100	MAC = 1	0.100	µg/L	2021-01-30	
Triallate	< 0.100	N/A	0.100	µg/L	2021-01-30	
Trifluralin	< 0.200	MAC = 45	0.200	µg/L	2021-01-30	
Surrogate: Tributyl Phosphate	78		50-140	%	2021-01-30	

TEST RESULTS

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WORK ORDER REPORTED 21A1801
2021-02-03 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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Header #1 (21A1801-01) | Matrix: Water | Sampled: 2021-01-20 11:15, Continued

Pesticides, Herbicides, and Fungicides, Continued

Surrogate: 4-chloro-3-nitrobenzotrifluoride	90		50-140	%	2021-01-30	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.050	N/A	0.050	µg/L	2021-01-24	
Acenaphthylene	< 0.200	N/A	0.200	µg/L	2021-01-24	
Acridine	< 0.050	N/A	0.050	µg/L	2021-01-24	
Anthracene	< 0.010	N/A	0.010	µg/L	2021-01-24	
Benz(a)anthracene	< 0.010	N/A	0.010	µg/L	2021-01-24	
Benzo(a)pyrene	< 0.010	MAC = 0.04	0.010	µg/L	2021-01-24	
Benzo(b+j)fluoranthene	< 0.050	N/A	0.050	µg/L	2021-01-24	
Benzo(g,h,i)perylene	< 0.050	N/A	0.050	µg/L	2021-01-24	
Benzo(k)fluoranthene	< 0.050	N/A	0.050	µg/L	2021-01-24	
2-Chloronaphthalene	< 0.100	N/A	0.100	µg/L	2021-01-24	
Chrysene	< 0.050	N/A	0.050	µg/L	2021-01-24	
Dibenz(a,h)anthracene	< 0.010	N/A	0.010	µg/L	2021-01-24	
Fluoranthene	< 0.030	N/A	0.030	µg/L	2021-01-24	
Fluorene	< 0.050	N/A	0.050	µg/L	2021-01-24	
Indeno(1,2,3-cd)pyrene	< 0.050	N/A	0.050	µg/L	2021-01-24	
1-Methylnaphthalene	< 0.100	N/A	0.100	µg/L	2021-01-24	
2-Methylnaphthalene	< 0.100	N/A	0.100	µg/L	2021-01-24	
Naphthalene	< 0.200	N/A	0.200	µg/L	2021-01-24	
Phenanthrene	< 0.100	N/A	0.100	µg/L	2021-01-24	
Pyrene	< 0.020	N/A	0.020	µg/L	2021-01-24	
Quinoline	< 0.050	N/A	0.050	µg/L	2021-01-24	
Surrogate: Acridine-d9	54		50-140	%	2021-01-24	
Surrogate: Naphthalene-d8	104		50-140	%	2021-01-24	
Surrogate: Perylene-d12	83		50-140	%	2021-01-24	

Total Metals

Aluminum, total	0.0591	OG < 0.1	0.0050	mg/L	2021-01-23	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2021-01-23	
Arsenic, total	0.00097	MAC = 0.01	0.00050	mg/L	2021-01-23	
Barium, total	0.0831	MAC = 2	0.0050	mg/L	2021-01-23	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2021-01-23	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2021-01-23	
Calcium, total	39.5	None Required	0.20	mg/L	2021-01-23	
Chromium, total	0.00425	MAC = 0.05	0.00050	mg/L	2021-01-23	
Copper, total	0.00048	MAC = 2	0.00040	mg/L	2021-01-23	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2021-01-23	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2021-01-23	
Magnesium, total	19.0	None Required	0.010	mg/L	2021-01-23	
Manganese, total	0.00860	MAC = 0.12	0.00020	mg/L	2021-01-23	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2021-01-22	
Potassium, total	2.48	N/A	0.10	mg/L	2021-01-23	

TEST RESULTS

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2021-02-03 15:48

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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Header #1 (21A1801-01) | Matrix: Water | Sampled: 2021-01-20 11:15, Continued

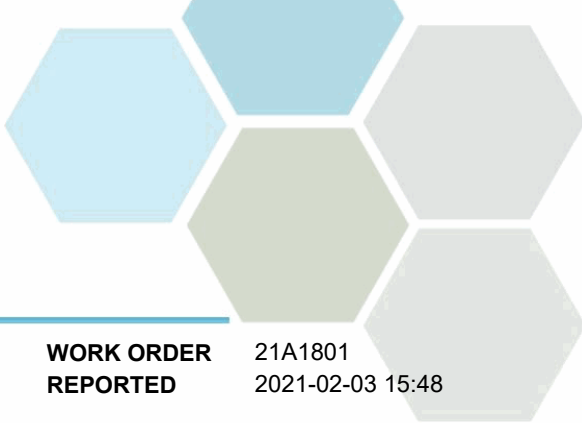
Total Metals, Continued

Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2021-01-23	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2021-01-23	
Sodium, total	21.7	AO ≤ 200	0.10	mg/L	2021-01-23	
Strontium, total	0.254	7	0.0010	mg/L	2021-01-23	
Uranium, total	0.000729	MAC = 0.02	0.000020	mg/L	2021-01-23	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2021-01-23	

Volatile Organic Compounds (VOC)

CST2

Benzene	< 0.5	MAC = 5	0.5	µg/L	2021-01-27	
Bromodichloromethane	8.1	N/A	1.0	µg/L	2021-01-27	
Bromoform	7.9	N/A	1.0	µg/L	2021-01-27	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2021-01-27	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2021-01-27	
Chloroethane	< 2.0	N/A	2.0	µg/L	2021-01-27	
Chloroform	22.6	N/A	1.0	µg/L	2021-01-27	
Dibromochloromethane	4.2	N/A	1.0	µg/L	2021-01-27	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2021-01-27	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2021-01-27	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2021-01-27	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2021-01-27	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2021-01-27	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2021-01-27	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2021-01-27	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2021-01-27	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2021-01-27	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2021-01-27	
Dichloromethane	< 3.0	MAC = 50	3.0	µg/L	2021-01-27	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2021-01-27	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2021-01-27	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2021-01-27	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2021-01-27	
Styrene	< 1.0	N/A	1.0	µg/L	2021-01-27	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2021-01-27	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2021-01-27	
Toluene	< 1.0	AO ≤ 24	1.0	µg/L	2021-01-27	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2021-01-27	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2021-01-27	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2021-01-27	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2021-01-27	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2021-01-27	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2021-01-27	
Surrogate: Toluene-d8	0.5		70-130	%	2021-01-27	
Surrogate: 4-Bromofluorobenzene	94		70-130	%	2021-01-27	



TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
Header #1 (21A1801-01) Matrix: Water Sampled: 2021-01-20 11:15, Continued						
Volatile Organic Compounds (VOC), Continued						CST2
Surrogate: 1,4-Dichlorobenzene-d4	78		70-130	%	2021-01-27	

Sample Qualifiers:						
CST2	Potential for low bias due to matrix effect on surrogate and/or matrix spike recoveries					
HT2	The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.					

APPENDIX 1: SUPPORTING INFORMATION

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Schedule 4

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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
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
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 Spectrometry (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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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: acrump@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
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Acid Herbicides, Batch B1B0014

Blank (B1B0014-BLK1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
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 (B1B0014-BS1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
2,4-D	5.56	0.10 µg/L	5.05		110	70-130			
MCPA	4.76	0.02 µg/L	5.05		94	70-130			
2,4,5-T	5.62	0.10 µg/L	4.98		113	70-130			
Dicamba	4.05	0.10 µg/L	5.05		80	70-130			
Picloram	5.21	0.10 µg/L	5.00		104	70-130			
Dinoseb	5.02	0.10 µg/L	4.98		101	70-130			
LCS Dup (B1B0014-BSD1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
2,4-D	4.75	0.10 µg/L	5.05		94	70-130	16	30	
MCPA	4.48	0.02 µg/L	5.05		89	70-130	6	30	
2,4,5-T	4.88	0.10 µg/L	4.98		98	70-130	14	30	
Dicamba	4.01	0.10 µg/L	5.05		79	70-130	1	30	
Picloram	4.22	0.10 µg/L	5.00		84	70-130	21	30	
Dinoseb	4.90	0.10 µg/L	4.98		98	70-130	2	30	

Anions, Batch B1A1601

Blank (B1A1601-BLK1)			Prepared: 2021-01-21, Analyzed: 2021-01-21						
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 (B1A1601-BS1)			Prepared: 2021-01-21, Analyzed: 2021-01-21						
Chlorate	10.6	0.50 mg/L	10.0		106	89-112			

APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B1A1601, Continued									
LCS (B1A1601-BS1), Continued					Prepared: 2021-01-21, Analyzed: 2021-01-21				
Chloride	10.6	0.50 mg/L	10.0		106	90-110			
Chlorite	10.2	0.50 mg/L	10.0		102	80-120			
Fluoride	0.95	0.10 mg/L	1.00		95	85-115			
Nitrate (as N)	0.994	0.050 mg/L	1.00		99	92-108			
Nitrite (as N)	0.488	0.050 mg/L	0.500		98	85-115			
Sulfate	52.6	1.0 mg/L	50.0		105	90-110			
Chlorinated Phenols, Batch B1A1852									
Blank (B1A1852-BLK1)					Prepared: 2021-01-23, Analyzed: 2021-01-25				
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	1.40	µg/L	2.02		69	60-130			
Surrogate: 2,4,6-Tribromophenol	1.61	µg/L	2.00		81	60-130			
LCS (B1A1852-BS1)					Prepared: 2021-01-23, Analyzed: 2021-01-25				
2-Chlorophenol	7.04	0.10 µg/L	10.0		70	60-108			
3 & 4-Chlorophenol	12.6	0.10 µg/L	20.1		63	60-120			
4-Chloro-3-Methylphenol	8.35	0.50 µg/L	10.0		83	60-140			
2,3-Dichlorophenol	8.94	0.20 µg/L	10.0		89	60-111			
2,4 & 2,5-Dichlorophenol	18.6	0.20 µg/L	20.2		92	60-116			
2,6-Dichlorophenol	9.61	0.20 µg/L	10.0		96	60-112			
3,4-Dichlorophenol	8.50	0.20 µg/L	10.0		85	60-120			
3,5-Dichlorophenol	9.01	0.20 µg/L	10.0		90	60-121			
2,3,4-Trichlorophenol	7.98	0.50 µg/L	10.0		80	60-122			
2,3,5-Trichlorophenol	8.53	0.50 µg/L	10.0		85	60-126			
2,3,6-Trichlorophenol	7.47	0.50 µg/L	10.0		75	60-130			
2,4,5-Trichlorophenol	7.78	0.50 µg/L	10.0		78	60-118			
2,4,6-Trichlorophenol	7.93	0.50 µg/L	10.0		79	60-120			
3,4,5-Trichlorophenol	8.97	0.50 µg/L	10.0		89	60-129			
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	17.4	0.50 µg/L	20.0		87	60-127			
2,3,4,6-Tetrachlorophenol	8.52	0.50 µg/L	10.0		85	60-127			
Pentachlorophenol	8.73	0.50 µg/L	10.0		87	60-130			
Surrogate: 2,4-Dibromophenol	1.65	µg/L	2.02		82	60-130			
Surrogate: 2,4,6-Tribromophenol	1.87	µg/L	2.00		93	60-130			
LCS Dup (B1A1852-BSD1)					Prepared: 2021-01-23, Analyzed: 2021-01-25				
2-Chlorophenol	7.39	0.10 µg/L	10.0		74	60-108	5	32	
3 & 4-Chlorophenol	13.2	0.10 µg/L	20.1		66	60-120	5	21	
4-Chloro-3-Methylphenol	8.44	0.50 µg/L	10.0		84	60-140	1	30	
2,3-Dichlorophenol	8.90	0.20 µg/L	10.0		89	60-111	< 1	27	

APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Chlorinated Phenols, Batch B1A1852, Continued									
LCS Dup (B1A1852-BSD1), Continued					Prepared: 2021-01-23, Analyzed: 2021-01-25				
2,4 & 2,5-Dichlorophenol	18.6	0.20 µg/L	20.2		92	60-116	< 1	22	
2,6-Dichlorophenol	9.69	0.20 µg/L	10.0		97	60-112	< 1	27	
3,4-Dichlorophenol	8.54	0.20 µg/L	10.0		85	60-120	< 1	22	
3,5-Dichlorophenol	8.69	0.20 µg/L	10.0		87	60-121	4	23	
2,3,4-Trichlorophenol	8.32	0.50 µg/L	10.0		83	60-122	4	26	
2,3,5-Trichlorophenol	8.78	0.50 µg/L	10.0		88	60-126	3	24	
2,3,6-Trichlorophenol	8.11	0.50 µg/L	10.0		81	60-130	8	26	
2,4,5-Trichlorophenol	8.36	0.50 µg/L	10.0		84	60-118	7	22	
2,4,6-Trichlorophenol	8.49	0.50 µg/L	10.0		84	60-120	7	26	
3,4,5-Trichlorophenol	9.36	0.50 µg/L	10.0		93	60-129	4	19	
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	18.3	0.50 µg/L	20.0		91	60-127	5	26	
2,3,4,6-Tetrachlorophenol	8.19	0.50 µg/L	10.0		81	60-127	4	23	
Pentachlorophenol	9.72	0.50 µg/L	10.0		97	60-130	11	17	
Surrogate: 2,4-Dibromophenol	1.65	µg/L	2.02		82	60-130			
Surrogate: 2,4,6-Tribromophenol	1.88	µg/L	2.00		94	60-130			

General Parameters, Batch B1A1603

Blank (B1A1603-BLK1)					Prepared: 2021-01-21, Analyzed: 2021-01-21				
Chlorine, Total	< 0.02	0.02 mg/L							
Chlorine, Free	< 0.02	0.02 mg/L							
Reference (B1A1603-SRM1)					Prepared: 2021-01-21, Analyzed: 2021-01-21				
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 B1A1686

Blank (B1A1686-BLK1)					Prepared: 2021-01-21, Analyzed: 2021-01-21				
Turbidity	< 0.10	0.10 NTU							
LCS (B1A1686-BS1)					Prepared: 2021-01-21, Analyzed: 2021-01-21				
Turbidity	40.1	0.10 NTU	40.0		100	90-110			

General Parameters, Batch B1A1738

Blank (B1A1738-BLK1)					Prepared: 2021-01-25, Analyzed: 2021-01-25				
Carbon, Total Organic	< 0.50	0.50 mg/L							
Blank (B1A1738-BLK2)					Prepared: 2021-01-25, Analyzed: 2021-01-25				
Carbon, Total Organic	< 0.50	0.50 mg/L							
LCS (B1A1738-BS1)					Prepared: 2021-01-25, Analyzed: 2021-01-25				
Carbon, Total Organic	10.2	0.50 mg/L	10.0		102	78-116			
LCS (B1A1738-BS2)					Prepared: 2021-01-25, Analyzed: 2021-01-25				
Carbon, Total Organic	10.8	0.50 mg/L	10.0		108	78-116			

General Parameters, Batch B1A1763

Blank (B1A1763-BLK1)					Prepared: 2021-01-22, Analyzed: 2021-01-22				
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B1A1763-BS1)					Prepared: 2021-01-22, Analyzed: 2021-01-22				
Conductivity (EC)	994	2.0 µS/cm	1000		99	95-105			

APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B1A1769									
Blank (B1A1769-BLK1)				Prepared: 2021-01-22, Analyzed: 2021-01-22					
Sulfide, Total	< 0.020	0.020 mg/L							
LCS (B1A1769-BS1)				Prepared: 2021-01-22, Analyzed: 2021-01-22					
Sulfide, Total	0.446	0.020 mg/L	0.470		95	80-120			
General Parameters, Batch B1A1772									
Blank (B1A1772-BLK1)				Prepared: 2021-01-22, Analyzed: 2021-01-22					
Nitritotriacetic Acid	< 0.20	0.20 mg/L							
LCS (B1A1772-BS1)				Prepared: 2021-01-22, Analyzed: 2021-01-22					
Nitritotriacetic Acid	0.91	0.20 mg/L	1.00		91	80-120			
LCS Dup (B1A1772-BSD1)				Prepared: 2021-01-22, Analyzed: 2021-01-22					
Nitritotriacetic Acid	0.88	0.20 mg/L	1.00		88	80-120	3	20	
General Parameters, Batch B1A1794									
Blank (B1A1794-BLK1)				Prepared: 2021-01-22, Analyzed: 2021-01-22					
Colour, True	< 5.0	5.0 CU							
LCS (B1A1794-BS1)				Prepared: 2021-01-22, Analyzed: 2021-01-22					
Colour, True	21	5.0 CU	20.0		104	90-109			
General Parameters, Batch B1A1918									
Blank (B1A1918-BLK1)				Prepared: 2021-01-25, Analyzed: 2021-01-25					
Cyanide, Total	< 0.0020	0.0020 mg/L							
Blank (B1A1918-BLK2)				Prepared: 2021-01-25, Analyzed: 2021-01-25					
Cyanide, Total	< 0.0020	0.0020 mg/L							
LCS (B1A1918-BS1)				Prepared: 2021-01-25, Analyzed: 2021-01-25					
Cyanide, Total	0.0193	0.0020 mg/L	0.0200		97	82-120			
LCS (B1A1918-BS2)				Prepared: 2021-01-25, Analyzed: 2021-01-25					
Cyanide, Total	0.0197	0.0020 mg/L	0.0200		99	82-120			
LCS Dup (B1A1918-BSD1)				Prepared: 2021-01-25, Analyzed: 2021-01-25					
Cyanide, Total	0.0192	0.0020 mg/L	0.0200		96	82-120	< 1	10	
LCS Dup (B1A1918-BSD2)				Prepared: 2021-01-25, Analyzed: 2021-01-25					
Cyanide, Total	0.0195	0.0020 mg/L	0.0200		98	82-120	1	10	
General Parameters, Batch B1A1933									
Blank (B1A1933-BLK1)				Prepared: 2021-01-25, Analyzed: 2021-01-25					
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
LCS (B1A1933-BS1)				Prepared: 2021-01-25, Analyzed: 2021-01-25					
Ammonia, Total (as N)	0.205	0.050 mg/L	0.200		103	85-115			

General Parameters, Batch B1A2024

APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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General Parameters, Batch B1A2024, Continued

Blank (B1A2024-BLK1)			Prepared: 2021-01-26, Analyzed: 2021-01-26						
Alkalinity, Total (as CaCO ₃)	< 2.0	2.0 mg/L							
Bicarbonate (HCO ₃)	< 2.0	2.0 mg/L							
Carbonate (CO ₃)	< 2.0	2.0 mg/L							
Hydroxide (OH)	< 2.0	2.0 mg/L							
LCS (B1A2024-BS1)			Prepared: 2021-01-26, Analyzed: 2021-01-26						
Alkalinity, Total (as CaCO ₃)	249	2.0 mg/L	250		100	94-108			

General Parameters, Batch B1A2027

Reference (B1A2027-SRM1)			Prepared: 2021-01-26, Analyzed: 2021-01-26						
pH	6.98	0.10 pH units	7.00		100	98-102			

Haloacetic Acids, Batch B1A2365

Blank (B1A2365-BLK1)			Prepared: 2021-01-28, Analyzed: 2021-01-29						
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	0.0115	mg/L	0.0116		99	70-130			
LCS (B1A2365-BS1)			Prepared: 2021-01-28, Analyzed: 2021-01-28						
Monochloroacetic Acid	0.0616	0.0020 mg/L	0.0556		111	75-117			
Monobromoacetic Acid	0.0369	0.0020 mg/L	0.0371		99	83-113			
Dichloroacetic Acid	0.0548	0.0020 mg/L	0.0557		98	78-112			
Trichloroacetic Acid	0.0182	0.0020 mg/L	0.0185		99	81-110			
Dibromoacetic Acid	0.0185	0.0020 mg/L	0.0185		100	89-112			
Surrogate: 2-Bromopropionic Acid	0.0108	mg/L	0.0116		93	70-130			
LCS Dup (B1A2365-BSD1)			Prepared: 2021-01-28, Analyzed: 2021-01-28						
Monochloroacetic Acid	0.0497	0.0020 mg/L	0.0556		89	75-117	21	30	
Monobromoacetic Acid	0.0374	0.0020 mg/L	0.0371		101	83-113	1	30	
Dichloroacetic Acid	0.0566	0.0020 mg/L	0.0557		102	78-112	3	30	
Trichloroacetic Acid	0.0188	0.0020 mg/L	0.0185		101	81-110	3	30	
Dibromoacetic Acid	0.0185	0.0020 mg/L	0.0185		100	89-112	< 1	30	
Surrogate: 2-Bromopropionic Acid	0.0125	mg/L	0.0116		107	70-130			

Miscellaneous Herbicides, Batch B1A2032

Blank (B1A2032-BLK1)			Prepared: 2021-01-26, Analyzed: 2021-01-26						
Glyphosate	< 0.050	0.050 mg/L							
LCS (B1A2032-BS1)			Prepared: 2021-01-26, Analyzed: 2021-01-26						
Glyphosate	0.195	0.050 mg/L	0.252		77	70-130			
LCS Dup (B1A2032-BSD1)			Prepared: 2021-01-26, Analyzed: 2021-01-26						
Glyphosate	0.235	0.050 mg/L	0.252		93	70-130	18	20	

Pesticides, Herbicides, and Fungicides, Batch B1A2093

Blank (B1A2093-BLK1)			Prepared: 2021-01-26, Analyzed: 2021-01-30						
Alachlor	< 0.100	0.100 µg/L							
Aldrin	< 0.006	0.006 µg/L							

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B1A2093, Continued									
Blank (B1A2093-BLK1), Continued					Prepared: 2021-01-26, Analyzed: 2021-01-30				
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							
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	0.661	µg/L	1.00		66	50-140			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	0.676	µg/L	1.00		68	50-140			
LCS (B1A2093-BS1)					Prepared: 2021-01-26, Analyzed: 2021-01-30				
Alachlor	0.786	0.100 µg/L	1.01		78	65-118			
Aldrin	0.621	0.006 µg/L	1.00		62	58-107			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B1A2093, Continued									
LCS (B1A2093-BS1), Continued					Prepared: 2021-01-26, Analyzed: 2021-01-30				
Atrazine	0.615	0.100 µg/L	1.00		62	61-122			
Atrazine-desethyl	0.769	0.100 µg/L	1.03		75	50-140			
Azinphos-methyl	0.625	0.200 µg/L	1.00		63	53-127			
alpha-BHC	0.674	0.010 µg/L	1.01		67	54-134			
beta-BHC	0.703	0.050 µg/L	1.01		70	58-112			
delta-BHC	0.663	0.050 µg/L	1.00		66	58-119			
gamma-BHC (Lindane)	0.621	0.050 µg/L	1.00		62	59-113			
Bromacil	0.710	0.100 µg/L	1.00		71	52-123			
Bromoxynil	0.724	0.200 µg/L	1.02		71	50-132			
Butachlor	0.603	0.020 µg/L	0.998		60	50-140			
Captan	1.03	0.100 µg/L	1.05		98	63-137			
Chlordane (cis + trans)	1.39	0.050 µg/L	2.01		69	50-140			
Chlorothalonil	1.10	0.050 µg/L	1.01		109	50-110			
Chlorpyrifos	0.675	0.010 µg/L	1.00		68	61-121			
Cyanazine	0.830	0.100 µg/L	1.00		83	57-126			
DDT, Total	6.41	0.010 µg/L	5.04		127	50-140			
Deltamethrin	5.14	0.100 µg/L	10.2		50	50-121			
Diazinon	0.712	0.020 µg/L	1.00		71	52-126			
Dichlorvos	0.561	0.100 µg/L	1.03		54	50-110			
Diclofop-methyl	0.873	0.100 µg/L	0.990		88	58-112			
Dieldrin	1.11	0.010 µg/L	1.00		111	64-112			
Dimethoate	0.622	0.200 µg/L	0.989		63	50-120			
Disulfoton	0.785	0.100 µg/L	1.01		78	50-122			
Diuron	0.700	0.200 µg/L	1.03		68	54-116			
Endosulfan I + II	1.63	0.010 µg/L	2.01		81	50-140			
Endosulfan sulfate	1.05	0.050 µg/L	1.01		104	64-110			
Endrin	1.19	0.020 µg/L	1.01		118	59-123			
Endrin aldehyde	0.794	0.020 µg/L	1.00		79	58-118			
Endrin ketone	0.972	0.020 µg/L	1.01		96	53-114			
Fenchlorphos (Ronnel)	1.09	0.100 µg/L	1.02		107	63-110			
Heptachlor	1.14	0.010 µg/L	1.01		113	58-128			
Heptachlor epoxide	0.984	0.010 µg/L	1.01		97	64-110			
Linuron	0.998	0.050 µg/L	1.02		98	59-140			
Malathion	0.651	0.100 µg/L	1.00		65	61-121			
Methoxychlor	0.846	0.050 µg/L	1.01		84	53-121			
Methyl parathion	0.646	0.100 µg/L	0.998		65	65-114			
Metolachlor	0.664	0.100 µg/L	1.01		66	65-112			
Metribuzin	0.651	0.200 µg/L	1.00		65	53-123			
Parathion	1.15	0.100 µg/L	0.997		115	53-130			
Pentachloronitrobenzene	0.933	0.100 µg/L	1.00		93	54-136			
Permethrin	0.553	0.010 µg/L	1.01		55	50-130			
Phorate	0.762	0.100 µg/L	1.00		76	55-120			
Prometon	0.716	0.300 µg/L	1.00		72	57-124			
Prometryne	0.978	0.100 µg/L	1.00		98	50-140			
Simazine	0.692	0.200 µg/L	1.01		69	54-119			
Sulfotep	1.04	0.100 µg/L	1.04		100	61-121			
Tebuthiuron	0.687	0.200 µg/L	1.01		68	50-127			
Temephos (Abate)	6.28	0.500 µg/L	10.2		62	67-135			SPK1
Terbufos	0.836	0.100 µg/L	0.993		84	51-122			
Triallate	1.18	0.100 µg/L	1.02		116	50-120			
Trifluralin	1.06	0.200 µg/L	1.00		106	52-129			
Surrogate: Tributyl Phosphate	0.613	µg/L	1.00		61	50-140			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	0.639	µg/L	1.00		64	50-140			

LCS Dup (B1A2093-BS1)					Prepared: 2021-01-26, Analyzed: 2021-01-30				
Alachlor	0.744	0.100 µg/L	1.01		74	65-118	5	30	

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B1A2093, Continued									
LCS Dup (B1A2093-BSD1), Continued					Prepared: 2021-01-26, Analyzed: 2021-01-30				
Aldrin	0.599	0.006 µg/L	1.00		60	58-107	4	30	
Atrazine	0.633	0.100 µg/L	1.00		63	61-122	3	30	
Atrazine-desethyl	0.739	0.100 µg/L	1.03		72	50-140	4	30	
Azinphos-methyl	0.729	0.200 µg/L	1.00		73	53-127	15	30	
alpha-BHC	0.639	0.010 µg/L	1.01		63	54-134	5	30	
beta-BHC	0.658	0.050 µg/L	1.01		65	58-112	7	30	
delta-BHC	0.623	0.050 µg/L	1.00		62	58-119	6	30	
gamma-BHC (Lindane)	0.586	0.050 µg/L	1.00		59	59-113	6	30	
Bromacil	0.774	0.100 µg/L	1.00		77	52-123	9	30	
Bromoxynil	0.668	0.200 µg/L	1.02		65	50-132	8	30	
Butachlor	0.576	0.020 µg/L	0.998		58	50-140	5	30	
Captan	0.991	0.100 µg/L	1.05		94	63-137	4	30	
Chlordane (cis + trans)	1.65	0.050 µg/L	2.01		82	50-140	17	30	
Chlorothalonil	0.861	0.050 µg/L	1.01		85	50-110	24	30	
Chlorpyrifos	0.634	0.010 µg/L	1.00		63	61-121	6	30	
Cyanazine	0.790	0.100 µg/L	1.00		79	57-126	5	30	
DDT, Total	5.93	0.010 µg/L	5.04		118	50-140	8	30	
Deltamethrin	6.05	0.100 µg/L	10.2		59	50-121	16	30	
Diazinon	0.683	0.020 µg/L	1.00		68	52-126	4	30	
Dichlorvos	0.552	0.100 µg/L	1.03		54	50-110	2	30	
Diclofop-methyl	0.766	0.100 µg/L	0.990		77	58-112	13	30	
Dieldrin	0.954	0.010 µg/L	1.00		95	64-112	15	30	
Dimethoate	0.599	0.200 µg/L	0.989		61	50-120	4	30	
Disulfoton	0.729	0.100 µg/L	1.01		72	50-122	7	30	
Diuron	0.655	0.200 µg/L	1.03		64	54-116	7	30	
Endosulfan I + II	1.44	0.010 µg/L	2.01		71	50-140	13	30	
Endosulfan sulfate	0.918	0.050 µg/L	1.01		91	64-110	13	30	
Endrin	1.11	0.020 µg/L	1.01		110	59-123	7	30	
Endrin aldehyde	0.774	0.020 µg/L	1.00		77	58-118	3	30	
Endrin ketone	0.990	0.020 µg/L	1.01		98	53-114	2	30	
Fenchlorphos (Ronnell)	1.00	0.100 µg/L	1.02		98	63-110	8	30	
Heptachlor	0.966	0.010 µg/L	1.01		96	58-128	17	30	
Heptachlor epoxide	0.830	0.010 µg/L	1.01		82	64-110	17	30	
Linuron	0.994	0.050 µg/L	1.02		97	59-140	< 1	30	
Malathion	0.643	0.100 µg/L	1.00		64	61-121	1	30	
Methoxychlor	0.978	0.050 µg/L	1.01		97	53-121	14	30	
Methyl parathion	0.655	0.100 µg/L	0.998		66	65-114	1	30	
Metolachlor	0.638	0.100 µg/L	1.01		63	65-112	4	30	SPK1
Metribuzin	0.607	0.200 µg/L	1.00		61	53-123	7	30	
Parathion	1.01	0.100 µg/L	0.997		101	53-130	13	30	
Pentachloronitrobenzene	0.876	0.100 µg/L	1.00		88	54-136	6	30	
Permethrin	0.637	0.010 µg/L	1.01		63	50-130	14	30	
Phorate	0.710	0.100 µg/L	1.00		71	55-120	7	30	
Prometon	0.653	0.300 µg/L	1.00		65	57-124	9	30	
Prometryne	0.916	0.100 µg/L	1.00		92	50-140	7	30	
Simazine	0.656	0.200 µg/L	1.01		65	54-119	5	30	
Sulfotep	0.939	0.100 µg/L	1.04		90	61-121	10	30	
Tebuthiuron	0.732	0.200 µg/L	1.01		72	50-127	6	30	
Temephos (Abate)	6.85	0.500 µg/L	10.2		67	67-135	9	30	
Terbufos	0.782	0.100 µg/L	0.993		79	51-122	7	30	
Triallate	1.05	0.100 µg/L	1.02		103	50-120	11	30	
Trifluralin	0.892	0.200 µg/L	1.00		89	52-129	17	30	
Surrogate: Tributyl Phosphate	0.577	µg/L	1.00		58	50-140			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	0.620	µg/L	1.00		62	50-140			

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B1A1905									
Blank (B1A1905-BLK1)					Prepared: 2021-01-24, Analyzed: 2021-01-24				
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	2.81	µg/L	4.44		63	50-140			
Surrogate: Naphthalene-d8	4.30	µg/L	4.47		96	50-140			
Surrogate: Perylene-d12	3.81	µg/L	4.47		85	50-140			
LCS (B1A1905-BS1)					Prepared: 2021-01-24, Analyzed: 2021-01-24				
Acenaphthene	3.03	0.050 µg/L	4.44		68	55-137			
Acenaphthylene	3.04	0.200 µg/L	4.44		68	53-140			
Acridine	2.71	0.050 µg/L	4.44		61	50-120			
Anthracene	3.28	0.010 µg/L	4.44		74	64-130			
Benz(a)anthracene	3.47	0.010 µg/L	4.44		78	57-140			
Benzo(a)pyrene	3.09	0.010 µg/L	4.44		69	63-133			
Benzo(b+j)fluoranthene	7.85	0.050 µg/L	8.89		88	60-129			
Benzo(g,h,i)perylene	2.93	0.050 µg/L	4.44		66	52-139			
Benzo(k)fluoranthene	2.77	0.050 µg/L	4.44		62	50-138			
2-Chloronaphthalene	3.07	0.100 µg/L	4.38		70	50-139			
Chrysene	3.86	0.050 µg/L	4.44		87	59-140			
Dibenz(a,h)anthracene	3.05	0.010 µg/L	4.44		69	53-136			
Fluoranthene	3.50	0.030 µg/L	4.44		79	67-135			
Fluorene	2.97	0.050 µg/L	4.44		67	57-134			
Indeno(1,2,3-cd)pyrene	2.90	0.050 µg/L	4.44		65	52-129			
1-Methylnaphthalene	3.04	0.100 µg/L	4.44		68	50-140			
2-Methylnaphthalene	3.31	0.100 µg/L	4.44		74	50-140			
Naphthalene	3.56	0.200 µg/L	4.44		80	50-140			
Phenanthrene	2.84	0.100 µg/L	4.44		64	61-134			
Pyrene	3.40	0.020 µg/L	4.44		77	66-131			
Quinoline	4.68	0.050 µg/L	4.44		105	50-140			
Surrogate: Acridine-d9	3.01	µg/L	4.44		68	50-140			
Surrogate: Naphthalene-d8	4.27	µg/L	4.47		96	50-140			
Surrogate: Perylene-d12	3.30	µg/L	4.47		74	50-140			
LCS Dup (B1A1905-BSD1)					Prepared: 2021-01-24, Analyzed: 2021-01-24				
Acenaphthene	2.79	0.050 µg/L	4.44		63	55-137	8	18	
Acenaphthylene	2.85	0.200 µg/L	4.44		64	53-140	6	20	
Acridine	2.58	0.050 µg/L	4.44		58	50-120	5	30	
Anthracene	3.09	0.010 µg/L	4.44		70	64-130	6	15	

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B1A1905, Continued									
LCS Dup (B1A1905-BSD1), Continued					Prepared: 2021-01-24, Analyzed: 2021-01-24				
Benz(a)anthracene	3.87	0.010 µg/L	4.44		87	57-140	11	25	
Benzo(a)pyrene	2.97	0.010 µg/L	4.44		67	63-133	4	18	
Benzo(b+j)fluoranthene	7.47	0.050 µg/L	8.89		84	60-129	5	17	
Benzo(g,h,i)perylene	2.91	0.050 µg/L	4.44		66	52-139	< 1	22	
Benzo(k)fluoranthene	3.11	0.050 µg/L	4.44		70	50-138	11	26	
2-Chloronaphthalene	2.98	0.100 µg/L	4.38		68	50-139	3	23	
Chrysene	4.32	0.050 µg/L	4.44		97	59-140	11	23	
Dibenz(a,h)anthracene	3.27	0.010 µg/L	4.44		74	53-136	7	21	
Fluoranthene	3.67	0.030 µg/L	4.44		82	67-135	5	18	
Fluorene	2.81	0.050 µg/L	4.44		63	57-134	5	18	
Indeno(1,2,3-cd)pyrene	3.17	0.050 µg/L	4.44		71	52-129	9	21	
1-Methylnaphthalene	3.01	0.100 µg/L	4.44		68	50-140	< 1	20	
2-Methylnaphthalene	3.15	0.100 µg/L	4.44		71	50-140	5	21	
Naphthalene	3.31	0.200 µg/L	4.44		75	50-140	7	22	
Phenanthrene	2.84	0.100 µg/L	4.44		64	61-134	< 1	17	
Pyrene	3.63	0.020 µg/L	4.44		82	66-131	6	19	
Quinoline	4.52	0.050 µg/L	4.44		102	50-140	3	14	
Surrogate: Acridine-d9	2.77	µg/L	4.44		62	50-140			
Surrogate: Naphthalene-d8	3.91	µg/L	4.47		88	50-140			
Surrogate: Perylene-d12	3.52	µg/L	4.47		79	50-140			

Total Metals, Batch B1A1776

Blank (B1A1776-BLK1)					Prepared: 2021-01-22, Analyzed: 2021-01-22				
Mercury, total	< 0.000010	0.000010 mg/L							
Blank (B1A1776-BLK2)					Prepared: 2021-01-22, Analyzed: 2021-01-22				
Mercury, total	< 0.000010	0.000010 mg/L							
Reference (B1A1776-SRM1)					Prepared: 2021-01-22, Analyzed: 2021-01-22				
Mercury, total	0.00604	0.000010 mg/L	0.00581		104	70-130			
Reference (B1A1776-SRM2)					Prepared: 2021-01-22, Analyzed: 2021-01-22				
Mercury, total	0.00550	0.000010 mg/L	0.00581		95	70-130			

Total Metals, Batch B1A1848

Blank (B1A1848-BLK1)					Prepared: 2021-01-23, Analyzed: 2021-01-23				
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	< 0.0500	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							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Newell Regional Services Corporation
Schedule 4

WORK ORDER REPORTED 21A1801
2021-02-03 15:48

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Total Metals, Batch B1A1848, Continued

Blank (B1A1848-BLK1), Continued

Prepared: 2021-01-23, Analyzed: 2021-01-23

Uranium, total	< 0.000020	0.000020 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							

LCS (B1A1848-BS1)

Prepared: 2021-01-23, Analyzed: 2021-01-23

Aluminum, total	0.0224	0.0050 mg/L	0.0199		113	80-120			
Antimony, total	0.0216	0.00020 mg/L	0.0200		108	80-120			
Arsenic, total	0.0204	0.00050 mg/L	0.0200		102	80-120			
Barium, total	0.0200	0.0050 mg/L	0.0198		101	80-120			
Boron, total	< 0.0500	0.0500 mg/L	0.0200		109	80-120			
Cadmium, total	0.0202	0.000010 mg/L	0.0199		101	80-120			
Calcium, total	2.18	0.20 mg/L	2.02		108	80-120			
Chromium, total	0.0197	0.00050 mg/L	0.0198		99	80-120			
Copper, total	0.0202	0.00040 mg/L	0.0200		101	80-120			
Iron, total	1.96	0.010 mg/L	2.02		97	80-120			
Lead, total	0.0223	0.00020 mg/L	0.0199		112	80-120			
Magnesium, total	2.30	0.010 mg/L	2.02		114	80-120			
Manganese, total	0.0166	0.00020 mg/L	0.0199		83	80-120			
Potassium, total	2.28	0.10 mg/L	2.02		113	80-120			
Selenium, total	0.0206	0.00050 mg/L	0.0200		103	80-120			
Silver, total	0.0190	0.000050 mg/L	0.0200		95	80-120			
Sodium, total	2.24	0.10 mg/L	2.02		111	80-120			
Strontium, total	0.0196	0.0010 mg/L	0.0200		98	80-120			
Uranium, total	0.0203	0.000020 mg/L	0.0200		102	80-120			
Zinc, total	0.0214	0.0040 mg/L	0.0200		107	80-120			

Reference (B1A1848-SRM1)

Prepared: 2021-01-23, Analyzed: 2021-01-23

Aluminum, total	0.304	0.0050 mg/L	0.299		102	70-130			
Antimony, total	0.0542	0.00020 mg/L	0.0517		105	70-130			
Arsenic, total	0.130	0.00050 mg/L	0.119		109	70-130			
Barium, total	0.812	0.0050 mg/L	0.801		101	70-130			
Boron, total	4.05	0.0500 mg/L	4.11		99	70-130			
Cadmium, total	0.0520	0.000010 mg/L	0.0503		103	70-130			
Calcium, total	10.2	0.20 mg/L	10.7		95	70-130			
Chromium, total	0.261	0.00050 mg/L	0.250		104	70-130			
Copper, total	0.508	0.00040 mg/L	0.487		104	70-130			
Iron, total	0.516	0.010 mg/L	0.504		102	70-130			
Lead, total	0.314	0.00020 mg/L	0.278		113	70-130			
Magnesium, total	4.27	0.010 mg/L	3.59		119	70-130			
Manganese, total	0.109	0.00020 mg/L	0.111		99	70-130			
Potassium, total	7.06	0.10 mg/L	5.89		120	70-130			
Selenium, total	0.130	0.00050 mg/L	0.120		109	70-130			
Sodium, total	8.86	0.10 mg/L	8.71		102	70-130			
Strontium, total	0.406	0.0010 mg/L	0.393		103	70-130			
Uranium, total	0.0360	0.000020 mg/L	0.0344		105	70-130			
Zinc, total	2.59	0.0040 mg/L	2.50		103	70-130			

Volatile Organic Compounds (VOC), Batch B1A2119

Blank (B1A2119-BLK1)

Prepared: 2021-01-27, Analyzed: 2021-01-27

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							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Newell Regional Services Corporation
Schedule 4

WORK ORDER REPORTED 21A1801
2021-02-03 15:48

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B1A2119, Continued									
Blank (B1A2119-BLK1), Continued					Prepared: 2021-01-27, Analyzed: 2021-01-27				
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	26.3	µg/L	26.5		99	70-130			
Surrogate: 4-Bromofluorobenzene	19.5	µg/L	24.9		78	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	19.3	µg/L	25.5		76	70-130			
LCS (B1A2119-BS1)					Prepared: 2021-01-27, Analyzed: 2021-01-27				
Benzene	19.0	0.5 µg/L	20.0		95	70-130			
Bromodichloromethane	16.6	1.0 µg/L	20.0		83	70-130			
Bromoform	19.0	1.0 µg/L	20.1		94	70-130			
Carbon tetrachloride	14.0	0.5 µg/L	20.2		69	70-130			SPK
Chlorobenzene	19.2	1.0 µg/L	20.1		95	70-130			
Chloroethane	21.1	2.0 µg/L	20.0		105	60-140			
Chloroform	16.7	1.0 µg/L	20.1		83	70-130			
Dibromochloromethane	16.8	1.0 µg/L	20.2		83	70-130			
1,2-Dibromoethane	17.2	0.3 µg/L	20.0		86	70-130			
Dibromomethane	19.0	1.0 µg/L	20.0		95	70-130			
1,2-Dichlorobenzene	17.6	0.5 µg/L	20.1		88	70-130			
1,3-Dichlorobenzene	17.4	1.0 µg/L	20.1		86	70-130			
1,4-Dichlorobenzene	18.0	1.0 µg/L	20.1		89	70-130			
1,1-Dichloroethane	19.0	1.0 µg/L	20.1		94	70-130			
1,2-Dichloroethane	15.6	1.0 µg/L	20.1		78	70-130			
1,1-Dichloroethylene	16.9	1.0 µg/L	20.1		84	70-130			
cis-1,2-Dichloroethylene	18.2	1.0 µg/L	20.0		91	70-130			
trans-1,2-Dichloroethylene	18.5	1.0 µg/L	20.0		93	70-130			
Dichloromethane	19.3	3.0 µg/L	20.1		96	70-130			
1,2-Dichloropropane	18.4	1.0 µg/L	20.1		92	70-130			
1,3-Dichloropropene (cis + trans)	35.8	1.0 µg/L	40.0		89	70-130			
Ethylbenzene	16.6	1.0 µg/L	20.0		83	70-130			
Methyl tert-butyl ether	15.7	1.0 µg/L	20.0		78	70-130			
Styrene	15.4	1.0 µg/L	20.0		77	70-130			
1,1,2,2-Tetrachloroethane	181	0.5 µg/L	20.1		901	70-130			SPK

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT Newell Regional Services Corporation
Schedule 4

WORK ORDER REPORTED 21A1801
2021-02-03 15:48

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B1A2119, Continued									
LCS (B1A2119-BS1), Continued					Prepared: 2021-01-27, Analyzed: 2021-01-27				
Tetrachloroethylene	12.3	1.0 µg/L	20.1		61	70-130			SPK
Toluene	21.2	1.0 µg/L	20.0		106	70-130			
1,1,1-Trichloroethane	14.0	1.0 µg/L	20.0		70	70-130			
1,1,2-Trichloroethane	18.8	1.0 µg/L	20.1		93	70-130			
Trichloroethylene	13.3	1.0 µg/L	20.1		66	70-130			SPK
Trichlorofluoromethane	16.1	1.0 µg/L	20.0		81	60-140			
Vinyl chloride	28.2	1.0 µg/L	20.0		141	60-140			SPK
Xylenes (total)	49.2	2.0 µg/L	60.0		82	70-130			
Surrogate: Toluene-d8	23.4	µg/L	26.5		88	70-130			
Surrogate: 4-Bromofluorobenzene	21.8	µg/L	24.9		88	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	24.0	µg/L	25.5		94	70-130			
LCS (B1A2119-BS4)					Prepared: 2021-01-28, Analyzed: 2021-01-28				
cis-1,2-Dichloroethylene	18.2	1.0 µg/L	20.0		91	70-130			
Tetrachloroethylene	19.4	1.0 µg/L	20.1		97	70-130			
Trichloroethylene	18.7	1.0 µg/L	20.1		93	70-130			
Matrix Spike (B1A2119-MS3)					Source: 21A1801-01 Prepared: 2021-01-28, Analyzed: 2021-01-28				
Benzene	22.0	0.5 µg/L	20.0	< 0.5	110	70-130			
Bromodichloromethane	31.2	1.0 µg/L	20.0	8.1	116	70-130			
Bromoform	26.8	1.0 µg/L	20.1	7.9	94	70-130			
Carbon tetrachloride	23.3	0.5 µg/L	20.2	< 0.5	115	70-130			
Chlorobenzene	22.1	1.0 µg/L	20.1	< 1.0	110	70-130			
Chloroethane	26.0	2.0 µg/L	20.0	< 2.0	130	60-140			
Chloroform	47.7	1.0 µg/L	20.1	22.6	125	70-130			
Dibromochloromethane	25.7	1.0 µg/L	20.2	4.2	106	70-130			
1,2-Dibromoethane	21.8	0.3 µg/L	20.0	< 0.3	109	70-130			
Dibromomethane	23.4	1.0 µg/L	20.0	< 1.0	117	70-130			
1,2-Dichlorobenzene	25.4	0.5 µg/L	20.1	< 0.5	126	70-130			
1,3-Dichlorobenzene	21.0	1.0 µg/L	20.1	< 1.0	105	70-130			
1,4-Dichlorobenzene	22.6	1.0 µg/L	20.1	< 1.0	112	70-130			
1,1-Dichloroethane	24.2	1.0 µg/L	20.1	< 1.0	121	70-130			
1,2-Dichloroethane	23.9	1.0 µg/L	20.1	< 1.0	119	70-130			
1,1-Dichloroethylene	9.0	1.0 µg/L	20.1	< 1.0	45	70-130			SPK
cis-1,2-Dichloroethylene	24.6	1.0 µg/L	20.0	< 1.0	123	70-130			
trans-1,2-Dichloroethylene	17.5	1.0 µg/L	20.0	< 1.0	88	70-130			
Dichloromethane	24.0	3.0 µg/L	20.1	< 3.0	118	70-130			
1,2-Dichloropropane	23.7	1.0 µg/L	20.1	< 1.0	118	70-130			
Ethylbenzene	1.7	1.0 µg/L	20.0	< 1.0	8	70-130			MS1
Methyl tert-butyl ether	22.6	1.0 µg/L	20.0	< 1.0	113	70-130			
Styrene	< 1.0	1.0 µg/L	20.0	< 1.0		70-130			MS1
1,1,2,2-Tetrachloroethane	33.1	0.5 µg/L	20.1	< 0.5	165	70-130			MS1
Tetrachloroethylene	16.6	1.0 µg/L	20.1	< 1.0	83	70-130			
Toluene	< 1.0	1.0 µg/L	20.0	< 1.0	3	70-130			MS1
1,1,1-Trichloroethane	25.0	1.0 µg/L	20.0	< 1.0	125	70-130			
1,1,2-Trichloroethane	23.4	1.0 µg/L	20.1	< 1.0	117	70-130			
Trichloroethylene	21.3	1.0 µg/L	20.1	< 1.0	106	70-130			
Trichlorofluoromethane	30.8	1.0 µg/L	20.0	< 1.0	154	60-140			MS1
Vinyl chloride	< 1.0	1.0 µg/L	20.0	< 1.0	3	60-140			MS1
Xylenes (total)	< 2.0	2.0 µg/L	60.0	< 2.0	0.6	70-130			MS1
Surrogate: Toluene-d8	0.820	µg/L	26.5		3	70-130			S02
Surrogate: 4-Bromofluorobenzene	24.3	µg/L	24.9		98	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	25.7	µg/L	25.5		101	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Newell Regional Services Corporation
PROJECT Schedule 4

WORK ORDER 21A1801
REPORTED 2021-02-03 15:48

QC Qualifiers:

CST2	Potential for low bias due to matrix effect on surrogate and/or matrix spike recoveries
MS1	The matrix spike recovery was outside of control limits due to a matrix effect and/or interference.
S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
S09	The surrogate recovery for this sample is outside of established control limits .
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.



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



ICES
usly.

INVOICE TO:

SAME AS REPORT TO

COMPANY:

Newell Regional Services Corp

ADDRESS:

330 Canal St, PO Box 638

CONTACT:

Brady AB TEL 286

TEL/FAX:

403-793-3177

DELIVERY METHOD:

EMAIL ☒ MAIL ☐ OTHER* ☐

DATA FORMAT:

EXCEL ☐ WATERTRAX ☒ Esdat ☐

EMAIL 1:

fmelrose@nrsc.ca

EMAIL 2:

fmelrose@nrsc.ca

EMAIL 3:

4003

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

SAMPLED BY: Brennan Leve

MATRIX:

CONTAINER QTY

SAMPLING:

COMMENTS:

CLIENT SAMPLE ID:

Header #1

DRINKING WATER
OTHER WATER
SOIL
OTHER

DATE
TIME

CHLORINATED
FILTERED
PRESERVED
(e.g. flow/volume media ID/notes)

SOIL PHC F1-F4 BTEX ☐
WATER PHC F1-F2 BTEX ☐
VOC ☐ THM ☐ PAH ☐ HAA ☐
DISSOLVED METALS Hg ☐ Cr6 ☐
TOTAL METALS Hg ☐ Cr6 ☐
SOIL METALS SatP B ☐ Cr6 ☐ Hg ☐
SOIL SALINITY BASIC ☐ DETAILED ☐
CLASS 2 LANDFILL
ROUTINE WATER Fe+Mn ☐
COD ☐ BOD ☐ TOC ☐ DOC ☐
TSS ☐ TDS ☐ VSS ☐
AMMONIA ☐ TKN ☐ TP ☐
TO&G ☐ PHENOLICS ☐
TCOL ☐ E. Coli ☐ FCOL ☐ HPC ☐
TOXICITY TROUT ☐ DAPHNIA ☐
PSA HYDROMETER ☐ 75 um SIEVE ☐
See attached Schedule 4

HOLD

POSSIBLE SAMPLE HAZARD CODE(S)

CHAIN OF CUSTODY RECORD

COC# 10306

PAGE OF

CARO AB COC, Rev 2020-0

RELINQUISHED BY:

DATE:

RECEIVED BY:

DATE:

TURNAROUND TIME REQUESTED:

TIME:

REGULATORY APPLICATION:

Show on Report

Routine: (5-7 Days) ☒
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* ☐

Canadian Drinking Water Quality ☒
AB T1 SOIL/GW: NA ☐ AG ☐ RES/PL ☐ CL ☐ IL ☐
AB SWQG: F/MAL ☐ IW ☐ LW ☐
Other: ☐

*Contact Lab To Confirm, Surcharge May Apply

CCME:

PROJECT NUMBER / INFO:

WTP Winter Analysis 2021

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

ANALYSES REQUESTED:

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐

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): 10.1 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	Substance	Specific Parameter
Physical Parameters (Primary and Secondary)	Colour; pH; Total Dissolved Solids	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.
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;		