



CERTIFICATE OF ANALYSIS

REPORTED TO	High River, Town of 309B Macleod Trail S.W. High River, AB T1V 1Z5	WORK ORDER	21A2592
ATTENTION	Jason Craigie	RECEIVED / TEMP REPORTED	2021-01-28 08:55 / 10°C
PO NUMBER		REPORTED	2021-02-11 12:55
PROJECT	Bi-Annual Schedule 4	COC NUMBER	10328
PROJECT INFO			

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.

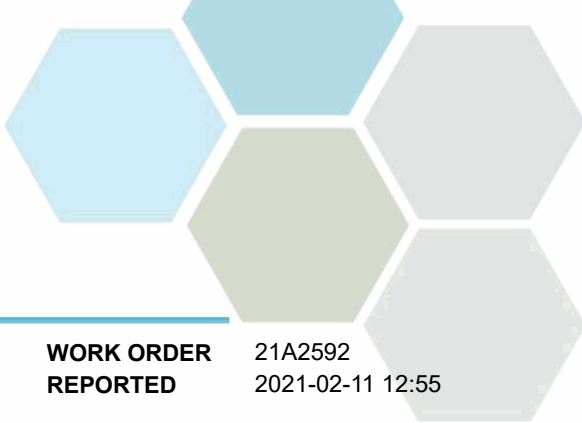
If you have any questions or concerns, please contact me at acrump@caro.ca

Authorized By:

Alana Crump
Team Lead, Client Service

1-888-311-8846 | www.caro.ca

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



TEST RESULTS

REPORTED TO PROJECT High River, Town of
Bi-Annual Schedule 4

WORK ORDER REPORTED 21A2592
2021-02-11 12:55

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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Water Treatment Plant (21A2592-01) | Matrix: Water | Sampled: 2021-01-27 07:30

Acid Herbicides

2,4-D	< 0.10	MAC = 100	0.10 µg/L	2021-02-08	
MCPA	< 0.02	MAC = 100	0.02 µg/L	2021-02-08	
2,4,5-T	< 0.10	N/A	0.10 µg/L	2021-02-08	
Dicamba	< 0.10	MAC = 120	0.10 µg/L	2021-02-08	
Picloram	< 0.10	MAC = 190	0.10 µg/L	2021-02-08	
Dinoseb	< 0.10	N/A	0.10 µg/L	2021-02-08	

Anions

Bromate	< 0.010	MAC = 0.01	0.010 mg/L	2021-02-04	
Chlorate	< 0.50	MAC = 1	0.50 mg/L	2021-01-28	
Chloride	2.96	AO ≤ 250	0.50 mg/L	2021-01-28	
Chlorite	< 0.50	MAC = 1	0.50 mg/L	2021-01-28	
Fluoride	0.14	MAC = 1.5	0.10 mg/L	2021-01-28	
Nitrate (as N)	0.196	MAC = 10	0.050 mg/L	2021-01-28	
Nitrite (as N)	< 0.050	MAC = 1	0.050 mg/L	2021-01-28	
Sulfate	53.8	AO ≤ 500	1.0 mg/L	2021-01-28	

Calculated Parameters

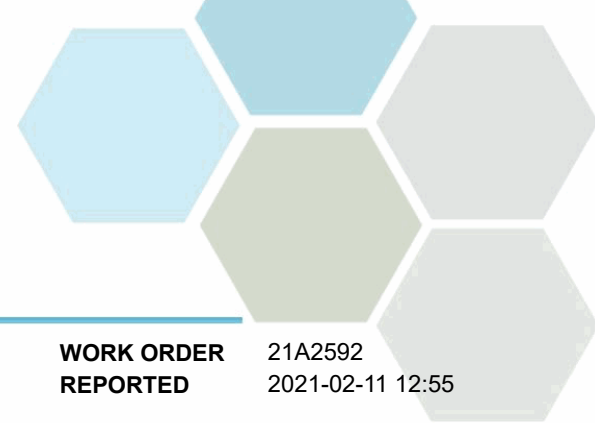
Chloramines	0.0700	MAC = 3	0.0400 mg/L	N/A	
Total Trihalomethanes	< 0.00400	MAC = 0.1	0.00400 mg/L	N/A	
Hardness, Total (as CaCO3)	251	None Required	0.541 mg/L	N/A	
Solids, Total Dissolved	300	AO ≤ 500	3.35 mg/L	N/A	

Carbamates

Aldicarb	< 0.0010	N/A	0.0010 mg/L	2021-02-02	
Bendiocarb	< 0.0010	N/A	0.0010 mg/L	2021-02-02	
Carbaryl	< 0.0010	MAC = 0.09	0.0010 mg/L	2021-02-02	
Carbofuran	< 0.0010	MAC = 0.09	0.0010 mg/L	2021-02-02	

Chlorinated Phenols

2-Chlorophenol	< 0.10	N/A	0.10 µg/L	2021-02-03	
3 & 4-Chlorophenol	< 0.10	N/A	0.10 µg/L	2021-02-03	
4-Chloro-3-Methylphenol	< 0.50	N/A	0.50 µg/L	2021-02-03	
2,3-Dichlorophenol	< 0.20	N/A	0.20 µg/L	2021-02-03	
2,4 & 2,5-Dichlorophenol	< 0.20	AO ≤ 0.3	0.20 µg/L	2021-02-03	
2,6-Dichlorophenol	< 0.20	N/A	0.20 µg/L	2021-02-03	
3,4-Dichlorophenol	< 0.20	N/A	0.20 µg/L	2021-02-03	
3,5-Dichlorophenol	< 0.20	N/A	0.20 µg/L	2021-02-03	
2,3,4-Trichlorophenol	< 0.50	N/A	0.50 µg/L	2021-02-03	
2,3,5-Trichlorophenol	< 0.50	N/A	0.50 µg/L	2021-02-03	
2,3,6-Trichlorophenol	< 0.50	N/A	0.50 µg/L	2021-02-03	
2,4,5-Trichlorophenol	< 0.50	N/A	0.50 µg/L	2021-02-03	
2,4,6-Trichlorophenol	< 0.50	AO ≤ 2	0.50 µg/L	2021-02-03	
3,4,5-Trichlorophenol	< 0.50	N/A	0.50 µg/L	2021-02-03	

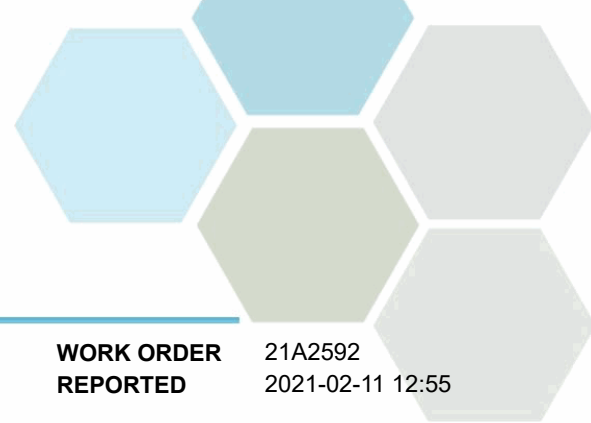


TEST RESULTS

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Bi-Annual Schedule 4

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Water Treatment Plant (21A2592-01) Matrix: Water Sampled: 2021-01-27 07:30, Continued					
Chlorinated Phenols, Continued					
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	< 0.50	N/A	0.50 µg/L	2021-02-03	
2,3,4,6-Tetrachlorophenol	< 0.50	AO ≤ 1	0.50 µg/L	2021-02-03	
Pentachlorophenol	< 0.50	AO ≤ 30	0.50 µg/L	2021-02-03	
Surrogate: 2,4-Dibromophenol	72		60-130 %	2021-02-03	
Surrogate: 2,4,6-Tribromophenol	79		60-130 %	2021-02-03	
General Parameters					
Alkalinity, Total (as CaCO ₃)	238	N/A	2.0 mg/L	2021-02-01	
Bicarbonate (HCO ₃)	290	N/A	2.0 mg/L	2021-02-01	
Carbonate (CO ₃)	< 2.0	N/A	2.0 mg/L	2021-02-01	
Hydroxide (OH)	< 2.0	N/A	2.0 mg/L	2021-02-01	
Ammonia, Total (as N)	< 0.050	None Required	0.050 mg/L	2021-01-29	
Carbon, Total Organic	< 0.50	N/A	0.50 mg/L	2021-02-01	
Chlorine, Total	0.51	None Required	0.02 mg/L	2021-01-29	HT2
Chlorine, Free	0.44	N/A	0.02 mg/L	2021-01-29	HT2
Colour, True	< 5.0	AO ≤ 15	5.0 CU	2021-01-28	
Conductivity (EC)	525	N/A	2.0 µS/cm	2021-01-29	
Cyanide, Total	< 0.0020	MAC = 0.2	0.0020 mg/L	2021-02-02	
Nitritotriacetic Acid	< 0.20	MAC = 0.4	0.20 mg/L	2021-02-02	
pH	7.17	7.0-10.5	0.10 pH units	2021-02-01	HT2
Sulfide, Total	< 0.020	AO ≤ 0.05	0.020 mg/L	2021-02-01	
Turbidity	< 0.10	OG < 1	0.10 NTU	2021-01-28	
Microbiological Parameters					
Microcystin, total	< 0.14	MAC = 1.5	0.14 µg/L	2021-02-03	
Miscellaneous Herbicides					
Diquat	< 0.0100	MAC = 0.07	0.0100 mg/L	2021-02-02	
Paraquat	< 0.0050	MAC = 0.007	0.0050 mg/L	2021-02-02	
Glyphosate	< 0.050	MAC = 0.28	0.050 mg/L	2021-02-07	
Miscellaneous Organics					
N-Nitrosodimethylamine	< 0.0016	MAC = 0.04	0.0016 µg/L	2021-02-05	
Perfluorinated Compounds					
Perfluorooctanesulfonate (PFOS)	< 0.020	0.6	0.020 µg/L	2021-02-08	
Perfluorooctanoic acid (PFOA)	< 0.020	0.2	0.020 µg/L	2021-02-08	
Perfluoropentanoic acid (PFPeA)	< 0.020	N/A	0.020 µg/L	2021-02-08	
Perfluorobutanesulfonate (PFBS)	< 15.0	N/A	10.0 µg/L	2021-02-08	RS1
Perfluorohexanoic acid (PFHxA)	< 0.010	N/A	0.010 µg/L	2021-02-08	
Perfluoroheptanoic acid (PFHpA)	< 0.010	N/A	0.010 µg/L	2021-02-08	
Perfluorohexanesulfonate (PFHxS)	< 0.020	N/A	0.020 µg/L	2021-02-08	
Perfluoroheptane sulfonate (PFHpS)	< 0.020	N/A	0.020 µg/L	2021-02-08	
Perfluorononanoic acid (PFNA)	< 0.020	N/A	0.020 µg/L	2021-02-08	
Perfluorodecanoic acid (PFDA)	< 0.020	N/A	0.020 µg/L	2021-02-08	



TEST RESULTS

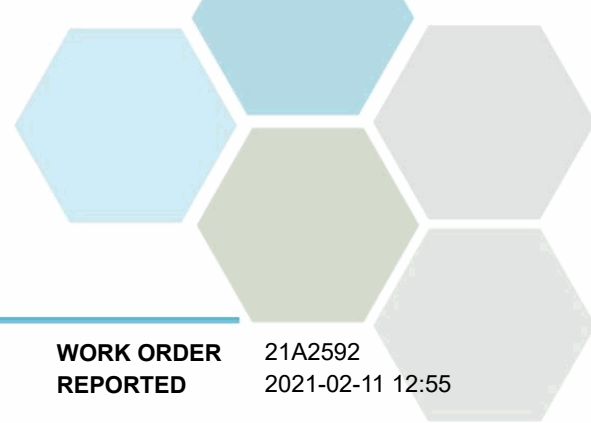
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<i>Perfluorinated Compounds, Continued</i>					
Perfluoroundecanoic acid (PFUnA)	< 0.020	N/A	0.020 µg/L	2021-02-08	
Perfluorodecanesulfonate (PFDS)	< 0.040	N/A	0.040 µg/L	2021-02-08	
Perfluorododecanoic acid (PFDoA)	< 0.030	N/A	0.030 µg/L	2021-02-08	
Perfluorotetradecanoic acid (PFTeA)	< 0.020	N/A	0.020 µg/L	2021-02-08	
Perfluorooctanesulfonamide (PFOSA)	< 0.020	N/A	0.020 µg/L	2021-02-08	
Perfluorotridecanoic acid (PFTrA)	< 0.030	N/A	0.020 µg/L	2021-02-08	RS1
Perfluorobutanoic acid (PFBA)	< 10.0	N/A	10.0 µg/L	2021-02-08	

Pesticides, Herbicides, and Fungicides

Alachlor	< 0.100	N/A	0.100 µg/L	2021-02-03	
Aldrin	< 0.006	N/A	0.006 µg/L	2021-02-03	
Atrazine and metabolites	< 0.100	MAC = 5	0.100 µg/L	2021-02-03	
Azinphos-methyl	< 0.200	MAC = 20	0.200 µg/L	2021-02-03	
alpha-BHC	< 0.010	N/A	0.010 µg/L	2021-02-03	
beta-BHC	< 0.050	N/A	0.050 µg/L	2021-02-03	
delta-BHC	< 0.050	N/A	0.050 µg/L	2021-02-03	
gamma-BHC (Lindane)	< 0.050	N/A	0.050 µg/L	2021-02-03	
Bromacil	< 0.100	N/A	0.100 µg/L	2021-02-03	
Bromoxynil	< 0.200	MAC = 5	0.200 µg/L	2021-02-03	
Butachlor	< 0.020	N/A	0.020 µg/L	2021-02-03	
Captan	< 0.100	N/A	0.100 µg/L	2021-02-03	
Chlordane (cis + trans)	< 0.050	N/A	0.050 µg/L	2021-02-03	
Chlorothalonil	< 0.050	N/A	0.050 µg/L	2021-02-03	
Chlorpyrifos	< 0.010	MAC = 90	0.010 µg/L	2021-02-03	
Cyanazine	< 0.100	N/A	0.100 µg/L	2021-02-03	
DDT, Total	< 0.010	N/A	0.010 µg/L	2021-02-03	
Deltamethrin	< 0.100	N/A	0.100 µg/L	2021-02-03	
Diazinon	< 0.020	MAC = 20	0.020 µg/L	2021-02-03	
Dichlorvos	< 0.100	N/A	0.100 µg/L	2021-02-03	
Diclofop-methyl	< 0.100	MAC = 9	0.100 µg/L	2021-02-03	
Dieldrin	< 0.010	N/A	0.010 µg/L	2021-02-03	
Dimethoate	< 0.200	MAC = 20	0.200 µg/L	2021-02-03	
Disulfoton	< 0.100	N/A	0.100 µg/L	2021-02-03	
Diuron	< 0.200	MAC = 150	0.200 µg/L	2021-02-03	
Endosulfan I + II	< 0.010	N/A	0.010 µg/L	2021-02-03	
Endosulfan sulfate	< 0.050	N/A	0.050 µg/L	2021-02-03	
Endrin	< 0.020	N/A	0.020 µg/L	2021-02-03	
Endrin aldehyde	< 0.020	N/A	0.020 µg/L	2021-02-03	
Endrin ketone	< 0.020	N/A	0.020 µg/L	2021-02-03	
Fenchlorphos (Ronnel)	< 0.100	N/A	0.100 µg/L	2021-02-03	
Heptachlor	< 0.010	N/A	0.010 µg/L	2021-02-03	
Heptachlor epoxide	< 0.010	N/A	0.010 µg/L	2021-02-03	
Linuron	< 0.050	N/A	0.050 µg/L	2021-02-03	



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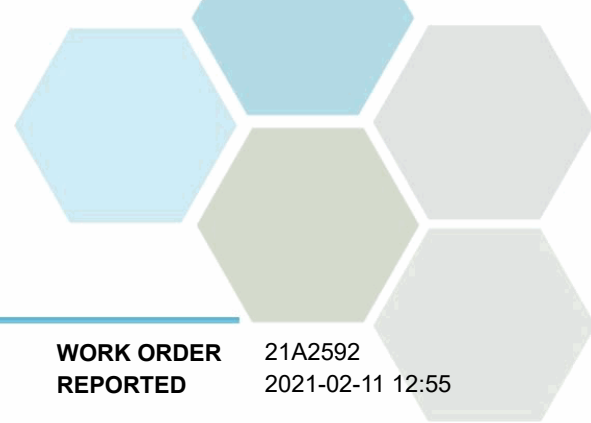
Water Treatment Plant (21A2592-01) | Matrix: Water | Sampled: 2021-01-27 07:30, Continued

Pesticides, Herbicides, and Fungicides, Continued

Malathion	< 0.100	MAC = 190	0.100 µg/L	2021-02-03	
Methoxychlor	< 0.050	N/A	0.050 µg/L	2021-02-03	
Methyl parathion	< 0.100	N/A	0.100 µg/L	2021-02-03	
Metolachlor	< 0.100	MAC = 50	0.100 µg/L	2021-02-03	
Metribuzin	< 0.200	MAC = 80	0.200 µg/L	2021-02-03	
Parathion	< 0.100	N/A	0.100 µg/L	2021-02-03	
Pentachloronitrobenzene	< 0.100	N/A	0.100 µg/L	2021-02-03	
Permethrin	< 0.010	N/A	0.010 µg/L	2021-02-03	
Phorate	< 0.100	MAC = 2	0.100 µg/L	2021-02-03	
Prometon	< 0.300	N/A	0.300 µg/L	2021-02-03	
Prometryne	< 0.100	N/A	0.100 µg/L	2021-02-03	
Simazine	< 0.200	MAC = 10	0.200 µg/L	2021-02-03	
Sulfotep	< 0.100	N/A	0.100 µg/L	2021-02-03	
Tebuthiuron	< 0.200	N/A	0.200 µg/L	2021-02-03	
Temephos (Abate)	< 0.500	N/A	0.500 µg/L	2021-02-03	
Terbufos	< 0.100	MAC = 1	0.100 µg/L	2021-02-03	
Triallate	< 0.100	N/A	0.100 µg/L	2021-02-03	
Trifluralin	< 0.200	MAC = 45	0.200 µg/L	2021-02-03	
Surrogate: Tributyl Phosphate	77		50-140 %	2021-02-03	
Surrogate: 4-chloro-3-nitrobenzotrifluoride	73		50-140 %	2021-02-03	

Polycyclic Aromatic Hydrocarbons (PAH)

Acenaphthene	< 0.050	N/A	0.050 µg/L	2021-02-02	
Acenaphthylene	< 0.200	N/A	0.200 µg/L	2021-02-02	
Acridine	< 0.050	N/A	0.050 µg/L	2021-02-02	
Anthracene	< 0.010	N/A	0.010 µg/L	2021-02-02	
Benz(a)anthracene	< 0.010	N/A	0.010 µg/L	2021-02-02	
Benzo(a)pyrene	< 0.010	MAC = 0.04	0.010 µg/L	2021-02-02	
Benzo(b+j)fluoranthene	< 0.050	N/A	0.050 µg/L	2021-02-02	
Benzo(g,h,i)perylene	< 0.050	N/A	0.050 µg/L	2021-02-02	
Benzo(k)fluoranthene	< 0.050	N/A	0.050 µg/L	2021-02-02	
2-Chloronaphthalene	< 0.100	N/A	0.100 µg/L	2021-02-02	
Chrysene	< 0.050	N/A	0.050 µg/L	2021-02-02	
Dibenz(a,h)anthracene	< 0.010	N/A	0.010 µg/L	2021-02-02	
Fluoranthene	< 0.030	N/A	0.030 µg/L	2021-02-02	
Fluorene	< 0.050	N/A	0.050 µg/L	2021-02-02	
Indeno(1,2,3-cd)pyrene	< 0.050	N/A	0.050 µg/L	2021-02-02	
1-Methylnaphthalene	< 0.100	N/A	0.100 µg/L	2021-02-02	
2-Methylnaphthalene	< 0.100	N/A	0.100 µg/L	2021-02-02	
Naphthalene	< 0.200	N/A	0.200 µg/L	2021-02-02	
Phenanthrene	< 0.100	N/A	0.100 µg/L	2021-02-02	
Pyrene	< 0.020	N/A	0.020 µg/L	2021-02-02	
Quinoline	< 0.050	N/A	0.050 µg/L	2021-02-02	



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Polycyclic Aromatic Hydrocarbons (PAH), Continued

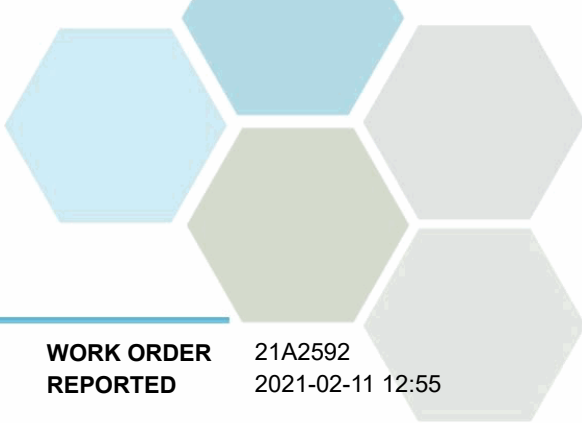
Surrogate: Acridine-d9	96		50-140	%	2021-02-02	
Surrogate: Naphthalene-d8	91		50-140	%	2021-02-02	
Surrogate: Perylene-d12	82		50-140	%	2021-02-02	

Total Metals

Aluminum, total	0.0229	OG < 0.1	0.0050	mg/L	2021-02-01	
Antimony, total	< 0.00020	MAC = 0.006	0.00020	mg/L	2021-02-01	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050	mg/L	2021-02-01	
Barium, total	0.121	MAC = 2	0.0050	mg/L	2021-02-01	
Boron, total	< 0.0500	MAC = 5	0.0500	mg/L	2021-02-01	
Cadmium, total	< 0.000010	MAC = 0.005	0.000010	mg/L	2021-02-01	
Calcium, total	69.6	None Required	0.20	mg/L	2021-02-01	
Chromium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2021-02-01	
Copper, total	0.00345	MAC = 2	0.00040	mg/L	2021-02-01	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2021-02-01	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2021-02-01	
Magnesium, total	18.8	None Required	0.010	mg/L	2021-02-01	
Manganese, total	< 0.00020	MAC = 0.12	0.00020	mg/L	2021-02-01	
Mercury, total	< 0.000010	MAC = 0.001	0.000010	mg/L	2021-02-03	
Potassium, total	1.18	N/A	0.10	mg/L	2021-02-01	
Selenium, total	0.00072	MAC = 0.05	0.00050	mg/L	2021-02-01	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2021-02-01	
Sodium, total	7.89	AO ≤ 200	0.10	mg/L	2021-02-01	
Strontium, total	0.389	7	0.0010	mg/L	2021-02-01	
Uranium, total	0.000795	MAC = 0.02	0.000020	mg/L	2021-02-01	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2021-02-01	

Volatile Organic Compounds (VOC)

Benzene	< 0.5	MAC = 5	0.5	µg/L	2021-02-01	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2021-02-01	
Bromoform	< 1.0	N/A	1.0	µg/L	2021-02-01	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2021-02-01	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2021-02-01	
Chloroethane	< 2.0	N/A	2.0	µg/L	2021-02-01	
Chloroform	2.4	N/A	1.0	µg/L	2021-02-01	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2021-02-01	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2021-02-01	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2021-02-01	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2021-02-01	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2021-02-01	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2021-02-01	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2021-02-01	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2021-02-01	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2021-02-01	



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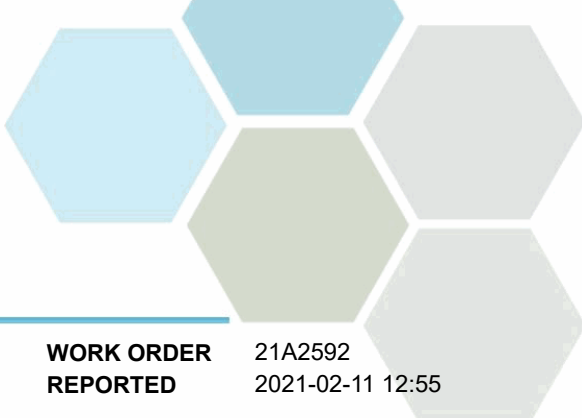
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<i>Volatile Organic Compounds (VOC), Continued</i>					
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2021-02-01	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2021-02-01	
Dichloromethane	< 3.0	MAC = 50	3.0 µg/L	2021-02-01	
1,2-Dichloropropane	< 1.0	N/A	1.0 µg/L	2021-02-01	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0 µg/L	2021-02-01	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0 µg/L	2021-02-01	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0 µg/L	2021-02-01	
Styrene	< 1.0	N/A	1.0 µg/L	2021-02-01	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5 µg/L	2021-02-01	
Tetrachloroethylene	< 1.0	MAC = 10	1.0 µg/L	2021-02-01	
Toluene	< 1.0	AO ≤ 24	1.0 µg/L	2021-02-01	
1,1,1-Trichloroethane	< 1.0	N/A	1.0 µg/L	2021-02-01	
1,1,2-Trichloroethane	< 1.0	N/A	1.0 µg/L	2021-02-01	
Trichloroethylene	< 1.0	MAC = 5	1.0 µg/L	2021-02-01	
Trichlorofluoromethane	< 1.0	N/A	1.0 µg/L	2021-02-01	
Vinyl chloride	< 1.0	MAC = 2	1.0 µg/L	2021-02-01	
Xylenes (total)	< 2.0	AO ≤ 20	2.0 µg/L	2021-02-01	
Surrogate: Toluene-d8	93		70-130 %	2021-02-01	
Surrogate: 4-Bromofluorobenzene	98		70-130 %	2021-02-01	
Surrogate: 1,4-Dichlorobenzene-d4	99		70-130 %	2021-02-01	

Sample Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

RS1 The Reporting Limits for this sample have been raised due to high analyte concentration and/or matrix interference.



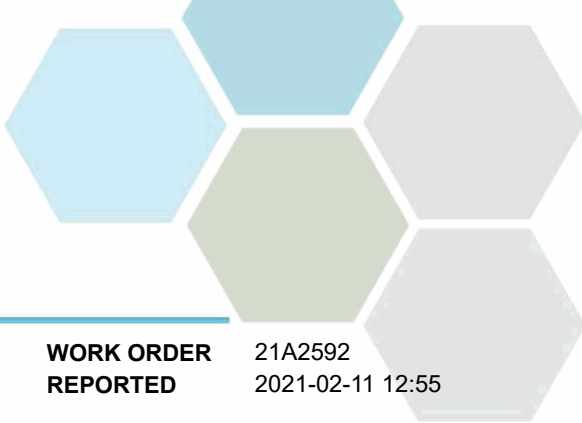
APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO PROJECT High River, Town of
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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
Carbamates in Water	EPA 531.2*	Direct Aqueous Injection HPLC with Post-Column Derivatization and Fluorescence Detection	✓	Richmond
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
Diquat/Paraquat in Water	EPA 549.2*	Liquid-Solid Extraction and HPLC-DAD	✓	Richmond
Glyphosate in Water	EPA 547*	Direct Aqueous Injection HPLC with Post-Column Derivatization and Fluorescence Detection	✓	Richmond
Hardness in Water	SM 2340 B (2017)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	✓	N/A
Mercury, total in Water	EPA 245.7*	BrCl2 Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)	✓	Richmond
Nitilotriacetic Acid in Water	EPA 430.1	Manual Colorimetry (Zinc-Zincon)		Kelowna
N-Nitrosodimethylamine in Water	In-House	N/A	✓	Sublet
Perfluorinated Compounds in Water	ASTM D7979-17	LC-MS/MS	✓	Richmond
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



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Glossary of Terms:

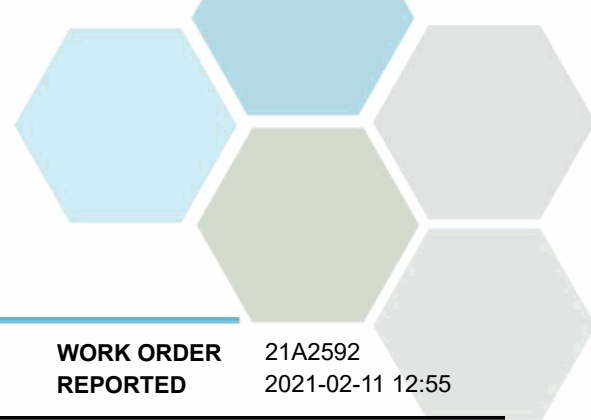
RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
CU	Colour Units (referenced against a platinum cobalt standard)
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams 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.

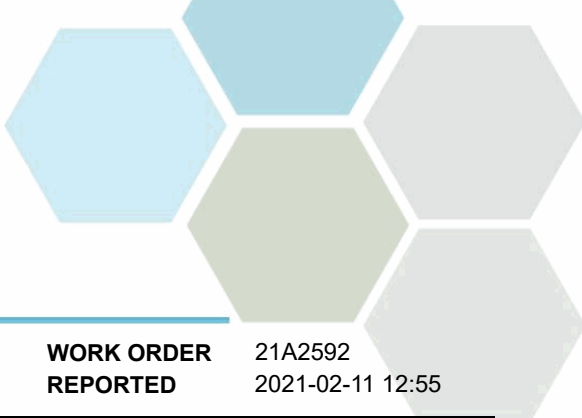
Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Acid Herbicides, Batch B1B0711

Blank (B1B0711-BLK1)			Prepared: 2021-02-08, Analyzed: 2021-02-08						
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 (B1B0711-BS1)			Prepared: 2021-02-08, Analyzed: 2021-02-08						
2,4-D	4.87	0.10 µg/L	5.05		96	70-130			
MCPA	4.29	0.02 µg/L	5.05		85	70-130			
2,4,5-T	6.05	0.10 µg/L	4.98		122	70-130			
Dicamba	4.55	0.10 µg/L	5.05		90	70-130			
Picloram	3.90	0.10 µg/L	5.00		78	70-130			
Dinoseb	5.18	0.10 µg/L	4.98		104	70-130			
LCS Dup (B1B0711-BS1)			Prepared: 2021-02-08, Analyzed: 2021-02-08						
2,4-D	4.95	0.10 µg/L	5.05		98	70-130	2	30	
MCPA	4.54	0.02 µg/L	5.05		90	70-130	6	30	
2,4,5-T	5.50	0.10 µg/L	4.98		111	70-130	9	30	
Dicamba	5.21	0.10 µg/L	5.05		103	70-130	14	30	
Picloram	5.51	0.10 µg/L	5.00		110	70-130	34	30	RPD
Dinoseb	4.96	0.10 µg/L	4.98		100	70-130	4	30	

Anions, Batch B1A2326

Blank (B1A2326-BLK1)			Prepared: 2021-01-28, Analyzed: 2021-01-28						
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 (B1A2326-BS1)			Prepared: 2021-01-28, Analyzed: 2021-01-28						
Chlorate	10.3	0.50 mg/L	10.0		103	89-112			



APPENDIX 2: QUALITY CONTROL RESULTS

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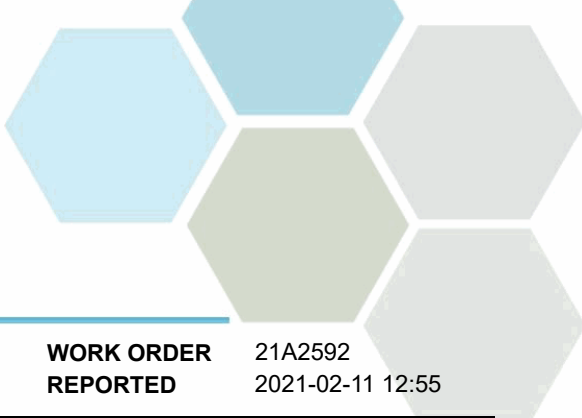
Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B1A2326, Continued									
LCS (B1A2326-BS1), Continued					Prepared: 2021-01-28, Analyzed: 2021-01-28				
Chloride	10.5	0.50 mg/L	10.0		105	90-110			
Chlorite	10.0	0.50 mg/L	10.0		100	80-120			
Fluoride	1.05	0.10 mg/L	1.00		105	85-115			
Nitrate (as N)	1.04	0.050 mg/L	1.00		104	92-108			
Nitrite (as N)	0.496	0.050 mg/L	0.500		99	85-115			
Sulfate	52.5	1.0 mg/L	50.0		105	90-110			

Carbamates, Batch B1B0115

Blank (B1B0115-BLK1)					Prepared: 2021-02-02, Analyzed: 2021-02-02				
Aldicarb	< 0.0010	0.0010 mg/L							
Bendiocarb	< 0.0010	0.0010 mg/L							
Carbaryl	< 0.0010	0.0010 mg/L							
Carbofuran	< 0.0010	0.0010 mg/L							
LCS (B1B0115-BS1)					Prepared: 2021-02-02, Analyzed: 2021-02-02				
Aldicarb	0.0240	0.0010 mg/L	0.0200		120	80-120			
Bendiocarb	0.0167	0.0010 mg/L	0.0200		83	80-120			
Carbaryl	0.0162	0.0010 mg/L	0.0200		81	80-120			
Carbofuran	0.0181	0.0010 mg/L	0.0200		90	80-120			
LCS Dup (B1B0115-BSD1)					Prepared: 2021-02-02, Analyzed: 2021-02-02				
Aldicarb	0.0238	0.0010 mg/L	0.0200		119	80-120	1	20	
Bendiocarb	0.0157	0.0010 mg/L	0.0200		78	80-120	6	20	SPK1
Carbaryl	0.0154	0.0010 mg/L	0.0200		77	80-120	5	20	SPK1
Carbofuran	0.0172	0.0010 mg/L	0.0200		86	80-120	5	20	

Chlorinated Phenols, Batch B1B0111

Blank (B1B0111-BLK1)					Prepared: 2021-02-02, Analyzed: 2021-02-03				
2-Chlorophenol	< 0.10	0.10 µg/L							
3 & 4-Chlorophenol	< 0.10	0.10 µg/L							
4-Chloro-3-Methylphenol	< 0.20	0.20 µg/L							
2,3-Dichlorophenol	< 0.20	0.20 µg/L							
2,4 & 2,5-Dichlorophenol	< 0.20	0.20 µg/L							
2,6-Dichlorophenol	< 0.20	0.20 µg/L							
3,4-Dichlorophenol	< 0.20	0.20 µg/L							
3,5-Dichlorophenol	< 0.20	0.20 µg/L							
2,3,4-Trichlorophenol	< 0.50	0.50 µg/L							
2,3,5-Trichlorophenol	< 0.50	0.50 µg/L							
2,3,6-Trichlorophenol	< 0.50	0.50 µg/L							
2,4,5-Trichlorophenol	< 0.50	0.50 µg/L							
2,4,6-Trichlorophenol	< 0.50	0.50 µg/L							
3,4,5-Trichlorophenol	< 0.50	0.50 µg/L							
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	< 0.50	0.50 µg/L							
2,3,4,6-Tetrachlorophenol	< 0.50	0.50 µg/L							
Pentachlorophenol	< 0.50	0.50 µg/L							
Surrogate: 2,4-Dibromophenol	1.10	µg/L	2.02		54	60-130			S02
Surrogate: 2,4,6-Tribromophenol	1.29	µg/L	2.00		64	60-130			
LCS (B1B0111-BS1)					Prepared: 2021-02-02, Analyzed: 2021-02-02				
2-Chlorophenol	7.29	0.10 µg/L	10.0		73	60-108			
3 & 4-Chlorophenol	17.4	0.10 µg/L	20.1		86	60-120			
4-Chloro-3-Methylphenol	9.08	0.20 µg/L	10.0		90	60-140			
2,3-Dichlorophenol	8.59	0.20 µg/L	10.0		86	60-111			
2,4 & 2,5-Dichlorophenol	17.9	0.20 µg/L	20.2		89	60-116			



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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Chlorinated Phenols, Batch B1B0111, Continued

LCS (B1B0111-BS1), Continued				Prepared: 2021-02-02, Analyzed: 2021-02-02					
2,6-Dichlorophenol	8.51	0.20 µg/L	10.0		85	60-112			
3,4-Dichlorophenol	8.48	0.20 µg/L	10.0		85	60-120			
3,5-Dichlorophenol	8.42	0.20 µg/L	10.0		84	60-121			
2,3,4-Trichlorophenol	8.76	0.50 µg/L	10.0		88	60-122			
2,3,5-Trichlorophenol	9.36	0.50 µg/L	10.0		94	60-126			
2,3,6-Trichlorophenol	7.29	0.50 µg/L	10.0		73	60-130			
2,4,5-Trichlorophenol	8.91	0.50 µg/L	10.0		89	60-118			
2,4,6-Trichlorophenol	8.98	0.50 µg/L	10.0		89	60-120			
3,4,5-Trichlorophenol	9.61	0.50 µg/L	10.0		96	60-129			
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	18.1	0.50 µg/L	20.0		90	60-127			
2,3,4,6-Tetrachlorophenol	9.70	0.50 µg/L	10.0		96	60-127			
Pentachlorophenol	9.98	0.50 µg/L	10.0		100	60-130			
Surrogate: 2,4-Dibromophenol	1.89	µg/L	2.02		94	60-130			
Surrogate: 2,4,6-Tribromophenol	2.20	µg/L	2.00		110	60-130			

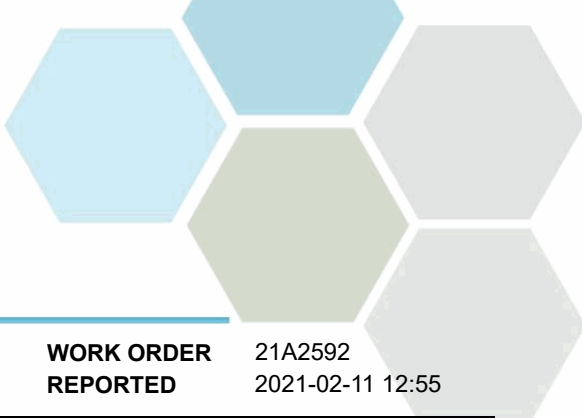
LCS Dup (B1B0111-BSD1)				Prepared: 2021-02-02, Analyzed: 2021-02-03					
2-Chlorophenol	7.47	0.10 µg/L	10.0		75	60-108	2	32	
3 & 4-Chlorophenol	17.3	0.10 µg/L	20.1		86	60-120	< 1	21	
4-Chloro-3-Methylphenol	9.26	0.20 µg/L	10.0		92	60-140	2	30	
2,3-Dichlorophenol	8.23	0.20 µg/L	10.0		82	60-111	4	27	
2,4 & 2,5-Dichlorophenol	18.2	0.20 µg/L	20.2		90	60-116	2	22	
2,6-Dichlorophenol	8.76	0.20 µg/L	10.0		88	60-112	3	27	
3,4-Dichlorophenol	8.39	0.20 µg/L	10.0		84	60-120	1	22	
3,5-Dichlorophenol	8.91	0.20 µg/L	10.0		89	60-121	6	23	
2,3,4-Trichlorophenol	8.91	0.50 µg/L	10.0		89	60-122	2	26	
2,3,5-Trichlorophenol	9.61	0.50 µg/L	10.0		96	60-126	3	24	
2,3,6-Trichlorophenol	7.50	0.50 µg/L	10.0		75	60-130	3	26	
2,4,5-Trichlorophenol	9.25	0.50 µg/L	10.0		92	60-118	4	22	
2,4,6-Trichlorophenol	9.17	0.50 µg/L	10.0		91	60-120	2	26	
3,4,5-Trichlorophenol	10.2	0.50 µg/L	10.0		102	60-129	6	19	
2,3,4,5 & 2,3,5,6-Tetrachlorophenol	19.5	0.50 µg/L	20.0		98	60-127	8	26	
2,3,4,6-Tetrachlorophenol	9.35	0.50 µg/L	10.0		93	60-127	4	23	
Pentachlorophenol	10.4	0.50 µg/L	10.0		104	60-130	4	17	
Surrogate: 2,4-Dibromophenol	1.83	µg/L	2.02		91	60-130			
Surrogate: 2,4,6-Tribromophenol	2.26	µg/L	2.00		113	60-130			

General Parameters, Batch B1A2198

Blank (B1A2198-BLK1)				Prepared: 2021-01-28, Analyzed: 2021-01-28					
Colour, True	< 5.0	5.0 CU							
LCS (B1A2198-BS1)				Prepared: 2021-01-28, Analyzed: 2021-01-28					
Colour, True	22	5.0 CU	20.0		108	90-109			

General Parameters, Batch B1A2345

Blank (B1A2345-BLK1)				Prepared: 2021-01-28, Analyzed: 2021-01-28					
Turbidity	< 0.10	0.10 NTU							
LCS (B1A2345-BS1)				Prepared: 2021-01-28, Analyzed: 2021-01-28					
Turbidity	40.8	0.10 NTU	40.0		102	90-110			
Duplicate (B1A2345-DUP1)				Source: 21A2592-01 Prepared: 2021-01-28, Analyzed: 2021-01-28					
Turbidity	< 0.10	0.10 NTU	< 0.10					10	

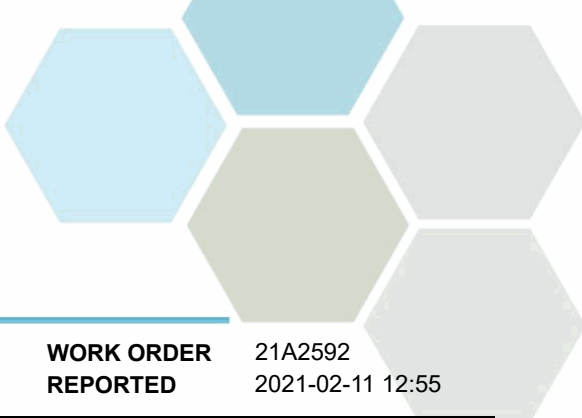


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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B1A2356									
Blank (B1A2356-BLK1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Carbon, Total Organic	< 0.50	0.50 mg/L							
Blank (B1A2356-BLK2)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Carbon, Total Organic	< 0.50	0.50 mg/L							
Blank (B1A2356-BLK3)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Carbon, Total Organic	< 0.50	0.50 mg/L							
LCS (B1A2356-BS1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Carbon, Total Organic	10.1	0.50 mg/L	10.0		101	78-116			
LCS (B1A2356-BS2)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Carbon, Total Organic	9.99	0.50 mg/L	10.0		100	78-116			
LCS (B1A2356-BS3)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Carbon, Total Organic	9.46	0.50 mg/L	10.0		95	78-116			
General Parameters, Batch B1A2400									
Blank (B1A2400-BLK1)			Prepared: 2021-01-29, Analyzed: 2021-01-29						
Ammonia, Total (as N)	< 0.050	0.050 mg/L							
LCS (B1A2400-BS1)			Prepared: 2021-01-29, Analyzed: 2021-01-29						
Ammonia, Total (as N)	0.203	0.050 mg/L	0.200		102	85-115			
General Parameters, Batch B1A2406									
Blank (B1A2406-BLK1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Cyanide, Total	< 0.0020	0.0020 mg/L							
Blank (B1A2406-BLK2)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Cyanide, Total	< 0.0020	0.0020 mg/L							
LCS (B1A2406-BS1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Cyanide, Total	0.0205	0.0020 mg/L	0.0200		102	82-120			
LCS (B1A2406-BS2)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Cyanide, Total	0.0187	0.0020 mg/L	0.0200		93	82-120			
LCS Dup (B1A2406-BSD1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Cyanide, Total	0.0202	0.0020 mg/L	0.0200		101	82-120	1	10	
LCS Dup (B1A2406-BSD2)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Cyanide, Total	0.0190	0.0020 mg/L	0.0200		95	82-120	2	10	
General Parameters, Batch B1A2411									
Blank (B1A2411-BLK1)			Prepared: 2021-01-29, Analyzed: 2021-01-29						
Chlorine, Total	< 0.02	0.02 mg/L							
Chlorine, Free	< 0.02	0.02 mg/L							
Duplicate (B1A2411-DUP1)			Source: 21A2592-01		Prepared: 2021-01-29, Analyzed: 2021-01-29				
Chlorine, Total	0.51	0.02 mg/L		0.51			< 1	10	
Chlorine, Free	0.42	0.02 mg/L		0.44			5	20	

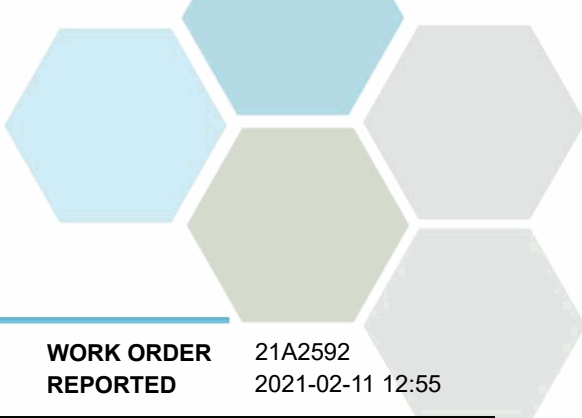


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT High River, Town of
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B1A2411, Continued									
Reference (B1A2411-SRM1)			Prepared: 2021-01-29, Analyzed: 2021-01-29						
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 B1A2432									
Blank (B1A2432-BLK1)			Prepared: 2021-01-29, Analyzed: 2021-01-29						
Conductivity (EC)	< 2.0	2.0 µS/cm							
LCS (B1A2432-BS1)			Prepared: 2021-01-29, Analyzed: 2021-01-29						
Conductivity (EC)	991	2.0 µS/cm	1000		99	95-105			
General Parameters, Batch B1B0001									
Blank (B1B0001-BLK1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
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							
Blank (B1B0001-BLK2)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
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 (B1B0001-BS1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Alkalinity, Total (as CaCO3)	245	2.0 mg/L	250		98	94-108			
LCS (B1B0001-BS2)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Alkalinity, Total (as CaCO3)	244	2.0 mg/L	250		98	94-108			
General Parameters, Batch B1B0002									
Reference (B1B0002-SRM1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
pH	6.96	0.10 pH units	7.00		99	98-102			
Reference (B1B0002-SRM2)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
pH	7.00	0.10 pH units	7.00		100	98-102			
General Parameters, Batch B1B0028									
Blank (B1B0028-BLK1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Sulfide, Total	< 0.020	0.020 mg/L							
LCS (B1B0028-BS1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Sulfide, Total	0.434	0.020 mg/L	0.470		92	80-120			
General Parameters, Batch B1B0117									
Blank (B1B0117-BLK1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Nitriilotriacetic Acid	< 0.20	0.20 mg/L							
LCS (B1B0117-BS1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Nitriilotriacetic Acid	0.99	0.20 mg/L	1.00		99	80-120			



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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 B1B0117, Continued

LCS Dup (B1B0117-BSD1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Nitritotriacetic Acid	0.97	0.20 mg/L	1.00		97	80-120	1	20	

Miscellaneous Herbicides, Batch B1B0146

Blank (B1B0146-BLK1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Diquat	< 0.0100	0.0100 mg/L							
Paraquat	< 0.0050	0.0050 mg/L							

LCS (B1B0146-BS1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Diquat	0.0389	0.0100 mg/L	0.0249		156	70-130			SPK1
Paraquat	0.0384	0.0050 mg/L	0.0252		153	70-130			SPK1

LCS Dup (B1B0146-BSD1)			Prepared: 2021-02-02, Analyzed: 2021-02-02						
Diquat	0.0394	0.0100 mg/L	0.0249		158	70-130	1	20	SPK1
Paraquat	0.0502	0.0050 mg/L	0.0252		200	70-130	27	20	SPK1

Miscellaneous Herbicides, Batch B1B0633

Blank (B1B0633-BLK1)			Prepared: 2021-02-07, Analyzed: 2021-02-07						
Glyphosate	< 0.050	0.050 mg/L							

LCS (B1B0633-BS1)			Prepared: 2021-02-07, Analyzed: 2021-02-07						
Glyphosate	0.127	0.050 mg/L	0.252		50	70-130			SPK1

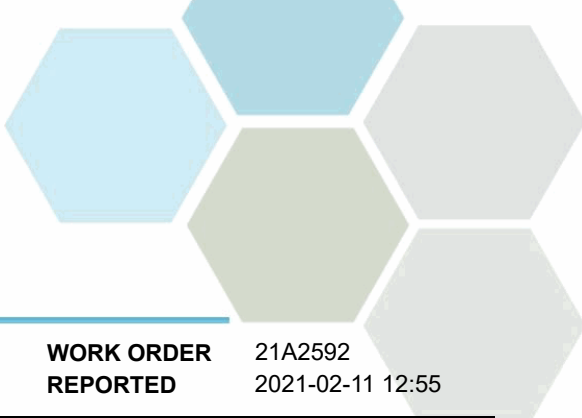
LCS Dup (B1B0633-BSD1)			Prepared: 2021-02-07, Analyzed: 2021-02-07						
Glyphosate	0.141	0.050 mg/L	0.252		56	70-130	10	20	SPK1

Matrix Spike (B1B0633-MS1)			Prepared: 2021-02-07, Analyzed: 2021-02-07						
Glyphosate	0.093	0.050 mg/L	0.252		37	60-120			MS1

Perfluorinated Compounds, Batch B1B0644

Blank (B1B0644-BLK1)			Prepared: 2021-02-07, Analyzed: 2021-02-08						
Perfluorooctanesulfonate (PFOS)	< 0.020	0.020 µg/L							
Perfluorooctanoic acid (PFOA)	< 0.020	0.020 µg/L							
Perfluoropentanoic acid (PFPeA)	< 0.020	0.020 µg/L							
Perfluorobutanesulfonate (PFBS)	< 15.0	15.0 µg/L							
Perfluorohexanoic acid (PFHxA)	< 0.010	0.010 µg/L							
Perfluoroheptanoic acid (PFHpA)	< 0.010	0.010 µg/L							
Perfluorohexanesulfonate (PFHxS)	< 0.020	0.020 µg/L							
Perfluoroheptane sulfonate (PFHpS)	< 0.020	0.020 µg/L							
Perfluorononanoic acid (PFNA)	< 0.020	0.020 µg/L							
Perfluorodecanoic acid (PFDA)	< 0.020	0.020 µg/L							
Perfluoroundecanoic acid (PFUnA)	< 0.020	0.020 µg/L							
Perfluorodecanesulfonate (PFDS)	< 0.040	0.040 µg/L							
Perfluorododecanoic acid (PFDoA)	< 0.030	0.030 µg/L							
Perfluorotetradecanoic acid (PFTeA)	< 0.020	0.020 µg/L							
Perfluorooctanesulfonamide (PFOSA)	< 0.020	0.020 µg/L							
Perfluorotridecanoic acid (PFTrA)	< 0.020	0.020 µg/L							
Perfluorobutanoic acid (PFBA)	< 10.0	10.0 µg/L							

Blank (B1B0644-BLK2)			Prepared: 2021-02-07, Analyzed: 2021-02-08						
Perfluorooctanesulfonate (PFOS)	< 0.020	0.020 µg/L							
Perfluorooctanoic acid (PFOA)	< 0.020	0.020 µg/L							
Perfluoropentanoic acid (PFPeA)	< 0.020	0.020 µg/L							
Perfluorobutanesulfonate (PFBS)	< 15.0	15.0 µg/L							



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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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Perfluorinated Compounds, Batch B1B0644, Continued

Blank (B1B0644-BLK2), Continued

Prepared: 2021-02-07, Analyzed: 2021-02-08

Perfluorohexanoic acid (PFHxA)	< 0.010	0.010 µg/L							
Perfluoroheptanoic acid (PFHpA)	< 0.010	0.010 µg/L							
Perfluorohexanesulfonate (PFHxS)	< 0.020	0.020 µg/L							
Perfluoroheptane sulfonate (PFHpS)	< 0.020	0.020 µg/L							
Perfluorononanoic acid (PFNA)	< 0.020	0.020 µg/L							
Perfluorodecanoic acid (PFDA)	< 0.020	0.020 µg/L							
Perfluoroundecanoic acid (PFUnA)	< 0.020	0.020 µg/L							
Perfluorodecanesulfonate (PFDS)	< 0.040	0.040 µg/L							
Perfluorododecanoic acid (PFDoA)	< 0.030	0.030 µg/L							
Perfluorotetradecanoic acid (PFTeA)	< 0.020	0.020 µg/L							
Perfluorooctanesulfonamide (PFOSA)	< 0.020	0.020 µg/L							
Perfluorotridecanoic acid (PFTTrA)	< 0.020	0.020 µg/L							
Perfluorobutanoic acid (PFBA)	< 10.0	10.0 µg/L							

LCS (B1B0644-BS1)

Prepared: 2021-02-07, Analyzed: 2021-02-08

Perfluorooctanesulfonate (PFOS)	0.0520	0.020 µg/L	0.0500		104	70-130			
Perfluorooctanoic acid (PFOA)	0.0618	0.020 µg/L	0.0500		124	70-130			
Perfluoropentanoic acid (PFPeA)	0.0482	0.020 µg/L	0.0500		96	70-130			
Perfluorobutanesulfonate (PFBS)	32.0	10.0 µg/L	24.9		128	70-130			
Perfluorohexanoic acid (PFHxA)	0.0762	0.010 µg/L	0.0500		152	70-130			
Perfluoroheptanoic acid (PFHpA)	0.0439	0.010 µg/L	0.0500		88	70-130			
Perfluorohexanesulfonate (PFHxS)	0.0988	0.020 µg/L	0.0500		198	70-130			
Perfluoroheptane sulfonate (PFHpS)	0.125	0.020 µg/L	0.0500		250	70-130			
Perfluorononanoic acid (PFNA)	0.0350	0.020 µg/L	0.0500		70	70-130			
Perfluorodecanoic acid (PFDA)	0.0418	0.020 µg/L	0.0500		84	70-130			
Perfluoroundecanoic acid (PFUnA)	0.0468	0.020 µg/L	0.0500		94	70-130			
Perfluorodecanesulfonate (PFDS)	0.0739	0.040 µg/L	0.0499		148	70-130			
Perfluorododecanoic acid (PFDoA)	0.0403	0.030 µg/L	0.0500		81	70-130			
Perfluorotetradecanoic acid (PFTeA)	0.0374	0.020 µg/L	0.0500		75	70-130			
Perfluorooctanesulfonamide (PFOSA)	0.0851	0.020 µg/L	0.0500		170	70-130			
Perfluorotridecanoic acid (PFTTrA)	0.0429	0.020 µg/L	0.0500		86	70-130			
Perfluorobutanoic acid (PFBA)	24.5	10.0 µg/L	24.8		99	70-130			

LCS Dup (B1B0644-BSD1)

Prepared: 2021-02-07, Analyzed: 2021-02-08

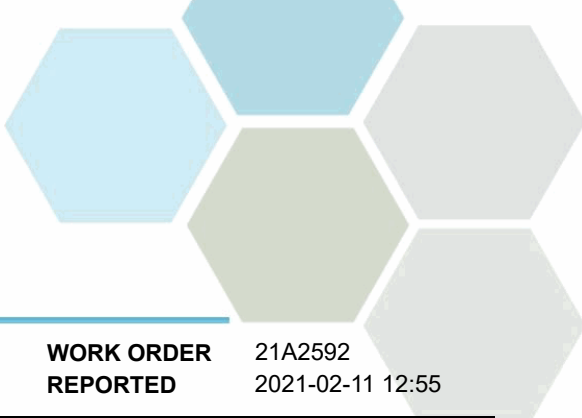
Perfluorooctanesulfonate (PFOS)	0.0425	0.020 µg/L	0.0500		85	70-130	20	30	
Perfluorooctanoic acid (PFOA)	0.0613	0.020 µg/L	0.0500		123	70-130	< 1	30	
Perfluoropentanoic acid (PFPeA)	0.0226	0.020 µg/L	0.0500		45	70-130	72	30	RPD
Perfluorobutanesulfonate (PFBS)	32.7	10.0 µg/L	24.9		131	70-130	2	30	
Perfluorohexanoic acid (PFHxA)	0.0750	0.010 µg/L	0.0500		150	70-130	2	30	
Perfluoroheptanoic acid (PFHpA)	0.0585	0.010 µg/L	0.0500		117	70-130	29	30	
Perfluorohexanesulfonate (PFHxS)	0.0862	0.020 µg/L	0.0500		172	70-130	14	30	
Perfluoroheptane sulfonate (PFHpS)	0.125	0.020 µg/L	0.0500		251	70-130	< 1	30	
Perfluorononanoic acid (PFNA)	0.0428	0.020 µg/L	0.0500		86	70-130	20	30	
Perfluorodecanoic acid (PFDA)	0.0477	0.020 µg/L	0.0500		95	70-130	13	30	
Perfluoroundecanoic acid (PFUnA)	0.0520	0.020 µg/L	0.0500		104	70-130	10	30	
Perfluorodecanesulfonate (PFDS)	0.0901	0.040 µg/L	0.0499		180	70-130	20	30	
Perfluorododecanoic acid (PFDoA)	0.0473	0.030 µg/L	0.0500		95	70-130	16	30	
Perfluorotetradecanoic acid (PFTeA)	0.0367	0.020 µg/L	0.0500		73	70-130	2	30	
Perfluorooctanesulfonamide (PFOSA)	0.0715	0.020 µg/L	0.0500		143	70-130	17	30	
Perfluorotridecanoic acid (PFTTrA)	0.0383	0.020 µg/L	0.0500		77	70-130	11	30	
Perfluorobutanoic acid (PFBA)	22.7	10.0 µg/L	24.8		91	70-130	8	30	

Pesticides, Herbicides, and Fungicides, Batch B1B0218

Blank (B1B0218-BLK1)

Prepared: 2021-02-03, Analyzed: 2021-02-03

Alachlor	< 0.100	0.100 µg/L							
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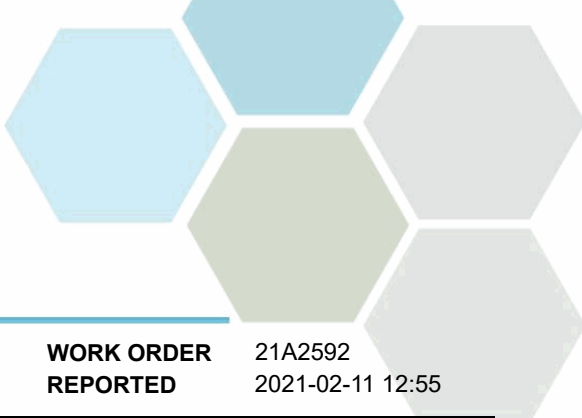


APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B1B0218, Continued									
Blank (B1B0218-BLK1), Continued					Prepared: 2021-02-03, Analyzed: 2021-02-03				
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							
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	0.631	µg/L	1.00		63	50-140			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	0.637	µg/L	1.00		64	50-140			
LCS (B1B0218-BS1)					Prepared: 2021-02-03, Analyzed: 2021-02-03				
Alachlor	0.850	0.100 µg/L	1.01		84	65-118			

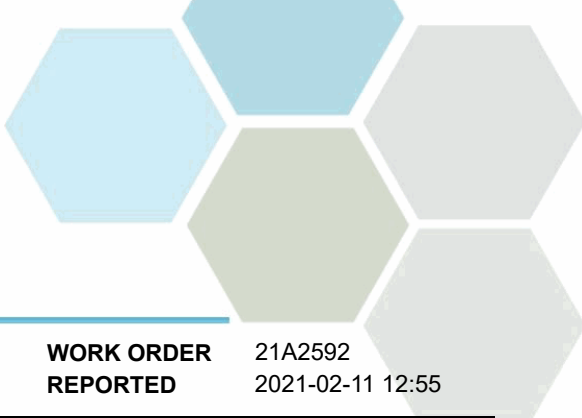


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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B1B0218, Continued									
LCS (B1B0218-BS1), Continued					Prepared: 2021-02-03, Analyzed: 2021-02-03				
Aldrin	0.782	0.006 µg/L	1.00		78	58-107			
Atrazine	0.841	0.100 µg/L	1.00		84	61-122			
Atrazine-desethyl	1.04	0.100 µg/L	1.03		101	50-140			
Azinphos-methyl	1.17	0.200 µg/L	1.00		117	53-127			
alpha-BHC	0.791	0.010 µg/L	1.01		78	54-134			
beta-BHC	0.798	0.050 µg/L	1.01		79	58-112			
delta-BHC	0.781	0.050 µg/L	1.00		78	58-119			
gamma-BHC (Lindane)	0.759	0.050 µg/L	1.00		76	59-113			
Bromacil	1.05	0.100 µg/L	1.00		105	52-123			
Bromoxynil	0.732	0.200 µg/L	1.02		72	50-132			
Butachlor	0.885	0.020 µg/L	0.998		89	50-140			
Captan	1.18	0.100 µg/L	1.05		112	63-137			
Chlordane (cis + trans)	2.10	0.050 µg/L	2.01		105	50-140			
Chlorothalonil	0.633	0.050 µg/L	1.01		63	50-110			
Chlorpyrifos	0.788	0.010 µg/L	1.00		79	61-121			
Cyanazine	0.880	0.100 µg/L	1.00		88	57-126			
DDT, Total	3.96	0.010 µg/L	5.04		79	50-140			
Deltamethrin	8.62	0.100 µg/L	10.2		85	50-121			
Diazinon	0.756	0.020 µg/L	1.00		76	52-126			
Dichlorvos	0.894	0.100 µg/L	1.03		87	50-110			
Diclofop-methyl	0.833	0.100 µg/L	0.990		84	58-112			
Dieldrin	0.641	0.010 µg/L	1.00		64	64-112			
Dimethoate	0.950	0.200 µg/L	0.989		96	50-120			
Disulfoton	0.860	0.100 µg/L	1.01		85	50-122			
Diuron	1.62	0.200 µg/L	1.03		157	54-116			SPK1
Endosulfan I + II	1.45	0.010 µg/L	2.01		72	50-140			
Endosulfan sulfate	0.746	0.050 µg/L	1.01		74	64-110			
Endrin	0.756	0.020 µg/L	1.01		75	59-123			
Endrin aldehyde	0.781	0.020 µg/L	1.00		78	58-118			
Endrin ketone	0.950	0.020 µg/L	1.01		94	53-114			
Fenchlorphos (Ronnel)	0.654	0.100 µg/L	1.02		64	63-110			
Heptachlor	0.581	0.010 µg/L	1.01		58	58-128			
Heptachlor epoxide	0.809	0.010 µg/L	1.01		80	64-110			
Linuron	1.35	0.050 µg/L	1.02		132	59-140			
Malathion	0.955	0.100 µg/L	1.00		95	61-121			
Methoxychlor	0.977	0.050 µg/L	1.01		97	53-121			
Methyl parathion	0.967	0.100 µg/L	0.998		97	65-114			
Metolachlor	0.888	0.100 µg/L	1.01		88	65-112			
Metribuzin	0.917	0.200 µg/L	1.00		92	53-123			
Parathion	0.748	0.100 µg/L	0.997		75	53-130			
Pentachloronitrobenzene	0.656	0.100 µg/L	1.00		66	54-136			
Permethrin	1.03	0.010 µg/L	1.01		102	50-130			
Phorate	0.750	0.100 µg/L	1.00		75	55-120			
Prometon	0.783	0.300 µg/L	1.00		78	57-124			
Prometryne	0.663	0.100 µg/L	1.00		66	50-140			
Simazine	0.889	0.200 µg/L	1.01		88	54-119			
Sulfotep	0.855	0.100 µg/L	1.04		82	61-121			
Tebuthiuron	1.26	0.200 µg/L	1.01		124	50-127			
Temephos (Abate)	10.5	0.500 µg/L	10.2		103	67-135			
Terbufos	0.633	0.100 µg/L	0.993		64	51-122			
Triallate	0.622	0.100 µg/L	1.02		61	50-120			
Trifluralin	0.738	0.200 µg/L	1.00		74	52-129			
Surrogate: Tributyl Phosphate	0.940	µg/L	1.00		94	50-140			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	0.772	µg/L	1.00		77	50-140			

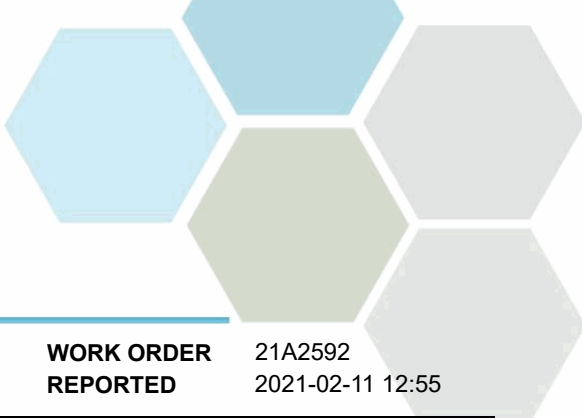


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT High River, Town of
Bi-Annual Schedule 4

WORK ORDER REPORTED 21A2592
2021-02-11 12:55

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Pesticides, Herbicides, and Fungicides, Batch B1B0218, Continued									
LCS Dup (B1B0218-BSD1)					Prepared: 2021-02-03, Analyzed: 2021-02-03				
Alachlor	0.920	0.100 µg/L	1.01		91	65-118	8	30	
Aldrin	0.820	0.006 µg/L	1.00		82	58-107	5	30	
Atrazine	0.885	0.100 µg/L	1.00		88	61-122	5	30	
Atrazine-desethyl	1.11	0.100 µg/L	1.03		107	50-140	6	30	
Azinphos-methyl	1.23	0.200 µg/L	1.00		123	53-127	5	30	
alpha-BHC	0.846	0.010 µg/L	1.01		84	54-134	7	30	
beta-BHC	0.846	0.050 µg/L	1.01		84	58-112	6	30	
delta-BHC	0.816	0.050 µg/L	1.00		82	58-119	4	30	
gamma-BHC (Lindane)	0.811	0.050 µg/L	1.00		81	59-113	7	30	
Bromacil	1.13	0.100 µg/L	1.00		113	52-123	8	30	
Bromoxynil	0.785	0.200 µg/L	1.02		77	50-132	7	30	
Butachlor	0.964	0.020 µg/L	0.998		97	50-140	9	30	
Captan	1.18	0.100 µg/L	1.05		113	63-137	< 1	30	
Chlordane (cis + trans)	2.12	0.050 µg/L	2.01		106	50-140	1	30	
Chlorothalonil	0.664	0.050 µg/L	1.01		66	50-110	5	30	
Chlorpyrifos	0.832	0.010 µg/L	1.00		83	61-121	5	30	
Cyanazine	0.946	0.100 µg/L	1.00		95	57-126	7	30	
DDT, Total	3.95	0.010 µg/L	5.04		78	50-140	< 1	30	
Deltamethrin	9.11	0.100 µg/L	10.2		89	50-121	5	30	
Diazinon	0.810	0.020 µg/L	1.00		81	52-126	7	30	
Dichlorvos	0.994	0.100 µg/L	1.03		97	50-110	11	30	
Diclofop-methyl	0.885	0.100 µg/L	0.990		89	58-112	6	30	
Dieldrin	0.650	0.010 µg/L	1.00		65	64-112	1	30	
Dimethoate	1.02	0.200 µg/L	0.989		103	50-120	7	30	
Disulfoton	0.919	0.100 µg/L	1.01		91	50-122	7	30	
Diuron	1.71	0.200 µg/L	1.03		166	54-116	5	30	SPK1
Endosulfan I + II	1.51	0.010 µg/L	2.01		75	50-140	4	30	
Endosulfan sulfate	0.768	0.050 µg/L	1.01		76	64-110	3	30	
Endrin	0.790	0.020 µg/L	1.01		78	59-123	4	30	
Endrin aldehyde	0.806	0.020 µg/L	1.00		81	58-118	3	30	
Endrin ketone	0.993	0.020 µg/L	1.01		98	53-114	4	30	
Fenchlorphos (Ronnel)	0.618	0.100 µg/L	1.02		61	63-110	6	30	SPK1
Heptachlor	0.595	0.010 µg/L	1.01		59	58-128	2	30	
Heptachlor epoxide	0.796	0.010 µg/L	1.01		79	64-110	2	30	
Linuron	1.51	0.050 µg/L	1.02		148	59-140	11	30	SPK1
Malathion	1.05	0.100 µg/L	1.00		105	61-121	10	30	
Methoxychlor	1.03	0.050 µg/L	1.01		102	53-121	5	30	
Methyl parathion	1.03	0.100 µg/L	0.998		103	65-114	6	30	
Metolachlor	0.960	0.100 µg/L	1.01		95	65-112	8	30	
Metribuzin	0.982	0.200 µg/L	1.00		98	53-123	7	30	
Parathion	0.654	0.100 µg/L	0.997		66	53-130	13	30	
Pentachloronitrobenzene	0.660	0.100 µg/L	1.00		66	54-136	< 1	30	
Permethrin	1.13	0.010 µg/L	1.01		112	50-130	9	30	
Phorate	0.833	0.100 µg/L	1.00		83	55-120	10	30	
Prometon	0.880	0.300 µg/L	1.00		88	57-124	12	30	
Prometryne	0.682	0.100 µg/L	1.00		68	50-140	3	30	
Simazine	0.938	0.200 µg/L	1.01		93	54-119	5	30	
Sulfotep	0.834	0.100 µg/L	1.04		80	61-121	2	30	
Tebuthiuron	1.12	0.200 µg/L	1.01		111	50-127	11	30	
Temephos (Abate)	10.6	0.500 µg/L	10.2		104	67-135	< 1	30	
Terbufos	0.695	0.100 µg/L	0.993		70	51-122	9	30	
Triallate	0.582	0.100 µg/L	1.02		57	50-120	7	30	
Trifluralin	0.757	0.200 µg/L	1.00		76	52-129	2	30	
Surrogate: Tributyl Phosphate	0.988	µg/L	1.00		99	50-140			
Surrogate: 4-chloro-3-nitrobenzotrifluoride	0.851	µg/L	1.00		85	50-140			

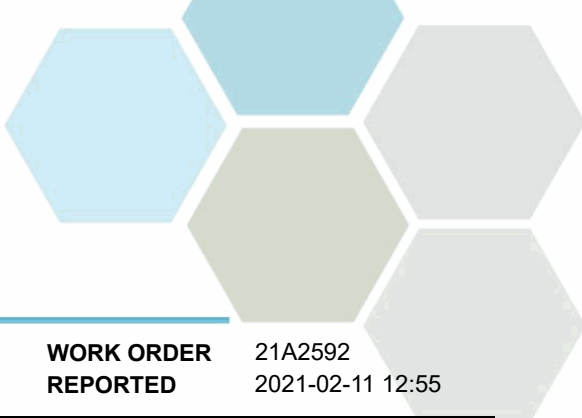


APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT High River, Town of
Bi-Annual Schedule 4

WORK ORDER REPORTED 21A2592
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B1B0180									
Blank (B1B0180-BLK1)					Prepared: 2021-02-02, Analyzed: 2021-02-03				
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	4.51	µg/L	4.44		101	50-140			
Surrogate: Naphthalene-d8	4.81	µg/L	4.47		108	50-140			
Surrogate: Perylene-d12	4.73	µg/L	4.47		106	50-140			
LCS (B1B0180-BS1)					Prepared: 2021-02-02, Analyzed: 2021-02-03				
Acenaphthene	3.83	0.050 µg/L	4.44		86	55-137			
Acenaphthylene	3.64	0.200 µg/L	4.44		82	53-140			
Acridine	2.97	0.050 µg/L	4.44		67	50-120			
Anthracene	4.37	0.010 µg/L	4.44		98	64-130			
Benz(a)anthracene	3.45	0.010 µg/L	4.44		78	57-140			
Benzo(a)pyrene	4.00	0.010 µg/L	4.44		90	63-133			
Benzo(b+j)fluoranthene	8.58	0.050 µg/L	8.89		96	60-129			
Benzo(g,h,i)perylene	4.16	0.050 µg/L	4.44		94	52-139			
Benzo(k)fluoranthene	3.45	0.050 µg/L	4.44		78	50-138			
2-Chloronaphthalene	3.58	0.100 µg/L	4.38		82	50-139			
Chrysene	4.11	0.050 µg/L	4.44		93	59-140			
Dibenz(a,h)anthracene	3.67	0.010 µg/L	4.44		83	53-136			
Fluoranthene	4.01	0.030 µg/L	4.44		90	67-135			
Fluorene	3.90	0.050 µg/L	4.44		88	57-134			
Indeno(1,2,3-cd)pyrene	3.37	0.050 µg/L	4.44		76	52-129			
1-Methylnaphthalene	3.55	0.100 µg/L	4.44		80	50-140			
2-Methylnaphthalene	3.51	0.100 µg/L	4.44		79	50-140			
Naphthalene	4.18	0.200 µg/L	4.44		94	50-140			
Phenanthrene	3.88	0.100 µg/L	4.44		87	61-134			
Pyrene	4.01	0.020 µg/L	4.44		90	66-131			
Quinoline	5.00	0.050 µg/L	4.44		113	50-140			
Surrogate: Acridine-d9	3.24	µg/L	4.44		73	50-140			
Surrogate: Naphthalene-d8	4.15	µg/L	4.47		93	50-140			
Surrogate: Perylene-d12	3.58	µg/L	4.47		80	50-140			
LCS Dup (B1B0180-BSD1)					Prepared: 2021-02-02, Analyzed: 2021-02-03				
Acenaphthene	3.87	0.050 µg/L	4.44		87	55-137	1	18	
Acenaphthylene	3.57	0.200 µg/L	4.44		80	53-140	2	20	
Acridine	3.12	0.050 µg/L	4.44		70	50-120	5	30	
Anthracene	4.10	0.010 µg/L	4.44		92	64-130	6	15	



APPENDIX 2: QUALITY CONTROL RESULTS

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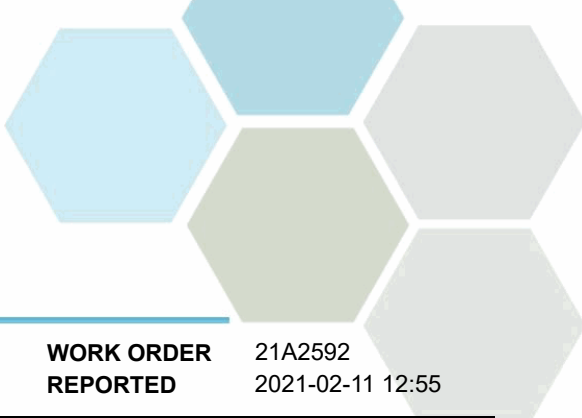
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2021-02-11 12:55

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B1B0180, Continued									
LCS Dup (B1B0180-BSD1), Continued					Prepared: 2021-02-02, Analyzed: 2021-02-03				
Benz(a)anthracene	3.58	0.010 µg/L	4.44		81	57-140	4	25	
Benzo(a)pyrene	4.00	0.010 µg/L	4.44		90	63-133	< 1	18	
Benzo(b+j)fluoranthene	8.74	0.050 µg/L	8.89		98	60-129	2	17	
Benzo(g,h,i)perylene	4.75	0.050 µg/L	4.44		107	52-139	13	22	
Benzo(k)fluoranthene	4.16	0.050 µg/L	4.44		94	50-138	19	26	
2-Chloronaphthalene	3.35	0.100 µg/L	4.38		77	50-139	6	23	
Chrysene	4.28	0.050 µg/L	4.44		96	59-140	4	23	
Dibenz(a,h)anthracene	3.91	0.010 µg/L	4.44		88	53-136	6	21	
Fluoranthene	3.89	0.030 µg/L	4.44		88	67-135	3	18	
Fluorene	3.78	0.050 µg/L	4.44		85	57-134	3	18	
Indeno(1,2,3-cd)pyrene	3.78	0.050 µg/L	4.44		85	52-129	11	21	
1-Methylnaphthalene	3.29	0.100 µg/L	4.44		74	50-140	7	20	
2-Methylnaphthalene	3.18	0.100 µg/L	4.44		72	50-140	10	21	
Naphthalene	3.89	0.200 µg/L	4.44		88	50-140	7	22	
Phenanthrene	4.34	0.100 µg/L	4.44		98	61-134	11	17	
Pyrene	3.86	0.020 µg/L	4.44		87	66-131	4	19	
Quinoline	4.63	0.050 µg/L	4.44		104	50-140	8	14	
Surrogate: Acridine-d9	2.68	µg/L	4.44		60	50-140			
Surrogate: Naphthalene-d8	3.84	µg/L	4.47		86	50-140			
Surrogate: Perylene-d12	3.87	µg/L	4.47		87	50-140			

Total Metals, Batch B1B0043

Blank (B1B0043-BLK1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
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							
Uranium, total	< 0.000020	0.000020 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							

LCS (B1B0043-BS1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Aluminum, total	0.0215	0.0050 mg/L	0.0199		108	80-120			
Antimony, total	0.0196	0.00020 mg/L	0.0200		98	80-120			
Arsenic, total	0.0195	0.00050 mg/L	0.0200		98	80-120			
Barium, total	0.0188	0.0050 mg/L	0.0198		95	80-120			
Boron, total	< 0.0500	0.0500 mg/L	0.0200		107	80-120			
Cadmium, total	0.0194	0.000010 mg/L	0.0199		97	80-120			
Calcium, total	1.96	0.20 mg/L	2.02		97	80-120			
Chromium, total	0.0204	0.00050 mg/L	0.0198		103	80-120			
Copper, total	0.0204	0.00040 mg/L	0.0200		102	80-120			
Iron, total	1.94	0.010 mg/L	2.02		96	80-120			



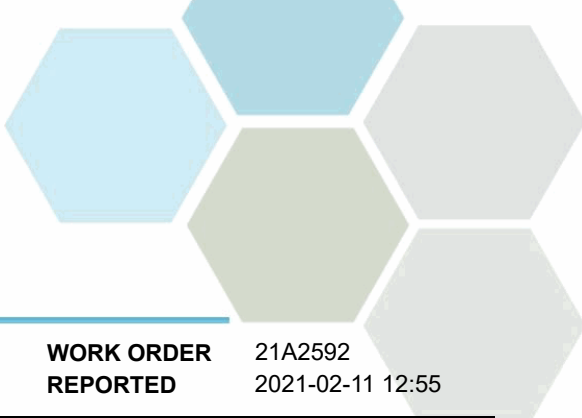
APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT High River, Town of
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WORK ORDER REPORTED 21A2592
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B1B0043, Continued									
LCS (B1B0043-BS1), Continued					Prepared: 2021-02-01, Analyzed: 2021-02-01				
Lead, total	0.0201	0.00020 mg/L	0.0199		101	80-120			
Magnesium, total	1.97	0.010 mg/L	2.02		97	80-120			
Manganese, total	0.0204	0.00020 mg/L	0.0199		102	80-120			
Potassium, total	2.14	0.10 mg/L	2.02		106	80-120			
Selenium, total	0.0194	0.00050 mg/L	0.0200		97	80-120			
Silver, total	0.0187	0.000050 mg/L	0.0200		93	80-120			
Sodium, total	2.18	0.10 mg/L	2.02		108	80-120			
Strontium, total	0.0194	0.0010 mg/L	0.0200		97	80-120			
Uranium, total	0.0201	0.000020 mg/L	0.0200		100	80-120			
Zinc, total	0.0198	0.0040 mg/L	0.0200		99	80-120			
Duplicate (B1B0043-DUP1)					Source: 21A2592-01 Prepared: 2021-02-01, Analyzed: 2021-02-01				
Aluminum, total	0.0250	0.0050 mg/L		0.0229			9	20	
Antimony, total	< 0.00020	0.00020 mg/L		< 0.00020				20	
Arsenic, total	< 0.00050	0.00050 mg/L		< 0.00050				20	
Barium, total	0.128	0.0050 mg/L		0.121			5	20	
Boron, total	< 0.0500	0.0500 mg/L		< 0.0500				20	
Cadmium, total	< 0.000010	0.000010 mg/L		< 0.000010				20	
Calcium, total	71.7	0.20 mg/L		69.6			3	20	
Chromium, total	< 0.00050	0.00050 mg/L		< 0.00050				20	
Copper, total	0.00364	0.00040 mg/L		0.00345			5	20	
Iron, total	< 0.010	0.010 mg/L		< 0.010				20	
Lead, total	< 0.00020	0.00020 mg/L		< 0.00020				20	
Magnesium, total	19.2	0.010 mg/L		18.8			2	20	
Manganese, total	< 0.00020	0.00020 mg/L		< 0.00020				20	
Potassium, total	1.23	0.10 mg/L		1.18			4	20	
Selenium, total	0.00073	0.00050 mg/L		0.00072				20	
Silver, total	< 0.000050	0.000050 mg/L		< 0.000050				20	
Sodium, total	8.14	0.10 mg/L		7.89			3	20	
Strontium, total	0.405	0.0010 mg/L		0.389			4	20	
Uranium, total	0.000822	0.000020 mg/L		0.000795			3	20	
Zinc, total	< 0.0040	0.0040 mg/L		< 0.0040				20	
Reference (B1B0043-SRM1)					Prepared: 2021-02-01, Analyzed: 2021-02-01				
Aluminum, total	0.301	0.0050 mg/L		0.299	101	70-130			
Antimony, total	0.0498	0.00020 mg/L		0.0517	96	70-130			
Arsenic, total	0.123	0.00050 mg/L		0.119	104	70-130			
Barium, total	0.782	0.0050 mg/L		0.801	98	70-130			
Boron, total	4.12	0.0500 mg/L		4.11	100	70-130			
Cadmium, total	0.0501	0.000010 mg/L		0.0503	100	70-130			
Calcium, total	9.29	0.20 mg/L		10.7	87	70-130			
Chromium, total	0.263	0.00050 mg/L		0.250	105	70-130			
Copper, total	0.514	0.00040 mg/L		0.487	106	70-130			
Iron, total	0.492	0.010 mg/L		0.504	98	70-130			
Lead, total	0.276	0.00020 mg/L		0.278	99	70-130			
Magnesium, total	3.57	0.010 mg/L		3.59	100	70-130			
Manganese, total	0.115	0.00020 mg/L		0.111	104	70-130			
Potassium, total	6.44	0.10 mg/L		5.89	109	70-130			
Selenium, total	0.119	0.00050 mg/L		0.120	99	70-130			
Sodium, total	9.78	0.10 mg/L		8.71	112	70-130			
Strontium, total	0.399	0.0010 mg/L		0.393	101	70-130			
Uranium, total	0.0350	0.000020 mg/L		0.0344	102	70-130			
Zinc, total	2.53	0.0040 mg/L		2.50	101	70-130			

Total Metals, Batch B1B0284



APPENDIX 2: QUALITY CONTROL RESULTS

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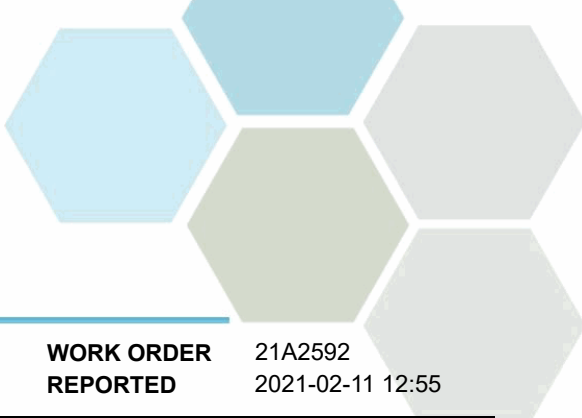
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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Total Metals, Batch B1B0284, Continued									
Blank (B1B0284-BLK1)			Prepared: 2021-02-03, Analyzed: 2021-02-03						
Mercury, total	< 0.000010	0.000010 mg/L							
Duplicate (B1B0284-DUP1)			Source: 21A2592-01		Prepared: 2021-02-03, Analyzed: 2021-02-03				
Mercury, total	< 0.000010	0.000010 mg/L		< 0.000010				20	
Reference (B1B0284-SRM1)			Prepared: 2021-02-03, Analyzed: 2021-02-03						
Mercury, total	0.00607	0.000010 mg/L	0.00581		104	70-130			

Volatile Organic Compounds (VOC), Batch B1A2560

Blank (B1A2560-BLK1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
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-Dichloropropane (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	23.6	µg/L	26.5		89	70-130			
Surrogate: 4-Bromofluorobenzene	23.6	µg/L	24.9		95	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	24.3	µg/L	25.5		95	70-130			

LCS (B1A2560-BS1)			Prepared: 2021-02-01, Analyzed: 2021-02-01						
Benzene	20.1	0.5 µg/L	20.0		100	70-130			
Bromodichloromethane	19.6	1.0 µg/L	20.0		98	70-130			
Bromoform	18.9	1.0 µg/L	20.1		94	70-130			
Carbon tetrachloride	21.0	0.5 µg/L	20.2		104	70-130			
Chlorobenzene	21.2	1.0 µg/L	20.1		106	70-130			
Chloroethane	9.9	2.0 µg/L	20.0		49	60-140			SPK
Chloroform	21.0	1.0 µg/L	20.1		104	70-130			



APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B1A2560, Continued									
LCS (B1A2560-BS1), Continued					Prepared: 2021-02-01, Analyzed: 2021-02-01				
Dibromochloromethane	19.6	1.0 µg/L	20.2		97	70-130			
1,2-Dibromoethane	20.2	0.3 µg/L	20.0		101	70-130			
Dibromomethane	19.5	1.0 µg/L	20.0		98	70-130			
1,2-Dichlorobenzene	21.2	0.5 µg/L	20.1		106	70-130			
1,3-Dichlorobenzene	21.6	1.0 µg/L	20.1		107	70-130			
1,4-Dichlorobenzene	21.8	1.0 µg/L	20.1		109	70-130			
1,1-Dichloroethane	20.4	1.0 µg/L	20.1		102	70-130			
1,2-Dichloroethane	19.4	1.0 µg/L	20.1		96	70-130			
1,1-Dichloroethylene	21.6	1.0 µg/L	20.1		107	70-130			
cis-1,2-Dichloroethylene	19.8	1.0 µg/L	20.0		99	70-130			
trans-1,2-Dichloroethylene	20.6	1.0 µg/L	20.0		103	70-130			
Dichloromethane	20.6	3.0 µg/L	20.1		102	70-130			
1,2-Dichloropropane	20.0	1.0 µg/L	20.1		99	70-130			
1,3-Dichloropropene (cis + trans)	40.7	1.0 µg/L	40.0		102	70-130			
Ethylbenzene	21.0	1.0 µg/L	20.0		105	70-130			
Methyl tert-butyl ether	20.5	1.0 µg/L	20.0		103	70-130			
Styrene	20.8	1.0 µg/L	20.0		104	70-130			
1,1,2,2-Tetrachloroethane	19.1	0.5 µg/L	20.1		95	70-130			
Tetrachloroethylene	21.7	1.0 µg/L	20.1		108	70-130			
Toluene	22.8	1.0 µg/L	20.0		114	70-130			
1,1,1-Trichloroethane	21.5	1.0 µg/L	20.0		108	70-130			
1,1,2-Trichloroethane	20.1	1.0 µg/L	20.1		100	70-130			
Trichloroethylene	20.8	1.0 µg/L	20.1		103	70-130			
Trichlorofluoromethane	21.8	1.0 µg/L	20.0		109	60-140			
Vinyl chloride	25.0	1.0 µg/L	20.0		125	60-140			
Xylenes (total)	61.7	2.0 µg/L	60.0		103	70-130			
Surrogate: Toluene-d8	23.9	µg/L	26.5		90	70-130			
Surrogate: 4-Bromofluorobenzene	23.3	µg/L	24.9		93	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	23.8	µg/L	25.5		93	70-130			

QC Qualifiers:

- MS1 The matrix spike recovery was outside of control limits due to a matrix effect and/or interference.
- 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.