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09 December 2022

Kyle Siesser
Cottonwood Consulting
PO Box 1653
Durango, CO 81302
RE: COGCC Table 915-1

Enclosed are the results of analyses for samples received by the laboratory on 11/16/22 13:15. The data to follow was performed, in whole or in part, by Green Analytical Laboratories. Any data that was performed by a subcontract laboratory is included within the GAL report, or with an additional report attached.

If you need any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, reading 'Jeremy D. Allen'.

Jeremy D Allen
Laboratory Director

All accredited analytes contained in this report are denoted by an asterisk (*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <http://greenanalytical.com/certifications/>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water. TNI Certificate Number: T104704514-22-15

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8. TNI Certificate Number: T104704398-22-15



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PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS01	2211211-01	Solid	11/15/22 14:50	11/16/22 13:15	
SS02	2211211-02	Solid	11/15/22 14:55	11/16/22 13:15	
SS03	2211211-03	Solid	11/15/22 15:05	11/16/22 13:15	

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS01

2211211-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Hexavalent Chromium	<0.250	0.250	0.128	mg/kg dry	25	11/22/22 13:35	3060A/3500-Cr B		HTB
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Saturated Paste Extraction

Calcium	40.3	0.100	0.058	mg/L	1	12/01/22 15:48	EPA200.7		AES
Conductivity	840			umho/cm@25 C	1	11/29/22 16:00	ASA#9 10-3.3		JDA
Magnesium	30.4	0.100	0.065	mg/L	1	12/01/22 15:48	EPA200.7		AES
pH	8.04			pH Units	1	11/29/22 16:00	ASA#9 10-3.2		JDA
SAR	2.06			No Unit	1	12/01/22 15:48	Calculation		AES
Sodium	71.2	1.00	0.079	mg/L	1	12/01/22 15:48	EPA200.7		AES

Total Metals by ICP

Barium	186	5.00	1.10	mg/kg dry	100	12/01/22 13:17	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	12/01/22 13:17	6010B		AES
Chromium	17.6	5.00	1.58	mg/kg dry	100	12/01/22 13:17	6010B		AES
Copper	7.87	5.00	2.83	mg/kg dry	100	12/01/22 13:17	6010B		AES
Lead	<10.0	10.0	4.02	mg/kg dry	100	12/01/22 13:17	6010B		AES
Nickel	9.88	5.00	2.41	mg/kg dry	100	12/01/22 13:17	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	12/01/22 13:16	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	12/01/22 13:16	6010B		AES
Zinc	42.7	10.0	2.18	mg/kg dry	100	12/01/22 13:17	6010B		AES

Total Metals by ICPMS

Arsenic	4.22	1.00	0.158	mg/kg dry	1000	12/01/22 16:45	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	12/01/22 14:35	EPA200.7		AES
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	11/23/22 03:18	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	11/23/22 03:18	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	11/23/22 03:18	8015B		MS

Surrogate: 1-Chlorooctane 83.9 % 45.3-161 11/23/22 03:18 8015B MS

Surrogate: 1-Chlorooctadecane 90.3 % 46.3-178 11/23/22 03:18 8015B MS

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Jeremy D Allen, Laboratory Director

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Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS01

2211211-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

VOLATILES BY GC/MS

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	11/22/22 18:17	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	11/22/22 18:17	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	11/22/22 18:17	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	11/22/22 18:17	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	11/22/22 18:17	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0256	mg/kg	50	11/22/22 18:17	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	11/22/22 18:17	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	11/22/22 18:17	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	11/22/22 18:17	8260B		MS

Surrogate: Dibromofluoromethane 92.1 % 84.6-114 11/22/22 18:17 8260B MS

Surrogate: Toluene-d8 101 % 90.4-109 11/22/22 18:17 8260B MS

Surrogate: 4-Bromofluorobenzene 99.3 % 82.5-117 11/22/22 18:17 8260B MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.040	0.040	0.015	mg/kg	40	12/02/22 02:18	8270C		MS
2-Methylnaphthalene*	<0.040	0.040	0.023	mg/kg	40	12/02/22 02:18	8270C		MS
1-Methylnaphthalene	<0.040	0.040	0.016	mg/kg	40	12/02/22 02:18	8270C		MS
Acenaphthene*	<0.040	0.040	0.024	mg/kg	40	12/02/22 02:18	8270C		MS
Fluorene*	<0.040	0.040	0.014	mg/kg	40	12/02/22 02:18	8270C		MS
Anthracene*	<0.040	0.040	0.017	mg/kg	40	12/02/22 02:18	8270C		MS
Fluoranthene*	<0.040	0.040	0.019	mg/kg	40	12/02/22 02:18	8270C		MS
Pyrene*	<0.040	0.040	0.013	mg/kg	40	12/02/22 02:18	8270C		MS
Benzo[a]anthracene*	<0.040	0.040	0.023	mg/kg	40	12/02/22 02:18	8270C		MS
Chrysene	<0.040	0.040	0.017	mg/kg	40	12/02/22 02:18	8270C		MS
Benzo[b]fluoranthene*	<0.040	0.040	0.019	mg/kg	40	12/02/22 02:18	8270C		MS
Benzo[k]fluoranthene*	<0.040	0.040	0.016	mg/kg	40	12/02/22 02:18	8270C		MS
Benzo[a]pyrene*	<0.040	0.040	0.018	mg/kg	40	12/02/22 02:18	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.040	0.040	0.017	mg/kg	40	12/02/22 02:18	8270C		MS
Dibenz[a,h]anthracene*	<0.040	0.040	0.019	mg/kg	40	12/02/22 02:18	8270C		MS

Surrogate: Nitrobenzene-d5 60.4 % 39.6-121 12/02/22 02:18 8270C MS

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Jeremy D Allen, Laboratory Director

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PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS01

2211211-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Polynuclear Aromatic Compounds by GC/MS

Surrogate: 2-Fluorobiphenyl	72.4 %	39.8-134				12/02/22 02:18	8270C		MS
Surrogate: Terphenyl-dl4	72.4 %	33.3-136				12/02/22 02:18	8270C		MS

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Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS02

2211211-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Hexavalent Chromium	<0.250	0.250	0.128	mg/kg dry	25	11/22/22 13:35	3060A/3500-Cr B		HTB
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Saturated Paste Extraction

Calcium	498	1.00	0.579	mg/L	10	12/01/22 15:53	EPA200.7		AES
Conductivity	4800			umho/cm@25 C	1	11/29/22 16:00	ASA#9 10-3.3		JDA
Magnesium	199	1.00	0.654	mg/L	10	12/01/22 15:53	EPA200.7		AES
pH	7.71			pH Units	1	11/29/22 16:00	ASA#9 10-3.2		JDA
SAR	2.78			No Unit	1	12/01/22 15:53	Calculation		AES
Sodium	290	10.0	0.793	mg/L	10	12/01/22 15:53	EPA200.7		AES

Total Metals by ICP

Barium	144	5.00	1.10	mg/kg dry	100	12/01/22 13:21	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	12/01/22 13:21	6010B		AES
Chromium	17.3	5.00	1.58	mg/kg dry	100	12/01/22 13:21	6010B		AES
Copper	8.95	5.00	2.83	mg/kg dry	100	12/01/22 13:21	6010B		AES
Lead	20.0	10.0	4.02	mg/kg dry	100	12/01/22 13:21	6010B		AES
Nickel	10.7	5.00	2.41	mg/kg dry	100	12/01/22 13:21	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	12/01/22 13:21	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	12/01/22 13:21	6010B		AES
Zinc	59.1	10.0	2.18	mg/kg dry	100	12/01/22 13:21	6010B		AES

Total Metals by ICPMS

Arsenic	3.47	1.00	0.158	mg/kg dry	1000	12/01/22 16:49	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	12/01/22 14:37	EPA200.7		AES
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	11/23/22 03:42	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	11/23/22 03:42	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	11/23/22 03:42	8015B		MS

Surrogate: 1-Chlorooctane	82.5 %	45.3-161	11/23/22 03:42	8015B	MS
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Surrogate: 1-Chlorooctadecane	90.3 %	46.3-178	11/23/22 03:42	8015B	MS
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Jeremy D Allen, Laboratory Director

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Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS02

2211211-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

VOLATILES BY GC/MS

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	11/22/22 18:32	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	11/22/22 18:32	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	11/22/22 18:32	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	11/22/22 18:32	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	11/22/22 18:32	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0256	mg/kg	50	11/22/22 18:32	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	11/22/22 18:32	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	11/22/22 18:32	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	11/22/22 18:32	8260B		MS

Surrogate: Dibromofluoromethane 92.4 % 84.6-114 11/22/22 18:32 8260B MS

Surrogate: Toluene-d8 99.6 % 90.4-109 11/22/22 18:32 8260B MS

Surrogate: 4-Bromofluorobenzene 99.8 % 82.5-117 11/22/22 18:32 8260B MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.040	0.040	0.015	mg/kg	40	12/02/22 02:49	8270C		MS
2-Methylnaphthalene*	<0.040	0.040	0.023	mg/kg	40	12/02/22 02:49	8270C		MS
1-Methylnaphthalene	<0.040	0.040	0.016	mg/kg	40	12/02/22 02:49	8270C		MS
Acenaphthene*	0.097	0.040	0.024	mg/kg	40	12/02/22 02:49	8270C		MS
Fluorene*	0.069	0.040	0.014	mg/kg	40	12/02/22 02:49	8270C		MS
Anthracene*	0.201	0.040	0.017	mg/kg	40	12/02/22 02:49	8270C		MS
Fluoranthene*	0.700	0.040	0.019	mg/kg	40	12/02/22 02:49	8270C		MS
Pyrene*	0.606	0.040	0.013	mg/kg	40	12/02/22 02:49	8270C		MS
Benzo[a]anthracene*	0.259	0.040	0.023	mg/kg	40	12/02/22 02:49	8270C		MS
Chrysene	0.249	0.040	0.017	mg/kg	40	12/02/22 02:49	8270C		MS
Benzo[b]fluoranthene*	0.208	0.040	0.019	mg/kg	40	12/02/22 02:49	8270C		MS
Benzo[k]fluoranthene*	0.075	0.040	0.016	mg/kg	40	12/02/22 02:49	8270C		MS
Benzo[a]pyrene*	0.169	0.040	0.018	mg/kg	40	12/02/22 02:49	8270C		MS
Indeno[1,2,3-cd]pyrene*	0.072	0.040	0.017	mg/kg	40	12/02/22 02:49	8270C		MS
Dibenz[a,h]anthracene*	<0.040	0.040	0.019	mg/kg	40	12/02/22 02:49	8270C		MS

Surrogate: Nitrobenzene-d5 74.3 % 39.6-121 12/02/22 02:49 8270C MS

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Jeremy D Allen, Laboratory Director

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Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS02

2211211-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Polynuclear Aromatic Compounds by GC/MS

Surrogate: 2-Fluorobiphenyl	92.6 %	39.8-134				12/02/22 02:49	8270C		MS
Surrogate: Terphenyl-dl4	96.6 %	33.3-136				12/02/22 02:49	8270C		MS

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Jeremy D Allen, Laboratory Director

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Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS03

2211211-03 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Hexavalent Chromium	<0.250	0.250	0.128	mg/kg dry	25	11/22/22 13:35	3060A/3500-Cr B		HTB
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Saturated Paste Extraction

Calcium	87.1	0.100	0.058	mg/L	1	12/01/22 15:55	EPA200.7		AES
Conductivity	803			umho/cm@25 C	1	11/29/22 16:00	ASA#9 10-3.3		JDA
Magnesium	28.9	0.100	0.065	mg/L	1	12/01/22 15:56	EPA200.7		AES
pH	7.78			pH Units	1	11/29/22 16:00	ASA#9 10-3.2		JDA
SAR	0.61			No Unit	1	12/01/22 15:55	Calculation		AES
Sodium	25.8	1.00	0.079	mg/L	1	12/01/22 15:55	EPA200.7		AES

Total Metals by ICP

Barium	136	5.00	1.10	mg/kg dry	100	12/01/22 13:25	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	12/01/22 13:25	6010B		AES
Chromium	19.2	5.00	1.58	mg/kg dry	100	12/01/22 13:25	6010B		AES
Copper	8.82	5.00	2.83	mg/kg dry	100	12/01/22 13:25	6010B		AES
Lead	14.4	10.0	4.02	mg/kg dry	100	12/01/22 13:25	6010B		AES
Nickel	11.3	5.00	2.41	mg/kg dry	100	12/01/22 13:25	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	12/01/22 13:25	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	12/01/22 13:25	6010B		AES
Zinc	51.7	10.0	2.18	mg/kg dry	100	12/01/22 13:25	6010B		AES

Total Metals by ICPMS

Arsenic	3.93	1.00	0.158	mg/kg dry	1000	12/01/22 16:51	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	12/01/22 14:40	EPA200.7		AES
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	11/23/22 04:04	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	11/23/22 04:04	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	11/23/22 04:04	8015B		MS

Surrogate: 1-Chlorooctane 68.5 % 45.3-161 11/23/22 04:04 8015B MS

Surrogate: 1-Chlorooctadecane 81.9 % 46.3-178 11/23/22 04:04 8015B MS

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS03

2211211-03 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

VOLATILES BY GC/MS

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	11/22/22 18:48	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	11/22/22 18:48	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	11/22/22 18:48	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	11/22/22 18:48	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	11/22/22 18:48	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0256	mg/kg	50	11/22/22 18:48	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	11/22/22 18:48	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	11/22/22 18:48	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	11/22/22 18:48	8260B		MS

Surrogate: Dibromofluoromethane 91.2 % 84.6-114 11/22/22 18:48 8260B MS

Surrogate: Toluene-d8 100 % 90.4-109 11/22/22 18:48 8260B MS

Surrogate: 4-Bromofluorobenzene 97.6 % 82.5-117 11/22/22 18:48 8260B MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.040	0.040	0.015	mg/kg	40	12/02/22 03:20	8270C		MS
2-Methylnaphthalene*	<0.040	0.040	0.023	mg/kg	40	12/02/22 03:20	8270C		MS
1-Methylnaphthalene	<0.040	0.040	0.016	mg/kg	40	12/02/22 03:20	8270C		MS
Acenaphthene*	<0.040	0.040	0.024	mg/kg	40	12/02/22 03:20	8270C		MS
Fluorene*	<0.040	0.040	0.014	mg/kg	40	12/02/22 03:20	8270C		MS
Anthracene*	<0.040	0.040	0.017	mg/kg	40	12/02/22 03:20	8270C		MS
Fluoranthene*	<0.040	0.040	0.019	mg/kg	40	12/02/22 03:20	8270C		MS
Pyrene*	<0.040	0.040	0.013	mg/kg	40	12/02/22 03:20	8270C		MS
Benzo[a]anthracene*	<0.040	0.040	0.023	mg/kg	40	12/02/22 03:20	8270C		MS
Chrysene	<0.040	0.040	0.017	mg/kg	40	12/02/22 03:20	8270C		MS
Benzo[b]fluoranthene*	<0.040	0.040	0.019	mg/kg	40	12/02/22 03:20	8270C		MS
Benzo[k]fluoranthene*	<0.040	0.040	0.016	mg/kg	40	12/02/22 03:20	8270C		MS
Benzo[a]pyrene*	<0.040	0.040	0.018	mg/kg	40	12/02/22 03:20	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.040	0.040	0.017	mg/kg	40	12/02/22 03:20	8270C		MS
Dibenz[a,h]anthracene*	<0.040	0.040	0.019	mg/kg	40	12/02/22 03:20	8270C		MS

Surrogate: Nitrobenzene-d5 67.5 % 39.6-121 12/02/22 03:20 8270C MS

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

SS03

2211211-03 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Polynuclear Aromatic Compounds by GC/MS

Surrogate: 2-Fluorobiphenyl	81.5 %	39.8-134				12/02/22 03:20	8270C		MS
Surrogate: Terphenyl-dl4	81.6 %	33.3-136				12/02/22 03:20	8270C		MS

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Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B223262 - General Prep - Wet Chem

Blank (B223262-BLK1)

Prepared: 11/21/22 Analyzed: 11/22/22

Hexavalent Chromium	ND	0.250	mg/kg dry							
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LCS (B223262-BS1)

Prepared: 11/21/22 Analyzed: 11/22/22

Hexavalent Chromium	2.40	0.250	mg/kg dry	2.50		96.2	85-115			
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Saturated Paste Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B223325 - Paste Extract

Blank (B223325-BLK1)

Prepared: 11/29/22 Analyzed: 12/01/22

Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
SAR	0.00		No Unit							
Sodium	ND	1.00	mg/L							

Reference (B223325-SRM1)

Prepared: 11/29/22 Analyzed: 12/01/22

SAR	10.7		No Unit	10.5		101	90-110			
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Batch B223326 - Paste Extract

Reference (B223326-SRM1)

Prepared & Analyzed: 11/29/22

pH	7.05		pH Units	6.93		102	92-108			
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Batch B223327 - Paste Extract

Reference (B223327-SRM1)

Prepared & Analyzed: 11/29/22

Conductivity	8200		umho/cm@2 5C	8340		98.4	90-110			
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PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

Total Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B223310 - EPA 3050

Blank (B223310-BLK1)

Prepared: 11/29/22 Analyzed: 12/01/22

Barium	ND	5.00	mg/kg dry
Cadmium	ND	5.00	mg/kg dry
Chromium	ND	5.00	mg/kg dry
Copper	ND	5.00	mg/kg dry
Lead	ND	10.0	mg/kg dry
Nickel	ND	5.00	mg/kg dry
Selenium	ND	20.0	mg/kg dry
Silver	ND	1.00	mg/kg dry
Zinc	ND	10.0	mg/kg dry

LCS (B223310-BS1)

Prepared: 11/29/22 Analyzed: 12/01/22

Barium	191	5.00	mg/kg dry	200	95.7	80-120
Cadmium	179	5.00	mg/kg dry	200	89.4	80-120
Chromium	194	5.00	mg/kg dry	200	97.0	80-120
Copper	396	5.00	mg/kg dry	400	99.1	80-120
Lead	179	10.0	mg/kg dry	200	89.7	80-120
Nickel	184	5.00	mg/kg dry	200	92.1	80-120
Selenium	783	20.0	mg/kg dry	800	97.9	80-120
Silver	9.32	1.00	mg/kg dry	10.0	93.2	80-120
Zinc	168	10.0	mg/kg dry	200	84.2	80-120

LCS Dup (B223310-BSD1)

Prepared: 11/29/22 Analyzed: 12/01/22

Barium	189	5.00	mg/kg dry	200	94.6	80-120	1.15	20
Cadmium	176	5.00	mg/kg dry	200	87.9	80-120	1.62	20
Chromium	191	5.00	mg/kg dry	200	95.7	80-120	1.30	20
Copper	393	5.00	mg/kg dry	400	98.4	80-120	0.702	20
Lead	178	10.0	mg/kg dry	200	89.1	80-120	0.676	20
Nickel	184	5.00	mg/kg dry	200	91.9	80-120	0.231	20
Selenium	780	20.0	mg/kg dry	800	97.5	80-120	0.472	20
Silver	9.24	1.00	mg/kg dry	10.0	92.4	80-120	0.857	20
Zinc	167	10.0	mg/kg dry	200	83.6	80-120	0.726	20

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

Total Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B223335 - EPA 3050M

Blank (B223335-BLK1)

Prepared: 11/30/22 Analyzed: 12/01/22

Arsenic	ND	1.00	mg/kg dry							
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LCS (B223335-BS1)

Prepared: 11/30/22 Analyzed: 12/01/22

Arsenic	5.27	1.00	mg/kg dry	5.00		105	80-120			
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LCS Dup (B223335-BSD1)

Prepared: 11/30/22 Analyzed: 12/01/22

Arsenic	5.28	1.00	mg/kg dry	5.00		106	80-120	0.292	20	
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Hot Water Extractable - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B223324 - Hot Water Soluble Metals Extract

Blank (B223324-BLK1)

Prepared: 11/29/22 Analyzed: 12/01/22

Boron	ND	1.20	mg/L							
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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

Petroleum Hydrocarbons by GC FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2112219 - General Prep - Organics

Blank (2112219-BLK1)

Prepared & Analyzed: 11/22/22

Surrogate: 1-Chlorooctadecane	57.9		mg/kg	50.0		116	46.3-178			
Surrogate: 1-Chlorooctane	53.3		mg/kg	50.0		107	45.3-161			
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
GRO C6-C10	ND	10.0	mg/kg							

LCS (2112219-BS1)

Prepared & Analyzed: 11/22/22

Surrogate: 1-Chlorooctadecane	64.3		mg/kg	50.0		129	46.3-178			
Surrogate: 1-Chlorooctane	55.9		mg/kg	50.0		112	45.3-161			
DRO >C10-C28	184	10.0	mg/kg	200		91.9	74.9-127			
GRO C6-C10	195	10.0	mg/kg	200		97.7	76.8-124			
Total TPH C6-C28	379	10.0	mg/kg	400		94.8	77.5-124			

LCS Dup (2112219-BSD1)

Prepared & Analyzed: 11/22/22

Surrogate: 1-Chlorooctadecane	61.5		mg/kg	50.0		123	46.3-178			
Surrogate: 1-Chlorooctane	58.2		mg/kg	50.0		116	45.3-161			
DRO >C10-C28	197	10.0	mg/kg	200		98.4	74.9-127	6.75	18.6	
GRO C6-C10	216	10.0	mg/kg	200		108	76.8-124	9.92	17.2	
Total TPH C6-C28	413	10.0	mg/kg	400		103	77.5-124	8.40	17.6	

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

VOLATILES BY GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2112216 - Volatiles**Blank (2112216-BLK1)**

Prepared & Analyzed: 11/22/22

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg							
Surrogate: 4-Bromofluorobenzene	1.23		mg/kg	1.25		98.4	82.5-117			
Benzene	ND	0.0250	mg/kg							
Surrogate: Dibromofluoromethane	1.17		mg/kg	1.25		93.5	84.6-114			
Ethylbenzene	ND	0.0250	mg/kg							
m+p - Xylene	ND	0.0500	mg/kg							
Naphthalene	ND	0.0250	mg/kg							
o-Xylene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	mg/kg							
Surrogate: Toluene-d8	1.26		mg/kg	1.25		100	90.4-109			
Total Xylenes	ND	0.0750	mg/kg							

LCS (2112216-BS1)

Prepared & Analyzed: 11/22/22

1,2,4-Trimethylbenzene	0.509	0.0250	mg/kg	0.500		102	62.4-140			
1,3,5-Trimethylbenzene	0.520	0.0250	mg/kg	0.500		104	64.4-138			
Surrogate: 4-Bromofluorobenzene	1.25		mg/kg	1.25		100	82.5-117			
Benzene	0.509	0.0250	mg/kg	0.500		102	73-130			
Surrogate: Dibromofluoromethane	1.21		mg/kg	1.25		96.8	84.6-114			
Ethylbenzene	0.510	0.0250	mg/kg	0.500		102	75.4-127			
m+p - Xylene	1.03	0.0500	mg/kg	1.00		103	71.8-133			
Naphthalene	0.411	0.0250	mg/kg	0.500		82.1	28.7-158			
o-Xylene	0.505	0.0250	mg/kg	0.500		101	78.6-125			
Toluene	0.522	0.0250	mg/kg	0.500		104	79-122			
Surrogate: Toluene-d8	1.28		mg/kg	1.25		102	90.4-109			
Total Xylenes	1.53	0.0750	mg/kg	1.50		102	74.6-130			

LCS Dup (2112216-BSD1)

Prepared & Analyzed: 11/22/22

1,2,4-Trimethylbenzene	0.508	0.0250	mg/kg	0.500		102	62.4-140	0.147	38.2	
1,3,5-Trimethylbenzene	0.502	0.0250	mg/kg	0.500		100	64.4-138	3.54	39.1	
Surrogate: 4-Bromofluorobenzene	1.26		mg/kg	1.25		100	82.5-117			
Benzene	0.509	0.0250	mg/kg	0.500		102	73-130	0.0649	17.1	
Surrogate: Dibromofluoromethane	1.19		mg/kg	1.25		94.8	84.6-114			
Ethylbenzene	0.504	0.0250	mg/kg	0.500		101	75.4-127	1.19	16.5	
m+p - Xylene	1.02	0.0500	mg/kg	1.00		102	71.8-133	0.730	19.1	
Naphthalene	0.359	0.0250	mg/kg	0.500		71.8	28.7-158	13.4	64	
o-Xylene	0.489	0.0250	mg/kg	0.500		97.8	78.6-125	3.22	13.2	
Toluene	0.518	0.0250	mg/kg	0.500		104	79-122	0.850	18.3	

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Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

VOLATILES BY GC/MS - Quality Control
(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2112216 - Volatiles (Continued)

LCS Dup (2112216-BSD1) (Continued)

Prepared & Analyzed: 11/22/22

Surrogate: Toluene-d8	1.26		mg/kg	1.25		101	90.4-109			
Total Xylenes	1.51	0.0750	mg/kg	1.50		101	74.6-130	1.54	16.5	

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Jeremy D Allen, Laboratory Director

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

Polynuclear Aromatic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2112808 - SW846-3510

Blank (2112808-BLK1)

Prepared: 11/28/22 Analyzed: 12/02/22

1-Methylnaphthalene	ND	0.040	mg/kg							
Surrogate: 2-Fluorobiphenyl	1.63		mg/kg	2.00		81.7	39.8-134			
2-Methylnaphthalene	ND	0.040	mg/kg							
Acenaphthene	ND	0.040	mg/kg							
Anthracene	ND	0.040	mg/kg							
Benzo[a]anthracene	ND	0.040	mg/kg							
Benzo[a]pyrene	ND	0.040	mg/kg							
Benzo[b]fluoranthene	ND	0.040	mg/kg							
Benzo[k]fluoranthene	ND	0.040	mg/kg							
Chrysene	ND	0.040	mg/kg							
Dibenz[a,h]anthracene	ND	0.040	mg/kg							
Fluoranthene	ND	0.040	mg/kg							
Fluorene	ND	0.040	mg/kg							
Indeno[1,2,3-cd]pyrene	ND	0.040	mg/kg							
Naphthalene	ND	0.040	mg/kg							
Surrogate: Nitrobenzene-d5	1.39		mg/kg	2.00		69.6	39.6-121			
Pyrene	ND	0.040	mg/kg							
Surrogate: Terphenyl-d14	1.63		mg/kg	2.00		81.4	33.3-136			

LCS (2112808-BS1)

Prepared: 11/28/22 Analyzed: 12/02/22

1-Methylnaphthalene	0.314	0.040	mg/kg	0.400		78.5	57.6-108			
Surrogate: 2-Fluorobiphenyl	1.75		mg/kg	2.00		87.7	39.8-134			
2-Methylnaphthalene	0.312	0.040	mg/kg	0.400		78.1	59-106			
Acenaphthene	0.328	0.040	mg/kg	0.400		82.1	60.9-105			
Acenaphthylene	0.342	0.040	mg/kg	0.400		85.5	57.4-107			
Anthracene	0.322	0.040	mg/kg	0.400		80.6	60.8-105			
Benzo[a]anthracene	0.327	0.040	mg/kg	0.400		81.6	56.1-121			
Benzo[a]pyrene	0.334	0.040	mg/kg	0.400		83.5	56.7-115			
Benzo[b]fluoranthene	0.331	0.040	mg/kg	0.400		82.8	45.4-128			
Benzo[g,h,i]perylene	0.335	0.040	mg/kg	0.400		83.8	56.5-107			
Benzo[k]fluoranthene	0.314	0.040	mg/kg	0.400		78.5	49.6-119			
Carbazole	0.331	0.040	mg/kg	0.400		82.7	59.7-107			
Chrysene	0.331	0.040	mg/kg	0.400		82.9	12.2-190			
Dibenz[a,h]anthracene	0.341	0.040	mg/kg	0.400		85.3	59.1-111			
Fluoranthene	0.334	0.040	mg/kg	0.400		83.6	60.6-111			
Fluorene	0.322	0.040	mg/kg	0.400		80.6	59.3-108			
Indeno[1,2,3-cd]pyrene	0.335	0.040	mg/kg	0.400		83.7	53.4-116			
Naphthalene	0.316	0.040	mg/kg	0.400		79.1	56.5-106			

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

Polynuclear Aromatic Compounds by GC/MS - Quality Control
(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2112808 - SW846-3510 (Continued)

LCS (2112808-BS1) (Continued)

Prepared: 11/28/22 Analyzed: 12/02/22

Surrogate: Nitrobenzene-d5	1.42		mg/kg	2.00		70.8	39.6-121			
Phenanthrene	0.326	0.040	mg/kg	0.400		81.6	59.9-107			
Pyrene	0.318	0.040	mg/kg	0.400		79.5	51.5-122			
Surrogate: Terphenyl-d14	1.68		mg/kg	2.00		84.0	33.3-136			

LCS Dup (2112808-BS1)

Prepared: 11/28/22 Analyzed: 12/02/22

1-Methylnaphthalene	0.358	0.040	mg/kg	0.400		89.5	57.6-108	13.0	6.22	
Surrogate: 2-Fluorobiphenyl	1.63		mg/kg	2.00		81.6	39.8-134			
2-Methylnaphthalene	0.340	0.040	mg/kg	0.400		85.1	59-106	8.65	6.23	
Acenaphthene	0.317	0.040	mg/kg	0.400		79.1	60.9-105	3.61	8.18	
Acenaphthylene	0.325	0.040	mg/kg	0.400		81.3	57.4-107	5.10	5	
Anthracene	0.346	0.040	mg/kg	0.400		86.5	60.8-105	7.10	3.68	
Benzo[a]anthracene	0.327	0.040	mg/kg	0.400		81.8	56.1-121	0.147	9.01	
Benzo[a]pyrene	0.332	0.040	mg/kg	0.400		82.9	56.7-115	0.739	4.92	
Benzo[b]fluoranthene	0.312	0.040	mg/kg	0.400		77.9	45.4-128	6.11	7.63	
Benzo[g,h,i]perylene	0.310	0.040	mg/kg	0.400		77.6	56.5-107	7.71	12.5	
Benzo[k]fluoranthene	ND	0.040	mg/kg	0.400			49.6-119		10.6	
Carbazole	0.347	0.040	mg/kg	0.400		86.8	59.7-107	4.87	8.65	
Chrysene	0.321	0.040	mg/kg	0.400		80.2	12.2-190	3.33	21.8	
Dibenz[a,h]anthracene	0.324	0.040	mg/kg	0.400		81.1	59.1-111	5.09	11.6	
Fluoranthene	0.346	0.040	mg/kg	0.400		86.6	60.6-111	3.51	7.54	
Fluorene	0.323	0.040	mg/kg	0.400		80.6	59.3-108	0.0310	5.49	
Indeno[1,2,3-cd]pyrene	0.310	0.040	mg/kg	0.400		77.6	53.4-116	7.53	22.3	
Naphthalene	0.342	0.040	mg/kg	0.400		85.4	56.5-106	7.65	4.56	
Surrogate: Nitrobenzene-d5	1.51		mg/kg	2.00		75.7	39.6-121			
Phenanthrene	0.344	0.040	mg/kg	0.400		86.1	59.9-107	5.37	5.21	
Pyrene	0.341	0.040	mg/kg	0.400		85.1	51.5-122	6.87	10.6	
Surrogate: Terphenyl-d14	1.83		mg/kg	2.00		91.7	33.3-136			

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Jeremy D Allen, Laboratory Director

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Champlin 117 Amoco C #2
Project Manager: Kyle Siesser

Reported:
12/09/22 13:39

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
*Results reported on as received basis unless designated as dry.
RPD Relative Percent Difference
LCS Laboratory Control Sample (Blank Spike)
RL Report Limit
MDL Method Detection Limit

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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75 Suttle St Durango, CO 81303

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Cottonwood Consulting LLC		P.O. #:		Bill to (if different):		ANALYSIS REQUEST																																			
Project Manager: Jacob Harter		Company:																																							
Address: PO Box 1653		City: Durango		State: CO Zip: 81302																																					
Phone #: 970-946-3761		Email: jharter@cottonwoodconsulting.com		Address:																																					
Additional Report To:		City:		State:		Zip:																																			
Project Name: Champion 117 Ameco C #2		Phone #:		Fax or Email:																																					
Project Number:		Sample Name (Print): Jacob Harter		K5																																					
FOR LAB USE ONLY		Sample Name or Location		Collected		Matrix (check one)		# of containers																																	
Lab I.D.		Date		Time		GROUNDWATER		SURFACEWATER		WASTEWATER		PRODUCEDWATER		SOIL		OTHER :		No preservation (general)		HNO ₃		HCl		H ₂ SO ₄		Other:		Other:													
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