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13 August 2021

Jake Harter  
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 07/30/21 08:15. The data to follow was performed, in whole or in part, by a subcontract laboratory with an additional report attached.

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

Sincerely,

A handwritten signature in blue ink that reads 'Jeremy D. Allen'.

Jeremy D Allen For Debbie Zufelt  
Reports Manager

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: T104704514-21-12

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: T104704398-21-14



Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS01	2107314-01	Solid	07/28/21 08:50	07/30/21 08:15	
SS02	2107314-02	Solid	07/28/21 09:00	07/30/21 08:15	
SS03	2107314-03	Solid	07/28/21 09:10	07/30/21 08:15	

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Jeremy D Allen For Debbie Zufelt, Reports Manager

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding (OWP) #9 Project Manager: Jake Harter	Reported: 08/13/21 16:06
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**SS01**

**2107314-01 (Soil)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	77.3	0.100	0.058	mg/L	1	08/13/21 12:20	EPA200.7		AES
Conductivity	522			umho/cm @ 25.0°C	1	08/13/21 14:45	ASA#9 10-3.3		VJW
Magnesium	12.3	0.100	0.065	mg/L	1	08/13/21 12:20	EPA200.7		AES
pH	6.69			pH Units	1	08/13/21 08:30	ASA#9 10-3.2		VJW
SAR	0.57			No Unit	1	08/13/21 12:20	Calculation		AES
Sodium	20.5	1.00	0.079	mg/L	1	08/13/21 12:20	EPA200.7		AES

**Total Metals by ICP**

Barium	107	5.00	0.390	mg/kg dry	100	08/06/21 14:39	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	08/06/21 14:39	6010B		AES
Chromium	25.8	5.00	0.400	mg/kg dry	100	08/06/21 14:39	6010B		AES
Copper	30.5	5.00	2.39	mg/kg dry	100	08/06/21 14:39	6010B		AES
Lead	353	10.0	0.906	mg/kg dry	100	08/06/21 14:39	6010B		AES
Nickel	17.3	5.00	0.874	mg/kg dry	100	08/06/21 14:39	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	08/06/21 14:39	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	08/06/21 14:39	6010B		AES
Zinc	104	10.0	1.71	mg/kg dry	100	08/06/21 14:39	6010B		AES

**Total Metals by ICPMS**

Arsenic	7.00	1.00	0.0950	mg/kg dry	1000	08/10/21 17:52	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	08/13/21 12:51	EPA200.7		AES
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**Subcontracted -- Cardinal Laboratories**

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	08/04/21 20:34	8015B		MS
DRO >C10-C28*	87.3	10.0	4.26	mg/kg	1	08/04/21 20:34	8015B		MS
EXT DRO >C28-C36	88.0	10.0	4.26	mg/kg	1	08/04/21 20:34	8015B		MS

Surrogate: 1-Chlorooctane			70.5 %	44.3-133		08/04/21 20:34	8015B		MS
Surrogate: 1-Chlorooctadecane			73.4 %	38.9-142		08/04/21 20:34	8015B		MS

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SS01

2107314-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	08/03/21 17:38	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/03/21 17:38	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/03/21 17:38	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/03/21 17:38	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/03/21 17:38	8260B		MS
Total Xylenes*	<0.0250	0.0250	0.0250	mg/kg	50	08/03/21 17:38	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/03/21 17:38	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/03/21 17:38	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/03/21 17:38	8260B		MS
Surrogate: Dibromofluoromethane			100 %	84.6-114		08/03/21 17:38	8260B		MS
Surrogate: Toluene-d8			102 %	90.4-109		08/03/21 17:38	8260B		MS
Surrogate: 4-Bromofluorobenzene			98.6 %	82.5-117		08/03/21 17:38	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.153	0.400	0.153	mg/kg	400	08/10/21 14:48	8270C		MS
2-Methylnaphthalene*	<0.226	0.400	0.226	mg/kg	400	08/10/21 14:48	8270C		MS
1-Methylnaphthalene	<0.161	0.400	0.161	mg/kg	400	08/10/21 14:48	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	08/10/21 14:48	8270C		MS
Acenaphthene*	<0.235	0.400	0.235	mg/kg	400	08/10/21 14:48	8270C		MS
Fluorene*	<0.142	0.400	0.142	mg/kg	400	08/10/21 14:48	8270C		MS
Phenanthrene*	<0.214	0.400	0.214	mg/kg	400	08/10/21 14:48	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	08/10/21 14:48	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	08/10/21 14:48	8270C		MS
Fluoranthene*	<0.185	0.400	0.185	mg/kg	400	08/10/21 14:48	8270C		MS
Pyrene*	<0.132	0.400	0.132	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	08/10/21 14:48	8270C		MS
Chrysene*	<0.172	0.400	0.172	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	08/10/21 14:48	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding (OWP) #9 Project Manager: Jake Harter	Reported: 08/13/21 16:06
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**SS01**

**2107314-01 (Soil)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories

**Polynuclear Aromatic Compounds by GC/MS**

<b>Indeno[1,2,3-cd]pyrene*</b>	<0.168	0.400	0.168	mg/kg	400	08/10/21 14:48	8270C		MS
<b>Dibenz[a,h]anthracene*</b>	<0.186	0.400	0.186	mg/kg	400	08/10/21 14:48	8270C		MS
<b>Benzo[g,h,i]perylene*</b>	<0.186	0.400	0.186	mg/kg	400	08/10/21 14:48	8270C		MS
<i>Surrogate: Nitrobenzene-d5</i>			106 %	39.6-121		08/10/21 14:48	8270C		MS
<i>Surrogate: 2-Fluorobiphenyl</i>			95.3 %	39.8-134		08/10/21 14:48	8270C		MS
<i>Surrogate: Terphenyl-d14</i>			99.3 %	33.3-136		08/10/21 14:48	8270C		MS

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**SS02**

**2107314-02 (Soil)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	384	0.500	0.289	mg/L	5	08/13/21 12:22	EPA200.7		AES
Conductivity	2810			umho/cm @ 25.0°C	1	08/13/21 14:45	ASA#9 10-3.3		VJW
Magnesium	71.9	0.500	0.327	mg/L	5	08/13/21 12:22	EPA200.7		AES
pH	7.36			pH Units	1	08/13/21 08:30	ASA#9 10-3.2		VJW
SAR	2.17			No Unit	1	08/13/21 12:22	Calculation		AES
Sodium	177	5.00	0.396	mg/L	5	08/13/21 12:22	EPA200.7		AES

**Total Metals by ICP**

Barium	120	5.00	0.390	mg/kg dry	100	08/06/21 14:43	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	08/06/21 14:43	6010B		AES
Chromium	17.7	5.00	0.400	mg/kg dry	100	08/06/21 14:43	6010B		AES
Copper	29.3	5.00	2.39	mg/kg dry	100	08/06/21 14:43	6010B		AES
Lead	19.2	10.0	0.906	mg/kg dry	100	08/06/21 14:43	6010B		AES
Nickel	11.6	5.00	0.874	mg/kg dry	100	08/06/21 14:43	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	08/06/21 14:43	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	08/06/21 14:43	6010B		AES
Zinc	260	10.0	1.71	mg/kg dry	100	08/06/21 14:43	6010B		AES

**Total Metals by ICPMS**

Arsenic	6.04	1.00	0.0950	mg/kg dry	1000	08/10/21 17:56	6020A		AES
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**Hot Water Extractable**

Boron	5.65	1.20	0.568	mg/L	4	08/13/21 12:55	EPA200.7		AES
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**Subcontracted -- Cardinal Laboratories**

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	08/04/21 21:00	8015B		MS
DRO >C10-C28*	81.9	10.0	4.26	mg/kg	1	08/04/21 21:00	8015B		MS
EXT DRO >C28-C36	70.5	10.0	4.26	mg/kg	1	08/04/21 21:00	8015B		MS

Surrogate: 1-Chlorooctane			74.1 %	44.3-133		08/04/21 21:00	8015B		MS
Surrogate: 1-Chlorooctadecane			76.7 %	38.9-142		08/04/21 21:00	8015B		MS

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SS02

2107314-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	08/03/21 18:01	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/03/21 18:01	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/03/21 18:01	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/03/21 18:01	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/03/21 18:01	8260B		MS
Total Xylenes*	<0.0250	0.0250	0.0250	mg/kg	50	08/03/21 18:01	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/03/21 18:01	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/03/21 18:01	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/03/21 18:01	8260B		MS
Surrogate: Dibromofluoromethane			100 %	84.6-114		08/03/21 18:01	8260B		MS
Surrogate: Toluene-d8			103 %	90.4-109		08/03/21 18:01	8260B		MS
Surrogate: 4-Bromofluorobenzene			99.7 %	82.5-117		08/03/21 18:01	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.153	0.400	0.153	mg/kg	400	08/10/21 15:17	8270C		MS
2-Methylnaphthalene*	<0.226	0.400	0.226	mg/kg	400	08/10/21 15:17	8270C		MS
1-Methylnaphthalene	<0.161	0.400	0.161	mg/kg	400	08/10/21 15:17	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	08/10/21 15:17	8270C		MS
Acenaphthene*	<0.235	0.400	0.235	mg/kg	400	08/10/21 15:17	8270C		MS
Fluorene*	<0.142	0.400	0.142	mg/kg	400	08/10/21 15:17	8270C		MS
Phenanthrene*	<0.214	0.400	0.214	mg/kg	400	08/10/21 15:17	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	08/10/21 15:17	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	08/10/21 15:17	8270C		MS
Fluoranthene*	<0.185	0.400	0.185	mg/kg	400	08/10/21 15:17	8270C		MS
Pyrene*	<0.132	0.400	0.132	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	08/10/21 15:17	8270C		MS
Chrysene*	<0.172	0.400	0.172	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	08/10/21 15:17	8270C		MS

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SS02

2107314-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories

Polynuclear Aromatic Compounds by GC/MS

Indeno[1,2,3-cd]pyrene*	<0.168	0.400	0.168	mg/kg	400	08/10/21 15:17	8270C		MS
Dibenz[a,h]anthracene*	<0.186	0.400	0.186	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[g,h,i]perylene*	<0.186	0.400	0.186	mg/kg	400	08/10/21 15:17	8270C		MS
Surrogate: Nitrobenzene-d5			82.5 %	39.6-121		08/10/21 15:17	8270C		MS
Surrogate: 2-Fluorobiphenyl			85.1 %	39.8-134		08/10/21 15:17	8270C		MS
Surrogate: Terphenyl-d14			87.9 %	33.3-136		08/10/21 15:17	8270C		MS

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**SS03**

**2107314-03 (Soil)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	37.2	0.100	0.058	mg/L	1	08/13/21 12:26	EPA200.7		AES
Conductivity	298			umho/cm @ 25.0°C	1	08/13/21 14:45	ASA#9 10-3.3		VJW
Magnesium	9.49	0.100	0.065	mg/L	1	08/13/21 12:26	EPA200.7		AES
pH	6.23			pH Units	1	08/13/21 08:30	ASA#9 10-3.2		VJW
SAR	0.49			No Unit	1	08/13/21 12:26	Calculation		AES
Sodium	13.0	1.00	0.079	mg/L	1	08/13/21 12:26	EPA200.7		AES

**Total Metals by ICP**

Barium	142	5.00	0.390	mg/kg dry	100	08/06/21 13:36	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	08/06/21 13:36	6010B		AES
Chromium	25.9	5.00	0.400	mg/kg dry	100	08/06/21 13:36	6010B		AES
Copper	41.0	5.00	2.39	mg/kg dry	100	08/06/21 13:36	6010B		AES
Lead	15.0	10.0	0.906	mg/kg dry	100	08/06/21 13:36	6010B		AES
Nickel	14.4	5.00	0.874	mg/kg dry	100	08/06/21 13:36	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	08/06/21 13:36	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	08/06/21 13:36	6010B		AES
Zinc	83.1	10.0	1.71	mg/kg dry	100	08/06/21 13:36	6010B		AES

**Total Metals by ICPMS**

Arsenic	20.1	1.00	0.0950	mg/kg dry	1000	08/10/21 17:59	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	08/13/21 12:58	EPA200.7		AES
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**Subcontracted -- Cardinal Laboratories**

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	08/04/21 21:25	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	08/04/21 21:25	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	08/04/21 21:25	8015B		MS

Surrogate: 1-Chlorooctane			74.8 %	44.3-133		08/04/21 21:25	8015B		MS
Surrogate: 1-Chlorooctadecane			70.9 %	38.9-142		08/04/21 21:25	8015B		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding (OWP) #9 Project Manager: Jake Harter	Reported: 08/13/21 16:06
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SS03

2107314-03 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	08/03/21 18:25	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/03/21 18:25	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/03/21 18:25	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/03/21 18:25	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/03/21 18:25	8260B		MS
Total Xylenes*	<0.0250	0.0250	0.0250	mg/kg	50	08/03/21 18:25	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/03/21 18:25	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/03/21 18:25	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/03/21 18:25	8260B		MS
Surrogate: Dibromofluoromethane			98.9 %	84.6-114		08/03/21 18:25	8260B		MS
Surrogate: Toluene-d8			102 %	90.4-109		08/03/21 18:25	8260B		MS
Surrogate: 4-Bromofluorobenzene			96.4 %	82.5-117		08/03/21 18:25	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	08/10/21 15:47	8270C		MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	08/10/21 15:47	8270C		MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	08/10/21 15:47	8270C		MS
Acenaphthylene*	<0.020	0.040	0.020	mg/kg	40	08/10/21 15:47	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	08/10/21 15:47	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	08/10/21 15:47	8270C		MS
Phenanthrene*	<0.021	0.040	0.021	mg/kg	40	08/10/21 15:47	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	08/10/21 15:47	8270C		MS
Carbazole*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	08/10/21 15:47	8270C		MS
Chrysene*	<0.017	0.040	0.017	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	08/10/21 15:47	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding (OWP) #9 Project Manager: Jake Harter	Reported: 08/13/21 16:06
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SS03

2107314-03 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories

Polynuclear Aromatic Compounds by GC/MS

Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	08/10/21 15:47	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[g,h,i]perylene*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Surrogate: Nitrobenzene-d5			87.8 %	39.6-121		08/10/21 15:47	8270C		MS
Surrogate: 2-Fluorobiphenyl			89.2 %	39.8-134		08/10/21 15:47	8270C		MS
Surrogate: Terphenyl-d14			88.5 %	33.3-136		08/10/21 15:47	8270C		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding (OWP) #9	<b>Reported:</b>
Durango CO, 81302	Project Manager: Jake Harter	08/13/21 16:06

**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 B211850 - Paste Extract**

**Blank (B211850-BLK1)**

Prepared: 08/12/21 Analyzed: 08/13/21

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

**Reference (B211850-SRM1)**

Prepared: 08/12/21 Analyzed: 08/13/21

SAR	7.93		No Unit	7.50		106	90-110			
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**Batch B211851 - Paste Extract**

**Reference (B211851-SRM1)**

Prepared: 08/12/21 Analyzed: 08/13/21

Conductivity	7800		umho/cm @ 25.0°C	6720		116	90-110			BS1
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**Batch B211852 - Paste Extract**

**Reference (B211852-SRM1)**

Prepared: 08/12/21 Analyzed: 08/13/21

pH	8.65		pH Units	9.14		94.6	95-105			
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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding (OWP) #9	<b>Reported:</b>
Durango CO, 81302	Project Manager: Jake Harter	08/13/21 16:06

**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 B211785 - EPA 3050**

**Blank (B211785-BLK1)**

Prepared: 08/05/21 Analyzed: 08/06/21

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 (B211785-BS1)**

Prepared: 08/05/21 Analyzed: 08/06/21

Barium	186	5.00	mg/kg dry	200		93.0	80-120			
Cadmium	175	5.00	mg/kg dry	200		87.6	80-120			
Chromium	186	5.00	mg/kg dry	200		93.1	80-120			
Copper	391	5.00	mg/kg dry	400		97.6	80-120			
Lead	182	10.0	mg/kg dry	200		91.2	80-120			
Nickel	181	5.00	mg/kg dry	200		90.6	80-120			
Selenium	790	20.0	mg/kg dry	800		98.8	80-120			
Silver	9.34	1.00	mg/kg dry	10.0		93.4	80-120			
Zinc	171	10.0	mg/kg dry	200		85.6	80-120			

**LCS Dup (B211785-BSD1)**

Prepared: 08/05/21 Analyzed: 08/06/21

Barium	185	5.00	mg/kg dry	200		92.6	80-120	0.437	20	
Cadmium	173	5.00	mg/kg dry	200		86.7	80-120	0.949	20	
Chromium	185	5.00	mg/kg dry	200		92.7	80-120	0.430	20	
Copper	388	5.00	mg/kg dry	400		96.9	80-120	0.719	20	
Lead	183	10.0	mg/kg dry	200		91.4	80-120	0.239	20	
Nickel	181	5.00	mg/kg dry	200		90.6	80-120	0.0434	20	
Selenium	789	20.0	mg/kg dry	800		98.7	80-120	0.153	20	
Silver	9.48	1.00	mg/kg dry	10.0		94.8	80-120	1.52	20	
Zinc	171	10.0	mg/kg dry	200		85.7	80-120	0.135	20	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding (OWP) #9	<b>Reported:</b>
Durango CO, 81302	Project Manager: Jake Harter	08/13/21 16:06

**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 B211787 - EPA 3050M**

**Blank (B211787-BLK1)**

Prepared: 08/05/21 Analyzed: 08/10/21

Arsenic	ND	0.100	mg/kg dry							
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**LCS (B211787-BS1)**

Prepared: 08/05/21 Analyzed: 08/10/21

Arsenic	4.99	0.100	mg/kg dry	5.00		99.8	80-120			
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**LCS Dup (B211787-BSD1)**

Prepared: 08/05/21 Analyzed: 08/10/21

Arsenic	4.73	0.100	mg/kg dry	5.00		94.7	80-120	5.25	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 B211853 - Hot Water Soluble Metals Extract**

**Blank (B211853-BLK1)**

Prepared: 08/12/21 Analyzed: 08/13/21

Boron	ND	1.20	mg/L							
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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding (OWP) #9	<b>Reported:</b>
Durango CO, 81302	Project Manager: Jake Harter	08/13/21 16:06

**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 1080408 - General Prep - Organics**

**Blank (1080408-BLK1)**

Prepared & Analyzed: 08/04/21

Surrogate: 1-Chlorooctadecane	39.8		mg/kg	50.0		79.6	38.9-142			
Surrogate: 1-Chlorooctane	41.1		mg/kg	50.0		82.1	44.3-133			
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 (1080408-BS1)**

Prepared & Analyzed: 08/04/21

Surrogate: 1-Chlorooctadecane	42.0		mg/kg	50.0		83.9	38.9-142			
Surrogate: 1-Chlorooctane	43.5		mg/kg	50.0		87.1	44.3-133			
DRO >C10-C28	208	10.0	mg/kg	200		104	79.3-136			
GRO C6-C10	218	10.0	mg/kg	200		109	83.4-129			
Total TPH C6-C28	426	10.0	mg/kg	400		107	85.3-130			

**LCS Dup (1080408-BSD1)**

Prepared & Analyzed: 08/04/21

Surrogate: 1-Chlorooctadecane	41.7		mg/kg	50.0		83.5	38.9-142			
Surrogate: 1-Chlorooctane	42.8		mg/kg	50.0		85.6	44.3-133			
DRO >C10-C28	208	10.0	mg/kg	200		104	79.3-136	0.181	12.1	
GRO C6-C10	214	10.0	mg/kg	200		107	83.4-129	1.85	12.6	
Total TPH C6-C28	422	10.0	mg/kg	400		105	85.3-130	1.03	11.6	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding (OWP) #9	Reported:
Durango CO, 81302	Project Manager: Jake Harter	08/13/21 16:06

**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 1080214 - Volatiles**

**Blank (1080214-BLK1)**

Prepared: 08/02/21 Analyzed: 08/03/21

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg							
<i>Surrogate: 4-Bromofluorobenzene</i>	1.18		mg/kg	1.25		94.5	82.5-117			
Benzene	ND	0.0250	mg/kg							
<i>Surrogate: Dibromofluoromethane</i>	1.26		mg/kg	1.25		101	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							
<i>Surrogate: Toluene-d8</i>	1.25		mg/kg	1.25		100	90.4-109			
Total Xylenes	ND	0.0250	mg/kg							

**LCS (1080214-BS1)**

Prepared: 08/02/21 Analyzed: 08/03/21

1,2,4-Trimethylbenzene	0.518	0.0250	mg/kg	0.500		104	62.4-140			
1,3,5-Trimethylbenzene	0.521	0.0250	mg/kg	0.500		104	64.4-138			
<i>Surrogate: 4-Bromofluorobenzene</i>	1.25		mg/kg	1.25		100	82.5-117			
Benzene	0.511	0.0250	mg/kg	0.500		102	73-130			
<i>Surrogate: Dibromofluoromethane</i>	1.44		mg/kg	1.25		115	84.6-114			S-05
Ethylbenzene	0.521	0.0250	mg/kg	0.500		104	75.4-127			
m+p - Xylene	1.03	0.0500	mg/kg	1.00		103	71.8-133			
Naphthalene	0.502	0.0250	mg/kg	0.500		100	28.7-158			
o-Xylene	0.504	0.0250	mg/kg	0.500		101	78.6-125			
Toluene	0.520	0.0250	mg/kg	0.500		104	79-122			
<i>Surrogate: Toluene-d8</i>	1.26		mg/kg	1.25		101	90.4-109			
Total Xylenes	1.54	0.0250	mg/kg	1.50		103	74.6-130			

**LCS Dup (1080214-BSD1)**

Prepared: 08/02/21 Analyzed: 08/03/21

1,2,4-Trimethylbenzene	0.499	0.0250	mg/kg	0.500		99.8	62.4-140	3.72	38.2	
1,3,5-Trimethylbenzene	0.487	0.0250	mg/kg	0.500		97.5	64.4-138	6.71	39.1	
<i>Surrogate: 4-Bromofluorobenzene</i>	1.24		mg/kg	1.25		99.3	82.5-117			
Benzene	0.496	0.0250	mg/kg	0.500		99.2	73-130	2.96	17.1	
<i>Surrogate: Dibromofluoromethane</i>	1.25		mg/kg	1.25		99.8	84.6-114			
Ethylbenzene	0.499	0.0250	mg/kg	0.500		99.8	75.4-127	4.32	16.5	
m+p - Xylene	0.980	0.0500	mg/kg	1.00		98.0	71.8-133	5.46	19.1	
Naphthalene	0.452	0.0250	mg/kg	0.500		90.4	28.7-158	10.5	64	
o-Xylene	0.486	0.0250	mg/kg	0.500		97.2	78.6-125	3.73	13.2	
Toluene	0.486	0.0250	mg/kg	0.500		97.2	79-122	6.80	18.3	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding (OWP) #9	<b>Reported:</b>
Durango CO, 81302	Project Manager: Jake Harter	08/13/21 16:06

**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 1080214 - Volatiles (Continued)**

**LCS Dup (1080214-BSD1) (Continued)**

Prepared: 08/02/21 Analyzed: 08/03/21

Surrogate: Toluene-d8	1.27		mg/kg	1.25		102	90.4-109			
Total Xylenes	1.47	0.0250	mg/kg	1.50		97.7	74.6-130	4.89	16.5	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding (OWP) #9	Reported:
Durango CO, 81302	Project Manager: Jake Harter	08/13/21 16:06

**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 1072919 - SW846-3510**

**Blank (1072919-BLK1)**

Prepared: 07/29/21 Analyzed: 08/03/21

1-Methylnaphthalene	ND	0.040	mg/kg							
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.44</i>		mg/kg	<i>2.00</i>		<i>71.9</i>	<i>39.8-134</i>			
2-Methylnaphthalene	ND	0.040	mg/kg							
Acenaphthene	ND	0.040	mg/kg							
Acenaphthylene	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]flouranthene	ND	0.040	mg/kg							
Benzo[g,h,i]perylene	ND	0.040	mg/kg							
Benzo[k]flouranthene	ND	0.040	mg/kg							
Carbazole	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							
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.30</i>		mg/kg	<i>2.00</i>		<i>65.1</i>	<i>39.6-121</i>			
Phenanthrene	ND	0.040	mg/kg							
Pyrene	ND	0.040	mg/kg							
<i>Surrogate: Terphenyl-d14</i>	<i>1.74</i>		mg/kg	<i>2.00</i>		<i>86.9</i>	<i>33.3-136</i>			

**LCS (1072919-BS1)**

Prepared: 07/29/21 Analyzed: 08/03/21

1-Methylnaphthalene	0.308	0.040	mg/kg	0.400		77.0	57.6-108			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.18</i>		mg/kg	<i>2.00</i>		<i>59.2</i>	<i>39.8-134</i>			
2-Methylnaphthalene	0.316	0.040	mg/kg	0.400		79.1	59-106			
Acenaphthene	0.371	0.040	mg/kg	0.400		92.7	60.9-105			
Acenaphthylene	0.347	0.040	mg/kg	0.400		86.7	57.4-107			
Anthracene	0.349	0.040	mg/kg	0.400		87.2	60.8-105			
Benzo[a]anthracene	0.356	0.040	mg/kg	0.400		89.0	56.1-121			
Benzo[a]pyrene	0.309	0.040	mg/kg	0.400		77.3	56.7-115			
Benzo[b]flouranthene	0.364	0.040	mg/kg	0.400		91.0	45.4-128			
Benzo[g,h,i]perylene	0.318	0.040	mg/kg	0.400		79.6	56.5-107			
Benzo[k]flouranthene	0.361	0.040	mg/kg	0.400		90.1	49.6-119			
Carbazole	0.348	0.040	mg/kg	0.400		87.1	59.7-107			
Chrysene	0.339	0.040	mg/kg	0.400		84.8	12.2-190			
Dibenz[a,h]anthracene	0.292	0.040	mg/kg	0.400		72.9	59.1-111			
Fluoranthene	0.340	0.040	mg/kg	0.400		85.0	60.6-111			

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Jeremy D Allen For Debbie Zufelt, Reports Manager

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding (OWP) #9	Reported:
Durango CO, 81302	Project Manager: Jake Harter	08/13/21 16:06

**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 1072919 - SW846-3510 (Continued)**

**LCS (1072919-BS1) (Continued)**

Prepared: 07/29/21 Analyzed: 08/03/21

Fluorene	0.366	0.040	mg/kg	0.400		91.4	59.3-108			
Indeno[1,2,3-cd]pyrene	0.306	0.040	mg/kg	0.400		76.5	53.4-116			
Naphthalene	0.302	0.040	mg/kg	0.400		75.5	56.5-106			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.824</i>		mg/kg	<i>2.00</i>		<i>41.2</i>	<i>39.6-121</i>			
Phenanthrene	0.365	0.040	mg/kg	0.400		91.2	59.9-107			
Pyrene	0.348	0.040	mg/kg	0.400		86.9	51.5-122			
<i>Surrogate: Terphenyl-d14</i>	<i>1.57</i>		mg/kg	<i>2.00</i>		<i>78.3</i>	<i>33.3-136</i>			

**LCS Dup (1072919-BS1)**

Prepared: 07/29/21 Analyzed: 08/03/21

1-Methylnaphthalene	0.332	0.040	mg/kg	0.400		83.0	57.6-108	7.60	6.22	QR-04
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.20</i>		mg/kg	<i>2.00</i>		<i>60.1</i>	<i>39.8-134</i>			
2-Methylnaphthalene	0.327	0.040	mg/kg	0.400		81.8	59-106	3.35	6.23	
Acenaphthene	0.356	0.040	mg/kg	0.400		88.9	60.9-105	4.18	8.18	
Acenaphthylene	0.362	0.040	mg/kg	0.400		90.4	57.4-107	4.22	5	
Anthracene	0.355	0.040	mg/kg	0.400		88.8	60.8-105	1.81	3.68	
Benzo[a]anthracene	0.355	0.040	mg/kg	0.400		88.8	56.1-121	0.234	9.01	
Benzo[a]pyrene	0.312	0.040	mg/kg	0.400		77.9	56.7-115	0.773	4.92	
Benzo[b]fluoranthene	0.360	0.040	mg/kg	0.400		89.9	45.4-128	1.21	7.63	
Benzo[g,h,i]perylene	0.333	0.040	mg/kg	0.400		83.2	56.5-107	4.49	12.5	
Benzo[k]fluoranthene	0.366	0.040	mg/kg	0.400		91.6	49.6-119	1.58	10.6	
Carbazole	0.348	0.040	mg/kg	0.400		87.0	59.7-107	0.0919	8.65	
Chrysene	0.350	0.040	mg/kg	0.400		87.5	12.2-190	3.09	21.8	
Dibenz[a,h]anthracene	0.304	0.040	mg/kg	0.400		76.1	59.1-111	4.22	11.6	
Fluoranthene	0.336	0.040	mg/kg	0.400		83.9	60.6-111	1.28	7.54	
Fluorene	0.341	0.040	mg/kg	0.400		85.2	59.3-108	7.00	5.49	QR-04
Indeno[1,2,3-cd]pyrene	0.314	0.040	mg/kg	0.400		78.6	53.4-116	2.73	22.3	
Naphthalene	0.300	0.040	mg/kg	0.400		75.0	56.5-106	0.781	4.56	
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.869</i>		mg/kg	<i>2.00</i>		<i>43.4</i>	<i>39.6-121</i>			
Phenanthrene	0.342	0.040	mg/kg	0.400		85.4	59.9-107	6.58	5.21	QR-04
Pyrene	0.351	0.040	mg/kg	0.400		87.8	51.5-122	0.970	10.6	
<i>Surrogate: Terphenyl-d14</i>	<i>1.48</i>		mg/kg	<i>2.00</i>		<i>73.8</i>	<i>33.3-136</i>			

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Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

Notes and Definitions

- S-05 The surrogate recovery is outside of lab established statistical control limits but still within method limits. Data is not adversely affected.
- QR-04 The RPD for the BS/BSD was outside of historical limits.
- BS1 Laboratory control sample recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
- 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

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