



75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
970.247.4227 Fax
www.greenanalytical.com

08 September 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 07/26/22 14:15-08/19/22 13:00. 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', is written in a cursive style.

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



jeremy.allen@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Wellhead	2207279-01	Solid	07/26/22 11:15	07/26/22 14:15	
Background	2208289-01	Solid	08/19/22 11:45	08/19/22 13:00	

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

Wellhead

2207279-01 (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	08/01/22 15:20	3060A/3500-Cr B		AES
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Saturated Paste Extraction

Calcium	135	0.500	0.289	mg/L	5	07/29/22 11:37	EPA200.7		AES
Conductivity	1840			umho/cm/@25 C	1	07/28/22 15:30	ASA#9 10-3.3		QEB
Magnesium	1.21	0.500	0.327	mg/L	5	07/29/22 11:37	EPA200.7		AES
pH	11.0			pH Units	1	07/28/22 15:30	ASA#9 10-3.2		QEB
SAR	5.27			No Unit	1	07/29/22 11:37	Calculation		AES
Sodium	224	5.00	0.396	mg/L	5	07/29/22 11:37	EPA200.7		AES

Total Metals by ICP

Barium	280	5.00	1.10	mg/kg dry	100	07/29/22 12:25	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	08/01/22 15:28	6010B		AES
Chromium	87.8	5.00	1.58	mg/kg dry	100	07/29/22 12:25	6010B		AES
Copper	20.3	5.00	2.83	mg/kg dry	100	07/29/22 12:25	6010B		AES
Lead	16.4	10.0	4.02	mg/kg dry	100	07/29/22 12:25	6010B		AES
Nickel	52.2	5.00	2.41	mg/kg dry	100	08/01/22 15:28	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	07/29/22 12:25	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	07/29/22 12:25	6010B		AES
Zinc	51.8	10.0	2.18	mg/kg dry	100	08/05/22 13:16	6010B		AES

Total Metals by ICPMS

Arsenic	2.31	1.00	0.158	mg/kg dry	1000	08/05/22 11:50	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	07/29/22 11:53	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	08/03/22 01:31	8015B		MS
DRO >C10-C28*	13.9	10.0	4.26	mg/kg	1	08/03/22 01:31	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	08/03/22 01:31	8015B		MS

Surrogate: 1-Chlorooctane 107 % 43-149 08/03/22 01:31 8015B MS

Surrogate: 1-Chlorooctadecane 103 % 42.5-161 08/03/22 01:31 8015B MS

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Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

Wellhead

2207279-01 (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	08/04/22 14:22	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/04/22 14:22	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/04/22 14:22	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/04/22 14:22	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/04/22 14:22	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0256	mg/kg	50	08/04/22 14:22	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/04/22 14:22	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/04/22 14:22	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/04/22 14:22	8260B		MS

Surrogate: Dibromofluoromethane 97.4 % 84.6-114 08/04/22 14:22 8260B MS

Surrogate: Toluene-d8 99.2 % 90.4-109 08/04/22 14:22 8260B MS

Surrogate: 4-Bromofluorobenzene 96.9 % 82.5-117 08/04/22 14:22 8260B MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	08/11/22 14:24	8270C		MS
2-Methylnaphthalene*	0.026	0.040	0.023	mg/kg	40	08/11/22 14:24	8270C	J	MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	08/11/22 14:24	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	08/11/22 14:24	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	08/11/22 14:24	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	08/11/22 14:24	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/11/22 14:24	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	08/11/22 14:24	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	08/11/22 14:24	8270C		MS
Chrysene	<0.017	0.040	0.017	mg/kg	40	08/11/22 14:24	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/11/22 14:24	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	08/11/22 14:24	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	08/11/22 14:24	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	08/11/22 14:24	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	08/11/22 14:24	8270C		MS

Surrogate: Nitrobenzene-d5 75.8 % 39.6-121 08/11/22 14:24 8270C MS

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Jeremy D Allen, Laboratory Director

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Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

Wellhead

2207279-01 (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	85.0 %	39.8-134				08/11/22 14:24	8270C		MS
Surrogate: Terphenyl-dl4	92.8 %	33.3-136				08/11/22 14:24	8270C		MS

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Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

Background

2208289-01 (Soil)

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

Hexavalent Chromium	0.267	0.250	0.128	mg/kg dry	25	08/30/22 10:26	3060A/3500-Cr B		HTB
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Saturated Paste Extraction

Calcium	52.9	0.100	0.058	mg/L	1	08/26/22 16:15	EPA200.7		AES
Conductivity	496			umho/cm@25 C	1	08/26/22 08:30	ASA#9 10-3.3		QEB
Magnesium	13.5	0.100	0.065	mg/L	1	08/26/22 16:15	EPA200.7		AES
pH	7.31			pH Units	1	08/26/22 08:30	ASA#9 10-3.2		QEB
SAR	0.37			No Unit	1	08/26/22 16:15	Calculation		AES
Sodium	11.6	1.00	0.079	mg/L	1	08/26/22 16:15	EPA200.7		AES

Total Metals by ICP

Barium	135	5.00	1.10	mg/kg dry	100	08/31/22 11:47	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	08/31/22 11:48	6010B		AES
Chromium	14.4	5.00	1.58	mg/kg dry	100	08/31/22 11:47	6010B	SD2	AES
Copper	6.79	5.00	2.83	mg/kg dry	100	08/31/22 11:47	6010B		AES
Lead	16.7	10.0	4.02	mg/kg dry	100	08/31/22 11:48	6010B		AES
Nickel	7.66	5.00	2.41	mg/kg dry	100	08/31/22 11:48	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	08/31/22 11:47	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	08/31/22 11:47	6010B		AES
Zinc	34.1	10.0	2.18	mg/kg dry	100	08/31/22 11:48	6010B		AES

Total Metals by ICPMS

Arsenic	2.82	1.00	0.158	mg/kg dry	1000	08/29/22 11:39	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	08/24/22 17:52	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	08/23/22 21:07	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	08/23/22 21:07	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	08/23/22 21:07	8015B		MS

Surrogate: 1-Chlorooctane 77.2 % 45.3-161 08/23/22 21:07 8015B MS

Surrogate: 1-Chlorooctadecane 90.5 % 46.3-178 08/23/22 21:07 8015B MS

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Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

Background

2208289-01 (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	08/29/22 14:59	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/29/22 14:59	8260B	QM-07	MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/29/22 14:59	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/29/22 14:59	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/29/22 14:59	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0256	mg/kg	50	08/29/22 14:59	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/29/22 14:59	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/29/22 14:59	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/29/22 14:59	8260B		MS

Surrogate: Dibromofluoromethane 95.3 % 84.6-114 08/29/22 14:59 8260B MS

Surrogate: Toluene-d8 100 % 90.4-109 08/29/22 14:59 8260B MS

Surrogate: 4-Bromofluorobenzene 98.2 % 82.5-117 08/29/22 14:59 8260B MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	08/24/22 18:47	8270C		MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	08/24/22 18:47	8270C		MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	08/24/22 18:47	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	08/24/22 18:47	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	08/24/22 18:47	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	08/24/22 18:47	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/24/22 18:47	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	08/24/22 18:47	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	08/24/22 18:47	8270C		MS
Chrysene	<0.017	0.040	0.017	mg/kg	40	08/24/22 18:47	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/24/22 18:47	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	08/24/22 18:47	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	08/24/22 18:47	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	08/24/22 18:47	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	08/24/22 18:47	8270C		MS

Surrogate: Nitrobenzene-d5 81.2 % 39.6-121 08/24/22 18:47 8270C MS

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Jeremy D Allen, Laboratory Director

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Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

Background

2208289-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
---------	--------	----	-----	-------	----------	----------	--------	-------	---------

Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Polynuclear Aromatic Compounds by GC/MS

Surrogate: 2-Fluorobiphenyl	95.1 %	39.8-134				08/24/22 18:47	8270C		MS
Surrogate: Terphenyl-dl4	108 %	33.3-136				08/24/22 18:47	8270C		MS

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Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 B222081 - General Prep - Wet Chem

Blank (B222081-BLK1)

Prepared & Analyzed: 08/01/22

Hexavalent Chromium	ND	0.250	mg/kg dry							
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LCS (B222081-BS1)

Prepared & Analyzed: 08/01/22

Hexavalent Chromium	2.41	0.250	mg/kg dry	2.50		96.4	85-115			
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Batch B222370 - General Prep - Wet Chem

Blank (B222370-BLK1)

Prepared: 08/29/22 Analyzed: 08/30/22

Hexavalent Chromium	ND	0.250	mg/kg dry							
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LCS (B222370-BS1)

Prepared: 08/29/22 Analyzed: 08/30/22

Hexavalent Chromium	2.38	0.250	mg/kg dry	2.50		95.1	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 B222046 - Paste Extract

Blank (B222046-BLK1)

Prepared: 07/28/22 Analyzed: 07/29/22

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

Reference (B222046-SRM1)

Prepared: 07/28/22 Analyzed: 07/29/22

SAR	10.6		No Unit	10.5		101	90-110			
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Batch B222047 - Paste Extract

Reference (B222047-SRM1)

Prepared & Analyzed: 07/28/22

Conductivity	7970		umho/cm@25C	8340		95.6	90-110			
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Batch B222048 - Paste Extract

Reference (B222048-SRM1)

Prepared & Analyzed: 07/28/22

pH	6.88		pH Units	6.93		99.3	92-108			
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jeremy.allen@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

**Saturated Paste Extraction - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B222325 - Paste Extract

Reference (B222325-SRM1)

Prepared: 08/25/22 Analyzed: 08/26/22

pH	6.89		pH Units	6.93		99.4	92-108			
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Batch B222326 - Paste Extract

Blank (B222326-BLK1)

Prepared: 08/24/22 Analyzed: 08/26/22

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

Reference (B222326-SRM1)

Prepared: 08/24/22 Analyzed: 08/26/22

SAR	11.4		No Unit	10.5		109	90-110			
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Batch B222327 - Paste Extract

Reference (B222327-SRM1)

Prepared: 08/25/22 Analyzed: 08/26/22

Conductivity	8970		umho/cm@2 5C	8340		108	90-110			
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Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 B222037 - EPA 3050

Blank (B222037-BLK1)

Prepared: 07/28/22 Analyzed: 07/29/22

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

LCS (B222037-BS1)

Prepared: 07/28/22 Analyzed: 07/29/22

Barium	164	5.00	mg/kg dry	200	81.9	80-120
Cadmium	162	5.00	mg/kg dry	200	81.1	80-120
Chromium	165	5.00	mg/kg dry	200	82.6	80-120
Copper	329	5.00	mg/kg dry	400	82.2	80-120
Lead	161	10.0	mg/kg dry	200	80.7	80-120
Nickel	162	5.00	mg/kg dry	200	81.1	80-120
Selenium	694	20.0	mg/kg dry	800	86.7	80-120
Silver	8.48	1.00	mg/kg dry	10.0	84.8	80-120

LCS Dup (B222037-BSD1)

Prepared: 07/28/22 Analyzed: 07/29/22

Barium	166	5.00	mg/kg dry	200	82.9	80-120	1.12	20
Cadmium	162	5.00	mg/kg dry	200	81.2	80-120	0.0160	20
Chromium	167	5.00	mg/kg dry	200	83.4	80-120	0.866	20
Copper	332	5.00	mg/kg dry	400	82.9	80-120	0.818	20
Lead	161	10.0	mg/kg dry	200	80.5	80-120	0.185	20
Nickel	167	5.00	mg/kg dry	200	83.3	80-120	2.70	20
Selenium	704	20.0	mg/kg dry	800	88.0	80-120	1.48	20
Silver	8.60	1.00	mg/kg dry	10.0	86.0	80-120	1.47	20

Batch B222109 - EPA 3050

Blank (B222109-BLK1)

Prepared: 08/03/22 Analyzed: 08/05/22

Zinc	ND	10.0	mg/kg dry
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LCS (B222109-BS1)

Prepared: 08/03/22 Analyzed: 08/05/22

Zinc	170	10.0	mg/kg dry	200	85.0	80-120
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LCS Dup (B222109-BSD1)

Prepared: 08/03/22 Analyzed: 08/05/22

Zinc	171	10.0	mg/kg dry	200	85.4	80-120	0.451	20
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Batch B222360 - EPA 3050

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Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
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**Total Metals by ICP - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B222360 - EPA 3050 (Continued)

Blank (B222360-BLK1)

Prepared: 08/29/22 Analyzed: 08/31/22

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 (B222360-BS1)

Prepared: 08/29/22 Analyzed: 08/31/22

Barium	189	5.00	mg/kg dry	200	94.3	80-120
Cadmium	177	5.00	mg/kg dry	200	88.5	80-120
Chromium	190	5.00	mg/kg dry	200	95.2	80-120
Copper	388	5.00	mg/kg dry	400	97.1	80-120
Lead	180	10.0	mg/kg dry	200	89.9	80-120
Nickel	180	5.00	mg/kg dry	200	90.2	80-120
Selenium	783	20.0	mg/kg dry	800	97.9	80-120
Silver	9.10	1.00	mg/kg dry	10.0	91.0	80-120
Zinc	170	10.0	mg/kg dry	200	84.9	80-120

LCS Dup (B222360-BSD1)

Prepared: 08/29/22 Analyzed: 08/31/22

Barium	191	5.00	mg/kg dry	200	95.7	80-120	1.53	20
Cadmium	178	5.00	mg/kg dry	200	88.8	80-120	0.268	20
Chromium	194	5.00	mg/kg dry	200	96.9	80-120	1.80	20
Copper	395	5.00	mg/kg dry	400	98.8	80-120	1.78	20
Lead	181	10.0	mg/kg dry	200	90.6	80-120	0.802	20
Nickel	182	5.00	mg/kg dry	200	91.0	80-120	0.894	20
Selenium	778	20.0	mg/kg dry	800	97.2	80-120	0.651	20
Silver	9.12	1.00	mg/kg dry	10.0	91.2	80-120	0.324	20
Zinc	170	10.0	mg/kg dry	200	84.8	80-120	0.0540	20

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jeremy.allen@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 B222038 - EPA 3050M

Blank (B222038-BLK1)

Prepared: 07/28/22 Analyzed: 08/05/22

Arsenic	ND	0.100	mg/kg dry							
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LCS (B222038-BS1)

Prepared: 07/28/22 Analyzed: 08/05/22

Arsenic	4.83	0.100	mg/kg dry	5.00		96.6	80-120			
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LCS Dup (B222038-BSD1)

Prepared: 07/28/22 Analyzed: 08/05/22

Arsenic	4.92	0.100	mg/kg dry	5.00		98.4	80-120	1.81	20	
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Batch B222279 - EPA 3050M

Blank (B222279-BLK1)

Prepared: 08/22/22 Analyzed: 08/29/22

Arsenic	ND	0.100	mg/kg dry							
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LCS (B222279-BS1)

Prepared: 08/22/22 Analyzed: 08/29/22

Arsenic	4.55	0.100	mg/kg dry	5.00		91.0	80-120			
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LCS Dup (B222279-BSD1)

Prepared: 08/22/22 Analyzed: 08/29/22

Arsenic	4.40	0.100	mg/kg dry	5.00		88.0	80-120	3.36	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 B222056 - Hot Water Soluble Metals Extract

Blank (B222056-BLK1)

Prepared: 07/28/22 Analyzed: 07/29/22

Boron	ND	1.20	mg/L							
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Batch B222310 - Hot Water Soluble Metals Extract

Blank (B222310-BLK1)

Prepared: 08/23/22 Analyzed: 08/24/22

Boron	ND	1.20	mg/L							
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jeremy.allen@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 2080113 - General Prep - Organics

Blank (2080113-BLK1)

Prepared: 08/01/22 Analyzed: 08/02/22

Surrogate: 1-Chlorooctadecane	50.8		mg/kg	50.0		102	42.5-161			
Surrogate: 1-Chlorooctane	52.9		mg/kg	50.0		106	43-149			
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 (2080113-BS1)

Prepared: 08/01/22 Analyzed: 08/02/22

Surrogate: 1-Chlorooctadecane	57.2		mg/kg	50.0		114	42.5-161			
Surrogate: 1-Chlorooctane	54.2		mg/kg	50.0		108	43-149			
DRO >C10-C28	252	10.0	mg/kg	200		126	75.8-135			
GRO C6-C10	243	10.0	mg/kg	200		121	78.5-128			
Total TPH C6-C28	495	10.0	mg/kg	400		124	81.5-127			

LCS Dup (2080113-BSD1)

Prepared: 08/01/22 Analyzed: 08/02/22

Surrogate: 1-Chlorooctadecane	59.1		mg/kg	50.0		118	42.5-161			
Surrogate: 1-Chlorooctane	59.6		mg/kg	50.0		119	43-149			
DRO >C10-C28	246	10.0	mg/kg	200		123	75.8-135	2.49	17.9	
GRO C6-C10	247	10.0	mg/kg	200		124	78.5-128	1.83	21.4	
Total TPH C6-C28	493	10.0	mg/kg	400		123	81.5-127	0.345	17.6	

Batch 2082320 - General Prep - Organics

Blank (2082320-BLK1)

Prepared & Analyzed: 08/23/22

Surrogate: 1-Chlorooctadecane	61.6		mg/kg	50.0		123	46.3-178			
Surrogate: 1-Chlorooctane	53.2		mg/kg	50.0		106	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 (2082320-BS1)

Prepared & Analyzed: 08/23/22

Surrogate: 1-Chlorooctadecane	71.1		mg/kg	50.0		142	46.3-178			
Surrogate: 1-Chlorooctane	59.9		mg/kg	50.0		120	45.3-161			
DRO >C10-C28	212	10.0	mg/kg	200		106	74.3-129			
GRO C6-C10	199	10.0	mg/kg	200		99.5	76.9-124			
Total TPH C6-C28	411	10.0	mg/kg	400		103	81.5-127			

LCS Dup (2082320-BSD1)

Prepared & Analyzed: 08/23/22

Surrogate: 1-Chlorooctadecane	71.4		mg/kg	50.0		143	46.3-178			
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jeremy.allen@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

**Petroleum Hydrocarbons by GC FID - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2082320 - General Prep - Organics (Continued)

LCS Dup (2082320-BSD1) (Continued)

Prepared & Analyzed: 08/23/22

Surrogate: 1-Chlorooctane	57.6		mg/kg	50.0		115	45.3-161			
DRO >C10-C28	210	10.0	mg/kg	200		105	74.3-129	0.983	18.6	
GRO C6-C10	197	10.0	mg/kg	200		98.7	76.9-124	0.826	17.2	
Total TPH C6-C28	407	10.0	mg/kg	400		102	81.5-127	0.907	17.6	

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Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 2080324 - Volatiles**Blank (2080324-BLK1)**

Prepared: 08/03/22 Analyzed: 08/04/22

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg						
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg						
Surrogate: 4-Bromofluorobenzene	1.19		mg/kg	1.25		95.6	82.5-117		
Benzene	ND	0.0250	mg/kg						
Surrogate: Dibromofluoromethane	1.21		mg/kg	1.25		96.9	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	1.23		mg/kg	1.25		98.3	90.4-109		
Total Xylenes	ND	0.0750	mg/kg						

LCS (2080324-BS1)

Prepared: 08/03/22 Analyzed: 08/04/22

1,2,4-Trimethylbenzene	0.476	0.0250	mg/kg	0.500		95.1	62.4-140		
1,3,5-Trimethylbenzene	0.488	0.0250	mg/kg	0.500		97.5	64.4-138		
Surrogate: 4-Bromofluorobenzene	1.24		mg/kg	1.25		98.8	82.5-117		
Benzene	0.460	0.0250	mg/kg	0.500		92.0	73-130		
Surrogate: Dibromofluoromethane	1.26		mg/kg	1.25		100	84.6-114		
Ethylbenzene	0.463	0.0250	mg/kg	0.500		92.5	75.4-127		
m+p - Xylene	0.953	0.0500	mg/kg	1.00		95.3	71.8-133		
Naphthalene	0.470	0.0250	mg/kg	0.500		94.1	28.7-158		
o-Xylene	0.461	0.0250	mg/kg	0.500		92.2	78.6-125		
Toluene	0.452	0.0250	mg/kg	0.500		90.5	79-122		
Surrogate: Toluene-d8	1.24		mg/kg	1.25		99.1	90.4-109		
Total Xylenes	1.41	0.0750	mg/kg	1.50		94.3	74.6-130		

LCS Dup (2080324-BSD1)

Prepared: 08/03/22 Analyzed: 08/04/22

1,2,4-Trimethylbenzene	0.463	0.0250	mg/kg	0.500		92.5	62.4-140	2.74	38.2
1,3,5-Trimethylbenzene	0.466	0.0250	mg/kg	0.500		93.3	64.4-138	4.49	39.1
Surrogate: 4-Bromofluorobenzene	1.22		mg/kg	1.25		97.5	82.5-117		
Benzene	0.457	0.0250	mg/kg	0.500		91.4	73-130	0.632	17.1
Surrogate: Dibromofluoromethane	1.25		mg/kg	1.25		100	84.6-114		
Ethylbenzene	0.457	0.0250	mg/kg	0.500		91.3	75.4-127	1.33	16.5
m+p - Xylene	0.941	0.0500	mg/kg	1.00		94.1	71.8-133	1.35	19.1
Naphthalene	0.441	0.0250	mg/kg	0.500		88.2	28.7-158	6.47	64
o-Xylene	0.455	0.0250	mg/kg	0.500		91.0	78.6-125	1.31	13.2
Toluene	0.447	0.0250	mg/kg	0.500		89.5	79-122	1.11	18.3

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PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 2080324 - Volatiles (Continued)

LCS Dup (2080324-BSD1) (Continued)

Prepared: 08/03/22 Analyzed: 08/04/22

Surrogate: Toluene-d8	1.22		mg/kg	1.25		97.9	90.4-109			
Total Xylenes	1.40	0.0750	mg/kg	1.50		93.0	74.6-130	1.34	16.5	

Batch 2082916 - Volatiles

Blank (2082916-BLK1)

Prepared & Analyzed: 08/29/22

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		98.8	82.5-117			
Benzene	ND	0.0250	mg/kg							
Surrogate: Dibromofluoromethane	1.20		mg/kg	1.25		96.0	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	1.25		mg/kg	1.25		100	90.4-109			
Total Xylenes	ND	0.0750	mg/kg							

LCS (2082916-BS1)

Prepared & Analyzed: 08/29/22

1,2,4-Trimethylbenzene	0.531	0.0250	mg/kg	0.500		106	62.4-140			
1,3,5-Trimethylbenzene	0.528	0.0250	mg/kg	0.500		106	64.4-138			
Surrogate: 4-Bromofluorobenzene	1.24		mg/kg	1.25		99.3	82.5-117			
Benzene	0.527	0.0250	mg/kg	0.500		105	73-130			
Surrogate: Dibromofluoromethane	1.23		mg/kg	1.25		98.6	84.6-114			
Ethylbenzene	0.533	0.0250	mg/kg	0.500		107	75.4-127			
m+p - Xylene	1.04	0.0500	mg/kg	1.00		104	71.8-133			
Naphthalene	0.538	0.0250	mg/kg	0.500		108	28.7-158			
o-Xylene	0.523	0.0250	mg/kg	0.500		105	78.6-125			
Toluene	0.519	0.0250	mg/kg	0.500		104	79-122			
Surrogate: Toluene-d8	1.25		mg/kg	1.25		100	90.4-109			
Total Xylenes	1.56	0.0750	mg/kg	1.50		104	74.6-130			

LCS Dup (2082916-BSD1)

Prepared & Analyzed: 08/29/22

1,2,4-Trimethylbenzene	0.509	0.0250	mg/kg	0.500		102	62.4-140	4.15	38.2	
1,3,5-Trimethylbenzene	0.515	0.0250	mg/kg	0.500		103	64.4-138	2.44	39.1	
Surrogate: 4-Bromofluorobenzene	1.25		mg/kg	1.25		100	82.5-117			
Benzene	0.515	0.0250	mg/kg	0.500		103	73-130	2.45	17.1	

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jeremy.allen@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 2082916 - Volatiles (Continued)

LCS Dup (2082916-BSD1) (Continued)

Prepared & Analyzed: 08/29/22

Surrogate: Dibromofluoromethane	1.23		mg/kg	1.25		98.7	84.6-114			
Ethylbenzene	0.519	0.0250	mg/kg	0.500		104	75.4-127	2.64	16.5	
m+p - Xylene	1.02	0.0500	mg/kg	1.00		102	71.8-133	0.985	19.1	
Naphthalene	0.502	0.0250	mg/kg	0.500		100	28.7-158	6.80	64	
o-Xylene	0.510	0.0250	mg/kg	0.500		102	78.6-125	2.57	13.2	
Toluene	0.502	0.0250	mg/kg	0.500		100	79-122	3.28	18.3	
Surrogate: Toluene-d8	1.26		mg/kg	1.25		100	90.4-109			
Total Xylenes	1.53	0.0750	mg/kg	1.50		102	74.6-130	1.51	16.5	

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 2080212 - SW-846 3550

Blank (2080212-BLK1)

Prepared: 08/02/22 Analyzed: 08/11/22

1-Methylnaphthalene	ND	0.040	mg/kg							
Surrogate: 2-Fluorobiphenyl	1.51		mg/kg	2.00		75.4	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	1.28		mg/kg	2.00		63.9	39.6-121			
Pyrene	ND	0.040	mg/kg							
Surrogate: Terphenyl-d14	1.52		mg/kg	2.00		76.1	33.3-136			

LCS (2080212-BS1)

Prepared: 08/02/22 Analyzed: 08/11/22

1-Methylnaphthalene	0.334	0.040	mg/kg	0.400		83.4	57.6-108			
Surrogate: 2-Fluorobiphenyl	2.44		mg/kg	2.00		122	39.8-134			
2-Methylnaphthalene	0.333	0.040	mg/kg	0.400		83.2	59-106			
Acenaphthene	0.339	0.040	mg/kg	0.400		84.8	60.9-105			
Acenaphthylene	0.343	0.040	mg/kg	0.400		85.6	57.4-107			
Anthracene	0.348	0.040	mg/kg	0.400		87.1	60.8-105			
Benzo[a]anthracene	0.348	0.040	mg/kg	0.400		87.0	56.1-121			
Benzo[a]pyrene	0.347	0.040	mg/kg	0.400		86.8	56.7-115			
Benzo[b]fluoranthene	0.190	0.040	mg/kg	0.400		47.5	45.4-128			
Benzo[g,h,i]perylene	0.371	0.040	mg/kg	0.400		92.8	56.5-107			
Benzo[k]fluoranthene	0.291	0.040	mg/kg	0.400		72.9	49.6-119			
Carbazole	0.358	0.040	mg/kg	0.400		89.5	59.7-107			
Chrysene	0.361	0.040	mg/kg	0.400		90.2	12.2-190			
Dibenz[a,h]anthracene	0.355	0.040	mg/kg	0.400		88.8	59.1-111			
Fluoranthene	0.323	0.040	mg/kg	0.400		80.7	60.6-111			
Fluorene	0.345	0.040	mg/kg	0.400		86.1	59.3-108			
Indeno[1,2,3-cd]pyrene	0.334	0.040	mg/kg	0.400		83.5	53.4-116			
Naphthalene	0.345	0.040	mg/kg	0.400		86.3	56.5-106			

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 2080212 - SW-846 3550 (Continued)

LCS (2080212-BS1) (Continued)

Prepared: 08/02/22 Analyzed: 08/11/22

Surrogate: Nitrobenzene-d5	2.07		mg/kg	2.00		103	39.6-121			
Phenanthrene	0.355	0.040	mg/kg	0.400		88.8	59.9-107			
Pyrene	0.357	0.040	mg/kg	0.400		89.2	51.5-122			
Surrogate: Terphenyl-dl4	2.58		mg/kg	2.00		129	33.3-136			

LCS Dup (2080212-BS1)

Prepared: 08/02/22 Analyzed: 08/11/22

1-Methylnaphthalene	0.342	0.040	mg/kg	0.400		85.4	57.6-108	2.44	6.22	
Surrogate: 2-Fluorobiphenyl	2.40		mg/kg	2.00		120	39.8-134			
2-Methylnaphthalene	0.343	0.040	mg/kg	0.400		85.9	59-106	3.10	6.23	
Acenaphthene	0.346	0.040	mg/kg	0.400		86.5	60.9-105	2.01	8.18	
Acenaphthylene	0.342	0.040	mg/kg	0.400		85.6	57.4-107	0.0409	5	
Anthracene	0.347	0.040	mg/kg	0.400		86.9	60.8-105	0.293	3.68	
Benzo[a]anthracene	0.348	0.040	mg/kg	0.400		87.0	56.1-121	0.0575	9.01	
Benzo[a]pyrene	0.341	0.040	mg/kg	0.400		85.1	56.7-115	1.96	4.92	
Benzo[b]fluoranthene	0.344	0.040	mg/kg	0.400		86.0	45.4-128	57.6	7.63	QR-04
Benzo[g,h,i]perylene	0.376	0.040	mg/kg	0.400		94.1	56.5-107	1.41	12.5	
Benzo[k]fluoranthene	0.334	0.040	mg/kg	0.400		83.5	49.6-119	13.6	10.6	QR-04
Carbazole	0.367	0.040	mg/kg	0.400		91.8	59.7-107	2.48	8.65	
Chrysene	0.366	0.040	mg/kg	0.400		91.4	12.2-190	1.30	21.8	
Dibenz[a,h]anthracene	0.353	0.040	mg/kg	0.400		88.2	59.1-111	0.715	11.6	
Fluoranthene	0.317	0.040	mg/kg	0.400		79.3	60.6-111	1.84	7.54	
Fluorene	0.338	0.040	mg/kg	0.400		84.5	59.3-108	1.95	5.49	
Indeno[1,2,3-cd]pyrene	0.314	0.040	mg/kg	0.400		78.5	53.4-116	6.21	22.3	
Naphthalene	0.351	0.040	mg/kg	0.400		87.7	56.5-106	1.60	4.56	
Surrogate: Nitrobenzene-d5	2.03		mg/kg	2.00		102	39.6-121			
Phenanthrene	0.341	0.040	mg/kg	0.400		85.2	59.9-107	4.13	5.21	
Pyrene	0.358	0.040	mg/kg	0.400		89.6	51.5-122	0.425	10.6	
Surrogate: Terphenyl-dl4	2.56		mg/kg	2.00		128	33.3-136			

Batch 2081508 - SW846-3510

Blank (2081508-BLK1)

Prepared: 08/15/22 Analyzed: 08/23/22

1-Methylnaphthalene	ND	0.040	mg/kg							
Surrogate: 2-Fluorobiphenyl	1.10		mg/kg	2.00		54.9	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							

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 2081508 - SW846-3510 (Continued)

Blank (2081508-BLK1) (Continued)

Prepared: 08/15/22 Analyzed: 08/23/22

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	0.976		mg/kg	2.00		48.8	39.6-121		
Pyrene	ND	0.040	mg/kg						
Surrogate: Terphenyl-d14	1.11		mg/kg	2.00		55.7	33.3-136		

LCS (2081508-BS1)

Prepared: 08/15/22 Analyzed: 08/24/22

1-Methylnaphthalene	0.337	0.040	mg/kg	0.400		84.3	57.6-108		
Surrogate: 2-Fluorobiphenyl	1.56		mg/kg	2.00		77.8	39.8-134		
2-Methylnaphthalene	0.343	0.040	mg/kg	0.400		85.7	59-106		
Acenaphthene	0.306	0.040	mg/kg	0.400		76.6	60.9-105		
Acenaphthylene	0.327	0.040	mg/kg	0.400		81.6	57.4-107		
Anthracene	0.328	0.040	mg/kg	0.400		82.0	60.8-105		
Benzo[a]anthracene	0.368	0.040	mg/kg	0.400		91.9	56.1-121		
Benzo[a]pyrene	0.344	0.040	mg/kg	0.400		86.0	56.7-115		
Benzo[b]fluoranthene	0.365	0.040	mg/kg	0.400		91.2	45.4-128		
Benzo[g,h,i]perylene	0.360	0.040	mg/kg	0.400		89.9	56.5-107		
Benzo[k]fluoranthene	0.353	0.040	mg/kg	0.400		88.3	49.6-119		
Carbazole	0.347	0.040	mg/kg	0.400		86.7	59.7-107		
Chrysene	0.372	0.040	mg/kg	0.400		93.1	12.2-190		
Dibenz[a,h]anthracene	0.363	0.040	mg/kg	0.400		90.8	59.1-111		
Fluoranthene	0.331	0.040	mg/kg	0.400		82.7	60.6-111		
Fluorene	0.359	0.040	mg/kg	0.400		89.8	59.3-108		
Indeno[1,2,3-cd]pyrene	0.325	0.040	mg/kg	0.400		81.2	53.4-116		
Naphthalene	0.332	0.040	mg/kg	0.400		83.1	56.5-106		

Surrogate: Nitrobenzene-d5	1.09		mg/kg	2.00		54.4	39.6-121		
Phenanthrene	0.332	0.040	mg/kg	0.400		83.1	59.9-107		
Pyrene	0.431	0.040	mg/kg	0.400		108	51.5-122		
Surrogate: Terphenyl-d14	2.35		mg/kg	2.00		117	33.3-136		

LCS Dup (2081508-BS1)

Prepared: 08/15/22 Analyzed: 08/24/22

1-Methylnaphthalene	0.350	0.040	mg/kg	0.400		87.6	57.6-108	3.83	6.22
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Jeremy D Allen, Laboratory Director

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jeremy.allen@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

www.GreenAnalytical.com

Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

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 2081508 - SW846-3510 (Continued)

LCS Dup (2081508-BSD1) (Continued)

Prepared: 08/15/22 Analyzed: 08/24/22

Surrogate: 2-Fluorobiphenyl	1.53		mg/kg	2.00		76.3	39.8-134			
2-Methylnaphthalene	0.350	0.040	mg/kg	0.400		87.4	59-106	1.94	6.23	
Acenaphthene	0.326	0.040	mg/kg	0.400		81.4	60.9-105	6.12	8.18	
Acenaphthylene	0.324	0.040	mg/kg	0.400		80.9	57.4-107	0.867	5	
Anthracene	0.323	0.040	mg/kg	0.400		80.8	60.8-105	1.41	3.68	
Benzo[a]anthracene	0.368	0.040	mg/kg	0.400		92.0	56.1-121	0.0788	9.01	
Benzo[a]pyrene	0.346	0.040	mg/kg	0.400		86.5	56.7-115	0.626	4.92	
Benzo[b]fluoranthene	0.362	0.040	mg/kg	0.400		90.5	45.4-128	0.680	7.63	
Benzo[g,h,i]perylene	0.352	0.040	mg/kg	0.400		88.0	56.5-107	2.15	12.5	
Benzo[k]fluoranthene	0.359	0.040	mg/kg	0.400		89.8	49.6-119	1.68	10.6	
Carbazole	0.343	0.040	mg/kg	0.400		85.9	59.7-107	0.974	8.65	
Chrysene	0.385	0.040	mg/kg	0.400		96.1	12.2-190	3.25	21.8	
Dibenz[a,h]anthracene	0.356	0.040	mg/kg	0.400		88.9	59.1-111	2.11	11.6	
Fluoranthene	0.336	0.040	mg/kg	0.400		84.0	60.6-111	1.65	7.54	
Fluorene	0.353	0.040	mg/kg	0.400		88.1	59.3-108	1.91	5.49	
Indeno[1,2,3-cd]pyrene	0.327	0.040	mg/kg	0.400		81.6	53.4-116	0.485	22.3	
Naphthalene	0.323	0.040	mg/kg	0.400		80.7	56.5-106	2.96	4.56	
Surrogate: Nitrobenzene-d5	1.09		mg/kg	2.00		54.3	39.6-121			
Phenanthrene	0.331	0.040	mg/kg	0.400		82.8	59.9-107	0.250	5.21	
Pyrene	0.443	0.040	mg/kg	0.400		111	51.5-122	2.62	10.6	
Surrogate: Terphenyl-d14	2.33		mg/kg	2.00		117	33.3-136			

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PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Bryce (OWP) #1-X
Project Manager: Emma Millar

Reported:
09/08/22 10:21

Notes and Definitions

SD2 Serial Dilution RPD exceeded the laboratory control limit. All other QC for analyte acceptable.

QR-04 The RPD for the BS/BSD was outside of historical limits.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

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)

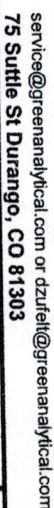
RL Report Limit

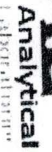
MDL Method Detection Limit

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[illegible]Page 24 of 25 2207279,2208289 GAL FINAL 09 08 22 1021 09/08/22 10:21:51



service@greenanalytical.com or dzufelt@greenanalytical.com
75 Suttle St Durango, CO 81303

ANALYSIS REQUEST

† GAL cannot always accept verbal changes. Please fax or email written change requests.
Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.