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15 April 2019

Steve Moskal
BP America
380 Airport Rd.
Durango, CO 81303
RE: Table 910

Enclosed are the results of analyses for samples received by the laboratory on 04/02/19 16:10. The data to follow was performed, in whole or in part, by a subcontract laboratory with an additional report attached.

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

Sincerely,

A handwritten signature in black ink that reads 'Debbie Zufelt'. The script is cursive and fluid, with the first name 'Debbie' and last name 'Zufelt' clearly legible.

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.

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.



BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS01	1904026-01	Solid	04/02/19 12:25	04/02/19 16:10	
SS02	1904026-02	Solid	04/02/19 12:50	04/02/19 16:10	
SS03	1904026-03	Solid	04/02/19 13:25	04/02/19 16:10	
SS04	1904026-04	Solid	04/02/19 15:05	04/02/19 16:10	
WS-01	1904026-05	Water	04/02/19 14:00	04/02/19 16:10	
WS-02	1904026-06	Water	04/02/19 15:00	04/02/19 16:10	

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Debbie Zufelt, Reports Manager

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BP America
380 Airport Rd.
Durango CO, 81303Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve MoskalReported:
04/15/19 12:27

SS01

1904026-01 (Solid)

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

% Dry Solids	80.7			%	1	04/05/19	EPA160.3/1684		VJL
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Saturated Paste Extraction

Calcium	35.5	0.100	0.013	mg/L	1	04/12/19	EPA200.7		AES
Conductivity	254			umhos/cm	1	04/12/19	ASA#9 10-3.3		VJL
Magnesium	6.19	0.100	0.019	mg/L	1	04/12/19	EPA200.7		AES
pH	6.66			pH Units	1	04/12/19	ASA#9 12-2.6		VJL
SAR	0.39			No Unit	1	04/12/19	Calculation		AES
Sodium	9.46	1.00	0.367	mg/L	1	04/12/19	EPA200.7		AES

Total Metals by ICP

Barium	452	5.00	0.049	mg/kg dry	100	04/05/19	6010B		AES
Cadmium	<5.00	5.00	0.122	mg/kg dry	100	04/05/19	6010B		AES
Chromium	7.17	5.00	0.075	mg/kg dry	100	04/05/19	6010B		AES
Copper	24.4	5.00	0.117	mg/kg dry	100	04/05/19	6010B		AES
Lead	16.1	10.0	0.576	mg/kg dry	100	04/05/19	6010B		AES
Nickel	10.6	5.00	0.213	mg/kg dry	100	04/05/19	6010B		AES
Selenium	<20.0	20.0	1.42	mg/kg dry	100	04/05/19	6010B		AES
Silver	<1.00	1.00	0.191	mg/kg dry	100	04/05/19	6010B		AES
Zinc	55.2	10.0	0.165	mg/kg dry	100	04/05/19	6010B		AES

Total Metals by ICPMS

Arsenic	2.64	1.00	0.214	mg/kg dry	1000	04/08/19	6020A		AES
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Total Mercury by CVAA

Mercury	<0.0496	0.0496	0.0207	mg/kg dry	200	04/09/19	EPA7471		LLG
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Hot Water Extractable

Boron	<1.20	1.20	0.059	mg/L	4	04/11/19	EPA200.7		AES
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BP America
380 Airport Rd.
Durango CO, 81303Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve MoskalReported:
04/15/19 12:27

SS01

1904026-01 (Solid)

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

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	04/06/19	8021B		ms
Toluene*	<0.050	0.050	0.002	mg/kg	50	04/06/19	8021B		ms
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	04/06/19	8021B		ms
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	04/06/19	8021B		ms
Total BTEX	<0.300	0.300	0.018	mg/kg	50	04/06/19	8021B		ms
Surrogate: 4-Bromofluorobenzene (PID)			93.8 %	73.3-129		04/06/19	8021B		ms

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	04/05/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	04/05/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	04/05/19	8015B		MS
Surrogate: 1-Chlorooctane			95.1 %	41-142		04/05/19	8015B		MS
Surrogate: 1-Chlorooctadecane			90.1 %	37.6-147		04/05/19	8015B		MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.014	0.040	0.014	mg/kg	40	04/08/19	8270C		MS
2-Methylnaphthalene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
1-Methylnaphthalene	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C	QM-07	MS
Acenaphthylene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Acenaphthene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Fluorene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Phenanthrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Anthracene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
Carbazole*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Fluoranthene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Pyrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Benzo[a]anthracene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
Chrysene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Benzo[b]fluoranthene*	<0.009	0.040	0.009	mg/kg	40	04/08/19	8270C		MS
Benzo[k]fluoranthene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Benzo[a]pyrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Dibenz[a,h]anthracene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS

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Debbie Zufelt, Reports Manager

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

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BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

SS01

1904026-01 (Solid)

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

Polynuclear Aromatic Compounds by GC/MS

Benzo[g,h,i]perylene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Surrogate: Nitrobenzene-d5			48.8 %	10.8-154		04/08/19	8270C		MS
Surrogate: 2-Fluorobiphenyl			52.9 %	16.9-156		04/08/19	8270C		MS
Surrogate: Terphenyl-d14			63.6 %	27-170		04/08/19	8270C		MS
Cation/Anion Balance	100.								

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Debbie Zufelt

Debbie Zufelt, Reports Manager

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BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

SS02**1904026-02 (Solid)**

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

% Dry Solids	72.3			%	1	04/05/19	EPA160.3/1684		VJL
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Saturated Paste Extraction

Calcium	111	0.500	0.064	mg/L	5	04/12/19	EPA200.7		AES
Conductivity	3870			umhos/cm	1	04/12/19	ASA#9 10-3.3		VJL
Magnesium	17.9	0.500	0.094	mg/L	5	04/12/19	EPA200.7		AES
pH	7.29			pH Units	1	04/12/19	ASA#9 12-2.6		VJL
SAR	14.1			No Unit	1	04/12/19	Calculation		AES
Sodium	607	5.00	1.83	mg/L	5	04/12/19	EPA200.7		AES

Total Metals by ICP

Barium	275	5.00	0.049	mg/kg dry	100	04/05/19	6010B		AES
Cadmium	<5.00	5.00	0.122	mg/kg dry	100	04/05/19	6010B		AES
Chromium	6.42	5.00	0.075	mg/kg dry	100	04/05/19	6010B		AES
Copper	22.5	5.00	0.117	mg/kg dry	100	04/05/19	6010B		AES
Lead	11.4	10.0	0.576	mg/kg dry	100	04/05/19	6010B		AES
Nickel	8.96	5.00	0.213	mg/kg dry	100	04/05/19	6010B		AES
Selenium	<20.0	20.0	1.42	mg/kg dry	100	04/05/19	6010B		AES
Silver	<1.00	1.00	0.191	mg/kg dry	100	04/05/19	6010B		AES
Zinc	50.5	10.0	0.165	mg/kg dry	100	04/05/19	6010B		AES

Total Metals by ICPMS

Arsenic	4.04	1.00	0.214	mg/kg dry	1000	04/08/19	6020A		AES
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Total Mercury by CVAA

Mercury	<0.0553	0.0553	0.0231	mg/kg dry	200	04/09/19	EPA7471		LLG
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Hot Water Extractable

Boron	2.18	1.20	0.059	mg/L	4	04/11/19	EPA200.7		AES
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Green Analytical Laboratories

Debbie Zufelt, Reports Manager

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BP America
380 Airport Rd.
Durango CO, 81303Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve MoskalReported:
04/15/19 12:27

SS02

1904026-02 (Solid)

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

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	04/06/19	8021B		ms
Toluene*	<0.050	0.050	0.002	mg/kg	50	04/06/19	8021B		ms
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	04/06/19	8021B		ms
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	04/06/19	8021B		ms
Total BTEX	<0.300	0.300	0.018	mg/kg	50	04/06/19	8021B		ms

Surrogate: 4-Bromofluorobenzene (PID) 93.3 % 73.3-129 04/06/19 8021B ms

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	04/04/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	04/04/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	04/04/19	8015B		MS

Surrogate: 1-Chlorooctane 86.9 % 41-142 04/04/19 8015B MS

Surrogate: 1-Chlorooctadecane 86.2 % 37.6-147 04/04/19 8015B MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.014	0.040	0.014	mg/kg	40	04/08/19	8270C		MS
2-Methylnaphthalene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
1-Methylnaphthalene	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Acenaphthylene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Acenaphthene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Fluorene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Phenanthrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Anthracene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
Carbazole*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Fluoranthene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Pyrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Benzo[a]anthracene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
Chrysene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Benzo[b]fluoranthene*	<0.009	0.040	0.009	mg/kg	40	04/08/19	8270C		MS
Benzo[k]fluoranthene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Benzo[a]pyrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Dibenz[a,h]anthracene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS

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Debbie Zufelt, Reports Manager

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BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

SS02

1904026-02 (Solid)

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

Polynuclear Aromatic Compounds by GC/MS

Benzo[g,h,i]perylene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Surrogate: Nitrobenzene-d5			44.0 %	10.8-154		04/08/19	8270C		MS
Surrogate: 2-Fluorobiphenyl			48.7 %	16.9-156		04/08/19	8270C		MS
Surrogate: Terphenyl-d14			53.3 %	27-170		04/08/19	8270C		MS
Cation/Anion Balance	100.								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

SS03**1904026-03 (Solid)**

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

% Dry Solids	60.6			%	1	04/05/19	EPA160.3/1684		VJL
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Saturated Paste Extraction

Calcium	74.7	0.200	0.026	mg/L	2	04/12/19	EPA200.7		AES
Conductivity	1770			umhos/cm	1	04/12/19	ASA#9 10-3.3		VJL
Magnesium	11.7	0.200	0.038	mg/L	2	04/12/19	EPA200.7		AES
pH	8.01			pH Units	1	04/12/19	ASA#9 12-2.6		VJL
SAR	19.3			No Unit	1	04/12/19	Calculation		AES
Sodium	681	2.00	0.734	mg/L	2	04/12/19	EPA200.7		AES

Total Metals by ICP

Barium	322	5.00	0.049	mg/kg dry	100	04/05/19	6010B		AES
Cadmium	<5.00	5.00	0.122	mg/kg dry	100	04/05/19	6010B		AES
Chromium	6.02	5.00	0.075	mg/kg dry	100	04/05/19	6010B		AES
Copper	16.3	5.00	0.117	mg/kg dry	100	04/05/19	6010B		AES
Lead	13.2	10.0	0.576	mg/kg dry	100	04/05/19	6010B		AES
Nickel	7.67	5.00	0.213	mg/kg dry	100	04/05/19	6010B		AES
Selenium	<20.0	20.0	1.42	mg/kg dry	100	04/05/19	6010B		AES
Silver	<1.00	1.00	0.191	mg/kg dry	100	04/05/19	6010B		AES
Zinc	55.6	10.0	0.165	mg/kg dry	100	04/05/19	6010B		AES

Total Metals by ICPMS

Arsenic	3.12	1.00	0.214	mg/kg dry	1000	04/08/19	6020A		AES
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Total Mercury by CVAA

Mercury	<0.0660	0.0660	0.0275	mg/kg dry	200	04/09/19	EPA7471		LLG
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Hot Water Extractable

Boron	<1.20	1.20	0.059	mg/L	4	04/11/19	EPA200.7		AES
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BP America
380 Airport Rd.
Durango CO, 81303Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve MoskalReported:
04/15/19 12:27

SS03

1904026-03 (Solid)

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

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	04/06/19	8021B		ms
Toluene*	<0.050	0.050	0.002	mg/kg	50	04/06/19	8021B		ms
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	04/06/19	8021B		ms
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	04/06/19	8021B		ms
Total BTEX	<0.300	0.300	0.018	mg/kg	50	04/06/19	8021B		ms

Surrogate: 4-Bromofluorobenzene (PID) 92.5 % 73.3-129 04/06/19 8021B ms

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	04/04/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	04/04/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	04/04/19	8015B		MS

Surrogate: 1-Chlorooctane 87.2 % 41-142 04/04/19 8015B MS

Surrogate: 1-Chlorooctadecane 85.2 % 37.6-147 04/04/19 8015B MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.014	0.040	0.014	mg/kg	40	04/08/19	8270C		MS
2-Methylnaphthalene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
1-Methylnaphthalene	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Acenaphthylene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Acenaphthene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Fluorene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Phenanthrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Anthracene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
Carbazole*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Fluoranthene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Pyrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Benzo[a]anthracene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
Chrysene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Benzo[b]fluoranthene*	<0.009	0.040	0.009	mg/kg	40	04/08/19	8270C		MS
Benzo[k]fluoranthene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Benzo[a]pyrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Dibenz[a,h]anthracene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS

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BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

SS03

1904026-03 (Solid)

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

Polynuclear Aromatic Compounds by GC/MS

Benzo[g,h,i]perylene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Surrogate: Nitrobenzene-d5			50.0 %	10.8-154		04/08/19	8270C		MS
Surrogate: 2-Fluorobiphenyl			52.9 %	16.9-156		04/08/19	8270C		MS
Surrogate: Terphenyl-d14			54.9 %	27-170		04/08/19	8270C		MS
Cation/Anion Balance	100.								

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

SS04**1904026-04 (Solid)**

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

% Dry Solids	61.4			%	1	04/05/19	EPA160.3/1684		VJL
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Saturated Paste Extraction

Calcium	74.4	0.100	0.013	mg/L	1	04/12/19	EPA200.7		AES
Conductivity	1000			umhos/cm	1	04/12/19	ASA#9 10-3.3		VJL
Magnesium	14.6	0.100	0.019	mg/L	1	04/12/19	EPA200.7		AES
pH	5.50			pH Units	1	04/12/19	ASA#9 12-2.6		VJL
SAR	2.80			No Unit	1	04/12/19	Calculation		AES
Sodium	101	1.00	0.367	mg/L	1	04/12/19	EPA200.7		AES

Total Metals by ICP

Barium	251	5.00	0.049	mg/kg dry	100	04/05/19	6010B		AES
Cadmium	<5.00	5.00	0.122	mg/kg dry	100	04/05/19	6010B		AES
Chromium	6.25	5.00	0.075	mg/kg dry	100	04/05/19	6010B		AES
Copper	16.8	5.00	0.117	mg/kg dry	100	04/05/19	6010B		AES
Lead	11.9	10.0	0.576	mg/kg dry	100	04/05/19	6010B		AES
Nickel	7.95	5.00	0.213	mg/kg dry	100	04/05/19	6010B		AES
Selenium	<20.0	20.0	1.42	mg/kg dry	100	04/05/19	6010B		AES
Silver	<1.00	1.00	0.191	mg/kg dry	100	04/05/19	6010B		AES
Zinc	51.2	10.0	0.165	mg/kg dry	100	04/05/19	6010B		AES

Total Metals by ICPMS

Arsenic	2.48	1.00	0.214	mg/kg dry	1000	04/08/19	6020A		AES
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Total Mercury by CVAA

Mercury	<0.0651	0.0651	0.0272	mg/kg dry	200	04/09/19	EPA7471		LLG
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Hot Water Extractable

Boron	<1.20	1.20	0.059	mg/L	4	04/11/19	EPA200.7		AES
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BP America
380 Airport Rd.
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Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

SS04

1904026-04 (Solid)

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

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	0.002	mg/kg	50	04/06/19	8021B		ms
Toluene*	<0.050	0.050	0.002	mg/kg	50	04/06/19	8021B		ms
Ethylbenzene*	<0.050	0.050	0.004	mg/kg	50	04/06/19	8021B		ms
Total Xylenes*	<0.150	0.150	0.010	mg/kg	50	04/06/19	8021B		ms
Total BTEX	<0.300	0.300	0.018	mg/kg	50	04/06/19	8021B		ms
Surrogate: 4-Bromofluorobenzene (PID)			91.0 %	73.3-129		04/06/19	8021B		ms

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	5.30	mg/kg	1	04/05/19	8015B		MS
DRO >C10-C28*	<10.0	10.0	1.56	mg/kg	1	04/05/19	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	1.56	mg/kg	1	04/05/19	8015B		MS
Surrogate: 1-Chlorooctane			83.8 %	41-142		04/05/19	8015B		MS
Surrogate: 1-Chlorooctadecane			83.5 %	37.6-147		04/05/19	8015B		MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.014	0.040	0.014	mg/kg	40	04/08/19	8270C		MS
2-Methylnaphthalene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
1-Methylnaphthalene	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Acenaphthylene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Acenaphthene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Fluorene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Phenanthrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Anthracene*	<0.008	0.040	0.008	mg/kg	40	04/08/19	8270C		MS
Carbazole*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Fluoranthene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Pyrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Benzo[a]anthracene*	0.009	0.040	0.008	mg/kg	40	04/08/19	8270C	J	MS
Chrysene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Benzo[b]fluoranthene*	<0.009	0.040	0.009	mg/kg	40	04/08/19	8270C		MS
Benzo[k]fluoranthene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Benzo[a]pyrene*	<0.007	0.040	0.007	mg/kg	40	04/08/19	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.010	0.040	0.010	mg/kg	40	04/08/19	8270C		MS
Dibenz[a,h]anthracene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS

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Debbie Zufelt

Debbie Zufelt, Reports Manager

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BP America
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Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

SS04

1904026-04 (Solid)

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

Polynuclear Aromatic Compounds by GC/MS

Benzo[g,h,i]perylene*	<0.006	0.040	0.006	mg/kg	40	04/08/19	8270C		MS
Surrogate: Nitrobenzene-d5			46.7 %	10.8-154		04/08/19	8270C		MS
Surrogate: 2-Fluorobiphenyl			49.8 %	16.9-156		04/08/19	8270C		MS
Surrogate: Terphenyl-d14			52.7 %	27-170		04/08/19	8270C		MS
Cation/Anion Balance	100.								

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Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

WS-01

1904026-05 (Water)

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

Alkalinity, Bicarbonate as CaCO ₃ *	1880	10.0		mg/L	5	04/12/19	2320 B		VJL
Alkalinity, Carbonate as CaCO ₃ *	100	10.0		mg/L	5	04/12/19	2320 B		VJL
Alkalinity, Hydroxide as CaCO ₃ *	<10.0	10.0		mg/L	5	04/12/19	2320 B		VJL
Alkalinity, Total as CaCO ₃ *	1980	10.0	3.06	mg/L	5	04/12/19	2320 B		VJL
Chloride*	771	20.0	2.05	mg/L	20	04/04/19	EPA300.0		AES
Conductivity*	5530	10.0		uS/cm	1	04/04/19	2510 B		VJL
pH*	7.79			pH Units	1	04/04/19	EPA150.1		VJL
Resistivity	181			ohm/cm	1	04/10/19	2510 B		JDA
Total Dissolved Solids*	3250	10.0		mg/L	1	04/09/19	EPA160.1		JDA
Specific Gravity	1.006	0.8000		No Unit	1	04/15/19	ASTM D1429-03		VJL
Sulfate*	<4.00	4.00	0.852	mg/L	4	04/04/19	EPA300.0		AES

Total Recoverable Metals by ICP (E200.7)

Iron*	4.90	1.00	0.348	mg/L	20	04/05/19	EPA200.7		AES
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Dissolved Metals by ICP

Hardness	51.4	3.31	0.546	mg/L	5	04/03/19	2340 B		AES
Barium*	2.93	0.100	0.010	mg/L	5	04/03/19	EPA200.7		AES
Calcium*	14.7	0.500	0.064	mg/L	5	04/03/19	EPA200.7		AES
Iron*	<0.250	0.250	0.138	mg/L	5	04/03/19	EPA200.7		AES
Magnesium*	3.54	0.500	0.094	mg/L	5	04/03/19	EPA200.7		AES
Manganese*	0.340	0.100	0.013	mg/L	5	04/03/19	EPA200.7		AES
Potassium*	7.02	5.00	0.478	mg/L	5	04/03/19	EPA200.7		AES
Sodium*	1290	5.00	1.83	mg/L	5	04/03/19	EPA200.7		AES
Strontium*	2.32	0.500	0.014	mg/L	5	04/03/19	EPA200.7		AES

Subcontracted -- Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.001	0.001	0.00007	mg/L	1	04/04/19	8021B		MS
Toluene*	<0.001	0.001	0.00005	mg/L	1	04/04/19	8021B		MS
Ethylbenzene*	<0.001	0.001	0.0001	mg/L	1	04/04/19	8021B		MS
Total Xylenes*	<0.003	0.003	0.0002	mg/L	1	04/04/19	8021B		MS
Total BTEX	<0.006	0.006	0.0005	mg/L	1	04/04/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 81.3-128 04/04/19 8021B MS

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

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BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

WS-01

1904026-05 (Water)

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

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<1.00	1.00	0.0601	mg/L	0.1	04/05/19	8015B		MS
DRO >C10-C28*	<1.00	1.00	0.164	mg/L	0.1	04/05/19	8015B		MS
EXT DRO >C28-C36	<1.00	1.00	0.164	mg/L	0.1	04/05/19	8015B		MS
Surrogate: 1-Chlorooctane			78.5 %	37.1-138		04/05/19	8015B		MS
Surrogate: 1-Chlorooctadecane			79.4 %	44.6-151		04/05/19	8015B		MS
Cation/Anion Balance	-3.34								

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BP America
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Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

WS-02

1904026-06 (Water)

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

Alkalinity, Bicarbonate as CaCO ₃ *	59.0	10.0		mg/L	1	04/12/19	2320 B		VJL
Alkalinity, Carbonate as CaCO ₃ *	<10.0	10.0		mg/L	1	04/12/19	2320 B		VJL
Alkalinity, Hydroxide as CaCO ₃ *	<10.0	10.0		mg/L	1	04/12/19	2320 B		VJL
Alkalinity, Total as CaCO ₃ *	59.0	10.0	3.06	mg/L	1	04/12/19	2320 B		VJL
Chloride*	161	10.0	1.03	mg/L	10	04/04/19	EPA300.0		AES
Conductivity*	831	10.0		uS/cm	1	04/04/19	2510 B		VJL
pH*	6.66			pH Units	1	04/04/19	EPA150.1		VJL
Resistivity	1200			ohm/cm	1	04/10/19	2510 B		JDA
Total Dissolved Solids*	470	10.0		mg/L	1	04/09/19	EPA160.1		JDA
Specific Gravity	1.003	0.8000		No Unit	1	04/15/19	ASTM D1429-03		VJL
Sulfate*	62.6	10.0	2.13	mg/L	10	04/04/19	EPA300.0		AES

Total Recoverable Metals by ICP (E200.7)

Iron*	3.14	0.250	0.087	mg/L	5	04/05/19	EPA200.7		AES
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Dissolved Metals by ICP

Hardness	182	3.31	0.546	mg/L	5	04/03/19	2340 B		AES
Barium*	0.209	0.100	0.010	mg/L	5	04/03/19	EPA200.7		AES
Calcium*	55.5	0.500	0.064	mg/L	5	04/03/19	EPA200.7		AES
Iron*	<0.250	0.250	0.138	mg/L	5	04/03/19	EPA200.7		AES
Magnesium*	10.4	0.500	0.094	mg/L	5	04/03/19	EPA200.7		AES
Manganese*	0.163	0.100	0.013	mg/L	5	04/03/19	EPA200.7		AES
Potassium*	<5.00	5.00	0.478	mg/L	5	04/03/19	EPA200.7		AES
Sodium*	93.3	5.00	1.83	mg/L	5	04/03/19	EPA200.7		AES
Strontium*	0.683	0.500	0.014	mg/L	5	04/03/19	EPA200.7		AES

Subcontracted -- Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.001	0.001	0.00007	mg/L	1	04/04/19	8021B		MS
Toluene*	<0.001	0.001	0.00005	mg/L	1	04/04/19	8021B		MS
Ethylbenzene*	<0.001	0.001	0.0001	mg/L	1	04/04/19	8021B		MS
Total Xylenes*	<0.003	0.003	0.0002	mg/L	1	04/04/19	8021B		MS
Total BTEX	<0.006	0.006	0.0005	mg/L	1	04/04/19	8021B		MS

Surrogate: 4-Bromofluorobenzene (PID) 93.3 % 81.3-128 04/04/19 8021B MS

Green Analytical Laboratories

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BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

WS-02

1904026-06 (Water)

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

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<1.00	1.00	0.0601	mg/L	0.1	04/05/19	8015B		MS
DRO >C10-C28*	<1.00	1.00	0.164	mg/L	0.1	04/05/19	8015B		MS
EXT DRO >C28-C36	<1.00	1.00	0.164	mg/L	0.1	04/05/19	8015B		MS
Surrogate: 1-Chlorooctane			79.9 %	37.1-138		04/05/19	8015B		MS
Surrogate: 1-Chlorooctadecane			81.0 %	44.6-151		04/05/19	8015B		MS
Cation/Anion Balance	5.61								

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BP America
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Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B904044 - General Prep - Wet Chem										
Blank (B904044-BLK1)				Prepared & Analyzed: 04/03/19						
Chloride	ND	1.00	mg/L							
Sulfate	ND	1.00	mg/L							
LCS (B904044-BS1)				Prepared & Analyzed: 04/03/19						
Chloride	24.6	1.00	mg/L	25.0		98.5	90-110			
Sulfate	24.4	1.00	mg/L	25.0		97.5	90-110			
LCS Dup (B904044-BSD1)				Prepared & Analyzed: 04/03/19						
Chloride	24.6	1.00	mg/L	25.0		98.4	90-110	0.110	20	
Sulfate	24.4	1.00	mg/L	25.0		97.5	90-110	0.0287	20	
Batch B904049 - General Prep - Wet Chem										
Duplicate (B904049-DUP1)		Source: 1904028-02		Prepared: 04/04/19		Analyzed: 04/05/19				
% Dry Solids	97.7		%		97.7			0.00361	20	
Batch B904050 - General Prep - Wet Chem										
Duplicate (B904050-DUP1)		Source: 1904037-01		Prepared & Analyzed: 04/04/19						
pH	7.35		pH Units		7.33			0.272	20	
Reference (B904050-SRM1)		Prepared & Analyzed: 04/04/19								
pH	6.99		pH Units	7.00		99.9	98.5-101.4			
Batch B904051 - General Prep - Wet Chem										
Duplicate (B904051-DUP1)		Source: 1904026-05		Prepared & Analyzed: 04/04/19						
Conductivity	5390	10.0	uS/cm		5530			2.56	20	
Reference (B904051-SRM1)		Prepared & Analyzed: 04/04/19								
Conductivity	498	10.0	uS/cm	491		101	90-110.1			
Batch B904085 - General Prep - Wet Chem										
Blank (B904085-BLK1)				Prepared & Analyzed: 04/09/19						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (B904085-DUP1)		Source: 1904038-01		Prepared & Analyzed: 04/09/19						
Total Dissolved Solids	3560	10.0	mg/L		3580			0.700	20	
Reference (B904085-SRM1)		Prepared & Analyzed: 04/09/19								

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Project: Table 910
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Project Manager: Steve Moskal

Reported:
04/15/19 12:27

**General Chemistry - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B904085 - General Prep - Wet Chem (Continued)

Reference (B904085-SRM1) (Continued)

Prepared & Analyzed: 04/09/19

Total Dissolved Solids	590	10.0	mg/L	600	98.3	85-115
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Batch B904106 - General Prep - Wet Chem

Duplicate (B904106-DUP1)

Source: 1904026-05

Prepared: 04/10/19 Analyzed: 04/15/19

Specific Gravity	1.006	0.8000	No Unit	1.006	0.00	20
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Batch B904138 - General Prep - Wet Chem

Blank (B904138-BLK1)

Prepared: 04/11/19 Analyzed: 04/12/19

Alkalinity, Total as CaCO ₃	ND	10.0	mg/L
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LCS (B904138-BS1)

Prepared: 04/11/19 Analyzed: 04/12/19

Alkalinity, Total as CaCO ₃	101	10.0	mg/L	100	101	85-115
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LCS Dup (B904138-BSD1)

Prepared: 04/11/19 Analyzed: 04/12/19

Alkalinity, Total as CaCO ₃	92.0	10.0	mg/L	100	92.0	85-115	9.33	20
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Project: Table 910
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Project Manager: Steve Moskal

Reported:
04/15/19 12:27

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 B904124 - Paste Extract

Blank (B904124-BLK1)

Prepared: 04/11/19 Analyzed: 04/12/19

Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							

Duplicate (B904124-DUP1)

Source: 1904026-01 Prepared: 04/11/19 Analyzed: 04/12/19

Calcium	30.1	0.100	mg/L		35.5			16.6	20	
Magnesium	5.85	0.100	mg/L		6.19			5.64	20	
SAR	0.38		No Unit		0.39			2.60	20	
Sodium	8.61	1.00	mg/L		9.46			9.45	20	

Batch B904125 - Paste Extract

Duplicate (B904125-DUP1)

Source: 1904026-01 Prepared: 04/11/19 Analyzed: 04/12/19

Conductivity	212		umhos/cm		254			17.6	20	
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Batch B904126 - Paste Extract

Duplicate (B904126-DUP1)

Source: 1904026-01 Prepared: 04/11/19 Analyzed: 04/12/19

pH	6.56		pH Units		6.66			1.51	20	
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Project: Table 910
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Project Manager: Steve Moskal

Reported:
04/15/19 12:27

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 B904061 - EPA 3050

Blank (B904061-BLK1)

Prepared & Analyzed: 04/05/19

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 (B904061-BS1)

Prepared & Analyzed: 04/05/19

Barium	186	5.00	mg/kg dry	200	93.2	80-120
Cadmium	174	5.00	mg/kg dry	200	86.9	80-120
Chromium	188	5.00	mg/kg dry	200	93.9	80-120
Copper	388	5.00	mg/kg dry	400	97.1	80-120
Lead	181	10.0	mg/kg dry	200	90.6	80-120
Nickel	180	5.00	mg/kg dry	200	90.1	80-120
Selenium	748	20.0	mg/kg dry	800	93.4	80-120
Silver	8.97	1.00	mg/kg dry	10.0	89.7	80-120
Zinc	169	10.0	mg/kg dry	200	84.4	80-120

LCS Dup (B904061-BSD1)

Prepared & Analyzed: 04/05/19

Barium	186	5.00	mg/kg dry	200	93.1	80-120	0.0132	20
Cadmium	173	5.00	mg/kg dry	200	86.7	80-120	0.180	20
Chromium	188	5.00	mg/kg dry	200	94.0	80-120	0.142	20
Copper	387	5.00	mg/kg dry	400	96.6	80-120	0.473	20
Lead	181	10.0	mg/kg dry	200	90.5	80-120	0.102	20
Nickel	180	5.00	mg/kg dry	200	90.0	80-120	0.128	20
Selenium	739	20.0	mg/kg dry	800	92.3	80-120	1.21	20
Silver	8.95	1.00	mg/kg dry	10.0	89.5	80-120	0.162	20
Zinc	169	10.0	mg/kg dry	200	84.5	80-120	0.106	20

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Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

Total Recoverable Metals by ICP (E200.7) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B904037 - Total Rec. 200.7/200.8/200.2

Blank (B904037-BLK1)

Prepared: 04/03/19 Analyzed: 04/05/19

Iron	ND	0.050	mg/L							
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LCS (B904037-BS1)

Prepared: 04/03/19 Analyzed: 04/05/19

Iron	3.90	0.050	mg/L	4.00		97.6	85-115			
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LCS Dup (B904037-BSD1)

Prepared: 04/03/19 Analyzed: 04/05/19

Iron	3.77	0.050	mg/L	4.00		94.3	85-115	3.45	20	
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Project Name / Number: Leroy McCaw B#1
Project Manager: Steve MoskalReported:
04/15/19 12:27

Dissolved 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 B904039 - Diss. 200.7/200.8

Blank (B904039-BLK1)

Prepared & Analyzed: 04/03/19

Barium	ND	0.020	mg/L
Calcium	ND	0.100	mg/L
Iron	ND	0.050	mg/L
Magnesium	ND	0.100	mg/L
Manganese	ND	0.020	mg/L
Potassium	ND	1.00	mg/L
Sodium	ND	1.00	mg/L
Strontium	ND	0.100	mg/L

LCS (B904039-BS1)

Prepared & Analyzed: 04/03/19

Barium	2.69	0.020	mg/L	2.50	108	85-115
Calcium	4.93	0.100	mg/L	5.00	98.7	85-115
Iron	4.90	0.050	mg/L	5.00	97.9	85-115
Magnesium	28.7	0.100	mg/L	25.0	115	85-115
Manganese	2.46	0.020	mg/L	2.50	98.4	85-115
Potassium	11.2	1.00	mg/L	10.0	112	85-115
Sodium	4.53	1.00	mg/L	4.05	112	85-115
Strontium	5.74	0.100	mg/L	5.00	115	85-115

LCS Dup (B904039-BSD1)

Prepared & Analyzed: 04/03/19

Barium	2.67	0.020	mg/L	2.50	107	85-115	0.972	20
Calcium	4.94	0.100	mg/L	5.00	98.8	85-115	0.0993	20
Iron	5.71	0.050	mg/L	5.00	114	85-115	15.3	20
Magnesium	27.8	0.100	mg/L	25.0	111	85-115	3.39	20
Manganese	2.86	0.020	mg/L	2.50	114	85-115	15.0	20
Potassium	10.9	1.00	mg/L	10.0	109	85-115	3.20	20
Sodium	4.42	1.00	mg/L	4.05	109	85-115	2.48	20
Strontium	5.62	0.100	mg/L	5.00	112	85-115	2.01	20

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Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

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 B904062 - EPA 3050M

Blank (B904062-BLK1)

Prepared: 04/05/19 Analyzed: 04/08/19

Arsenic	ND	0.100	mg/kg dry							
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LCS (B904062-BS1)

Prepared: 04/05/19 Analyzed: 04/08/19

Arsenic	5.32	0.100	mg/kg dry	5.00		106	80-120			
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LCS Dup (B904062-BSD1)

Prepared: 04/05/19 Analyzed: 04/08/19

Arsenic	5.21	0.100	mg/kg dry	5.00		104	80-120	2.09	20	
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Total Mercury by CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B904073 - EPA 7471

Blank (B904073-BLK1)

Prepared: 04/08/19 Analyzed: 04/09/19

Mercury	ND	0.0002	mg/kg wet							
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LCS (B904073-BS1)

Prepared: 04/08/19 Analyzed: 04/09/19

Mercury	0.0053	0.0002	mg/kg wet	0.00500		107	85-115			
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LCS Dup (B904073-BSD1)

Prepared: 04/08/19 Analyzed: 04/09/19

Mercury	0.0054	0.0002	mg/kg wet	0.00500		107	85-115	0.336	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 B904119 - Hot Water Soluble Metals Extract

Blank (B904119-BLK1)

Prepared & Analyzed: 04/11/19

Boron	ND	1.20	mg/L							
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Duplicate (B904119-DUP1)

Source: 1904026-01 Prepared & Analyzed: 04/11/19

Boron	0.696	1.20	mg/L		0.693			0.367	200	
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Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9040414 - Volatiles

Blank (9040414-BLK1)

Prepared & Analyzed: 04/04/19

Surrogate: 4-Bromofluorobenzene (PID)	0.0864		mg/L	0.100		86.4	81.3-128			
Benzene	ND	0.001	mg/L							
Ethylbenzene	ND	0.001	mg/L							
Toluene	ND	0.001	mg/L							
Total BTEX	ND	0.006	mg/L							
Total Xylenes	ND	0.003	mg/L							

LCS (9040414-BS1)

Prepared & Analyzed: 04/04/19

Surrogate: 4-Bromofluorobenzene (PID)	0.0869		mg/L	0.100		86.9	81.3-128			
Benzene	0.020	0.001	mg/L	0.0200		100	86.6-118			
Ethylbenzene	0.018	0.001	mg/L	0.0200		92.0	83.9-122			
Toluene	0.020	0.001	mg/L	0.0200		98.2	84.5-122			
Total Xylenes	0.060	0.003	mg/L	0.0600		99.5	81.8-124			

LCS Dup (9040414-BSD1)

Prepared & Analyzed: 04/04/19

Surrogate: 4-Bromofluorobenzene (PID)	0.0892		mg/L	0.100		89.2	81.3-128			
Benzene	0.020	0.001	mg/L	0.0200		101	86.6-118	0.841	7.71	
Ethylbenzene	0.018	0.001	mg/L	0.0200		92.4	83.9-122	0.510	11.8	
Toluene	0.020	0.001	mg/L	0.0200		98.4	84.5-122	0.229	8.86	
Total Xylenes	0.059	0.003	mg/L	0.0600		98.9	81.8-124	0.615	11.9	

Batch 9040504 - Volatiles

Blank (9040504-BLK1)

Prepared & Analyzed: 04/05/19

Surrogate: 4-Bromofluorobenzene (PID)	0.0921		mg/kg	0.100		92.1	73.3-129			
Benzene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Total Xylenes	ND	0.150	mg/kg							

LCS (9040504-BS1)

Prepared & Analyzed: 04/05/19

Surrogate: 4-Bromofluorobenzene (PID)	0.0914		mg/kg	0.100		91.4	73.3-129			
Benzene	2.16	0.050	mg/kg	2.00		108	72.2-131			
Ethylbenzene	2.13	0.050	mg/kg	2.00		106	68.9-126			
Toluene	2.01	0.050	mg/kg	2.00		101	71.7-126			
Total Xylenes	6.43	0.150	mg/kg	6.00		107	71.4-125			

LCS Dup (9040504-BSD1)

Prepared & Analyzed: 04/05/19

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Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

**Volatile Organic Compounds by EPA Method 8021 - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9040504 - Volatiles (Continued)

LCS Dup (9040504-BSD1) (Continued)

Prepared & Analyzed: 04/05/19

Surrogate: 4-Bromofluorobenzene (PID)	0.0916		mg/kg	0.100		91.6	73.3-129			
Benzene	2.10	0.050	mg/kg	2.00		105	72.2-131	2.74	6.91	
Ethylbenzene	2.05	0.050	mg/kg	2.00		103	68.9-126	3.63	7.88	
Toluene	1.94	0.050	mg/kg	2.00		97.1	71.7-126	3.59	7.12	
Total Xylenes	6.21	0.150	mg/kg	6.00		104	71.4-125	3.46	7.46	

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

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www.GreenAnalytical.com

BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

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 9040410 - General Prep - Organics

Blank (9040410-BLK1)

Prepared: 04/04/19 Analyzed: 04/05/19

Surrogate: 1-Chlorooctadecane	45.6		mg/kg	50.0		91.2	37.6-147			
Surrogate: 1-Chlorooctane	47.6		mg/kg	50.0		95.2	41-142			
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 (9040410-BS1)

Prepared: 04/04/19 Analyzed: 04/05/19

Surrogate: 1-Chlorooctadecane	49.0		mg/kg	50.0		98.1	37.6-147			
Surrogate: 1-Chlorooctane	51.8		mg/kg	50.0		104	41-142			
DRO >C10-C28	205	10.0	mg/kg	200		103	72.9-138			
GRO C6-C10	202	10.0	mg/kg	200		101	76.5-133			
Total TPH C6-C28	408	10.0	mg/kg	400		102	78-132			

LCS Dup (9040410-BSD1)

Prepared: 04/04/19 Analyzed: 04/05/19

Surrogate: 1-Chlorooctadecane	49.7		mg/kg	50.0		99.5	37.6-147			
Surrogate: 1-Chlorooctane	52.4		mg/kg	50.0		105	41-142			
DRO >C10-C28	203	10.0	mg/kg	200		101	72.9-138	1.12	20.6	
GRO C6-C10	203	10.0	mg/kg	200		101	76.5-133	0.218	20.6	
Total TPH C6-C28	406	10.0	mg/kg	400		101	78-132	0.453	18	

Batch 9040411 - General Prep - Organics

Blank (9040411-BLK1)

Prepared: 04/04/19 Analyzed: 04/05/19

Surrogate: 1-Chlorooctadecane	4.04		mg/L	5.00		80.8	44.6-151			
Surrogate: 1-Chlorooctane	3.42		mg/L	5.00		68.4	37.1-138			
DRO >C10-C28	ND	1.00	mg/L							
EXT DRO >C28-C36	ND	1.00	mg/L							
GRO C6-C10	ND	1.00	mg/L							

LCS (9040411-BS1)

Prepared: 04/04/19 Analyzed: 04/05/19

Surrogate: 1-Chlorooctadecane	4.45		mg/L	5.00		89.0	44.6-151			
Surrogate: 1-Chlorooctane	4.59		mg/L	5.00		91.9	37.1-138			
DRO >C10-C28	47.8	1.00	mg/L	50.0		95.5	77.5-117			
GRO C6-C10	46.9	1.00	mg/L	50.0		93.9	72.8-108			

LCS Dup (9040411-BSD1)

Prepared: 04/04/19 Analyzed: 04/05/19

Surrogate: 1-Chlorooctadecane	4.48		mg/L	5.00		89.6	44.6-151			
Surrogate: 1-Chlorooctane	4.64		mg/L	5.00		92.8	37.1-138			

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Debbie Zufelt, Reports Manager

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BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

**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 9040411 - General Prep - Organics (Continued)

LCS Dup (9040411-BSD1) (Continued)

Prepared: 04/04/19 Analyzed: 04/05/19

DRO >C10-C28	48.3	1.00	mg/L	50.0		96.6	77.5-117	1.07	12.1	
GRO C6-C10	47.5	1.00	mg/L	50.0		95.1	72.8-108	1.26	12	

Batch 9040416 - General Prep - Organics

Blank (9040416-BLK1)

Prepared & Analyzed: 04/04/19

Surrogate: 1-Chlorooctadecane	43.0		mg/kg	50.0		85.9	37.6-147			
Surrogate: 1-Chlorooctane	44.7		mg/kg	50.0		89.4	41-142			
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 (9040416-BS1)

Prepared & Analyzed: 04/04/19

Surrogate: 1-Chlorooctadecane	44.0		mg/kg	50.0		88.0	37.6-147			
Surrogate: 1-Chlorooctane	47.2		mg/kg	50.0		94.4	41-142			
DRO >C10-C28	210	10.0	mg/kg	200		105	72.9-138			
GRO C6-C10	203	10.0	mg/kg	200		101	76.5-133			
Total TPH C6-C28	413	10.0	mg/kg	400		103	78-132			

LCS Dup (9040416-BSD1)

Prepared & Analyzed: 04/04/19

Surrogate: 1-Chlorooctadecane	46.6		mg/kg	50.0		93.3	37.6-147			
Surrogate: 1-Chlorooctane	49.7		mg/kg	50.0		99.4	41-142			
DRO >C10-C28	230	10.0	mg/kg	200		115	72.9-138	9.40	20.6	
GRO C6-C10	226	10.0	mg/kg	200		113	76.5-133	10.9	20.6	
Total TPH C6-C28	457	10.0	mg/kg	400		114	78-132	10.1	18	

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www.GreenAnalytical.com

BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

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 9040502 - SW846-3510

Blank (9040502-BLK1)

Prepared: 04/05/19 Analyzed: 04/08/19

1-Methylnaphthalene	ND	0.040	mg/kg							
Surrogate: 2-Fluorobiphenyl	1.13		mg/kg	2.00		56.3	16.9-156			
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]fluoranthene	ND	0.040	mg/kg							
Benzo[g,h,i]perylene	ND	0.040	mg/kg							
Benzo[k]fluoranthene	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							
Surrogate: Nitrobenzene-d5	1.08		mg/kg	2.00		53.9	10.8-154			
Phenanthrene	ND	0.040	mg/kg							
Pyrene	ND	0.040	mg/kg							
Surrogate: Terphenyl-d14	1.22		mg/kg	2.00		60.8	27-170			

LCS (9040502-BS1)

Prepared: 04/05/19 Analyzed: 04/08/19

1-Methylnaphthalene	0.258	0.040	mg/kg	0.400		64.5	60-140			
Surrogate: 2-Fluorobiphenyl	1.12		mg/kg	2.00		55.9	16.9-156			
2-Methylnaphthalene	0.263	0.040	mg/kg	0.400		65.9	36.1-121			
Acenaphthene	0.232	0.040	mg/kg	0.400		57.9	33.9-127			
Acenaphthylene	0.230	0.040	mg/kg	0.400		57.6	34-126			
Anthracene	0.240	0.040	mg/kg	0.400		60.1	39.4-124			
Benzo[a]anthracene	0.227	0.040	mg/kg	0.400		56.8	40.6-124			
Benzo[a]pyrene	0.255	0.040	mg/kg	0.400		63.7	38.3-127			
Benzo[b]fluoranthene	0.262	0.040	mg/kg	0.400		65.4	34.4-130			
Benzo[g,h,i]perylene	0.245	0.040	mg/kg	0.400		61.3	29.9-134			
Benzo[k]fluoranthene	0.242	0.040	mg/kg	0.400		60.4	35.5-135			
Carbazole	0.234	0.040	mg/kg	0.400		58.4	31.9-133			
Chrysene	0.233	0.040	mg/kg	0.400		58.2	41.3-126			
Dibenz[a,h]anthracene	0.246	0.040	mg/kg	0.400		61.6	35-132			
Fluoranthene	0.230	0.040	mg/kg	0.400		57.6	37.2-123			

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

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BP America
380 Airport Rd.
Durango CO, 81303Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve MoskalReported:
04/15/19 12:27Polynuclear 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 9040502 - SW846-3510 (Continued)

LCS (9040502-BS1) (Continued)

Prepared: 04/05/19 Analyzed: 04/08/19

Fluorene	0.231	0.040	mg/kg	0.400		57.9	35.4-127			
Indeno[1,2,3-cd]pyrene	0.243	0.040	mg/kg	0.400		60.8	33.7-132			
Naphthalene	0.250	0.040	mg/kg	0.400		62.6	28.3-127			
Surrogate: Nitrobenzene-d5	1.09		mg/kg	2.00		54.6	10.8-154			
Phenanthrene	0.238	0.040	mg/kg	0.400		59.5	40.2-125			
Pyrene	0.240	0.040	mg/kg	0.400		60.1	34.3-133			
Surrogate: Terphenyl-d14	1.28		mg/kg	2.00		64.1	27-170			

LCS Dup (9040502-BSD1)

Prepared: 04/05/19 Analyzed: 04/08/19

1-Methylnaphthalene	0.256	0.040	mg/kg	0.400		64.0	60-140	0.860	30	
Surrogate: 2-Fluorobiphenyl	1.12		mg/kg	2.00		55.8	16.9-156			
2-Methylnaphthalene	0.256	0.040	mg/kg	0.400		64.0	36.1-121	2.81	15.9	
Acenaphthene	0.230	0.040	mg/kg	0.400		57.6	33.9-127	0.459	13.1	
Acenaphthylene	0.235	0.040	mg/kg	0.400		58.7	34-126	1.90	14.2	
Anthracene	0.237	0.040	mg/kg	0.400		59.2	39.4-124	1.55	16.3	
Benzo[a]anthracene	0.228	0.040	mg/kg	0.400		57.0	40.6-124	0.475	9.66	
Benzo[a]pyrene	0.253	0.040	mg/kg	0.400		63.2	38.3-127	0.871	11.8	
Benzo[b]fluoranthene	0.256	0.040	mg/kg	0.400		63.9	34.4-130	2.33	25.2	
Benzo[g,h,i]perylene	0.241	0.040	mg/kg	0.400		60.2	29.9-134	1.79	19	
Benzo[k]fluoranthene	0.247	0.040	mg/kg	0.400		61.6	35.5-135	2.03	27.3	
Carbazole	0.235	0.040	mg/kg	0.400		58.8	31.9-133	0.601	20.8	
Chrysene	0.232	0.040	mg/kg	0.400		58.0	41.3-126	0.327	10.6	
Dibenz[a,h]anthracene	0.248	0.040	mg/kg	0.400		62.1	35-132	0.918	15	
Fluoranthene	0.239	0.040	mg/kg	0.400		59.7	37.2-123	3.56	18.3	
Fluorene	0.230	0.040	mg/kg	0.400		57.6	35.4-127	0.416	14.5	
Indeno[1,2,3-cd]pyrene	0.251	0.040	mg/kg	0.400		62.9	33.7-132	3.28	14.9	
Naphthalene	0.251	0.040	mg/kg	0.400		62.7	28.3-127	0.0758	11.3	
Surrogate: Nitrobenzene-d5	1.07		mg/kg	2.00		53.5	10.8-154			
Phenanthrene	0.232	0.040	mg/kg	0.400		58.0	40.2-125	2.65	13.7	
Pyrene	0.232	0.040	mg/kg	0.400		57.9	34.3-133	3.58	22.4	
Surrogate: Terphenyl-d14	1.21		mg/kg	2.00		60.5	27-170			

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

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BP America
380 Airport Rd.
Durango CO, 81303

Project: Table 910
Project Name / Number: Leroy McCaw B#1
Project Manager: Steve Moskal

Reported:
04/15/19 12:27

Notes and Definitions

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

Green Analytical Laboratories

Debbie Zufelt, Reports Manager

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BP America Production Co.				P.O. #:				Bill to (if different):			
Project Manager: Steve Moskal				Company:							
Address: 3rd 1199 Main Ave Suite 101				Attn:							
City: Durango				State: CO Zip: 81301							
Phone #: (505) 830-9179 Email: steven.moskal@bpc.com				Address:							
Additional Report To:				City:							
Project Name: Leroy McLaw B#1				State:				Zip:			
Project Number:				Phone #:				Fax or Email:			
Sampler Name (Print): Emma Miller				Matrix (check one)				# of containers			
<small>FOR LAB USE ONLY</small>				<input type="checkbox"/> GROUNDWATER <input type="checkbox"/> SURFACEWATER <input type="checkbox"/> WASTEWATER <input type="checkbox"/> PRODUCEDWATER <input type="checkbox"/> SOIL <input type="checkbox"/> OTHER:				No preservation (general) <input type="checkbox"/> HNO ₃ <input type="checkbox"/> HCl <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> Other: <input type="checkbox"/> Other:			
Lab I.D.	Sample Name or Location	Collected		Date		Time					
		1907-026-01		SS01		4/24/19		1225			
		- 02		SS02				1250			
		- 03		SS03				1325			
		- 04		SS04				1505			
		- 05		WS01				1400			
- 06		WS02				1500					
PLEASE NOTE: GAL's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by GAL within 30 days after completion. In no event shall GAL be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder.											
Relinquished By: 				Date: 10/26/18		Received By: 4/2/19		Time: 1410			
Relinquished By:				Date: 1610		Received By: 1609.02		Time: 1610			
Relinquished By:				Date:		Received By:		Time:			
Delivered By: (Circle One)				Temperature at receipt:		CHECKED BY:					
(Sample) UPS - FedEx - Kangaroo - Other:				#1 on ice 11.5/11.3°C		Checked By: me					
ADDITIONAL REMARKS:											
Report to State? (Circle) No											
COGCC Table 910-1 APT BTEX / TPH											

* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.