



## **FIGURES**

**Figure 1: Topographic Site Location Map**

**Figure 2: Aerial Site Location Map**

**Figure 3: Soil Analytical Map**

**Figure 4: Polycyclic Aromatic Hydrocarbons Map**



**Topographic Site Location Map**  
 State Seventy Holes P-4  
 Surface Release  
 40.348648 / -104.326501  
 NW¼ NE¼ SEC.4 T4N R62W 6PM  
 Weld County, Colorado  
 Location ID 433884  
 Spill ID 480321



**EAGLE**  
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 CONSULTING, INC.

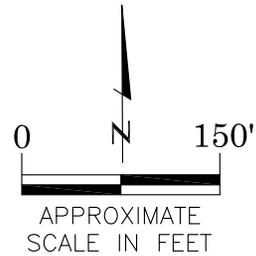
Source: USGS 7.5 Minute Topographic Map, Dearfield, CO Quadrangle 2019

**Figure 1**



LEGEND

- APPROXIMATE PAD BOUNDARIES (AS OF 2016)
- APPROXIMATE RELEASE LOCATION



AERIAL SITE LOCATION MAP  
 STATE SEVENTY HOLES P-4  
 SURFACE RELEASE  
 40.348648 / -104.326501  
 NW1/4 NE1/4 SEC.4 T4N R62W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 433884  
 SPILL ID 480321

DATE:  
08/10/21

FIG. NO.  
2

DRAWN BY:  
AMN



**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, INC.  
 8000 W 44th Ave, Wheat Ridge, CO 80033  
 Ph: 303-433-0479 • F: 303-325-5449



SS-03@0-0.25'  
08/02/21  
0-0.25'  
B = <0.00200  
T = <0.00200  
E = <0.00200  
X = <0.00200  
G = <0.200  
D = <50.0  
R = <200  
1,2,4-TMB = <0.00200  
1,3,5-TMB = <0.00200  
Brn= <0.199  
EC = 0.343  
SAR= 0.232  
pH = 8.06

SS-04@0-0.25'  
08/02/21  
0-0.25'  
B = <0.00200  
T = <0.00200  
E = <0.00200  
X = <0.00200  
G = <0.200  
D = <50.0  
R = <200  
1,2,4-TMB = <0.00200  
1,3,5-TMB = <0.00200  
Brn= <0.200  
EC = 0.488  
SAR= 0.0260  
pH = 7.24

SS-01@0-0.25'  
08/02/21  
0-0.25'  
B = <0.00200  
T = <0.00200  
E = <0.00200  
X = <0.00200  
G = <0.200  
D = <50.0  
R = <200  
1,2,4-TMB = <0.00200  
1,3,5-TMB = <0.00200  
Brn= <0.202  
EC = 0.229  
SAR= 0.0950  
pH = 7.39

SS-02@0-0.25'  
08/02/21  
0-0.25'  
B = <0.00200  
T = <0.00200  
E = <0.00200  
X = <0.00200  
G = <0.200  
D = <50.0  
R = <200  
1,2,4-TMB = <0.00200  
1,3,5-TMB = <0.00200  
Brn= <0.199  
EC = 0.307  
SAR= 0.0403  
pH = 8.09

**LEGEND**

- APPROXIMATE RELEASE/ASSESSMENT BOUNDARIES
- APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

**PARAMETERS**

**SAMPLE LOCATION**  
DATE  
DEPTH (FEET)  
B = BENZENE (mg/kg)  
T = TOLUENE (mg/kg)  
E = ETHYLBENZENE (mg/kg)  
X = TOTAL XYLENES (mg/kg)  
G = TPH-GRO (mg/kg)  
D = TPH-DRO (mg/kg)  
R = TPH-RRO (mg/kg)  
1,2,4-TMB = 1,2,4 TRIMETHYLBENZENE (mg/kg)  
1,3,5-TMB = 1,3,5 TRIMETHYLBENZENE (mg/kg)  
Brn= BORON (mg/L)  
EC = SPECIFIC CONDUCTANCE (mmhos/cm)  
SAR= SODIUM ADSORPTION RATIO  
pH = pH (pH UNITS)

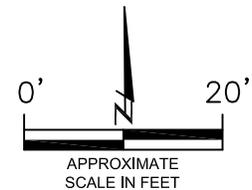
mg/kg = MILLIGRAMS PER KILOGRAM  
mg/L = MILLIGRAMS PER LITER

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS  
TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS  
TPH-RRO = TOTAL PETROLEUM HYDROCARBONS - RESIDUAL RANGE ORGANICS

**NOTE:**  
VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY REPORTING LIMITS

VALUES PRESENTED IN **BOLD** VALUES CONTAIN CONCENTRATIONS EXCEEDING COGCC TABLE 915-1 VALUES

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION



SOIL ANALYTICAL MAP  
STATE SEVENTY HOLES P-4  
SURFACE RELEASE  
40.348648 / -104.326501  
NW1/4 NE1/4 SEC.4 T4N R62W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 433884  
SPILL ID 480321

DATE:  
08/10/21  
DRAWN BY:  
AMN  
FIG.  
NO. 3

**EAGLE ENVIRONMENTAL CONSULTING, INC.**  
8000 W 44th Ave, Wheat Ridge, CO 80033  
Ph: 303-433-0479 • F: 303-325-5449



SS-03@0-0.25'  
08/02/21  
0-0.25'

1-Methylnaphthalene = <0.00067  
2-Methylnaphthalene = <0.00067  
Acenaphthene = <0.00067  
Anthracene = <0.00067  
Benzo(a)anthracene = <0.00067  
Benzo(a)pyrene = <0.00067  
Benzo(b)fluoranthene = <0.00067  
Benzo(k)fluoranthene = <0.00067  
Chrysene = <0.00067  
Dibenzo(a,h)anthracene = <0.00067  
Fluoranthene = <0.00067  
Fluorene = <0.00067  
Indeno(1,2,3-CD)pyrene = <0.00067  
Naphthalene = <0.00067  
Pyrene = <0.00067

SS-04@0-0.25'  
08/02/21  
0-0.25'

1-Methylnaphthalene = <0.00067  
2-Methylnaphthalene = <0.00067  
Acenaphthene = <0.00067  
Anthracene = <0.00067  
Benzo(a)anthracene = <0.00067  
Benzo(a)pyrene = <0.00067  
Benzo(b)fluoranthene = <0.00067  
Benzo(k)fluoranthene = <0.00067  
Chrysene = <0.00067  
Dibenzo(a,h)anthracene = <0.00067  
Fluoranthene = <0.00067  
Fluorene = <0.00067  
Indeno(1,2,3-CD)pyrene = <0.00067  
Naphthalene = <0.00067  
Pyrene = <0.00067

SS-02@0-0.25'  
08/02/21  
0-0.25'

1-Methylnaphthalene = <0.00335  
2-Methylnaphthalene = <0.00335  
Acenaphthene = <0.00335  
Anthracene = <0.00335  
Benzo(a)anthracene = <0.00335  
Benzo(a)pyrene = <0.00335  
Benzo(b)fluoranthene = <0.00335  
Benzo(k)fluoranthene = <0.00335  
Chrysene = <0.00335  
Dibenzo(a,h)anthracene = <0.00335  
Fluoranthene = <0.00335  
Fluorene = <0.00335  
Indeno(1,2,3-CD)pyrene = <0.00335  
Naphthalene = <0.00335  
Pyrene = <0.00335

SS-01@0-0.25'  
08/02/21  
0-0.25'

1-Methylnaphthalene = <0.00067  
2-Methylnaphthalene = <0.00067  
Acenaphthene = <0.00067  
Anthracene = <0.00067  
Benzo(a)anthracene = <0.00067  
Benzo(a)pyrene = <0.00067  
Benzo(b)fluoranthene = <0.00067  
Benzo(k)fluoranthene = <0.00067  
Chrysene = <0.00067  
Dibenzo(a,h)anthracene = <0.00067  
Fluoranthene = <0.00067  
Fluorene = <0.00067  
Indeno(1,2,3-CD)pyrene = <0.00067  
Naphthalene = <0.00067  
Pyrene = <0.00067

**LEGEND**

- APPROXIMATE RELEASE/ASSESSMENT BOUNDARIES
- APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

**PARAMETERS**

SAMPLE LOCATION  
DATE SAMPLE COLLECTED  
APPROXIMATE DEPTH

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

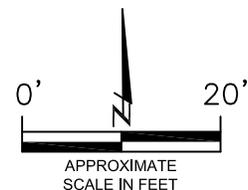
NOTE:  
CONCENTRATIONS PRESENTED IN mg/kg

mg/kg = MILLIGRAMS PER KILOGRAM

NOTE:  
VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES PRESENTED IN **BOLD** EXCEED COGCC TABLE 915-1 REGULATORY LIMITS FOR THAT COMPOUND

COGCC - COLORADO OIL AND GAS CONSERVATION COMMISSION



POLYCYCLIC AROMATIC HYDROCARBONS MAP  
STATE SEVENTY HOLES P-4  
SURFACE RELEASE  
40.348648 / -104.326501  
NW1/4 NE1/4 SEC.4 T4N R62W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 433884  
SPILL ID 480321

DATE:  
08/10/21  
DRAWN BY:  
AMN  
FIG.  
NO. 2



**EAGLE**  
ENVIRONMENTAL  
CONSULTING, INC.  
8000 W 44th Ave, Wheat Ridge, CO 80033  
Ph: 303-433-0479 • F: 303-325-5449



## **TABLES**

**Table 1: Photoionization Detector Reading Summary**

**Table 2: Soil Analytical Results Summary**

**Table 3: Polycyclic Aromatic Hydrocarbons Analytical Results Summary**

**TABLE 1**  
**PHOTOIONIZATION DETECTOR READING SUMMARY**  
**STATE SEVENTY HOLES P-4**  
**SURFACE RELEASE**  
**40.348648 / -104.326501**  
**NW1/4 NE1/4 SEC.4 T4N R62W 6PM**  
**WELD COUNTY, COLORADO**  
**LOCATION ID 433884**  
**SPILL ID 480321**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
SS-01 @ 0-0.25' (40.348668 / -104.326509)	08/02/21	0-0.25	8.5	Y
SS-02 @ 0-0.25' (40.348745 / -104.326502)	08/02/21	0-0.25	6.3	Y
SS-03 @ 0-0.25' (40.348836 / -104.326490)	08/02/21	0-0.25	0.0	Y
SS-04 @ 0-0.25' (40.348896 / -104.326486)	08/02/21	0-0.25	0.0	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2  
 SOIL ANALYTICAL RESULTS SUMMARY  
 STATE SEVENTY HOLES P-4  
 SURFACE RELEASE  
 40.348648 / -104.326501  
 NW1/4 NE1/4 SEC.4 T4N R62W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 433884  
 SPILL ID 480321

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-RRO (mg/kg)	1,2,4- Trimethylbenzene (mg/kg)	1,3,5- Trimethylbenzene (mg/kg)	Boron (mg/L)	Specific Conductance (mmhos/cm)	pH (pH units)	SAR
<b>COGCC Table 915-1 Residential Screening Levels</b>				<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>500</b>			<b>30</b>	<b>27</b>	<b>2</b>	<b>&lt;4</b>	<b>6-8.3</b>	<b>&lt;6</b>
SS-01 @ 0-0.25' (40.348668 / -104.326509)	08/02/21	0-0.25	8.5	<0.00200	<0.00200	<0.00200	<0.00600	<0.200	<50.0	<200	<0.00200	<0.00200	<0.202	0.229	7.39	0.0950
SS-02 @ 0-0.25' (40.348745 / -104.326502)	08/02/21	0-0.25	6.3	<0.00200	<0.00200	<0.00200	<0.00600	<0.200	<50.0	<200	<0.00200	<0.00200	<0.199	0.307	8.09	0.0403
SS-03 @ 0-0.25' (40.348836 / -104.326490)	08/02/21	0-0.25	0.0	<0.00200	<0.00200	<0.00200	<0.00600	<0.200	<50.0	<200	<0.00200	<0.00200	<0.199	0.343	8.06	0.232
SS-04 @ 0-0.25' (40.348896 / -104.326486)	08/02/21	0-0.25	0.0	<0.00200	<0.00200	<0.00200	<0.00600	<0.200	<50.0	<200	<0.00200	<0.00200	<0.200	0.488	7.24	0.0260

COGCC = Colorado Oil and Gas Conservation Commission

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

mmhos/cm = millimhos per centimeter

SAR = Sodium Adsorption Ratio

ppm-v = parts per million by volume

TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics

TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics

TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics

Note: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit.

Note: Values presented in **BOLD** contained concentrations exceeding applicable COGCC Table 915-1 Regulatory Limits

TABLE 3  
POLYCYCLIC AROMATIC HYDROCARBONS ANALYTICAL RESULTS SUMMARY  
STATE SEVENTY HOLES P-4  
SURFACE RELEASE  
40.348648 / -104.326501  
NW1/4 NE1/4 SEC.4 T4N R62W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 433884  
SPILL ID 480321

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	1-Methyl- naphthalene (mg/kg)	2-Methyl- naphthalene (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)- anthracene (mg/kg)	Benzo(a)-pyrene (mg/kg)	Benzo(b)- fluoranthene (mg/kg)	Benzo(k)- fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)- anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Ideno(1,2,3-cd)- pyrene (mg/kg)	Naphthalene (mg/kg)	Pyrene (mg/kg)
<b>COGCC Table 915-1 Residential Screening Levels</b>			<b>18</b>	<b>24</b>	<b>360</b>	<b>1,800</b>	<b>1.1</b>	<b>0.11</b>	<b>1.1</b>	<b>11</b>	<b>110</b>	<b>0.11</b>	<b>240</b>	<b>240</b>	<b>1.1</b>	<b>2</b>	<b>180</b>
SS-01 @ 0-0.25' (40.348668 / -104.326509)	08/02/21	0-0.25	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
SS-02 @ 0-0.25' (40.348745 / -104.326502)	08/02/21	0-0.25	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335
SS-03 @ 0-0.25' (40.348836 / -104.326490)	08/02/21	0-0.25	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
SS-04 @ 0-0.25' (40.348896 / -104.326486)	08/02/21	0-0.25	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067

COGCC = Colorado Oil and Gas Conservation Commission  
mg/kg = milligrams per kilogram  
Note: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit.  
Note: Values presented in **BOLD** contained concentrations exceeding applicable COGCC Table 915-1 Regulatory Limits



## **ATTACHMENT A**

### **Photo Log**

State Seventy Holes P-4  
Location ID 433884  
Spill ID 480321

Release Assessment

August 2021



**EAGLE**  
ENVIRONMENTAL  
CONSULTING, INC.  
8000 W 44th Ave, Wheat Ridge, CO 80033  
Ph: 303-433-0479 • F: 303-325-5449



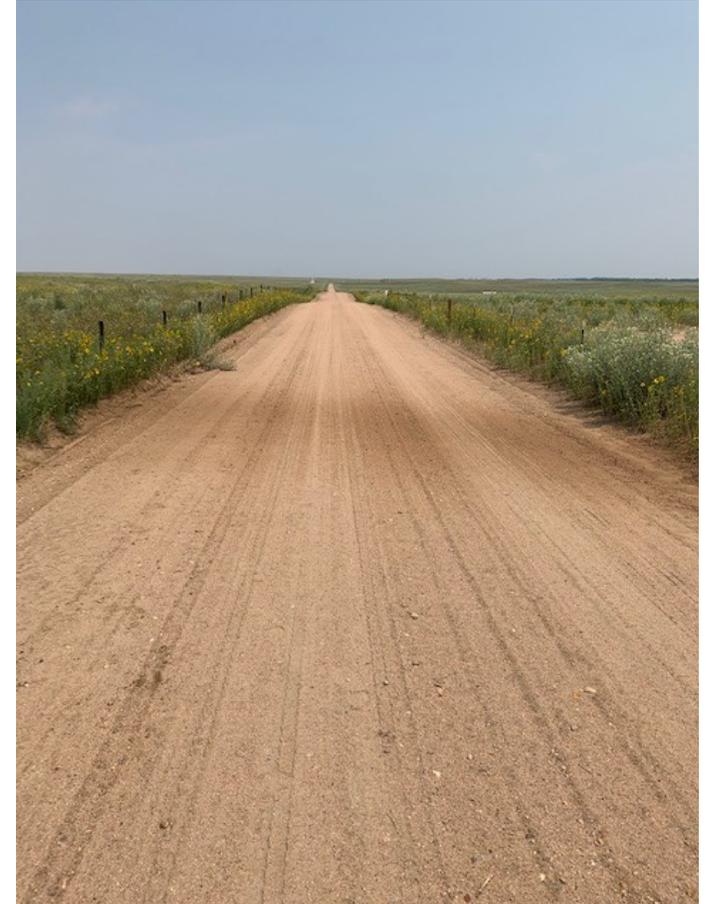
# Surface Release – 7/24/21



Looking north  
Surface staining associated with compressor  
release (mist)



Looking southwest  
Surface staining associated with compressor  
release (mist)



Looking west  
Surface staining associated with compressor  
release (mist) - offpad

# Confirmation Sampling – 08/02/21



Looking southeast  
No petroleum hydrocarbon staining odor observed



Looking south from road  
No petroleum hydrocarbon staining odor observed

# Confirmation Sampling – 08/02/21



Looking north

No petroleum hydrocarbon staining odor observed



## **ATTACHMENT B**

### **Laboratory Analytical Report**



August 10, 2021

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Bonanza - State Seventy Holes P-4 Project Number - [none]**

Attached are your analytical results for Bonanza - State Seventy Holes P-4 received by Origins Laboratory, Inc. August 02, 2021. This project is associated with Origins project number Y108009-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Eagle Environmental Consulting, Inc.  
8000 W 44th Ave  
Wheat Ridge CO 80033

Martin C Eckert III  
Project Number: [none]  
Project: Bonanza - State Seventy Holes P-4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-01@0-0.25'	Y108009-01	Soil	August 2, 2021 10:47	08/02/2021 12:53
SS-02@0-0.25'	Y108009-02	Soil	August 2, 2021 10:53	08/02/2021 12:53
SS-03@0-0.25'	Y108009-03	Soil	August 2, 2021 11:04	08/02/2021 12:53
SS-04@0-0.25'	Y108009-04	Soil	August 2, 2021 11:08	08/02/2021 12:53

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Eagle Environmental Consulting, Inc.  
 8000 W 44th Ave  
 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

Origins Laboratory

F-012207-01-R1  
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y108009

Client: Eagle  
 Client Project ID: State 70 Holes P-4

Checklist Completed by: JG

Shipped Via: HD  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

Date/time completed: 8/12/12

Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_

Cooler Number/Temperature: 1135 °C \_\_\_\_\_ °C \_\_\_\_\_ °C \_\_\_\_\_ °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: JM (Project Manager)

Date/Time Reviewed: 8-3-12

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.  
 8000 W 44th Ave  
 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-01@0-0.25'**  
**8/2/2021 10:47:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y108009-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.202	mg/L	1	B1H0617	JMA	08/06/2021	08/09/2021	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B1H0405	DJL	08/04/2021	08/05/2021	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	DJL	"	"	U

Surrogate: <i>o</i> -Terphenyl	77.4 %	50-150			"	"	"	"	
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**GBTEX+TMBs**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B1H0408	KDK	08/04/2021	08/06/2021	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Benzene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	116 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	86.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	70-130			"	"	"	"	

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Eagle Environmental Consulting, Inc.  
 8000 W 44th Ave  
 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-01@0-0.25'**  
**8/2/2021 10:47:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y108009-01 (Soil)**

**Metals by Saturated Paste**

Calcium	<b>2.08</b>	0.0499	meq/L	1	[CALC]	CJM	08/05/2021	08/06/2021	
Magnesium	<b>0.291</b>	0.0823	"	"	"	CJM	"	"	
Sodium	<b>0.104</b>	0.0435	"	"	"	CJM	"	"	

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00067	mg/Kg	1	L567280		08/04/2021	08/04/2021	
2-Methylnaphthalene	ND	0.00067	"	"	"		"	"	
Acenaphthene	ND	0.00067	"	"	"		"	"	
Anthracene	ND	0.00067	"	"	"		"	"	
Benzo(a)anthracene	ND	0.00067	"	"	"		"	"	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00067	"	"	"		"	"	
Pyrene	ND	0.00067	"	"	"		"	"	

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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-01@0-0.25'**  
**8/2/2021 10:47:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Waypoint Analytical, Inc.**  
**Y108009-01 (Soil)**

**PAH by 8270D SIM**

Surrogate: 2-Fluorobiphenyl	79 %	33-115			L5672 80		08/04/2021	08/04/2021	
Surrogate: 4-Terphenyl-d14	77.1 %	33-122			"	"	"	"	
Surrogate: Nitrobenzene-d5	70.4 %	29-110			"	"	"	"	

**pH in Soil by EPA 9045D**

pH	7.39		pH Units	1	B1H0416	DTP	08/04/2021	08/04/2021	
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**SAR by 20B Saturated Paste**

SAR	0.0950		SAR	1	B1H0514	CJM	08/05/2021	08/06/2021	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.229	0.00500	mmhos/cm	1	B1H0428	DTP	08/04/2021	08/04/2021	
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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-02@0-0.25'**  
**8/2/2021 10:53:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y108009-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.199	mg/L	1	B1H0617	JMA	08/06/2021	08/09/2021	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B1H0405	DJL	08/04/2021	08/05/2021	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	DJL	"	"	U

Surrogate: <i>o</i> -Terphenyl	82.7 %	50-150			"	"	"	"	
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**GBTEX+TMBs**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B1H0408	KDK	08/04/2021	08/06/2021	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Benzene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	122 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	93.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	"	

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 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-02@0-0.25'**  
**8/2/2021 10:53:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y108009-02 (Soil)**

**Metals by Saturated Paste**

Calcium	1.91	0.0499	meq/L	1	[CALC]	CJM	08/05/2021	08/06/2021	
Magnesium	0.424	0.0823	"	"	"	CJM	"	"	
Sodium	0.0435	0.0435	"	"	"	CJM	"	"	

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00335	mg/Kg	5	L567280		08/04/2021	08/04/2021	
2-Methylnaphthalene	ND	0.00335	"	"	"		"	"	
Acenaphthene	ND	0.00335	"	"	"		"	"	
Anthracene	ND	0.00335	"	"	"		"	"	
Benzo(a)anthracene	ND	0.00335	"	"	"		"	"	
Benzo(a)pyrene	ND	0.00335	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00335	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00335	"	"	"		"	"	
Chrysene	ND	0.00335	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00335	"	"	"		"	"	
Fluoranthene	ND	0.00335	"	"	"		"	"	
Fluorene	ND	0.00335	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00335	"	"	"		"	"	
Naphthalene	ND	0.00335	"	"	"		"	"	
Pyrene	ND	0.00335	"	"	"		"	"	

Origins Laboratory, Inc.



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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-02@0-0.25'**  
**8/2/2021 10:53:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Waypoint Analytical, Inc.**  
**Y108009-02 (Soil)**

**PAH by 8270D SIM**

Surrogate: 2-Fluorobiphenyl	72.8 %	33-115			L5672 80		08/04/2021	08/04/2021	
Surrogate: 4-Terphenyl-d14	67 %	33-122			"	"	"	"	
Surrogate: Nitrobenzene-d5	63.6 %	29-110			"	"	"	"	

**pH in Soil by EPA 9045D**

pH	<b>8.09</b>		pH Units	1	B1H0416	DTP	08/04/2021	08/04/2021	
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**SAR by 20B Saturated Paste**

SAR	<b>0.0403</b>		SAR	1	B1H0514	CJM	08/05/2021	08/06/2021	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	<b>0.307</b>	0.00500	mmhos/cm	1	B1H0428	DTP	08/04/2021	08/04/2021	
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 8000 W 44th Ave  
 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-03@0-0.25'**  
**8/2/2021 11:04:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y108009-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.199	mg/L	1	B1H0617	JMA	08/06/2021	08/09/2021	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B1H0405	DJL	08/04/2021	08/05/2021	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	DJL	"	"	U

Surrogate: <i>o</i> -Terphenyl	79.1 %	50-150			"	"	"	"	
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**GBTEX+TMBs**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B1H0408	KDK	08/04/2021	08/06/2021	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Benzene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	117 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	90.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

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 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-03@0-0.25'**  
**8/2/2021 11:04:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y108009-03 (Soil)**

**Metals by Saturated Paste**

Calcium	3.41	0.0499	meq/L	1	[CALC]	CJM	08/05/2021	08/06/2021	
Magnesium	0.548	0.0823	"	"	"	CJM	"	"	
Sodium	0.327	0.0435	"	"	"	CJM	"	"	

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00067	mg/Kg	1	L567280		08/04/2021	08/04/2021	
2-Methylnaphthalene	ND	0.00067	"	"	"		"	"	
Acenaphthene	ND	0.00067	"	"	"		"	"	
Anthracene	ND	0.00067	"	"	"		"	"	
Benzo(a)anthracene	ND	0.00067	"	"	"		"	"	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00067	"	"	"		"	"	
Pyrene	ND	0.00067	"	"	"		"	"	

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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-03@0-0.25'**  
**8/2/2021 11:04:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Waypoint Analytical, Inc.**  
**Y108009-03 (Soil)**

**PAH by 8270D SIM**

Surrogate: 2-Fluorobiphenyl	74.9 %	33-115			L5672 80		08/04/2021	08/04/2021	
Surrogate: 4-Terphenyl-d14	75.8 %	33-122			"	"	"	"	
Surrogate: Nitrobenzene-d5	71 %	29-110			"	"	"	"	

**pH in Soil by EPA 9045D**

pH	8.06		pH Units	1	B1H0416	DTP	08/04/2021	08/04/2021	
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**SAR by 20B Saturated Paste**

SAR	0.232		SAR	1	B1H0514	CJM	08/05/2021	08/06/2021	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.343	0.00500	mmhos/cm	1	B1H0428	DTP	08/04/2021	08/04/2021	
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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-04@0-0.25'**  
**8/2/2021 11:08:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y108009-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.200	mg/L	1	B1H0617	JMA	08/06/2021	08/09/2021	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B1H0405	DJL	08/04/2021	08/05/2021	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	DJL	"	"	U

Surrogate: <i>o</i> -Terphenyl	84.4 %	50-150			"	"	"	"	
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**GBTEX+TMBs**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B1H0408	KDK	08/04/2021	08/06/2021	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Benzene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	121 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	91.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	"	

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 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-04@0-0.25'**  
**8/2/2021 11:08:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y108009-04 (Soil)**

**Metals by Saturated Paste**

Calcium	2.68	0.0499	meq/L	1	[CALC]	CJM	08/05/2021	08/06/2021	
Magnesium	1.17	0.0823	"	"	"	CJM	"	"	
Sodium	ND	0.0435	"	"	"	CJM	"	"	

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00067	mg/Kg	1	L567280		08/04/2021	08/04/2021	
2-Methylnaphthalene	ND	0.00067	"	"	"		"	"	
Acenaphthene	ND	0.00067	"	"	"		"	"	
Anthracene	ND	0.00067	"	"	"		"	"	
Benzo(a)anthracene	ND	0.00067	"	"	"		"	"	
Benzo(a)pyrene	ND	0.00067	"	"	"		"	"	
Benzo(b)fluoranthene	ND	0.00067	"	"	"		"	"	
Benzo(k)fluoranthene	ND	0.00067	"	"	"		"	"	
Chrysene	ND	0.00067	"	"	"		"	"	
Dibenz(a,h)anthracene	ND	0.00067	"	"	"		"	"	
Fluoranthene	ND	0.00067	"	"	"		"	"	
Fluorene	ND	0.00067	"	"	"		"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"		"	"	
Naphthalene	ND	0.00067	"	"	"		"	"	
Pyrene	ND	0.00067	"	"	"		"	"	

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 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**SS-04@0-0.25'**  
**8/2/2021 11:08:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Waypoint Analytical, Inc.**  
**Y108009-04 (Soil)**

**PAH by 8270D SIM**

Surrogate: 2-Fluorobiphenyl	67.8 %	33-115			L5672 80		08/04/2021	08/04/2021	
Surrogate: 4-Terphenyl-d14	68.7 %	33-122			"	"	"	"	
Surrogate: Nitrobenzene-d5	61.1 %	29-110			"	"	"	"	

**pH in Soil by EPA 9045D**

pH	7.24		pH Units	1	B1H0416	DTP	08/04/2021	08/04/2021	
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**SAR by 20B Saturated Paste**

SAR	0.0260		SAR	1	B1H0514	CJM	08/05/2021	08/06/2021	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.488	0.00500	mmhos/cm	1	B1H0428	DTP	08/04/2021	08/04/2021	
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Origins Laboratory, Inc.



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 8000 W 44th Ave  
 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1H0405 - EPA 3550B</b>										
<b>Blank (B1H0405-BLK1)</b>										
					Prepared: 08/04/2021 Analyzed: 08/05/2021					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	39		"	50.0		77.8	50-150			

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Eagle Environmental Consulting, Inc.  
 8000 W 44th Ave  
 Wheat Ridge CO 80033

Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1H0405 - EPA 3550B**

**LCS (B1H0405-BS1)**

Prepared: 08/04/2021 Analyzed: 08/05/2021

Diesel (C10-C28)	865	50.0	mg/kg	1000		86.5	70-130			
Residual Range Organics (C28-C40)	879	200	"	1000		87.9	70-130			
Surrogate: o-Terphenyl	42		"	50.0		84.6	50-150			

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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1H0405 - EPA 3550B**

<b>Matrix Spike (B1H0405-MS1)</b>	<b>Source: Y108005-02</b>			Prepared: 08/04/2021 Analyzed: 08/05/2021						
Diesel (C10-C28)	1000	50.0	mg/kg	1000	ND	100	70-130			
Residual Range Organics (C28-C40)	1050	200	"	1000	ND	105	70-130			
Surrogate: o-Terphenyl	48		"	50.0		95.9	50-150			

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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1H0405 - EPA 3550B**

<b>Matrix Spike Dup (B1H0405-MSD1)</b>	<b>Source: Y108005-02</b>			<b>Prepared: 08/04/2021 Analyzed: 08/05/2021</b>						
Diesel (C10-C28)	909	50.0	mg/kg	1000	ND	90.9	70-130	9.67	35	
Residual Range Organics (C28-C40)	1010	200	"	1000	ND	101	70-130	3.89	35	
Surrogate: o-Terphenyl	44		"	50.0		88.1	50-150			

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 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1H0408 - EPA 5030 (soil)**

**Blank (B1H0408-BLK1)**

Prepared: 08/04/2021 Analyzed: 08/06/2021

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
Naphthalene	ND	0.0100	"							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Toluene	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Xylenes, total	ND	0.00200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125	117		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	93.1		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	104		70-130			

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 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1H0408 - EPA 5030 (soil)**

**LCS (B1H0408-BS1)**

Prepared: 08/04/2021 Analyzed: 08/06/2021

1,2,4-Trimethylbenzene	0.0583	0.00200	mg/kg	0.0500		117	70-130			
Naphthalene	0.0547	0.0100	"	0.0500		109	70-130			
1,3,5-Trimethylbenzene	0.0585	0.00200	"	0.0500		117	70-130			
Benzene	0.0601	0.00200	"	0.0500		120	70-130			
Ethylbenzene	0.0538	0.00200	"	0.0500		108	70-130			
m,p-Xylene	0.115	0.00400	"	0.100		115	70-130			
o-Xylene	0.0561	0.00200	"	0.0500		112	70-130			
Toluene	0.0541	0.00200	"	0.0500		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		118	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		92.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		110	70-130			

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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1H0408 - EPA 5030 (soil)

Matrix Spike (B1H0408-MS1)	Source: Y108009-01			Prepared: 08/04/2021 Analyzed: 08/06/2021						
1,2,4-Trimethylbenzene	0.0520	0.00200	mg/kg	0.0500	ND	104	70-130			
Naphthalene	0.0439	0.0100	"	0.0500	0.00244	83.0	70-130			
1,3,5-Trimethylbenzene	0.0551	0.00200	"	0.0500	ND	110	70-130			
Benzene	0.0632	0.00200	"	0.0500	ND	126	70-130			
Ethylbenzene	0.0519	0.00200	"	0.0500	ND	104	70-130			
m,p-Xylene	0.108	0.00400	"	0.100	ND	108	70-130			
o-Xylene	0.0545	0.00200	"	0.0500	ND	109	70-130			
Toluene	0.0549	0.00200	"	0.0500	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		120	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		92.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1H0408 - EPA 5030 (soil)

Matrix Spike Dup (B1H0408-MSD1)	Source: Y108009-01			Prepared: 08/04/2021 Analyzed: 08/06/2021						
1,2,4-Trimethylbenzene	0.0578	0.00200	mg/kg	0.0500	ND	116	70-130	10.5	20	
Naphthalene	0.0503	0.0100	"	0.0500	0.00244	95.8	70-130	13.6	20	
1,3,5-Trimethylbenzene	0.0610	0.00200	"	0.0500	ND	122	70-130	10.2	20	
Benzene	0.0698	0.00200	"	0.0500	ND	140	70-130	9.90	20	QM-07
Ethylbenzene	0.0574	0.00200	"	0.0500	ND	115	70-130	10.1	20	
m,p-Xylene	0.119	0.00400	"	0.100	ND	119	70-130	9.90	20	
o-Xylene	0.0609	0.00200	"	0.0500	ND	122	70-130	11.1	20	
Toluene	0.0613	0.00200	"	0.0500	ND	123	70-130	10.9	20	
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		118	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		89.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.2	70-130			

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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L567280 - 3550B**

<b>MSD (L 98094-MSD-L567280)</b>		<b>Source: Y108009-04</b>			Prepared: 08/04/2021 Analyzed: 08/04/2021					
Benzo(a)anthracene	0.129	0.000441	mg/Kg	0.166	<0.000441	77.7	30-130	0.7	30	
Anthracene	0.132	0.000426	"	0.166	<0.000426	79.5	30-130	2.2	30	
Acenaphthene	0.123	0.000431	"	0.166	<0.000431	74	30-130	0.8	30	
2-Methylnaphthalene	0.121	0.000542	"	0.166	<0.000542	72.8	30-130	0.8	30	
Chrysene	0.14	0.000256	"	0.166	<0.000256	84.3	30-130	0.7	30	
1-Methylnaphthalene	0.122	0.00048	"	0.166	<0.000480	73.4	30-130	0.8	30	
Pyrene	0.136	0.000387	"	0.166	<0.000387	81.9	30-130	1.4	30	
Naphthalene	0.118	0.000467	"	0.166	<0.000467	71	30-130	2.5	30	
Indeno(1,2,3-cd)pyrene	0.131	0.000344	"	0.166	<0.000344	78.9	30-130	9.4	30	
Fluorene	0.126	0.000501	"	0.166	<0.000501	75.9	30-130	0	30	
Fluoranthene	0.136	0.000529	"	0.166	<0.000529	81.9	30-130	0	30	
Dibenz(a,h)anthracene	0.138	0.000279	"	0.166	<0.000279	83.1	30-130	8.3	30	
Benzo(b)fluoranthene	0.112	0.000138	"	0.166	<0.000138	67.4	30-130	6	30	
Benzo(k)fluoranthene	0.115	0.000486	"	0.166	<0.000486	69.2	30-130	1.7	30	
Benzo(a)pyrene	0.136	0.000133	"	0.166	<0.000133	81.9	30-130	2.1	30	
Surrogate: 4-Terphenyl-d14	77.1		"	0.332	228	77.1	33-122			
Surrogate: 2-Fluorobiphenyl	77.1		"	0.332	225	77.1	33-115			
Surrogate: Nitrobenzene-d5	68.6		"	0.332	203	68.6	29-110			

<b>MS (L 98094-MS-L567280)</b>		<b>Source: Y108009-04</b>			Prepared: 08/04/2021 Analyzed: 08/04/2021					
Benzo(a)pyrene	0.139	0.000133	mg/Kg	0.166	<0.000133	83.7	30-130			
Chrysene	0.139	0.000256	"	0.166	<0.000256	83.7	30-130			
Pyrene	0.134	0.000387	"	0.166	<0.000387	80.7	30-130			
Naphthalene	0.121	0.000467	"	0.166	<0.000467	72.8	30-130			
Indeno(1,2,3-cd)pyrene	0.144	0.000344	"	0.166	<0.000344	86.7	30-130			
Fluorene	0.126	0.000501	"	0.166	<0.000501	75.9	30-130			
Fluoranthene	0.136	0.000529	"	0.166	<0.000529	81.9	30-130			

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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L567280 - 3550B**

<b>MS (L 98094-MS-L567280)</b>		<b>Source: Y108009-04</b>			Prepared: 08/04/2021 Analyzed: 08/04/2021					
Dibenz(a,h)anthracene	0.15	0.000279	mg/Kg	0.166	<0.000279	90.3	30-130			
Benzo(b)fluoranthene	0.119	0.000138	"	0.166	<0.000138	71.6	30-130			
Benzo(a)anthracene	0.13	0.000441	"	0.166	<0.000441	78.3	30-130			
Anthracene	0.135	0.000426	"	0.166	<0.000426	81.3	30-130			
Acenaphthene	0.124	0.000431	"	0.166	<0.000431	74.6	30-130			
2-Methylnaphthalene	0.122	0.000542	"	0.166	<0.000542	73.4	30-130			
Benzo(k)fluoranthene	0.117	0.000486	"	0.166	<0.000486	70.4	30-130			
1-Methylnaphthalene	0.123	0.00048	"	0.166	<0.000480	74	30-130			
Surrogate: Nitrobenzene-d5	70.4		"	0.332	203	70.4	29-110			
Surrogate: 2-Fluorobiphenyl	78		"	0.332	225	78	33-115			
Surrogate: 4-Terphenyl-d14	77.4		"	0.332	228	77.4	33-122			

<b>LCS (LCS-L567280)</b>		Prepared: 08/04/2021 Analyzed: 08/04/2021								
Dibenz(a,h)anthracene	0.153	0.000279	mg/Kg	0.167		91.6	30-130			
Fluoranthene	0.132	0.000529	"	0.167		79	30-130			
Pyrene	0.132	0.000387	"	0.167		79	30-130			
Fluorene	0.125	0.000501	"	0.167		74.8	30-130			
Indeno(1,2,3-cd)pyrene	0.146	0.000344	"	0.167		87.4	30-130			
Chrysene	0.137	0.000256	"	0.167		82	30-130			
Naphthalene	0.12	0.000467	"	0.167		71.8	30-130			
Benzo(b)fluoranthene	0.131	0.000138	"	0.167		78.4	30-130			
Benzo(a)pyrene	0.136	0.000133	"	0.167		81.4	30-130			
Benzo(a)anthracene	0.129	0.000441	"	0.167		77.2	30-130			
Acenaphthene	0.12	0.000431	"	0.167		71.8	30-130			
2-Methylnaphthalene	0.119	0.000542	"	0.167		71.2	30-130			
1-Methylnaphthalene	0.121	0.00048	"	0.167		72.4	30-130			
Anthracene	0.133	0.000426	"	0.167		79.6	30-130			

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Martin C Eckert III  
 Project Number: [none]  
 Project: Bonanza - State Seventy Holes P-4

**PAH by 8270D SIM - Quality Control**  
**Waypoint Analytical, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch L567280 - 3550B**

**LCS (LCS-L567280)**

Prepared: 08/04/2021 Analyzed: 08/04/2021

Benzo(k)fluoranthene	0.123	0.000486	mg/Kg	0.167		73.6	30-130			
Surrogate: Nitrobenzene-d5	75.9		"	0.333		75.9	29-110			
Surrogate: 4-Terphenyl-d14	81.9		"	0.333		81.9	33-122			
Surrogate: 2-Fluorobiphenyl	82.8		"	0.333		82.8	33-115			

**LRB (LRB-L567280)**

Prepared: 08/04/2021 Analyzed: 08/04/2021

Chrysene	ND	0.00067	mg/Kg				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	62.7		"	0.333		62.7	29-110			
Surrogate: 4-Terphenyl-d14	82.8		"	0.333		82.8	33-122			
Surrogate: 2-Fluorobiphenyl	76.8		"	0.333		76.8	33-115			

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Wheat Ridge CO 80033

Martin C Eckert III  
Project Number: [none]  
Project: Bonanza - State Seventy Holes P-4

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**Notes and Definitions**

U Sample is Non-Detect.

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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