

Wellhead Closure Checklist						
COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form						
Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure
Site Name & COGCC Facility Number: Patriot B #16-20		Date: 11-23-22				Remediation Project #: 25436
Associated Wells: 05-123-25729		Age of Site: Years				Number of Photos Attached: 1
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)					40.399252 / -104.559793	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)						
Good						
USCS Soil Type: SM				Estimated Depth to Groundwater: ~10-15'		
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)						
None observed.						
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)						
None observed.						
Wellhead(s)						
Well API	05-123-25729					
Age	Years					
Condition of surface around wellhead	Good - Per Crew					
PID Readings	N/A - Excavated Upon Arrival					
Condition of subsurface (staining present)	Good - No Odor/Staining					
PID Readings	1.9	1.7	1.9	1.5	2.1	
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01	
Photo Number(s)	See Photolog					
Other observations regarding wellheads:						
Well casing cut/capped following assessment.						
Summary						
Was impacted soil identified?						
<input checked="" type="checkbox"/> No Yes - less than 10 cubic yards Yes - more than 10 cubic yards						
Total number of samples field screened: 5				Total number of samples collected: 5		
Highest PID Reading: 2.1				Total number of samples submitted to lab for analysis: 1		
If more than 10 cubic yards of impacted soil were observed:						
Vertical extent:				Estimated spill volume:		
Lateral extent:				Volume of soil removed:		
Is additional investigation required?						
Was groundwater encountered during the investigation?						
<input checked="" type="checkbox"/> No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils						
Measured depth to groundwater:				Was remedial groundwater removal conducted? Yes No		
Date Groundwater was encountered:				Commencement date of removal:		
Sheen on groundwater? Yes No				Volume of groundwater removed prior to sampling:		
Free product observed? Yes No				Volume of groundwater removed post sampling:		
Total number of samples collected:				Total Volume of groundwater removed:		
Total number of samples submitted to lab for analysis:						

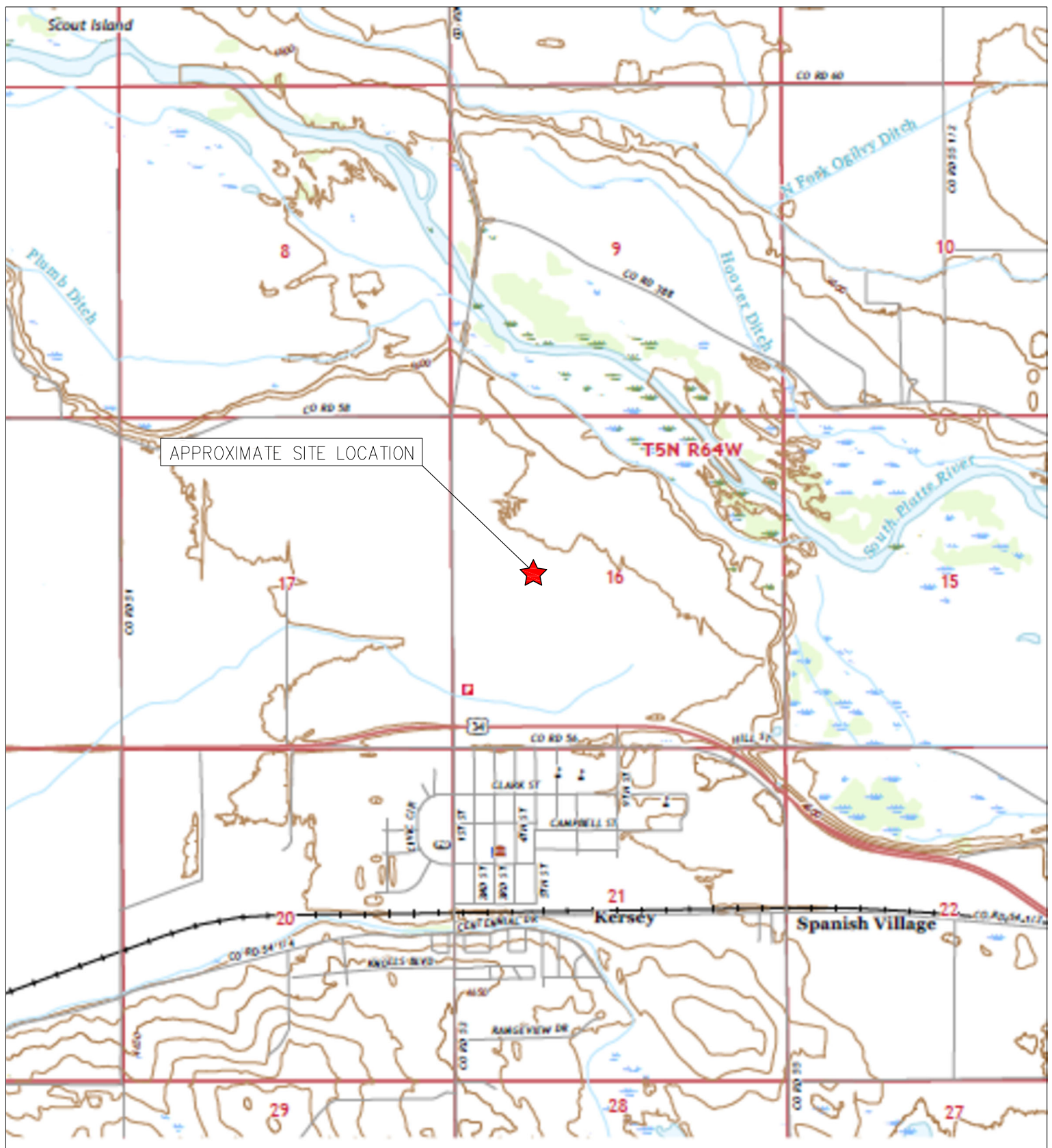


FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map



TOPOGRAPHIC SITE LOCATION MAP
 PATRIOT B #16-20
 CLOSURE ASSESSMENT
 40.399252 / -104.559793
 NW¼ SW¼ SEC.16 T5N R64W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-25729
 REMEDIATION # 25436



EAGLE
 ENVIRONMENTAL
 CONSULTING, LLC

8000 W 44th Ave, Wheat Ridge, CO 80033
 Ph: 303-433-0479 • F: 303-325-5449

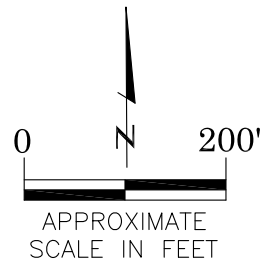
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP,
 KERSEY, CO QUADRANGLE 2022

FIGURE 1



LEGEND

- FORMER PATRIOT B #16-20 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



AERIAL SITE LOCATION MAP

PATRIOT B #16-20
CLOSURE ASSESSMENT
40.399252 / -104.559793
NW¼ SW¼ SEC.16 T5N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-25729
REMEDIAION # 25436

FIGURE NO.

2

DRAWN BY:

BPW



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Ph: 303-433-0479 • F: 303-325-5449



LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02 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)
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER
mmhos/cm = MILLIMHOS PER CENTIMETER

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

(BRL) = ALL VALUES BELOW REGULATORY LIMITS

NOTES:
VALUES PRESENTED IN **BOLD** EXCEED ECOM TABLE 915-1 REGULATORY LIMITS.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

SOIL ANALYTICAL MAP
PATRIOT B #16-20
CLOSURE ASSESSMENT
40.399252 / -104.559793
NW¼ SW¼ SEC.16 T5N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-25729
REMEDIAL # 25436

FIGURE NO.
3

DRAWN BY:
BPW



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CONSULTING, LLC
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 1
PHOTOIONIZATION DETECTOR READING SUMMARY
PATRIOT B #16-20
CLOSURE ASSESSMENT
40.399252 / -104.559793
NW¼ SW¼ SEC.16 T5N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-25729
REMEDIAION # 25436

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-SS-01 @ 5' (40.399260 / -104.559785)	11/23/22	5	1.9	N
WH-SS-02 @ 5' (40.399247 / -104.559767)	11/23/22	5	1.7	N
WH-SS-03 @ 5' (40.399233 / -104.559784)	11/23/22	5	1.9	N
WH-SS-04 @ 5' (40.399247 / -104.559803)	11/23/22	5	1.5	N
WH-FS-01 @ 6' (40.399248 / -104.559785)	11/23/22	6	2.1	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
PATRIOT B #16-20
CLOSURE ASSESSMENT
40.399252 / -104.559793
NW¼ SW¼ SEC.16 T5N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-25729
REMEDATION # 25436

Sample Location				WH-FS-01 @ 6'
(Latitude / Longitude)				(40.399248 / -104.559785)
Sample Date				11/23/2022
Sample Depth				6'
PID Reading (ppm-v)				2.1
Regulatory Limits				
Chemical of Concern	Units	ECMC Table 915-1 RSSLs	ECMC Table 915-1 GSSLs	
VOCs				
Benzene	mg/kg	1.2	0.0026	<0.00200
Toluene	mg/kg	490	0.69	<0.00200
Ethylbenzene	mg/kg	5.8	0.78	<0.00200
Total Xylenes	mg/kg	58	9.9	<0.00200
1,2,4-Trimethylbenzene	mg/kg	30	0.0081	<0.00200
1,3,5-Trimethylbenzene	mg/kg	27	0.0087	<0.00200
Total Petroleum Hydrocarbons				
TPH-GRO	mg/kg	500	--	<0.200
TPH-DRO	mg/kg	500	--	<25.0
TPH-RRO	mg/kg	500	--	<100
Polycyclic Aromatics Hydrocarbons				
1-Methyl-naphthalene	mg/kg	18	0.006	<0.00201
2-Methyl-naphthalene	mg/kg	24	0.019	<0.00201
Acenaphthene	mg/kg	360	0.55	0.000744
Anthracene	mg/kg	1800	5.8	0.00128
Benzo(a)-anthracene	mg/kg	1.1	0.011	0.00246
Benzo(a)-pyrene	mg/kg	0.11	0.24	0.00224
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	0.00211
Benzo(k)-fluoranthene	mg/kg	11	2.9	0.000984
Chrysene	mg/kg	110	9	0.00305
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	<0.00067
Fluoranthene	mg/kg	240	8.9	0.0054
Fluorene	mg/kg	240	0.54	0.000891
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	0.00113
Naphthalene	mg/kg	2	0.0038	<0.00201
Pyrene	mg/kg	180	1.3	0.0048
Soil Suitability (Inorganics)				
Boron	mg/L	2	--	0.357
pH	standard unit	6-8.3	--	7.78
Sodium Adsorption Ratio (SAR)	--	<6	--	1.01
Specific Conductance (EC)	mmhos/cm	<4	--	0.760
ECMC = Energy & Carbon Management Commission		VOCs - Volatile Organic Compounds		
mg/kg = milligrams per kilogram				
mmhos/cm = millimhos per centimeter		RSSLs = Residential Soil Screening Levels		
PID = Photoionization Detector		GSSLs = Protection of Groundwater Soil Screening Levels		
ppm-v = parts per million by volume		TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics		
mg/L = milligrams per liter		TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics		
SAR = Sodium Adsoption Ratio		TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics		
Notes:				
Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit and/or minimum detection limit.				
Values presented in BOLD exceed ECMC Table 915-1 Regulatory Limits.				



ATTACHMENT A

Photo Log

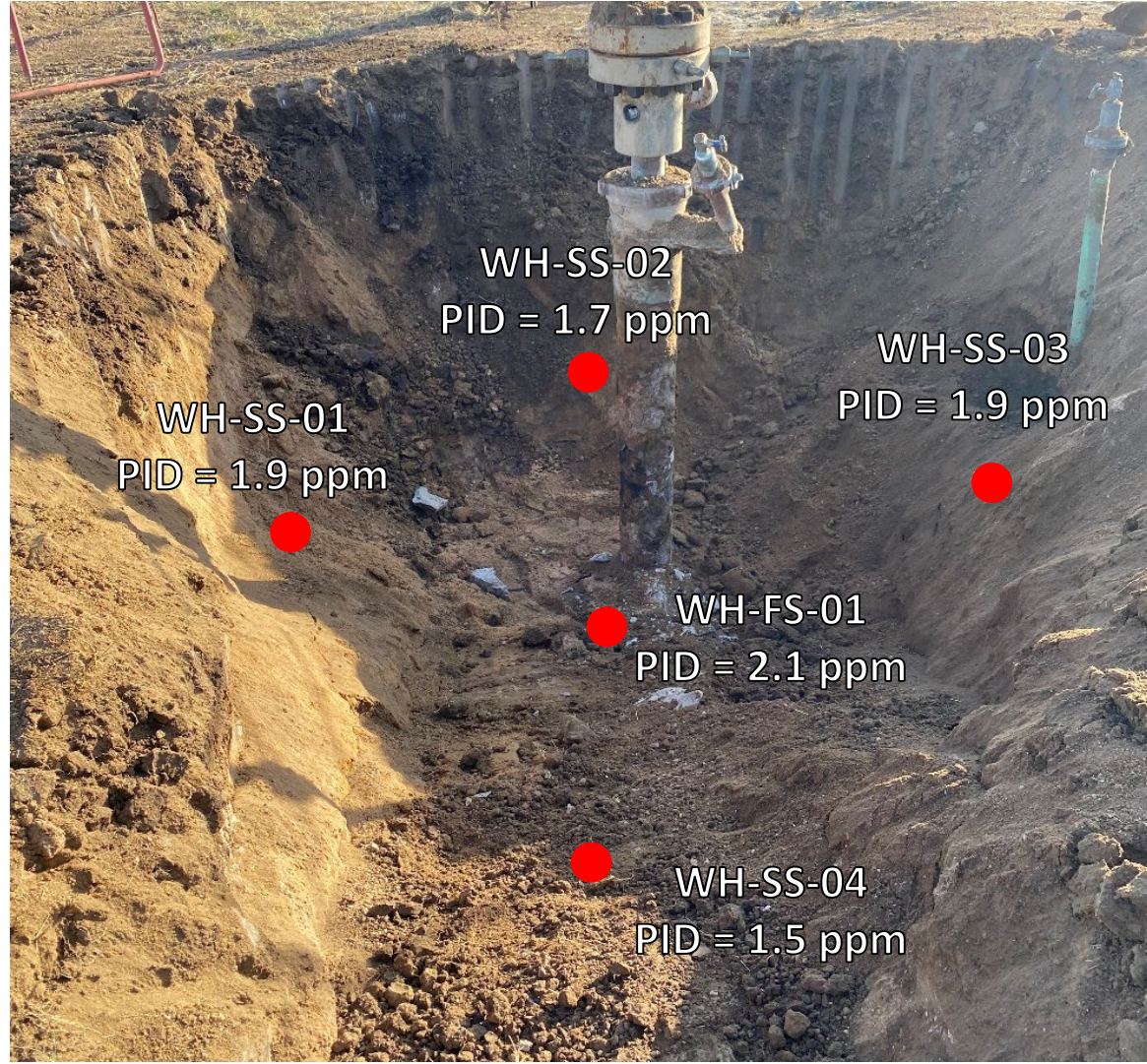
Patriot B #16-20
API # 05-123-25729
Remediation # 25436

Closure Assessment

November 2022



Wellhead Excavation – 11/23/22



Looking east

No petroleum hydrocarbon staining or odor observed



ATTACHMENT B

Laboratory Analytical Report



December 05, 2022

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Patriot B #16-20

Project Number - [none]

Attached are your analytical results for Noble - Patriot B #16-20 received by Origins Laboratory, Inc. November 23, 2022. This project is associated with Origins project number Y211567-01.

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: Noble - Patriot B #16-20

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@6'	Y211567-01	Soil	November 23, 2022 8:40	11/23/2022 12:20

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: Noble - Patriot B #16-20

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4211567

Client: Eagle

Client Project ID: Patriot B #16-20

Checklist Completed by: ETH/AM

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 11/23/12

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____

Cooler Number/Temperature: 1 13.3 °C 1 °C 1 °C (Describe) _____ °C

Thermometer ID: T004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by: JB (Project Manager)

Date/Time Reviewed: 11-28-12

Origins Laboratory, Inc.

J. Bynon

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: Noble - Patriot B #16-20

WH-FS-01@6'

11/23/2022 8:40:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y211567-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.357	0.0988	mg/L	1	B2K2905	11/29/2022	11/30/2022	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2K2801	11/28/2022	12/01/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	87.5 %	50-150			"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2K2338	11/23/2022	11/30/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	112 %	70-130			"	"	"
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Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

WH-FS-01@6'

11/23/2022 8:40:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y211567-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	97.8 %	70-130	B2K23 38	11/23/2022	11/30/2022
Surrogate: 4-Bromofluorobenzene	94.1 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	2.91	0.499	meq/L	10	[CALC]	11/29/2022	11/30/2022
Magnesium	1.89	0.823	"	"	"	"	"
Sodium	1.56	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L651094	11/30/2022	11/30/2022
2-Methylnaphthalene	ND	0.00194	0.00201	"	"	"	"	"
Acenaphthene	0.000744	0.000304	0.00067	"	"	"	"	"
Anthracene	0.00128	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	0.00246	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	0.00224	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	0.00211	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	0.000984	0.000437	0.00067	"	"	"	"	"
Chrysene	0.00305	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	0.0054	0.000394	0.00067	"	"	"	"	"
Fluorene	0.000891	0.000286	0.00067	"	"	"	"	"

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: Noble - Patriot B #16-20

WH-FS-01@6'

11/23/2022 8:40:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y211567-01 (Soil)

PAH by 8270D SIM

Indeno(1,2,3-cd)pyrene	0.00113	0.000627	0.00067	mg/Kg	1	L651094	11/30/2022	11/30/2022	
Naphthalene	ND	0.00145	0.00201	"	"	"	"	"	
Pyrene	0.0048	0.000643	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	53.6 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	57 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	50 %	29-110	"	"	"

pH in Soil by 9045D

pH	7.78	pH Units	1	B2K2916	11/29/2022	11/30/2022
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SAR by 20B Saturated Paste

SAR	1.01	SAR	1	B2K2910	11/29/2022	11/30/2022
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.760	0.00500	mmhos/cm	1	B2K2916	11/29/2022	11/30/2022
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Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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
Batch B2K2338 - EPA 5030 (soil)										
Blank (B2K2338-BLK1)					Prepared: 11/23/2022 Analyzed: 11/29/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	104		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	100		70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125	91.3		70-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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
Batch B2K2338 - EPA 5030 (soil)										
LCS (B2K2338-BS1)					Prepared: 11/23/2022 Analyzed: 11/29/2022					
1,2,4-Trimethylbenzene	0.110	0.00200	mg/kg	0.100		110	70-130			
1,3,5-Trimethylbenzene	0.115	0.00200	"	0.100		115	70-130			
Benzene	0.0908	0.00200	"	0.100		90.8	70-130			
Ethylbenzene	0.112	0.00200	"	0.100		112	70-130			
Naphthalene	0.0902	0.00380	"	0.100		90.2	70-130			
Toluene	0.0958	0.00200	"	0.100		95.8	70-130			
o-Xylene	0.107	0.00200	"	0.100		107	70-130			
m,p-Xylene	0.226	0.00400	"	0.200		113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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 B2K2338 - EPA 5030 (soil)

Matrix Spike (B2K2338-MS1)		Source: Y211516-01			Prepared: 11/23/2022 Analyzed: 11/29/2022					
1,2,4-Trimethylbenzene	0.102	0.00200	mg/kg	0.100	ND	102	70-130			
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130			
Benzene	0.0968	0.00200	"	0.100	ND	96.8	70-130			
Ethylbenzene	0.103	0.00200	"	0.100	ND	103	70-130			
Naphthalene	0.0956	0.00380	"	0.100	0.00138	94.2	70-130			
Toluene	0.0955	0.00200	"	0.100	ND	95.5	70-130			
o-Xylene	0.0981	0.00200	"	0.100	ND	98.1	70-130			
m,p-Xylene	0.209	0.00400	"	0.200	ND	104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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
Batch B2K2338 - EPA 5030 (soil)										
Matrix Spike Dup (B2K2338-MSD1)		Source: Y211516-01			Prepared: 11/23/2022 Analyzed: 11/29/2022					
1,2,4-Trimethylbenzene	0.107	0.00200	mg/kg	0.100	ND	107	70-130	4.16	20	
1,3,5-Trimethylbenzene	0.109	0.00200	"	0.100	ND	109	70-130	1.98	20	
Benzene	0.102	0.00200	"	0.100	ND	102	70-130	5.41	20	
Ethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130	3.76	20	
Naphthalene	0.101	0.00380	"	0.100	0.00138	99.1	70-130	5.04	20	
Toluene	0.0951	0.00200	"	0.100	ND	95.1	70-130	0.420	20	
o-Xylene	0.100	0.00200	"	0.100	ND	100	70-130	2.20	20	
m,p-Xylene	0.216	0.00400	"	0.200	ND	108	70-130	3.52	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		113	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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
Batch B2K2801 - EPA 3580										
Blank (B2K2801-BLK1)					Prepared: 11/28/2022 Analyzed: 12/01/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	25		"	24.9		99.8	50-150			

Origins Laboratory, Inc.



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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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 B2K2801 - EPA 3580

LCS (B2K2801-BS1)

Prepared: 11/28/2022 Analyzed: 12/01/2022

Diesel (C10-C28)	843	50.0	mg/kg	1000		84.3	70-130			
Residual Range Organics (C28-C40)	876	200	"	1000		87.6	70-130			
Surrogate: o-Terphenyl	46		"	49.8		92.4	50-150			

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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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 B2K2801 - EPA 3580

Matrix Spike (B2K2801-MS1)		Source: Y211565-01			Prepared: 11/28/2022 Analyzed: 12/01/2022					
Diesel (C10-C28)	895	50.0	mg/kg	1000	ND	89.5	70-130			
Residual Range Organics (C28-C40)	1030	200	"	1000	142	88.3	70-130			
Surrogate: o-Terphenyl	46		"	49.8		93.4	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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
Batch B2K2801 - EPA 3580										
Matrix Spike Dup (B2K2801-MSD1)		Source: Y211565-01			Prepared: 11/28/2022 Analyzed: 12/01/2022					
Diesel (C10-C28)	901	50.0	mg/kg	1000	ND	90.1	70-130	0.599	35	
Residual Range Organics (C28-C40)	1030	200	"	1000	142	88.4	70-130	0.0910	35	
Surrogate: o-Terphenyl	52		"	49.8		104	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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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Classical Chemistry Parameters - 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 B2K2905 - DTPA Sorbitol Preparation

Blank (B2K2905-BLK1)

Prepared: 11/29/2022 Analyzed: 11/30/2022

Boron ND 0.100 mg/L

Duplicate (B2K2905-DUP1)

Source: Y211556-12

Prepared: 11/29/2022 Analyzed: 11/30/2022

Boron 0.213 0.0982 mg/L 0.134 45.5 50

Batch B2K2910 - Saturated Paste Metals

Blank (B2K2910-BLK1)

Prepared: 11/29/2022 Analyzed: 11/30/2022

Calcium PPM ND 10.0 mg/L

SAR 0.00 SAR

Magnesium PPM ND 10.0 mg/L

Sodium PPM ND 10.0 "

Duplicate (B2K2910-DUP1)

Source: Y211556-13

Prepared: 11/29/2022 Analyzed: 11/30/2022

Calcium PPM 21.8 10.0 mg/L 22.9 4.69 50

SAR 0.00 SAR 6.56 200 200

Magnesium PPM 17.5 10.0 mg/L 18.9 7.92 50

Sodium PPM 176 10.0 " 175 0.196 50

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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2K2916 - Saturated Paste pH/EC										
Blank (B2K2916-BLK1)					Prepared: 11/29/2022 Analyzed: 11/30/2022					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B2K2916-DUP1)					Source: Y211556-13 Prepared: 11/29/2022 Analyzed: 11/30/2022					
pH	8.46		pH Units		8.47			0.118	25	
Specific Conductance (EC)	0.965	0.00500	mmhos/cm		0.991			2.68	25	

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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L651094 - 3550B

MSD (L 95379-MSD-L651094)		Source: 95379			Prepared: 11/30/2022 Analyzed: 11/30/2022					
2-Methylnaphthalene	0.0845	0.00201	mg/Kg	0.166	<0.00194	50.9	30-130	5.5	30	
Fluorene	0.0886	0.00067	"	0.166	<0.000286	53.3	30-130	8.2	30	
Pyrene	0.088	0.00067	"	0.166	<0.000643	53	30-130	6.8	30	
Indeno(1,2,3-cd)pyrene	0.0981	0.00067	"	0.166	<0.000627	59	30-130	7.5	30	
Fluoranthene	0.0904	0.00067	"	0.166	<0.000394	54.4	30-130	6.8	30	
Dibenz(a,h)anthracene	0.118	0.00067	"	0.166	<0.000614	71	30-130	8.8	30	
Chrysene	0.0897	0.00067	"	0.166	<0.000624	54	30-130	5.9	30	
Naphthalene	0.0867	0.00201	"	0.166	<0.00145	52.2	30-130	4.4	30	
1-Methylnaphthalene	0.0892	0.00201	"	0.166	<0.00109	53.7	30-130	8.4	30	
Benzo(k)fluoranthene	0.0724	0.00067	"	0.166	<0.000437	43.6	30-130	7.3	30	
Acenaphthene	0.087	0.00067	"	0.166	<0.000304	52.4	30-130	6.5	30	
Anthracene	0.0905	0.00067	"	0.166	<0.000334	54.5	30-130	8.7	30	
Benzo(a)anthracene	0.0897	0.00067	"	0.166	<0.000493	54	30-130	4.7	30	
Benzo(a)pyrene	0.0893	0.00067	"	0.166	<0.000468	53.7	30-130	5.9	30	
Benzo(b)fluoranthene	0.0818	0.00067	"	0.166	<0.000585	49.2	30-130	5.2	30	
Surrogate: 2-Fluorobiphenyl	53.1		"	0.331	142	53.1	33-115			
Surrogate: Nitrobenzene-d5	50.7		"	0.331	143	50.7	29-110			
Surrogate: 4-Terphenyl-d14	61.6		"	0.331	179	61.6	33-122			

MS (L 95379-MS-L651094)		Source: 95379			Prepared: 11/30/2022 Analyzed: 11/30/2022					
Benzo(k)fluoranthene	0.0673	0.00067	mg/Kg	0.166	<0.000437	40.5	30-130			
Acenaphthene	0.0815	0.00067	"	0.166	<0.000304	49	30-130			
Naphthalene	0.0829	0.00201	"	0.166	<0.00145	49.9	30-130			
Indeno(1,2,3-cd)pyrene	0.091	0.00067	"	0.166	<0.000627	54.8	30-130			
Fluorene	0.0816	0.00067	"	0.166	<0.000286	49.1	30-130			
Fluoranthene	0.0844	0.00067	"	0.166	<0.000394	50.8	30-130			
Dibenz(a,h)anthracene	0.108	0.00067	"	0.166	<0.000614	65	30-130			

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

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L651094 - 3550B

MS (L 95379-MS-L651094)		Source: 95379			Prepared: 11/30/2022 Analyzed: 11/30/2022					
Chrysene	0.0845	0.00067	mg/Kg	0.166	<0.000624	50.9	30-130			
1-Methylnaphthalene	0.082	0.00201	"	0.166	<0.00109	49.3	30-130			
Benzo(a)pyrene	0.0841	0.00067	"	0.166	<0.000468	50.6	30-130			
Anthracene	0.0829	0.00067	"	0.166	<0.000334	49.9	30-130			
Pyrene	0.0822	0.00067	"	0.166	<0.000643	49.5	30-130			
2-Methylnaphthalene	0.0799	0.00201	"	0.166	<0.00194	48.1	30-130			
Benzo(b)fluoranthene	0.0776	0.00067	"	0.166	<0.000585	46.7	30-130			
Benzo(a)anthracene	0.0855	0.00067	"	0.166	<0.000493	51.5	30-130			
Surrogate: Nitrobenzene-d5	54.9		"	0.331	143	54.9	29-110			
Surrogate: 4-Terphenyl-d14	58.3		"	0.331	179	58.3	33-122			
Surrogate: 2-Fluorobiphenyl	47.4		"	0.331	142	47.4	33-115			

LCS (LCS-L651094)		Prepared: 11/30/2022 Analyzed: 11/30/2022								
Chrysene	0.0967	0.00067	mg/Kg	0.167		57.9	30-130			
Dibenz(a,h)anthracene	0.14	0.00067	"	0.167		83.8	30-130			
Fluoranthene	0.0928	0.00067	"	0.167		55.5	30-130			
Fluorene	0.0781	0.00067	"	0.167		46.7	30-130			
Indeno(1,2,3-cd)pyrene	0.12	0.00067	"	0.167		71.8	30-130			
Naphthalene	0.0928	0.00201	"	0.167		55.5	30-130			
Benzo(k)fluoranthene	0.062	0.00067	"	0.167		37.1	30-130			
Pyrene	0.0943	0.00067	"	0.167		56.4	30-130			
Benzo(a)pyrene	0.103	0.00067	"	0.167		61.6	30-130			
Benzo(a)anthracene	0.092	0.00067	"	0.167		55	30-130			
Anthracene	0.0964	0.00067	"	0.167		57.7	30-130			
Acenaphthene	0.092	0.00067	"	0.167		55	30-130			
2-Methylnaphthalene	0.0923	0.00201	"	0.167		55.2	30-130			
1-Methylnaphthalene	0.0967	0.00201	"	0.167		57.9	30-130			

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Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-20

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L651094 - 3550B

LCS (LCS-L651094)

Prepared: 11/30/2022 Analyzed: 11/30/2022

Benzo(b)fluoranthene	0.0858	0.00067	mg/Kg	0.167		51.3	30-130			
Surrogate: Nitrobenzene-d5	53.7		"	0.333		53.7	29-110			
Surrogate: 4-Terphenyl-d14	66.3		"	0.333		66.3	33-122			
Surrogate: 2-Fluorobiphenyl	58.2		"	0.333		58.2	33-115			

LRB (LRB-L651094)

Prepared: 11/30/2022 Analyzed: 11/30/2022

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	0.00201	"				-			
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	0.00201	"				-			
1-Methylnaphthalene	ND	0.00201	"				-			
Pyrene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	57.6		"	0.333		57.6	29-110			
Surrogate: 4-Terphenyl-d14	68.1		"	0.333		68.1	33-122			
Surrogate: 2-Fluorobiphenyl	61.2		"	0.333		61.2	33-115			

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Eagle Environmental Consulting, Inc.

8000 W 44th Ave

Wheat Ridge CO 80033

Martin C Eckert III

Project Number: [none]

Project: Noble - Patriot B #16-20

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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