

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 #16-24		Date: 01-04-23				Remediation Project #: 25430
Associated Wells: 05-123-25730		Age of Site: Years				Number of Photos Attached: 1
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)					40.395440 / -104.555204	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)						Estimated Facility Size (acres):
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	05-123-25730					
Age	Years					
Condition of surface around wellhead	Good - Per Crew					
PID Readings	N/A - Excavated Upon Arrival					
Condition of subsurface (staining present)	Good - No Staining/Odor					
PID Readings	0.3	0.5	0.5	0.4	0.6	
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: 0.6				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:						

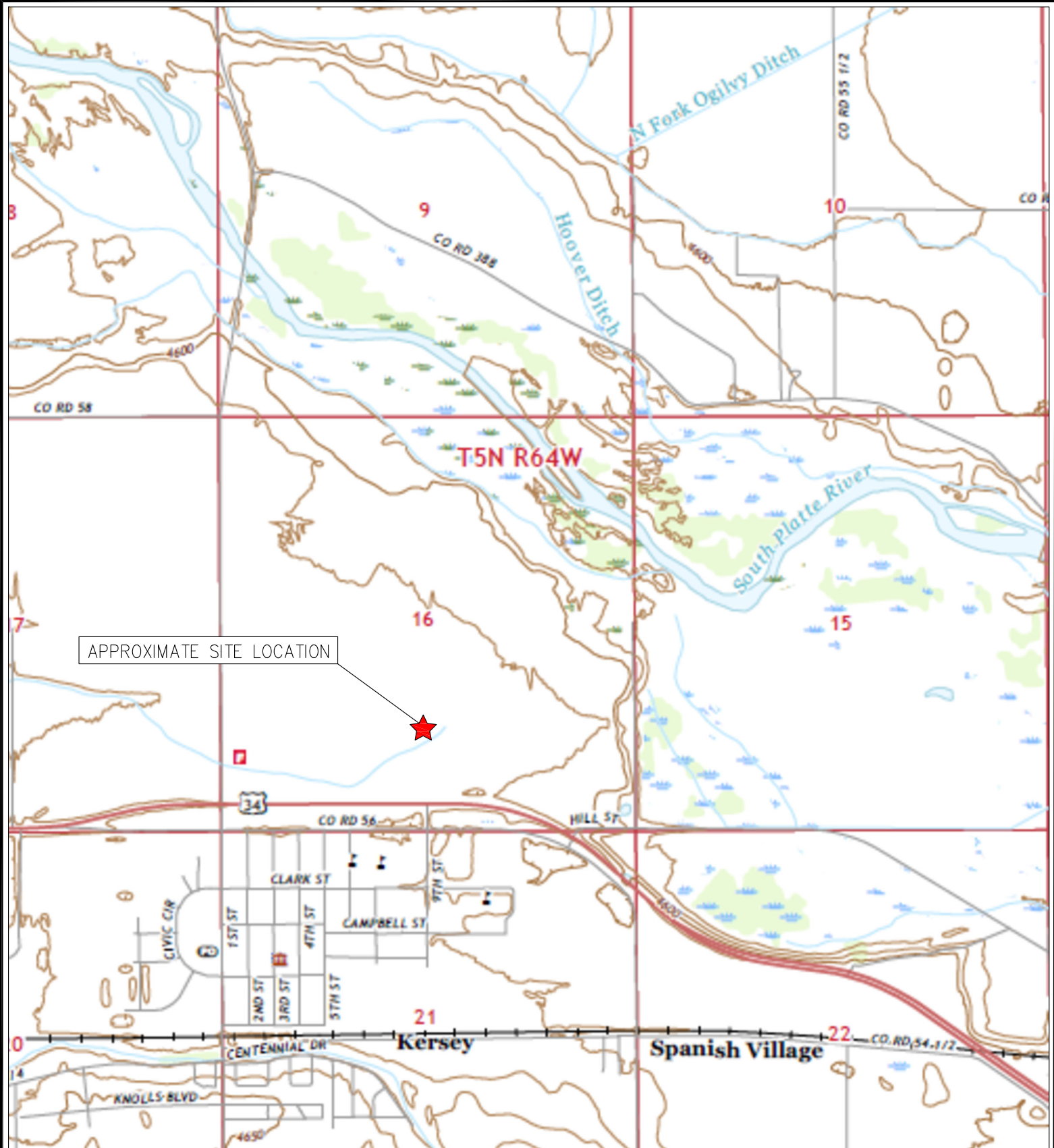


FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map



APPROXIMATE SITE LOCATION

TOPOGRAPHIC SITE LOCATION MAP
 PATRIOT B #16-24
 CLOSURE ASSESSMENT
 40.395440 / -104.555204
 SE¼ SW¼ SEC.16 T5N R64W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-25730
 REMEDIATION # 25430

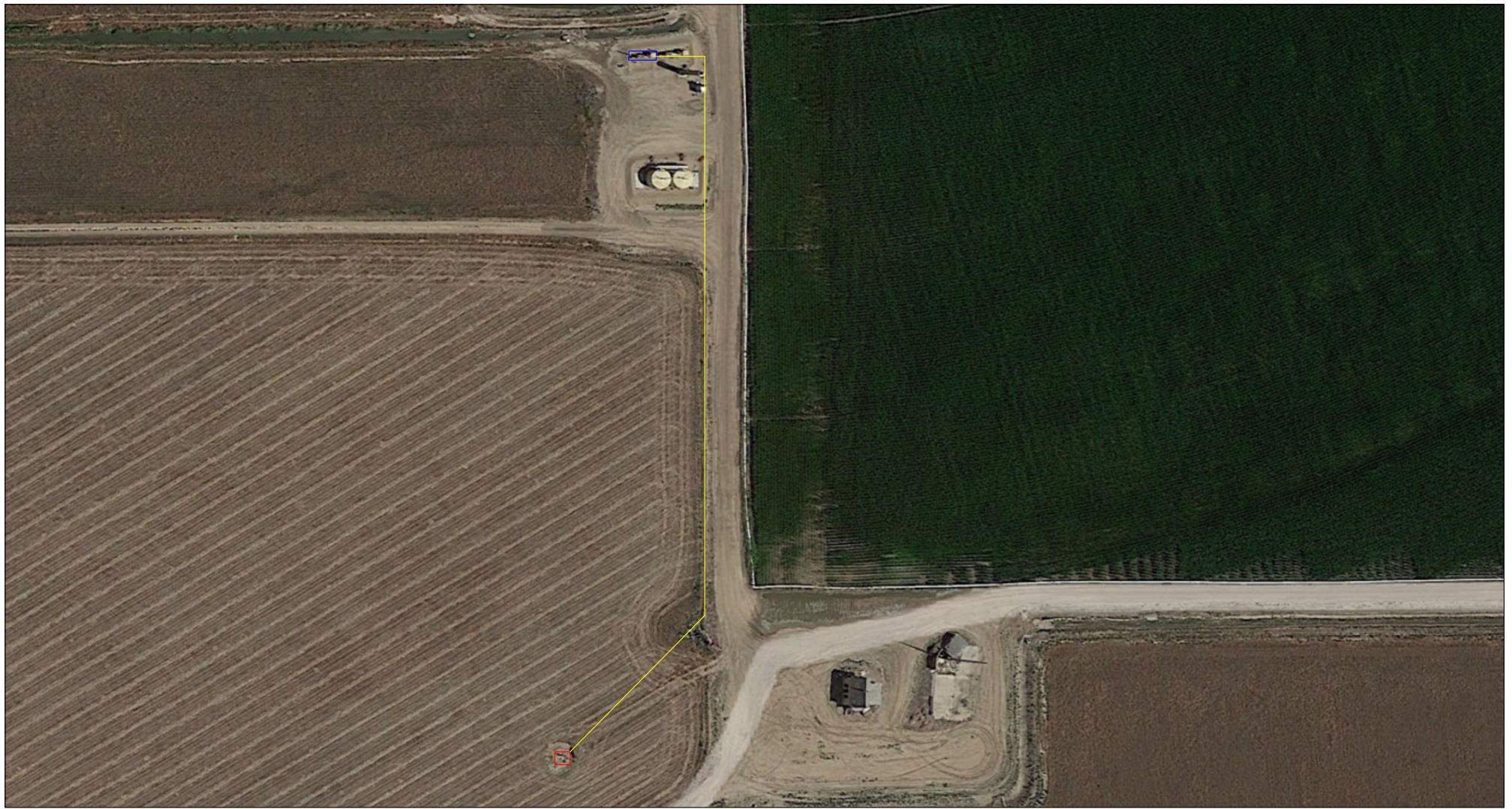


EAGLE
 ENVIRONMENTAL
 CONSULTING, LLC

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

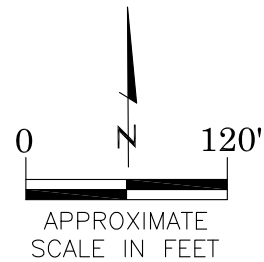
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP
 KERSEY, CO QUADRANGLE 2022

FIGURE 1



LEGEND

- FORMER PATRIOT B #16-24 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



AERIAL SITE LOCATION MAP
 PATRIOT B #16-24
 CLOSURE ASSESSMENT
 40.395440 / -104.555204
 SE¼ SW¼ SEC.16 T5N R64W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-25730
 REMEDIATION # 25430

DRAWN BY:

CK

FIG. NO.

2



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- 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

(BRL) - ALL VALUES BELOW REGULATORY LIMITS

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

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

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

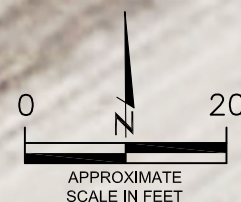
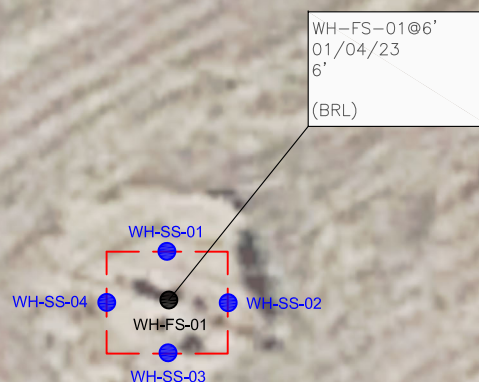
SOIL ANALYTICAL MAP
PATRIOT B #16-24
CLOSURE ASSESSMENT
40.395440 / -104.555204
SE¼ SW¼ SEC.16 T5N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-25730
REMEDIATION # 25430

DRAWN BY:
CT

FIG.
NO. 3



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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 #16-24
CLOSURE ASSESSMENT
40.395440 / -104.555204
SE¼ SW¼ SEC.16 T5N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-25730
REMEDIAION # 25430

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-SS-01 @ 5' (40.395457 / -104.555200)	01/04/23	5	0.3	N
WH-SS-02 @ 5' (40.395443 / -104.555180)	01/04/23	5	0.5	N
WH-SS-03 @ 5' (40.395429 / -104.555199)	01/04/23	5	0.5	N
WH-SS-04 @ 5' (40.395442 / -104.555219)	01/04/23	5	0.4	N
WH-FS-01 @ 6' (40.395443 / -104.555202)	01/04/23	6	0.6	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2
SOIL ANALYTICAL RESULTS
PATRIOT B #16-24
CLOSURE ASSESSMENT
40.395440 / -104.555204
SE¼ SW¼ SEC.16 T5N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-25730
REMEDIATION # 25430

Sample Location				WH-FS-01 @ 6'
(Latitude / Longitude)				(40.395443 / -104.555202)
Sample Date				1/4/2023
Sample Depth				6'
PID Reading (ppm-v)				0.6
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 AROMATIC 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	<0.00067
Anthracene	mg/kg	1800	5.8	<0.00067
Benzo(a)-anthracene	mg/kg	1.1	0.011	<0.00067
Benzo(a)-pyrene	mg/kg	0.11	0.24	0.000589
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	0.000599
Benzo(k)-fluoranthene	mg/kg	11	2.9	<0.00067
Chrysene	mg/kg	110	9	<0.00067
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	<0.00067
Fluoranthene	mg/kg	240	8.9	0.000547
Fluorene	mg/kg	240	0.54	<0.00067
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	<0.00067
Naphthalene	mg/kg	2	0.0038	<0.00201
Pyrene	mg/kg	180	1.3	<0.00067
SOIL SUITABILITY (Inorganics)				
Boron	mg/L	2	--	<0.0998
pH	standard unit	6-8.3	--	8.17
Sodium Adsorption Ratio (SAR)	--	<6	--	0.705
Specific Conductance (EC)	mmhos/cm	<4	--	0.540
ECMC = Energy & Carbon Management Commission mg/kg = milligrams per kilogram mmhos/cm = millimhos per centimeter PID = Photoionization Detector ppm-v = parts per million by volume mg/L = milligrams per liter SAR = Sodium Adsorption Ratio 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.				
VOCs - Volatile Organic Compounds RSSLs = Residential Soil Screening Levels GSSLs = Protection of Groundwater Soil Screening Levels TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics				



ATTACHMENT A

Photo Log

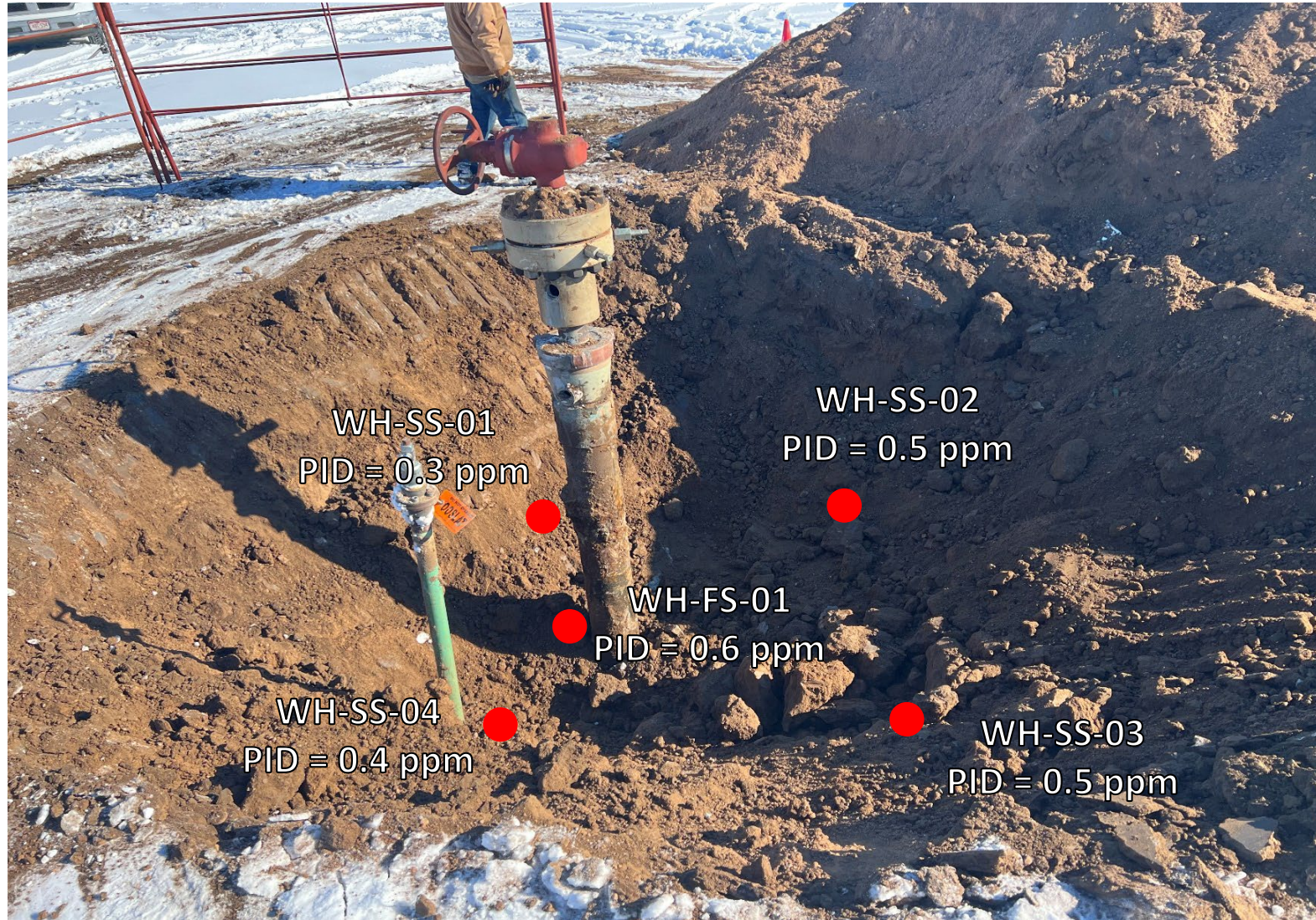
Patriot B #16-24
API # 05-123-25730
Remediation # 25430

Closure Assessment

January 2023



Wellhead Excavation – 01/04/23



Looking northeast

No petroleum hydrocarbon staining or odor observed



ATTACHMENT B

Laboratory Analytical Report



January 11, 2023

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Patriot B #16-24

Project Number - [none]

Attached are your analytical results for Noble - Patriot B #16-24 received by Origins Laboratory, Inc. January 04, 2023. This project is associated with Origins project number Y301032-01.

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 #16-24

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@6'	Y301032-01	Soil	January 4, 2023 12:48	01/04/2023 14:30

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 #16-24

www.originslaboratory.com

page 1 of 1

430032

Project Manager: Martin Eckert III
Project Name: Patriot B #16-24
Project Number: ---
Samples Collected By: Colt

Client: Eagle Environmental Consulting
Address: 8000 W 44th Ave
Wheat Ridge, CO 80033
Telephone Number: 303-433-0479
Email Address: mic3@eagle-environment.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa			Other
111-F5-01 @ 6'	1/4/03	1248	2	X				X			X	X	EC, SAR, pH by 1
											X	X	Saturated paste prep 2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By: Garrett King Date: 1/4/03 Time: 1430
Relinquished By: --- Date: --- Time: ---

Received By: EHS Date: 1/4/03 Time: 1430
Received By: --- Date: --- Time: ---

Turnaround Time: ☐ 24 Hr ☐ 48 Hr ☒ Standard

Temp Received: 2.4 Date Results Needed: Noble

Bill to: Colt

Origins Laboratory, Inc.

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 #16-24

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4301032

Client: Eagle

Client Project ID: Patriot B #16-24

Checklist Completed by: EHS

Shipped Via: 1D
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 1/4/23

Airbill #: NA

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

Cooler Number/Temperature: 1 / 2.4 °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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<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 type="checkbox"/>	<input type="checkbox"/>	<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 in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

Date/Time Reviewed 1/5/23

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 #16-24

WH-FS-01@6'
1/4/2023 12:48:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	---------------------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y301032-01 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.0998	mg/L	1	B3A0503	01/05/2023	01/06/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3A0515	01/05/2023	01/07/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	80.3 %	50-150			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3A0520	01/05/2023	01/07/2023	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	85.4 %	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 #16-24

WH-FS-01@6'

1/4/2023 12:48:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	---------------------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y301032-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	88.4 %	70-130	B3A05 20	01/05/2023	01/07/2023
Surrogate: 4-Bromofluorobenzene	99.2 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	2.14	0.499	meq/L	10	[CALC]	01/06/2023	01/09/2023
Magnesium	1.27	0.823	"	"	"	"	"
Sodium	0.920	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L657391	01/09/2023	01/09/2023
2-Methylnaphthalene	ND	0.00194	0.00201	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	0.000589	0.000468	0.00067	"	"	"	"	J
Benzo(b)fluoranthene	0.000599	0.000585	0.00067	"	"	"	"	J
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	0.000547	0.000394	0.00067	"	"	"	"	J
Fluorene	ND	0.000286	0.00067	"	"	"	"	"

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 #16-24

WH-FS-01@6'

1/4/2023 12:48:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y301032-01 (Soil)

PAH by 8270D SIM

Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	mg/Kg	1	L657391	01/09/2023	01/09/2023
Naphthalene	ND	0.00145	0.00201	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	51.7 %		33-115			"	"	"
Surrogate: 4-Terphenyl-d14	53.2 %		33-122			"	"	"
Surrogate: Nitrobenzene-d5	55.6 %		29-110			"	"	"

pH in Soil by 9045D

pH	8.17			pH Units	1	B3A0612	01/06/2023	01/07/2023
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SAR by 20B Saturated Paste

SAR	0.705			SAR	1	B3A0606	01/06/2023	01/09/2023
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.540		0.00500	mmhos/cm	1	B3A0612	01/06/2023	01/07/2023
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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 #16-24

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 B3A0515 - EPA 3580										
Blank (B3A0515-BLK1)					Prepared: 01/05/2023 Analyzed: 01/07/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	20		"	24.9		81.8	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 #16-24

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 B3A0515 - EPA 3580

LCS (B3A0515-BS1)

Prepared: 01/05/2023 Analyzed: 01/07/2023

Diesel (C10-C28)	1020	50.0	mg/kg	1000		102	70-130			
Residual Range Organics (C28-C40)	1090	200	"	1000		109	70-130			
Surrogate: o-Terphenyl	41		"	49.8		83.4	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: Noble - Patriot B #16-24

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 B3A0515 - EPA 3580										
Matrix Spike (B3A0515-MS1)		Source: Y301019-01			Prepared: 01/05/2023 Analyzed: 01/07/2023					
Diesel (C10-C28)	1030	50.0	mg/kg	1000	ND	103	70-130			
Residual Range Organics (C28-C40)	1110	200	"	1000	ND	111	70-130			
Surrogate: o-Terphenyl	38		"	49.8		75.7	50-150			

Origins Laboratory, Inc.



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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-24

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 B3A0515 - EPA 3580										
Matrix Spike Dup (B3A0515-MSD1)		Source: Y301019-01			Prepared: 01/05/2023 Analyzed: 01/07/2023					
Diesel (C10-C28)	1030	50.0	mg/kg	1000	ND	103	70-130	0.359	35	
Residual Range Organics (C28-C40)	1090	200	"	1000	ND	109	70-130	1.20	35	
Surrogate: o-Terphenyl	37		"	49.8		74.5	50-150			

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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-24

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 B3A0520 - EPA 5030 (soil)										
Blank (B3A0520-BLK1)					Prepared: 01/05/2023 Analyzed: 01/06/2023					
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	0.11		"	0.125		88.6	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		90.2	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 #16-24

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 B3A0520 - EPA 5030 (soil)										
LCS (B3A0520-BS1)					Prepared: 01/05/2023 Analyzed: 01/06/2023					
1,2,4-Trimethylbenzene	0.0926	0.00200	mg/kg	0.100		92.6	70-130			
1,3,5-Trimethylbenzene	0.0916	0.00200	"	0.100		91.6	70-130			
Benzene	0.0977	0.00200	"	0.100		97.7	70-130			
Ethylbenzene	0.0857	0.00200	"	0.100		85.7	70-130			
Naphthalene	0.0947	0.00380	"	0.100		94.7	70-130			
Toluene	0.0893	0.00200	"	0.100		89.3	70-130			
o-Xylene	0.0893	0.00200	"	0.100		89.3	70-130			
m,p-Xylene	0.180	0.00400	"	0.200		90.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.10		"	0.125		82.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		92.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		91.5	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 #16-24

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 B3A0520 - EPA 5030 (soil)										
Matrix Spike (B3A0520-MS1)		Source: Y301008-01			Prepared: 01/05/2023 Analyzed: 01/06/2023					
1,2,4-Trimethylbenzene	0.0332	0.00200	mg/kg	0.100	ND	33.2	70-130			QM-07
1,3,5-Trimethylbenzene	0.0301	0.00200	"	0.100	ND	30.1	70-130			QM-07
Benzene	0.0860	0.00200	"	0.100	ND	86.0	70-130			
Ethylbenzene	0.0521	0.00200	"	0.100	ND	52.1	70-130			QM-07
Naphthalene	0.0390	0.00380	"	0.100	ND	39.0	70-130			QM-07
Toluene	0.0673	0.00200	"	0.100	ND	67.3	70-130			QM-07
o-Xylene	0.0539	0.00200	"	0.100	ND	53.9	70-130			QM-07
m,p-Xylene	0.103	0.00400	"	0.200	ND	51.7	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.8	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		90.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.4	70-130			

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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-24

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 B3A0520 - EPA 5030 (soil)										
Matrix Spike Dup (B3A0520-MSD1)		Source: Y301008-01			Prepared: 01/05/2023 Analyzed: 01/06/2023					
1,2,4-Trimethylbenzene	0.0356	0.00200	mg/kg	0.100	ND	35.6	70-130	7.21	20	QM-07
1,3,5-Trimethylbenzene	0.0333	0.00200	"	0.100	ND	33.3	70-130	10.0	20	QM-07
Benzene	0.0873	0.00200	"	0.100	ND	87.3	70-130	1.52	20	
Ethylbenzene	0.0532	0.00200	"	0.100	ND	53.2	70-130	2.13	20	QM-07
Naphthalene	0.0435	0.00380	"	0.100	ND	43.5	70-130	11.0	20	QM-07
Toluene	0.0689	0.00200	"	0.100	ND	68.9	70-130	2.32	20	QM-07
o-Xylene	0.0549	0.00200	"	0.100	ND	54.9	70-130	1.84	20	QM-07
m,p-Xylene	0.105	0.00400	"	0.200	ND	52.3	70-130	1.19	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.7	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		89.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.8	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 #16-24

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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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 B3A0503 - DTPA Sorbitol Preparation

Blank (B3A0503-BLK1)

Prepared: 01/05/2023 Analyzed: 01/06/2023

Boron ND 0.100 mg/L

Duplicate (B3A0503-DUP1)

Source: Y301027-02

Prepared: 01/05/2023 Analyzed: 01/06/2023

Boron 0.848 0.0999 mg/L 0.781 8.24 50

Batch B3A0606 - Saturated Paste Metals

Blank (B3A0606-BLK1)

Prepared: 01/06/2023 Analyzed: 01/09/2023

Calcium PPM ND 10.0 mg/L

SAR 0.00 SAR

Magnesium PPM ND 10.0 mg/L

Sodium PPM ND 10.0 "

Duplicate (B3A0606-DUP1)

Source: Y301027-09

Prepared: 01/06/2023 Analyzed: 01/09/2023

SAR 0.00 SAR 1.45 200 200

Calcium PPM 34.4 10.0 mg/L 35.9 4.11 50

Magnesium PPM 17.6 10.0 " 18.8 6.59 50

Sodium PPM 43.3 10.0 " 43.0 0.617 50

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Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-24

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3A0612 - Saturated Paste pH/EC										
Blank (B3A0612-BLK1)					Prepared: 01/06/2023 Analyzed: 01/07/2023					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B3A0612-DUP1)					Source: Y301027-09 Prepared: 01/06/2023 Analyzed: 01/07/2023					
pH	8.37		pH Units		8.39			0.239	25	
Specific Conductance (EC)	0.506	0.00500	mmhos/cm		0.546			7.57	25	

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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-24

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 L657391 - 3550B

MSD (L 90752-MSD-L657391)		Source: 90752			Prepared: 01/09/2023 Analyzed: 01/09/2023					
2-Methylnaphthalene	0.104	0.00201	mg/Kg	0.167	<0.00194	62.2	30-130	3.7	30	
Fluorene	0.119	0.00067	"	0.167	<0.000286	71.2	30-130	5.7	30	
Pyrene	0.122	0.00067	"	0.167	<0.000643	73	30-130	0.8	30	
Indeno(1,2,3-cd)pyrene	0.136	0.00067	"	0.167	<0.000627	81.4	30-130	4.3	30	
Fluoranthene	0.124	0.00067	"	0.167	<0.000394	74.2	30-130	2.3	30	
Dibenz(a,h)anthracene	0.132	0.00067	"	0.167	<0.000614	79	30-130	1.5	30	
Chrysene	0.139	0.00067	"	0.167	<0.000624	83.2	30-130	5.9	30	
Naphthalene	0.1	0.00201	"	0.167	<0.00145	59.8	30-130	3.9	30	
1-Methylnaphthalene	0.101	0.00201	"	0.167	<0.00109	60.4	30-130	4.8	30	
Benzo(k)fluoranthene	0.0977	0.00067	"	0.167	<0.000437	58.5	30-130	8.1	30	
Acenaphthene	0.109	0.00067	"	0.167	<0.000304	65.2	30-130	6.2	30	
Anthracene	0.126	0.00067	"	0.167	<0.000334	75.4	30-130	2.3	30	
Benzo(a)anthracene	0.122	0.00067	"	0.167	<0.000493	73	30-130	6.3	30	
Benzo(a)pyrene	0.131	0.00067	"	0.167	<0.000468	78.4	30-130	0.7	30	
Benzo(b)fluoranthene	0.118	0.00067	"	0.167	<0.000585	70.6	30-130	1.6	30	
Surrogate: 2-Fluorobiphenyl	47.7		"	0.333	164	47.7	33-115			
Surrogate: Nitrobenzene-d5	48		"	0.333	166	48	29-110			
Surrogate: 4-Terphenyl-d14	57.6		"	0.333	167	57.6	33-122			

MS (L 90752-MS-L657391)		Source: 90752			Prepared: 01/09/2023 Analyzed: 01/09/2023					
Benzo(k)fluoranthene	0.106	0.00067	mg/Kg	0.167	<0.000437	63.4	30-130			
Acenaphthene	0.116	0.00067	"	0.167	<0.000304	69.4	30-130			
Naphthalene	0.104	0.00201	"	0.167	<0.00145	62.2	30-130			
Indeno(1,2,3-cd)pyrene	0.142	0.00067	"	0.167	<0.000627	85	30-130			
Fluorene	0.126	0.00067	"	0.167	<0.000286	75.4	30-130			
Fluoranthene	0.127	0.00067	"	0.167	<0.000394	76	30-130			
Dibenz(a,h)anthracene	0.134	0.00067	"	0.167	<0.000614	80.2	30-130			

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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Patriot B #16-24

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 L657391 - 3550B

MS (L 90752-MS-L657391)		Source: 90752			Prepared: 01/09/2023 Analyzed: 01/09/2023					
Chrysene	0.131	0.00067	mg/Kg	0.167	<0.000624	78.4	30-130			
1-Methylnaphthalene	0.106	0.00201	"	0.167	<0.00109	63.4	30-130			
Benzo(a)pyrene	0.132	0.00067	"	0.167	<0.000468	79	30-130			
Anthracene	0.129	0.00067	"	0.167	<0.000334	77.2	30-130			
Pyrene	0.123	0.00067	"	0.167	<0.000643	73.6	30-130			
2-Methylnaphthalene	0.108	0.00201	"	0.167	<0.00194	64.6	30-130			
Benzo(b)fluoranthene	0.12	0.00067	"	0.167	<0.000585	71.8	30-130			
Benzo(a)anthracene	0.13	0.00067	"	0.167	<0.000493	77.8	30-130			
Surrogate: Nitrobenzene-d5	53.4		"	0.333	166	53.4	29-110			
Surrogate: 4-Terphenyl-d14	59.4		"	0.333	167	59.4	33-122			
Surrogate: 2-Fluorobiphenyl	52.8		"	0.333	164	52.8	33-115			

LCS (LCS-L657391)		Prepared: 01/09/2023 Analyzed: 01/09/2023								
Chrysene	0.134	0.00067	mg/Kg	0.167		80.2	30-130			
Dibenz(a,h)anthracene	0.129	0.00067	"	0.167		77.2	30-130			
Fluoranthene	0.13	0.00067	"	0.167		77.8	30-130			
Fluorene	0.127	0.00067	"	0.167		76	30-130			
Indeno(1,2,3-cd)pyrene	0.128	0.00067	"	0.167		76.6	30-130			
Naphthalene	0.104	0.00201	"	0.167		62.2	30-130			
Benzo(k)fluoranthene	0.105	0.00067	"	0.167		62.8	30-130			
Pyrene	0.126	0.00067	"	0.167		75.4	30-130			
Benzo(a)pyrene	0.136	0.00067	"	0.167		81.4	30-130			
Benzo(a)anthracene	0.134	0.00067	"	0.167		80.2	30-130			
Anthracene	0.132	0.00067	"	0.167		79	30-130			
Acenaphthene	0.118	0.00067	"	0.167		70.6	30-130			
2-Methylnaphthalene	0.109	0.00201	"	0.167		65.2	30-130			
1-Methylnaphthalene	0.107	0.00201	"	0.167		64	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 #16-24

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
Batch L657391 - 3550B										
LCS (LCS-L657391)					Prepared: 01/09/2023 Analyzed: 01/09/2023					
Benzo(b)fluoranthene	0.122	0.00067	mg/Kg	0.167		73	30-130			
Surrogate: Nitrobenzene-d5	54.3		"	0.333		54.3	29-110			
Surrogate: 4-Terphenyl-d14	61.8		"	0.333		61.8	33-122			
Surrogate: 2-Fluorobiphenyl	55.8		"	0.333		55.8	33-115			
LRB (LRB-L657391)					Prepared: 01/09/2023 Analyzed: 01/09/2023					
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	56.7		"	0.333		56.7	29-110			
Surrogate: 4-Terphenyl-d14	56.1		"	0.333		56.1	33-122			
Surrogate: 2-Fluorobiphenyl	50.4		"	0.333		50.4	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 #16-24

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.

J Estimated Value. Analyte below reported quantitation limit.

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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