

Wellhead Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure --		Tank Battery Closure --		Flowline Closure --		Partially Buried Vault Closure --	
Site Name & COGCC Facility Number: Vern Marshall #1		Date: 7-26-23					Remediation Project #: 29144		
Associated Wells: 05-123-09739		Age of Site: years					Number of Photos Attached: 2		
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)						40.267290 / -104.694090		Estimated Facility Size (acres):	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good condition									
USCS Soil Type: CL				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	05-123-09739								
Age	years								
Condition of surface around wellhead	Good - No odor/no staining								
PID Readings	WH-N: 0.5	WH-E: 0.9	WH-S: 0.2	WH-W: 1.0					
Condition of subsurface (staining present)	Good - No odor/no staining								
PID Readings	0.6	1.7	2.2	2.0	2.4				
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01				
Photo Number(s)	See photo log								
Other observations regarding wellheads: Well casing cut/capped following assessment									
Summary									
Was impacted soil identified? <input checked="" type="radio"/> No Yes - less than 10 cubic yards Yes - more than 10 cubic yards									
Total number of samples field screened: 9				Total number of samples collected: 9					
Highest PID Reading: 2.4				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:					
N/A									
Lateral extent:				Volume of soil removed:					
Is additional investigation required?									
Was groundwater encountered during the investigation? <input checked="" type="radio"/> 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:									

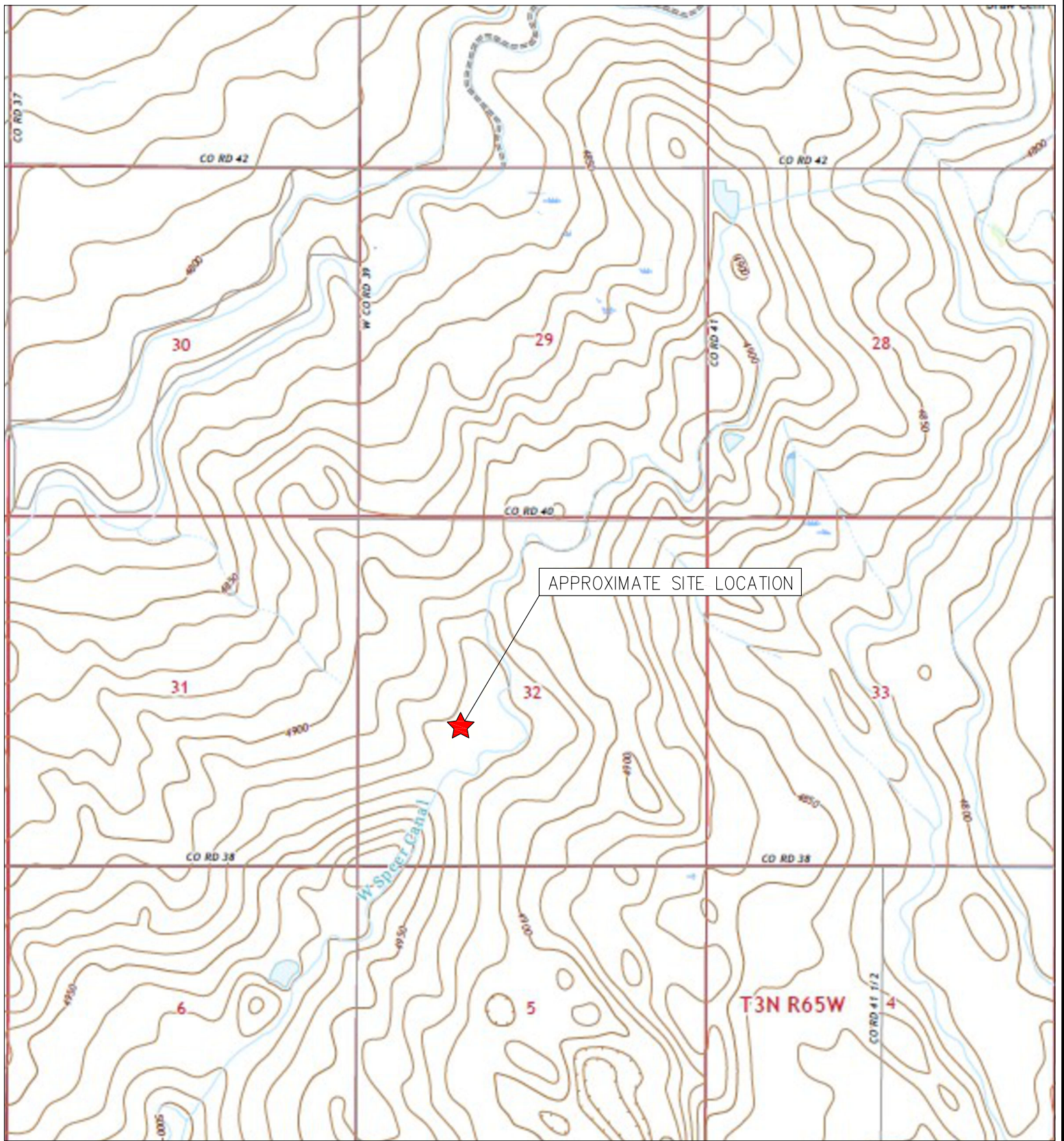


FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map



TOPOGRAPHIC SITE LOCATION MAP
 VERN MARSHALL #1
 CLOSURE ASSESSMENT
 40.267290 / -104.694090
 NW¼ SW¼ SEC.32 T4N R65W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-09739
 REMEDIATION # 29144



EAGLE
 ENVIRONMENTAL
 CONSULTING, LLC

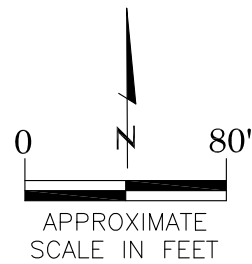
8000 W 44th Ave, Wheat Ridge, CO 80033
 Ph: 303-433-0479 • F: 303-325-5449





LEGEND

- FORMER VERN MARSHALL #1 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



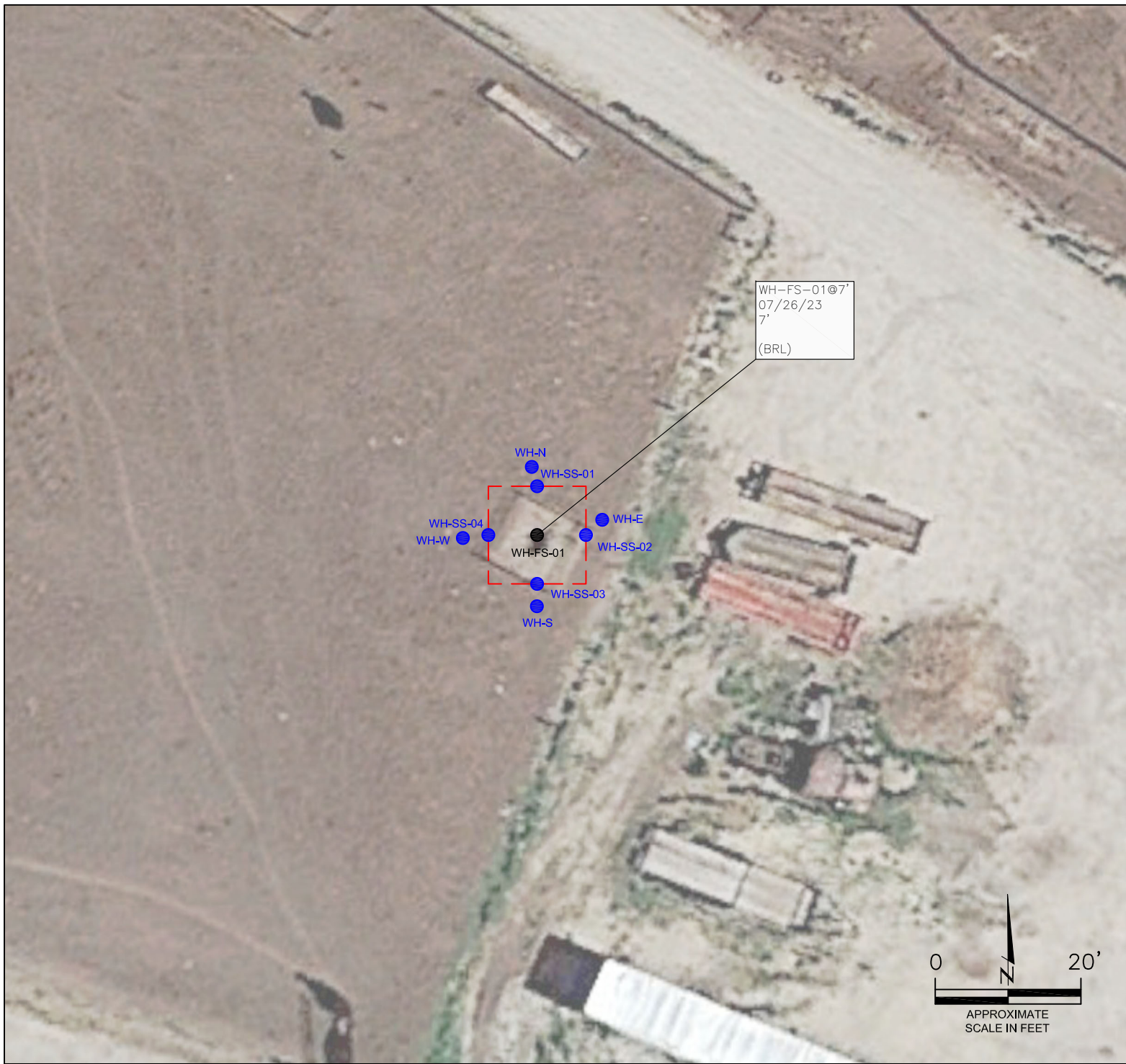
AERIAL SITE LOCATION MAP
 VERN MARSHALL #1
 CLOSURE ASSESSMENT
 40.267290 / -104.694090
 NW¼ SW¼ SEC.32 T4N R65W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-09739
 REMEDIATION # 29144

FIGURE NO.
2

DRAWN BY:
JF



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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)
 N = NAPHTHALENE (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
 VERN MARSHALL #1
 CLOSURE ASSESSMENT
 40.267290 / -104.694090
 NW¼ SW¼ SEC.32 T4N R65W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-09739
 REMEDIATION # 29144

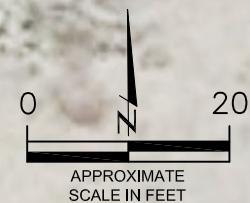


FIGURE NO.
3

DRAWN BY:
JF

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 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
VERN MARSHALL #1
CLOSURE ASSESSMENT
40.267290 / -104.694090
NW¼ SW¼ SEC.32 T4N R65W 6PM
WELD COUNTY, COLORADO
API # 05-123-09739
REMEDATION # 29144

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-SS-01 @ 6' (40.267322 / -104.694103)	07/26/23	6	0.6	N
WH-SS-02 @ 6' (40.267303 / -104.694077)	07/26/23	6	1.7	N
WH-SS-03 @ 6' (40.267280 / -104.694102)	07/26/23	6	2.2	N
WH-SS-04 @ 6' (40.267302 / -104.694126)	07/26/23	6	2.0	N
WH-FS-01 @ 7' (40.267301 / -104.694109)	07/26/23	7	2.4	Y
WH-N (40.267329 / -104.694107)	07/26/23	0.5	0.5	N
WH-E (40.267310 / -104.694069)	07/26/23	0.5	0.9	N
WH-S (40.267272 / -104.694103)	07/26/23	0.5	0.2	N
WH-W (40.267298 / -104.694139)	07/26/23	0.5	1.0	N
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				



TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
VERN MARSHALL #1
CLOSURE ASSESSMENT
40.267290 / -104.694090
NW¼ SW¼ SEC.32 T4N R65W 6PM
WELD COUNTY, COLORADO
API # 05-123-09739
REMEDIAION # 29144

Sample Location		WH-FS-01 @ 7'		
(Latitude / Longitude)		(40.267301 / -104.694109)		
Sample Date		7/26/2023		
Sample Depth		7'		
PID Reading (ppm-v)		2.4		
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
Naphthalene	mg/kg	2	0.0038	<0.00380
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		--	<25.0
TPH-RRO	mg/kg		--	<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	<0.00067
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	<0.00067
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	<0.00067
Fluorene	mg/kg	240	0.54	<0.00067
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	<0.00067
Pyrene	mg/kg	180	1.3	<0.00067
SOIL SUITABILITY (Inorganics)				
Boron	mg/L	2	--	0.227
pH	standard unit	6-8.3	--	7.48
Sodium Adsorption Ratio (SAR)	--	<6	--	0.510
Specific Conductance (EC)	mmhos/cm	<4	--	0.586
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 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				
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

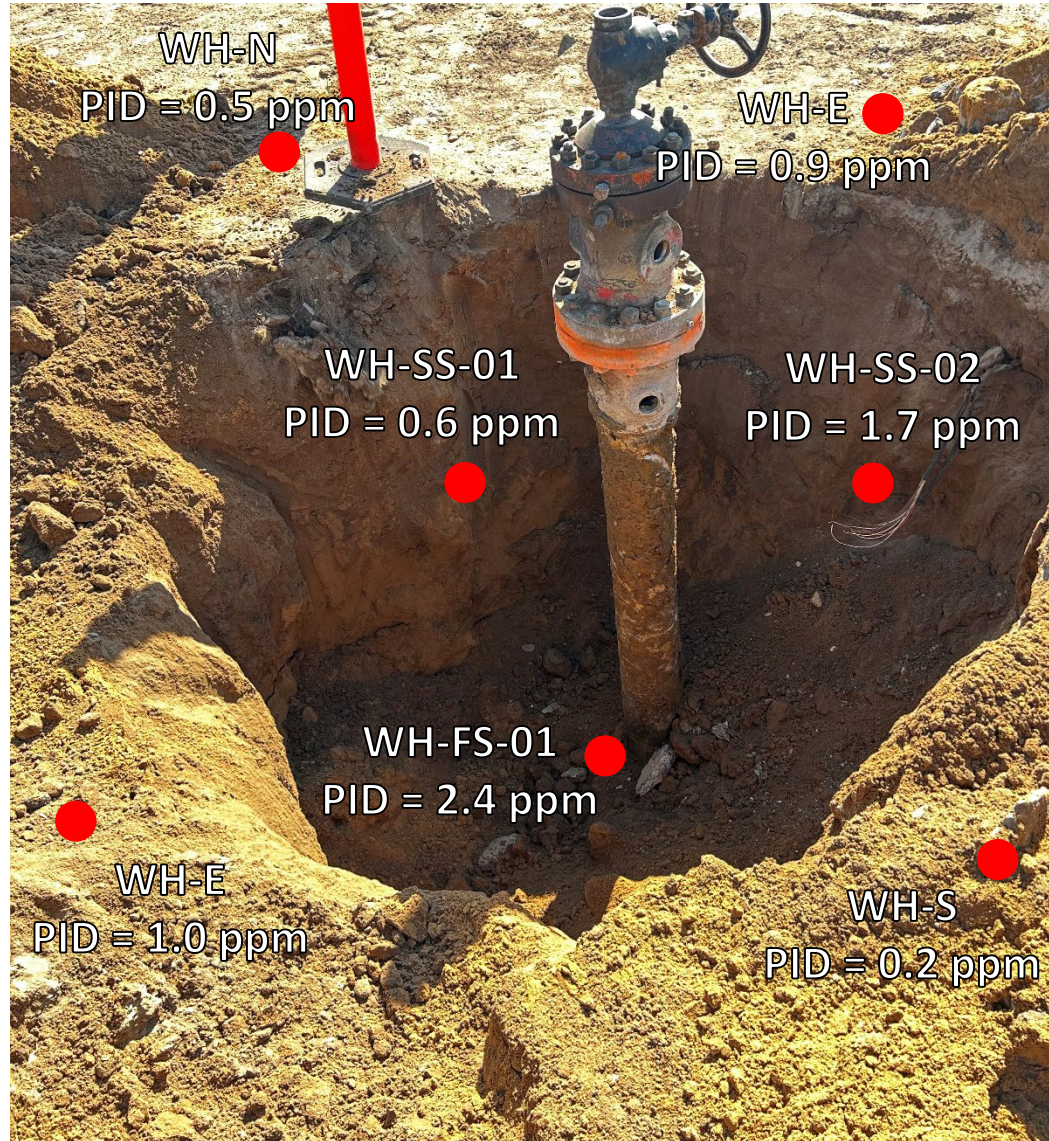
Vern Marshall #1
API # 05-123-09739
Remediation # 29144

Closure Assessment

July 2023



Wellhead Excavation – 07/26/23



Looking northeast

No petroleum hydrocarbon staining or odor observed



Looking southwest

No petroleum hydrocarbon staining or odor observed



ATTACHMENT B

Laboratory Analytical Report



August 03, 2023

Eagle Environmental Consulting, LLC

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Vern Marshall #1

Project Number - [none]

Attached are your analytical results for Noble - Vern Marshall #1 received by Origins Laboratory, Inc. July 26, 2023. This project is associated with Origins project number Y307599-01.

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



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

Martin C Eckert III
Project Number: [none]
Project: Noble - Vern Marshall #1

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@7'	Y307599-01	Soil	July 26, 2023 9:26	07/26/2023 17:42

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, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: YB07599

Client: Eagle
 Client Project ID: Vern Marshall #1

Checklist Completed by: T J J EKS
 Date/time completed: 7/27/23

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

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
 Cooler Number/Temperature: 1, 3 °C / _____ °C / _____ °C (Describe)
 Thermometer ID: 7004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	/			
Is there ice present (document if blue ice is used)	/			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		/		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		/		
Were all samples received intact ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		/		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	/			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	/			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	/			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			/	
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)			/	
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) [Signature]

Date/Time Reviewed 7/26/23

Origins Laboratory, Inc.

[Signature]

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, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

WH-FS-01@7'
7/26/2023 9:26:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y307599-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.227		0.100	mg/L	1	B3G2906	07/29/2023	08/01/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B3G2817	07/28/2023	07/28/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	101 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B3G3108	07/31/2023	08/02/2023	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

Origins Laboratory, Inc.



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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

WH-FS-01@7'
7/26/2023 9:26:00AM

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

Origins Laboratory, Inc.
Y307599-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 1,2-Dichloroethane-d4	107 %		70-130			B3G31 08	07/31/2023	08/02/2023	
Surrogate: Toluene-d8	102 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	90.0 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	2.69		0.499	meq/L	10	[CALC]	07/28/2023	07/31/2023	
Magnesium	1.07		0.823	"	"	"	"	"	
Sodium	0.699		0.435	"	"	"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L695982	08/01/2023	08/01/2023	
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	ND	0.000468	0.00067	"	"	"	"	"	
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"	
Chrysene	ND	0.000624	0.00067	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"	

Origins Laboratory, Inc.



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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

WH-FS-01@7'

7/26/2023 9:26:00AM

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

Waypoint Analytical, LLC.
Y307599-01 (Soil)

PAH by 8270D SIM

Fluoranthene	ND	0.000394	0.00067	mg/Kg	1	L695982	08/01/2023	08/01/2023	
Fluorene	ND	0.000286	0.00067	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"	
Pyrene	ND	0.000643	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	62.2 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	77.8 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	60.9 %		29-110			"	"	"	

pH in Soil by 9045D

pH	7.48			pH Units	1	B3G2808	07/28/2023	07/29/2023	
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SAR by 20B Saturated Paste

SAR	0.510			SAR	1	B3G2805	07/28/2023	07/31/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.586		0.00500	mmhos/cm	1	B3G2808	07/28/2023	07/29/2023	
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Origins Laboratory, Inc.



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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G2817 - EPA 3550B										
Blank (B3G2817-BLK1)										
					Prepared: 07/28/2023 Analyzed: 07/28/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	24		"	24.9		96.8	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G2817 - EPA 3550B

LCS (B3G2817-BS1)

Prepared: 07/28/2023 Analyzed: 07/28/2023

Diesel (C10-C28)	1100	50.0	mg/kg	1000		110	70-130			
Residual Range Organics (C28-C40)	1130	200	"	1000		113	70-130			
Surrogate: o-Terphenyl	64		"	49.8		128	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G2817 - EPA 3550B

Matrix Spike (B3G2817-MS1)	Source: Y307568-01			Prepared: 07/28/2023 Analyzed: 07/28/2023						
Diesel (C10-C28)	1260	50.0	mg/kg	1000	239	102	70-130			
Residual Range Organics (C28-C40)	1660	200	"	1000	637	102	70-130			
Surrogate: o-Terphenyl	52		"	49.8		104	50-150			

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, LLC
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G2817 - EPA 3550B

Matrix Spike Dup (B3G2817-MSD1)	Source: Y307568-01			Prepared: 07/28/2023 Analyzed: 07/28/2023						
Diesel (C10-C28)	1100	50.0	mg/kg	1000	239	86.5	70-130	13.4	35	
Residual Range Organics (C28-C40)	1490	200	"	1000	637	85.6	70-130	10.4	35	
Surrogate: o-Terphenyl	58		"	49.8		116	50-150			

Origins Laboratory, Inc.



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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G3108 - EPA 5030 (soil)

Blank (B3G3108-BLK1)

Prepared: 07/31/2023 Analyzed: 08/01/2023

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	0.12		"	0.125	96.0		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	104		70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125	90.6		70-130			

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G3108 - EPA 5030 (soil)

LCS (B3G3108-BS1)

Prepared: 07/31/2023 Analyzed: 08/01/2023

1,2,4-Trimethylbenzene	0.0997	0.00200	mg/kg	0.100		99.7	70-130			
1,3,5-Trimethylbenzene	0.101	0.00200	"	0.100		101	70-130			
Benzene	0.0820	0.00200	"	0.100		82.0	70-130			
Ethylbenzene	0.0972	0.00200	"	0.100		97.2	70-130			
Naphthalene	0.0986	0.00380	"	0.100		98.6	70-130			
Toluene	0.0865	0.00200	"	0.100		86.5	70-130			
o-Xylene	0.0960	0.00200	"	0.100		96.0	70-130			
m,p-Xylene	0.198	0.00400	"	0.200		98.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G3108 - EPA 5030 (soil)

Matrix Spike (B3G3108-MS1)	Source: Y307561-01			Prepared: 07/31/2023 Analyzed: 08/01/2023						
1,2,4-Trimethylbenzene	0.0908	0.00200	mg/kg	0.100	ND	90.8	70-130			
1,3,5-Trimethylbenzene	0.0929	0.00200	"	0.100	ND	92.9	70-130			
Benzene	0.0753	0.00200	"	0.100	ND	75.3	70-130			
Ethylbenzene	0.0967	0.00200	"	0.100	ND	96.7	70-130			
Naphthalene	0.0929	0.00380	"	0.100	ND	92.9	70-130			
Toluene	0.0797	0.00200	"	0.100	0.000540	79.2	70-130			
o-Xylene	0.0919	0.00200	"	0.100	ND	91.9	70-130			
m,p-Xylene	0.194	0.00400	"	0.200	ND	97.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		109	70-130			

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Eagle Environmental Consulting, LLC
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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G3108 - EPA 5030 (soil)

Matrix Spike Dup (B3G3108-MSD1)	Source: Y307561-01			Prepared: 07/31/2023 Analyzed: 08/01/2023						
1,2,4-Trimethylbenzene	0.0963	0.00200	mg/kg	0.100	ND	96.3	70-130	5.86	20	
1,3,5-Trimethylbenzene	0.0990	0.00200	"	0.100	ND	99.0	70-130	6.36	20	
Benzene	0.0793	0.00200	"	0.100	ND	79.3	70-130	5.25	20	
Ethylbenzene	0.0947	0.00200	"	0.100	ND	94.7	70-130	2.15	20	
Naphthalene	0.113	0.00380	"	0.100	ND	113	70-130	19.5	20	
Toluene	0.0804	0.00200	"	0.100	0.000540	79.9	70-130	0.874	20	
o-Xylene	0.0949	0.00200	"	0.100	ND	94.9	70-130	3.19	20	
m,p-Xylene	0.191	0.00400	"	0.200	ND	95.5	70-130	1.56	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 B3G2805 - Saturated Paste Metals

Blank (B3G2805-BLK1)

Prepared: 07/28/2023 Analyzed: 07/31/2023

SAR	0.00		SAR							
Calcium PPM	ND	10.0	mg/L							
Magnesium PPM	ND	10.0	"							
Sodium PPM	ND	10.0	"							

Duplicate (B3G2805-DUP1)

Source: Y307577-01

Prepared: 07/28/2023 Analyzed: 07/31/2023

SAR	0.00		SAR		0.329			200	200	
Calcium PPM	27.3	10.0	mg/L		23.5			15.1	50	
Magnesium PPM	3.84	10.0	"		3.03			23.6	50	
Sodium PPM	7.29	10.0	"		6.37			13.5	50	

Batch B3G2906 - DTPA Sorbitol Preparation

Blank (B3G2906-BLK1)

Prepared: 07/29/2023 Analyzed: 08/01/2023

Boron	ND	0.100	mg/L							
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Duplicate (B3G2906-DUP1)

Source: Y307599-01

Prepared: 07/29/2023 Analyzed: 08/01/2023

Boron	0.218	0.0989	mg/L		0.227			4.08	50	
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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

Saturated Paste - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3G2808 - Saturated Paste pH/EC										
Blank (B3G2808-BLK1)					Prepared: 07/28/2023 Analyzed: 07/29/2023					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B3G2808-DUP1)					Source: Y307577-01 Prepared: 07/28/2023 Analyzed: 07/29/2023					
pH	8.18		pH Units		8.45			3.25	25	
Specific Conductance (EC)	0.475	0.00500	mmhos/cm		0.519			8.94	25	

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 L695982 - 3550B

MSD (L 87963-MSD-L695982)		Source: 87963			Prepared: 08/01/2023 Analyzed: 08/01/2023					
Dibenz(a,h)anthracene	0.101	0.00067	mg/Kg	0.166	<0.000614	60.8	30-130	44	30	*
Indeno(1,2,3-cd)pyrene	0.0645	0.00067	"	0.166	<0.000627	38.8	30-130	60.9	30	*
1-Methylnaphthalene	0.102	0.00201	"	0.166	<0.00109	61.4	30-130	7.4	30	
Chrysene	0.111	0.00067	"	0.166	0.000974	66.2	30-130	1.8	30	
Benzo(k)fluoranthene	0.0765	0.00067	"	0.166	<0.000437	46	30-130	32.3	30	*
Benzo(b)fluoranthene	0.0706	0.00067	"	0.166	0.00129	41.7	30-130	25	30	
Benzo(a)pyrene	0.119	0.00067	"	0.166	0.00108	71	30-130	9.6	30	
Benzo(a)anthracene	0.107	0.00067	"	0.166	<0.000493	64.4	30-130	8.4	30	
Pyrene	0.12	0.00067	"	0.166	0.00122	71.5	30-130	2.5	30	
Acenaphthene	0.102	0.00067	"	0.166	<0.000304	61.4	30-130	0.9	30	
2-Methylnaphthalene	0.101	0.00201	"	0.166	<0.00194	60.8	30-130	7.3	30	
Fluoranthene	0.117	0.00067	"	0.166	0.00138	69.6	30-130	3.4	30	
Fluorene	0.111	0.00067	"	0.166	<0.000286	66.8	30-130	1.8	30	
Anthracene	0.12	0.00067	"	0.166	<0.000334	72.2	30-130	3.3	30	
Surrogate: 4-Terphenyl-d14	70.1		"	0.332	250	70.1	33-122			
Surrogate: Nitrobenzene-d5	53.6		"	0.332	191	53.6	29-110			
Surrogate: 2-Fluorobiphenyl	58.7		"	0.332	204	58.7	33-115			

MS (L 87963-MS-L695982)		Source: 87963			Prepared: 08/01/2023 Analyzed: 08/01/2023					
Benzo(a)anthracene	0.0983	0.00067	mg/Kg	0.164	<0.000493	59.9	30-130			
Pyrene	0.117	0.00067	"	0.164	0.00122	70.5	30-130			
Benzo(a)pyrene	0.108	0.00067	"	0.164	0.00108	65.1	30-130			
1-Methylnaphthalene	0.0947	0.00201	"	0.164	<0.00109	57.7	30-130			
2-Methylnaphthalene	0.0938	0.00201	"	0.164	<0.00194	57.1	30-130			
Acenaphthene	0.101	0.00067	"	0.164	<0.000304	61.5	30-130			
Benzo(b)fluoranthene	0.0908	0.00067	"	0.164	0.00129	54.5	30-130			
Anthracene	0.116	0.00067	"	0.164	<0.000334	70.7	30-130			

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 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 L695982 - 3550B

MS (L 87963-MS-L695982)		Source: 87963			Prepared: 08/01/2023 Analyzed: 08/01/2023					
Indeno(1,2,3-cd)pyrene	0.121	0.00067	mg/Kg	0.164	<0.000627	73.7	30-130			
Benzo(k)fluoranthene	0.106	0.00067	"	0.164	<0.000437	64.6	30-130			
Chrysene	0.109	0.00067	"	0.164	0.000974	65.8	30-130			
Dibenz(a,h)anthracene	0.158	0.00067	"	0.164	<0.000614	96.3	30-130			
Fluoranthene	0.113	0.00067	"	0.164	0.00138	68	30-130			
Fluorene	0.109	0.00067	"	0.164	<0.000286	66.4	30-130			
Surrogate: Nitrobenzene-d5	50.9		"	0.328	191	50.9	29-110			
Surrogate: 2-Fluorobiphenyl	53.3		"	0.328	204	53.3	33-115			
Surrogate: 4-Terphenyl-d14	64.6		"	0.328	250	64.6	33-122			

LCS (LCS-L695982)					Prepared: 08/01/2023 Analyzed: 08/01/2023					
Pyrene	0.121	0.00067	mg/Kg	0.167		72.4	30-130			
Acenaphthene	0.101	0.00067	"	0.167		60.4	30-130			
Indeno(1,2,3-cd)pyrene	0.124	0.00067	"	0.167		74.2	30-130			
Dibenz(a,h)anthracene	0.165	0.00067	"	0.167		98.8	30-130			
Chrysene	0.113	0.00067	"	0.167		67.6	30-130			
Benzo(k)fluoranthene	0.12	0.00067	"	0.167		71.8	30-130			
Benzo(b)fluoranthene	0.0961	0.00067	"	0.167		57.5	30-130			
Benzo(a)anthracene	0.107	0.00067	"	0.167		64	30-130			
Anthracene	0.119	0.00067	"	0.167		71.2	30-130			
Fluoranthene	0.119	0.00067	"	0.167		71.2	30-130			
2-Methylnaphthalene	0.0972	0.00201	"	0.167		58.2	30-130			
1-Methylnaphthalene	0.098	0.00201	"	0.167		58.6	30-130			
Fluorene	0.112	0.00067	"	0.167		67	30-130			
Benzo(a)pyrene	0.118	0.00067	"	0.167		70.6	30-130			
Surrogate: Nitrobenzene-d5	52.8		"	0.333		52.8	29-110			
Surrogate: 4-Terphenyl-d14	67.2		"	0.333		67.2	33-122			

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Martin C Eckert III
 Project Number: [none]
 Project: Noble - Vern Marshall #1

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 L695982 - 3550B										
LCS (LCS-L695982)					Prepared: 08/01/2023 Analyzed: 08/01/2023					
Surrogate: 2-Fluorobiphenyl	56.1		mg/Kg	0.333		56.1	33-115			
LRB (LRB-L695982)					Prepared: 08/01/2023 Analyzed: 08/01/2023					
Dibenz(a,h)anthracene	ND	0.00067	mg/Kg				-			
Pyrene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00201	"				-			
1-Methylnaphthalene	ND	0.00201	"				-			
Fluorene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	51		"	0.333		51	29-110			
Surrogate: 4-Terphenyl-d14	70.5		"	0.333		70.5	33-122			
Surrogate: 2-Fluorobiphenyl	58.2		"	0.333		58.2	33-115			

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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Vern Marshall #1

Notes and Definitions

U Sample is Non-Detect.

* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Calculated results may use J-flag data (instead of reported "ND") as part of calculation to provide a more accurate result.

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Jordan A. Bynon, Project Manager