

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: HSR-Massey #5-31		Date: 04/24/23				Remediation Project #: 27643
Associated Wells: 05-123-15256		Age of Site: Years				Number of Photos Attached: 1
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)					40.270760 / -104.713610	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)						
Good Condition						
USCS Soil Type: Clayey SAND				Estimated Depth to Groundwater: Approx. 15-20'		
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	05-123-15256					
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	0.1	0.3	0.1	0.1	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:		
N/A						
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:		
N/A						
Total number of samples collected:				Total Volume of groundwater removed:		
Total number of samples submitted to lab for analysis:						

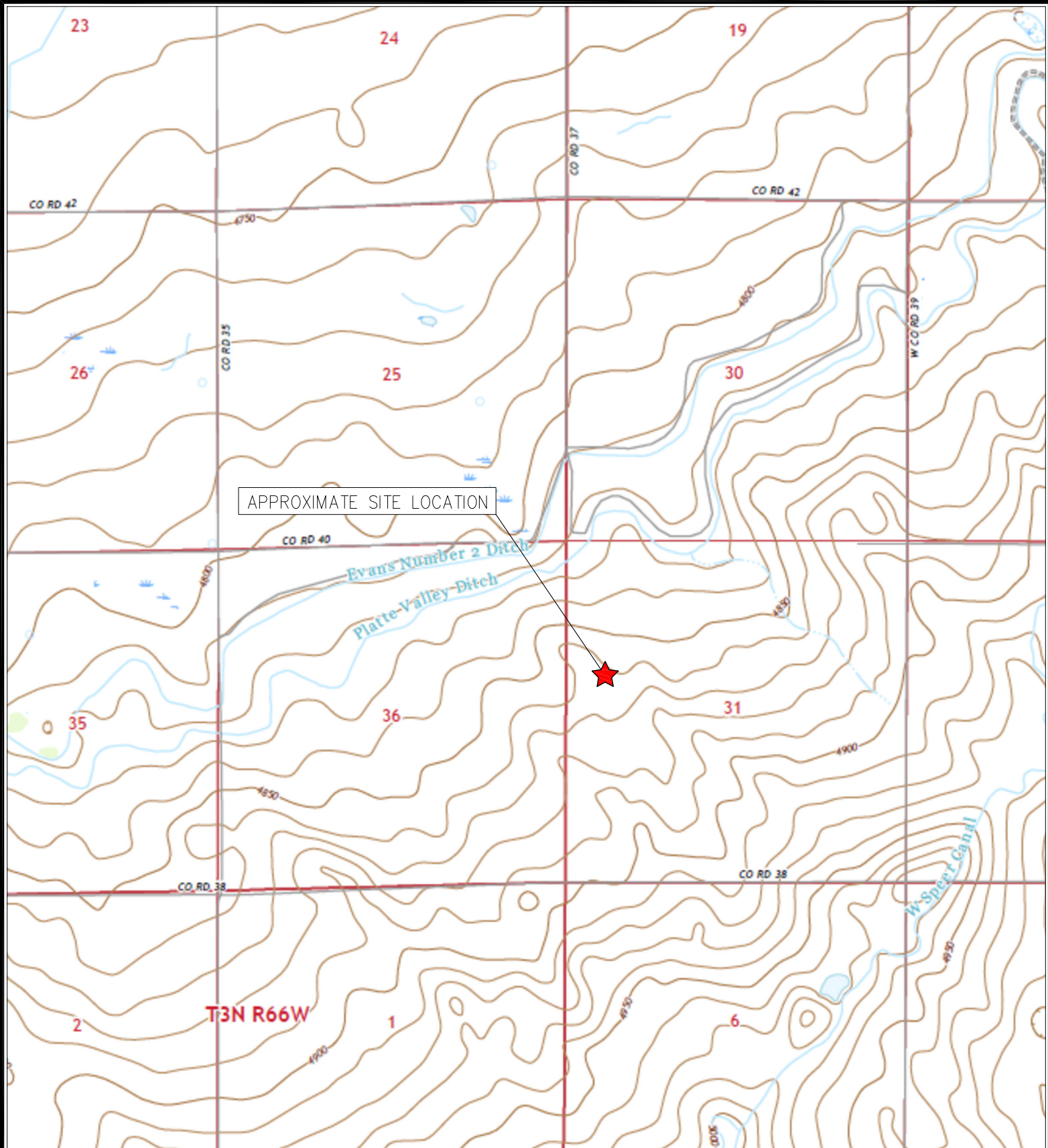


FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map



TOPOGRAPHIC SITE LOCATION MAP
 HSR-MASSEY #5-31
 CLOSURE ASSESSMENT
 40.270760 / -104.713610
 SW¼ NW¼ SEC.31 T4N R65W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-15256
 REMEDIATION # 27643



EAGLE
 ENVIRONMENTAL
 CONSULTING, LLC




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

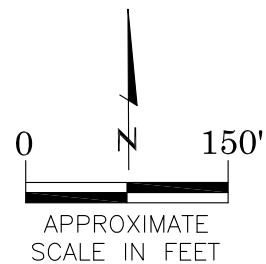
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP
 LA SALLE, CO QUADRANGLE 2022

FIGURE NO. 1



LEGEND

-  FORMER HSR-MASSEY #5-31 WELLHEAD (PLUGGED AND ABANDONED)
-  ASSOCIATED SEPARATOR
-  APPROXIMATE FLOWLINE LOCATION



AERIAL SITE LOCATION MAP

HSR-MASSEY #5-31
CLOSURE ASSESSMENT
40.270760 / -104.713610
SW¼ NW¼ SEC.31 T4N R65W 6PM
WELD COUNTY, COLORADO
API # 05-123-15256
REMEDATION # 27643

FIGURE NO.
2

DRAWN BY:
CT



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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
HSR-MASSEY #5-31
CLOSURE ASSESSMENT
40.270760 / -104.713610
SW¼ NW¼ SEC.31 T4N R65W 6PM
WELD COUNTY, COLORADO
API # 05-123-15256
REMEDATION # 27643

FIGURE NO.
3

DRAWN BY:
CT



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TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
HSR-MASSEY #5-31
CLOSURE ASSESSMENT
40.270760 / -104.713610
SW¼ NW¼ SEC.31 T4N R65W 6PM
WELD COUNTY, COLORADO
API # 05-123-15256
REMEDATION # 27643

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-SS-01 @ 5' (40.270779 / -104.713640)	04/24/23	5	0.1	N
WH-SS-02 @ 5' (40.270767 / -104.713625)	04/24/23	5	0.3	N
WH-SS-03 @ 5' (40.270757 / -104.713637)	04/24/23	5	0.1	N
WH-SS-04 @ 5' (40.270766 / -104.713657)	04/24/23	5	0.1	N
WH-FS-01 @ 6' (40.270764 / -104.713638)	04/24/23	6	0.6	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
HSR-MASSEY #5-31
CLOSURE ASSESSMENT
40.270760 / -104.713610
SW¼ NW¼ SEC.31 T4N R65W 6PM
WELD COUNTY, COLORADO
API # 05-123-15256
REMEDATION # 27643

Sample Location			WH-FS-01 @ 6'	
(Latitude / Longitude)			(40.270764 / -104.713638)	
Sample Date			04/24/23	
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	
VOLATILE ORGANIC COMPOUNDS				
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	<0.00067
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
Naphthalene	mg/kg	2	0.0038	<0.00201
Pyrene	mg/kg	180	1.3	<0.00067
SOIL SUITABILITY (Inorganics)				
Boron	mg/L	2	--	<0.101
pH	standard unit	6-8.3	--	8.02
Sodium Adsorption Ratio (SAR)	--	<6	--	0.608
Specific Conductance (EC)	mmhos/cm	<4	--	0.293

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
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.

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

HSR-Massey #5-31

API # 05-123-15256

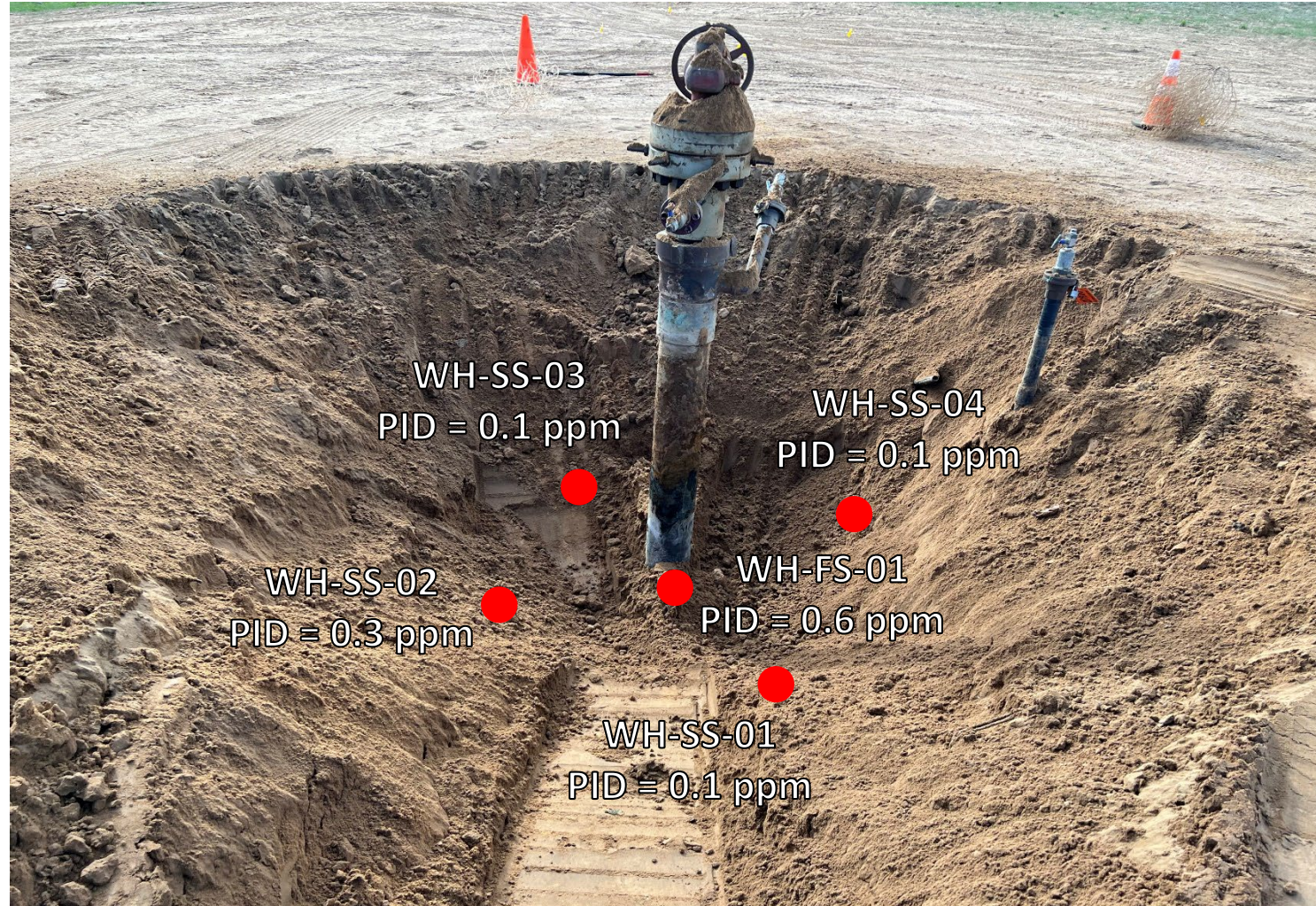
Remediation # 27643

Closure Assessment

April 2023



Wellhead Excavation – 04/24/23



Looking southwest

No petroleum hydrocarbon staining or odor observed



ATTACHMENT B

Laboratory Analytical Report



May 08, 2023

Eagle Environmental Consulting, LLC

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - HSR - Massey #5-31

Project Number - [none]

Attached are your analytical results for Noble - HSR - Massey #5-31 received by Origins Laboratory, Inc. April 24, 2023. This project is associated with Origins project number Y304542-01.

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, LLC
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - HSR - Massey #5-31

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@6'	Y304542-01	Soil	April 24, 2023 8:48	04/24/2023 14:37

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 - HSR - Massey #5-31

4304542

page 1 of 1

Client: Eagle Environmental Consulting
Address: 8000 W 44th Ave
Wheat Ridge, CO 80033
Telephone Number: 303-433-0479
Email Address: McC3@eagle-enviro.com

Project Manager: Martin Eckert III
Project Name: HSR-Massey #5-31
Project Number: —
Samples Collected By: GLK

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix		Analysis			Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other		PAHs
WH-ES-01 @ 6'	4/24/23	0848	3	X				X		X	X	X	EC-SAR, pH by 1
													Saturated pack prep 2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By: [Signature] Date: 4/24/23 Time: 1437
Relinquished By: [Signature] Date: 4/24/23 Time: 1457

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☒

Temp Received: 4 Date Results Needed: Noble

Origins Laboratory, Inc.

[Signature]

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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 - HSR - Massey #5-31

Origins Laboratory

Sample Receipt Checklist

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

Origins Work Order: 430453742

Client: Eagle

Client Project ID: Massey #5-31

Checklist Completed by: EHS (TOM)

Shipped Via: HO

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4/24/23

Airbill #: NA

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid

☐ Water

☐ Other:

Cooler Number/Temperature: 1 / 4.0 °C

1 / °C

 / °C (Describe)

Thermometer ID: T0043

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)

Date/Time Reviewed 4/26/23

Origins Laboratory, Inc.

J. Bynon

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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 - HSR - Massey #5-31

WH-FS-01@6'

4/24/2023 8:48:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y304542-01 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.101	mg/L	1	B3D2715	04/27/2023	05/02/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3D2636	04/26/2023	04/29/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	107 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3D2602	04/26/2023	04/27/2023	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	123 %	70-130			"	"	"	
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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 - HSR - Massey #5-31

WH-FS-01@6'

4/24/2023 8:48:00AM

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

Origins Laboratory, Inc.
Y304542-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	93.4 %	70-130	B3D26 02	04/26/2023	04/27/2023
Surrogate: 4-Bromofluorobenzene	94.1 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	1.26	0.499	meq/L	10	[CALC]	04/27/2023	04/28/2023
Magnesium	ND	0.823	"	"	"	"	"
Sodium	0.534	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L678675	04/27/2023	04/28/2023
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	"	"	"	"	"
Fluoranthene	ND	0.000394	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 - HSR - Massey #5-31

WH-FS-01@6'

4/24/2023 8:48:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y304542-01 (Soil)

PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L678675	04/27/2023	04/28/2023
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.00145	0.00201	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	47.1 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	57.7 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	51.1 %	29-110	"	"	"

pH in Soil by 9045D

pH	8.02	pH Units	1	B3D2719	04/27/2023	04/28/2023
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SAR by 20B Saturated Paste

SAR	0.608	SAR	1	B3D2711	04/27/2023	04/28/2023
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.293	0.00500	mmhos/cm	1	B3D2719	04/27/2023	04/28/2023
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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 - HSR - Massey #5-31

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 B3D2602 - EPA 5030 (soil)										
Blank (B3D2602-BLK1)					Prepared: 04/26/2023 Analyzed: 04/26/2023					
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	0.13		"	0.125	102		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	96.2		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	92.2		70-130			

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 - HSR - Massey #5-31

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 B3D2602 - EPA 5030 (soil)										
LCS (B3D2602-BS1)					Prepared: 04/26/2023 Analyzed: 04/26/2023					
1,2,4-Trimethylbenzene	0.116	0.00200	mg/kg	0.100		116	70-130			
1,3,5-Trimethylbenzene	0.110	0.00200	"	0.100		110	70-130			
Benzene	0.0986	0.00200	"	0.100		98.6	70-130			
Ethylbenzene	0.110	0.00200	"	0.100		110	70-130			
Naphthalene	0.106	0.00380	"	0.100		106	70-130			
Toluene	0.0961	0.00200	"	0.100		96.1	70-130			
o-Xylene	0.119	0.00200	"	0.100		119	70-130			
m,p-Xylene	0.231	0.00400	"	0.200		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	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 - HSR - Massey #5-31

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 B3D2602 - EPA 5030 (soil)										
Matrix Spike (B3D2602-MS1)		Source: Y304514-01			Prepared: 04/26/2023 Analyzed: 04/26/2023					
1,2,4-Trimethylbenzene	0.105	0.00200	mg/kg	0.100	ND	105	70-130			
1,3,5-Trimethylbenzene	0.189	0.00200	"	0.100	0.0825	107	70-130			
Benzene	0.0871	0.00200	"	0.100	ND	87.1	70-130			
Ethylbenzene	0.106	0.00200	"	0.100	ND	106	70-130			
Naphthalene	0.0888	0.00380	"	0.100	0.00198	86.8	70-130			
Toluene	0.0925	0.00200	"	0.100	ND	92.5	70-130			
o-Xylene	0.155	0.00200	"	0.100	0.0407	115	70-130			
m,p-Xylene	0.215	0.00400	"	0.200	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, LLC
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Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - HSR - Massey #5-31

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 B3D2602 - EPA 5030 (soil)										
Matrix Spike Dup (B3D2602-MSD1)			Source: Y304514-01		Prepared: 04/26/2023 Analyzed: 04/26/2023					
1,2,4-Trimethylbenzene	0.0986	0.00200	mg/kg	0.100	ND	98.6	70-130	6.67	20	
1,3,5-Trimethylbenzene	0.199	0.00200	"	0.100	0.0825	117	70-130	5.10	20	
Benzene	0.0889	0.00200	"	0.100	ND	88.9	70-130	2.07	20	
Ethylbenzene	0.100	0.00200	"	0.100	ND	100	70-130	5.46	20	
Naphthalene	0.0923	0.00380	"	0.100	0.00198	90.4	70-130	3.91	20	
Toluene	0.0888	0.00200	"	0.100	ND	88.8	70-130	4.08	20	
o-Xylene	0.161	0.00200	"	0.100	0.0407	121	70-130	3.95	20	
m,p-Xylene	0.204	0.00400	"	0.200	ND	102	70-130	5.31	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	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 - HSR - Massey #5-31

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 B3D2636 - EPA 3550B										
Blank (B3D2636-BLK1)					Prepared: 04/26/2023 Analyzed: 04/29/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	23		"	24.9		94.0	50-150			

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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 - HSR - Massey #5-31

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 B3D2636 - EPA 3550B										
LCS (B3D2636-BS1)					Prepared: 04/26/2023 Analyzed: 04/29/2023					
Diesel (C10-C28)	930	50.0	mg/kg	1000		93.0	70-130			
Residual Range Organics (C28-C40)	908	200	"	1000		90.8	70-130			
Surrogate: o-Terphenyl	53		"	49.8		107	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 - HSR - Massey #5-31

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 B3D2636 - EPA 3550B

Matrix Spike (B3D2636-MS1)		Source: Y304537-01			Prepared: 04/26/2023 Analyzed: 04/29/2023					
Diesel (C10-C28)	936	50.0	mg/kg	1000	ND	93.6	70-130			
Residual Range Organics (C28-C40)	910	200	"	1000	ND	91.0	70-130			
Surrogate: o-Terphenyl	52		"	49.8		105	50-150			

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Jordan A. Bynon, Project Manager

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

Martin C Eckert III
Project Number: [none]
Project: Noble - HSR - Massey #5-31

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 B3D2636 - EPA 3550B

Matrix Spike Dup (B3D2636-MSD1)		Source: Y304537-01			Prepared: 04/26/2023 Analyzed: 04/29/2023					
Diesel (C10-C28)	1010	50.0	mg/kg	1000	ND	101	70-130	7.69	35	
Residual Range Organics (C28-C40)	987	200	"	1000	ND	98.7	70-130	8.09	35	
Surrogate: o-Terphenyl	56		"	49.8		112	50-150			

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Jordan A. Bynon, Project Manager

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

Martin C Eckert III
Project Number: [none]
Project: Noble - HSR - Massey #5-31

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 B3D2711 - Saturated Paste Metals

Blank (B3D2711-BLK1)

Prepared: 04/27/2023 Analyzed: 04/28/2023

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

Duplicate (B3D2711-DUP1)

Source: Y304542-01

Prepared: 04/27/2023 Analyzed: 04/28/2023

SAR	0.00		SAR	0.608	200	200
Calcium PPM	23.6	10.0	mg/L	25.2	6.64	50
Magnesium PPM	3.23	10.0	"	3.46	7.03	50
Sodium PPM	12.2	10.0	"	12.3	0.474	50

Batch B3D2715 - DTPA Sorbitol Preparation

Blank (B3D2715-BLK1)

Prepared: 04/27/2023 Analyzed: 05/02/2023

Boron	ND	0.100	mg/L
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Duplicate (B3D2715-DUP1)

Source: Y304515-01

Prepared: 04/27/2023 Analyzed: 05/02/2023

Boron	1.67	0.101	mg/L	1.63	2.57	50
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8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - HSR - Massey #5-31

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 L678675 - 3550B

MSD (L 82886-MSD-L678675)		Source: 82886			Prepared: 04/27/2023 Analyzed: 04/28/2023					
2-Methylnaphthalene	0.107	0.00201	mg/Kg	0.166	<0.00194	64.4	30-130	7.4	30	
1-Methylnaphthalene	0.107	0.00201	"	0.166	<0.00109	64.4	30-130	8.1	30	
Indeno(1,2,3-cd)pyrene	0.109	0.00067	"	0.166	<0.000627	65.6	30-130	18.7	30	
Pyrene	0.125	0.00067	"	0.166	<0.000643	75.3	30-130	8.3	30	
Naphthalene	0.104	0.00201	"	0.166	<0.00145	62.6	30-130	7.4	30	
Fluorene	0.119	0.00067	"	0.166	<0.000286	71.6	30-130	11.5	30	
Fluoranthene	0.13	0.00067	"	0.166	<0.000394	78.3	30-130	7.1	30	
Dibenz(a,h)anthracene	0.111	0.00067	"	0.166	<0.000614	66.8	30-130	27.1	30	
Anthracene	0.12	0.00067	"	0.166	<0.000334	72.2	30-130	8.6	30	
Acenaphthene	0.113	0.00067	"	0.166	<0.000304	68	30-130	12.2	30	
Chrysene	0.115	0.00067	"	0.166	<0.000624	69.2	30-130	10	30	
Benzo(a)anthracene	0.135	0.00067	"	0.166	<0.000493	81.3	30-130	8.4	30	
Benzo(a)pyrene	0.128	0.00067	"	0.166	<0.000468	77.1	30-130	8.1	30	
Benzo(b)fluoranthene	0.123	0.00067	"	0.166	<0.000585	74	30-130	12	30	
Benzo(k)fluoranthene	0.109	0.00067	"	0.166	<0.000437	65.6	30-130	11.2	30	
Surrogate: 4-Terphenyl-d14	65.5		"	0.331	178	65.5	33-122			
Surrogate: 2-Fluorobiphenyl	49.8		"	0.331	135	49.8	33-115			
Surrogate: Nitrobenzene-d5	57.4		"	0.331	153	57.4	29-110			

MS (L 82886-MS-L678675)		Source: 82886			Prepared: 04/27/2023 Analyzed: 04/28/2023					
Anthracene	0.11	0.00067	mg/Kg	0.166	<0.000334	66.2	30-130			
Chrysene	0.104	0.00067	"	0.166	<0.000624	62.6	30-130			
Naphthalene	0.0965	0.00201	"	0.166	<0.00145	58.1	30-130			
Indeno(1,2,3-cd)pyrene	0.0903	0.00067	"	0.166	<0.000627	54.3	30-130			
Fluorene	0.106	0.00067	"	0.166	<0.000286	63.8	30-130			
Fluoranthene	0.121	0.00067	"	0.166	<0.000394	72.8	30-130			
Dibenz(a,h)anthracene	0.0845	0.00067	"	0.166	<0.000614	50.9	30-130			

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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 - HSR - Massey #5-31

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 L678675 - 3550B

MS (L 82886-MS-L678675)		Source: 82886			Prepared: 04/27/2023 Analyzed: 04/28/2023					
Pyrene	0.115	0.00067	mg/Kg	0.166	<0.000643	69.2	30-130			
Benzo(b)fluoranthene	0.109	0.00067	"	0.166	<0.000585	65.6	30-130			
Benzo(a)anthracene	0.124	0.00067	"	0.166	<0.000493	74.6	30-130			
Acenaphthene	0.1	0.00067	"	0.166	<0.000304	60.2	30-130			
2-Methylnaphthalene	0.0993	0.00201	"	0.166	<0.00194	59.8	30-130			
Benzo(k)fluoranthene	0.0974	0.00067	"	0.166	<0.000437	58.6	30-130			
Benzo(a)pyrene	0.118	0.00067	"	0.166	<0.000468	71	30-130			
1-Methylnaphthalene	0.0986	0.00201	"	0.166	<0.00109	59.3	30-130			
Surrogate: Nitrobenzene-d5	52.8		"	0.331	153	52.8	29-110			
Surrogate: 2-Fluorobiphenyl	46.2		"	0.331	135	46.2	33-115			
Surrogate: 4-Terphenyl-d14	59.8		"	0.331	178	59.8	33-122			

LCS (LCS-L678675)		Prepared: 04/27/2023 Analyzed: 04/28/2023								
Dibenz(a,h)anthracene	0.0937	0.00067	mg/Kg	0.167		56.1	30-130			
Fluoranthene	0.13	0.00067	"	0.167		77.8	30-130			
Fluorene	0.116	0.00067	"	0.167		69.4	30-130			
Indeno(1,2,3-cd)pyrene	0.0911	0.00067	"	0.167		54.5	30-130			
Naphthalene	0.107	0.00201	"	0.167		64	30-130			
Pyrene	0.125	0.00067	"	0.167		74.8	30-130			
1-Methylnaphthalene	0.109	0.00201	"	0.167		65.2	30-130			
Chrysene	0.11	0.00067	"	0.167		65.8	30-130			
Benzo(b)fluoranthene	0.118	0.00067	"	0.167		70.6	30-130			
Benzo(a)pyrene	0.125	0.00067	"	0.167		74.8	30-130			
Benzo(a)anthracene	0.131	0.00067	"	0.167		78.4	30-130			
Anthracene	0.118	0.00067	"	0.167		70.6	30-130			
Acenaphthene	0.11	0.00067	"	0.167		65.8	30-130			
2-Methylnaphthalene	0.109	0.00201	"	0.167		65.2	30-130			

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Martin C Eckert III
Project Number: [none]
Project: Noble - HSR - Massey #5-31

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 L678675 - 3550B										
LCS (LCS-L678675)					Prepared: 04/27/2023 Analyzed: 04/28/2023					
Benzo(k)fluoranthene	0.103	0.00067	mg/Kg	0.167		61.6	30-130			
Surrogate: Nitrobenzene-d5	60		"	0.333		60	29-110			
Surrogate: 4-Terphenyl-d14	67.2		"	0.333		67.2	33-122			
Surrogate: 2-Fluorobiphenyl	56.4		"	0.333		56.4	33-115			
LRB (LRB-L678675)					Prepared: 04/27/2023 Analyzed: 04/28/2023					
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	52.5		"	0.333		52.5	29-110			
Surrogate: 4-Terphenyl-d14	60.6		"	0.333		60.6	33-122			
Surrogate: 2-Fluorobiphenyl	50.4		"	0.333		50.4	33-115			

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Martin C Eckert III
Project Number: [none]
Project: Noble - HSR - Massey #5-31

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.

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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