

# Wellhead Closure Checklist

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

Additional attachments (optional): <u>      </u>		Pit Closure <u>      </u>		Tank Battery Closure <u>      </u>		Flowline Closure <u>      </u>		Partially Buried Vault Closure <u>      </u>
Site Name & COGCC Facility Number: <b>Huntsman G #13-9</b>		Date: <b>11/17/23</b>					Remediation Project #: <b>31082</b>	
Associated Wells: <b>05-123-16321</b>		Age of Site: <b>years</b>					Number of Photos Attached: <b>6</b>	
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) <b>40.310550 / -104.604642</b>							Estimated Facility Size (acres): <u>      </u>	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) <b>Good condition</b>								
USCS Soil Type: <b>Silty SAND</b>					Estimated Depth to Groundwater: <b>~10-20'</b>			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) <b>None observed</b>								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) <b>None observed</b>								
Wellhead(s)								
Well API	<b>05-123-16321</b>							
Age	<b>years</b>							
Condition of surface around wellhead	<b>Good - No odor/no staining</b>							
PID Readings	<b>WH-N: 0.8</b>	<b>WH-E: 0.6</b>	<b>WH-S: 1.1</b>	<b>WH-W: 1.0</b>				
Condition of subsurface (staining present)	<b>Good - No odor/no staining</b>							
PID Readings	<b>1.5</b>	<b>1.8</b>	<b>2.2</b>	<b>1.7</b>	<b>2.4</b>			
Sample taken? Location/Sample ID#	<b>WH-SS-01</b>	<b>WH-SS-02</b>	<b>WH-SS-03</b>	<b>WH-SS-04</b>	<b>WH-FS-01</b>			
Photo Number(s)	<b>See photo log</b>							
Other observations regarding wellheads: <b>Well casing cut/capped following assessment</b>								
Summary								
Was impacted soil identified? <b>(No)</b> Yes - less than 10 cubic yards Yes - more than 10 cubic yards								
Total number of samples field screened: <b>9</b>				Total number of samples collected: <b>9</b>				
Highest PID Reading: <b>2.4</b>				Total number of samples submitted to lab for analysis: <b>1</b>				
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:				Estimated spill volume:				
Lateral extent:				Volume of soil removed:				
<b>N/A</b>								
Is additional investigation required?								
Was groundwater encountered during the investigation? <b>(No)</b> 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**

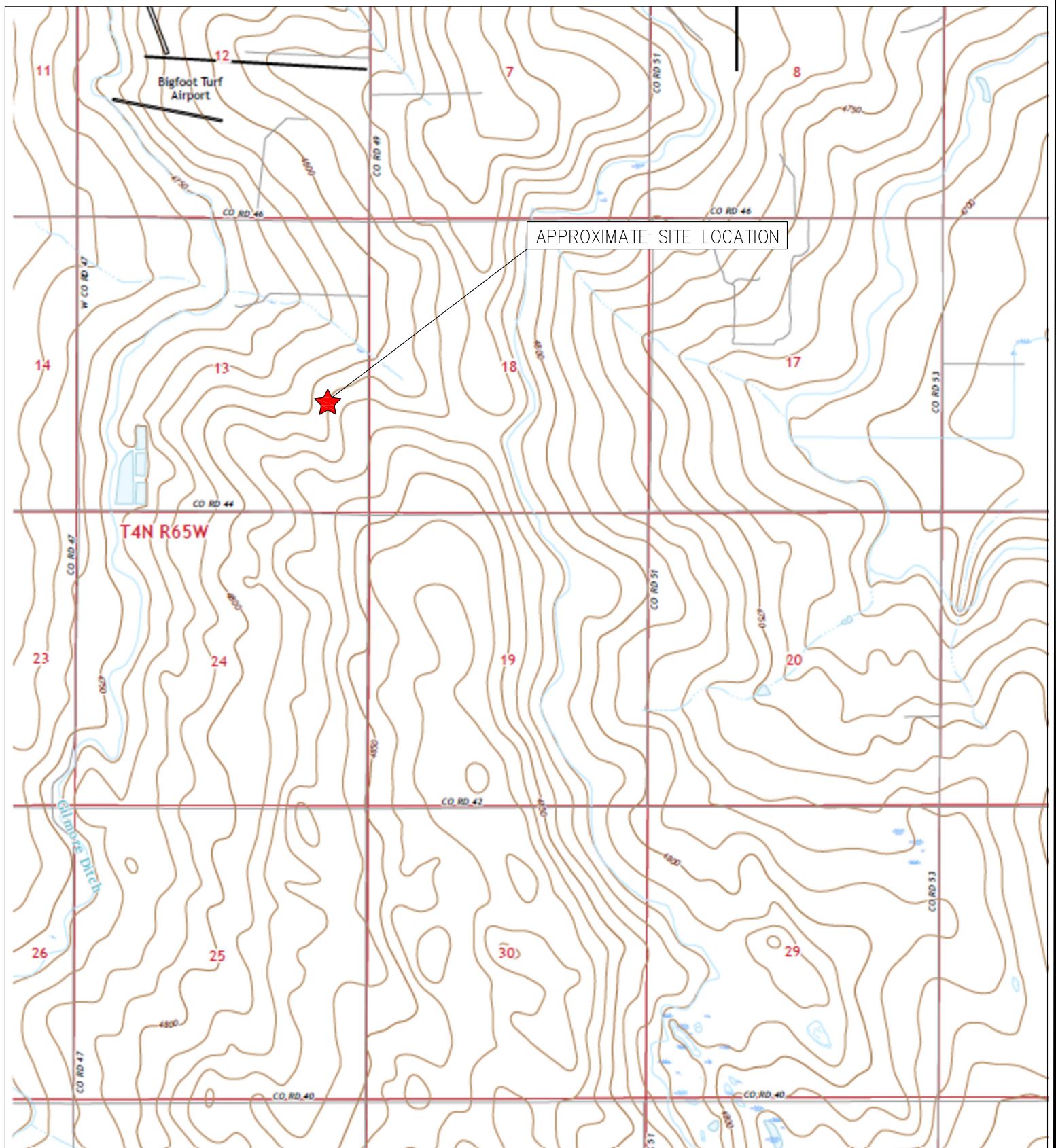
**Figure 1: Topographic Site Location Map**

**Figure 2: Aerial Site Location Map**

**Figure 3: Sample Location Map**

**Figure 4: Soil Analytical Map**

**Figure 5: Metals in Soil Map**



TOPOGRAPHIC SITE LOCATION MAP  
 HUNTSMAN G #13-9  
 CLOSURE ASSESSMENT  
 40.310550 / -104.604642  
 NE¼ SE¼ SEC.13 T4N R65W 6PM  
 WELD COUNTY, COLORADO  
 API # 05-123-16321  
 REMEDIATION # 31082



**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, LLC

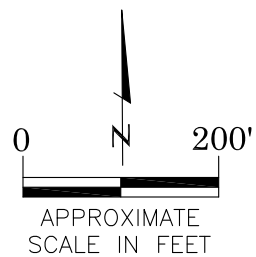
8000 W 44th Ave, Wheat Ridge, CO 80033  
 Ph: 303-433-0479 • F: 303-325-5449





# LEGEND

- FORMER HUNTSMAN G #13-9 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



AERIAL SITE LOCATION MAP  
 HUNTSMAN G #13-9  
 CLOSURE ASSESSMENT  
 40.310550 / -104.604642  
 NE¼ SE¼ SEC.13 T4N R65W 6PM  
 WELD COUNTY, COLORADO  
 API # 05-123-16321  
 REMEDIATION # 31082

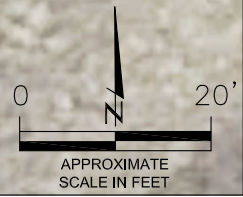
FIGURE NO.  
2

DRAWN BY:  
RS



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





**LEGEND**

- WELLHEAD ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

SAMPLE LOCATION MAP  
 HUNTSMAN G #13-9  
 CLOSURE ASSESSMENT  
 40.310550 / -104.604642  
 NE¼ SE¼ SEC.13 T4N R6SW 6PM  
 WELD COUNTY, COLORADO  
 API # 05-123-16321  
 REMEDIATION # 31082

FIGURE NO.  
3

DRAWN BY:  
RS

**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, LLC

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



#### LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- 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 = 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  
HUNTSMAN G #13-9  
CLOSURE ASSESSMENT  
40.310550 / -104.604642  
NE¼ SE¼ SEC.13 T4N R65W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-16321  
REMEDATION # 31082

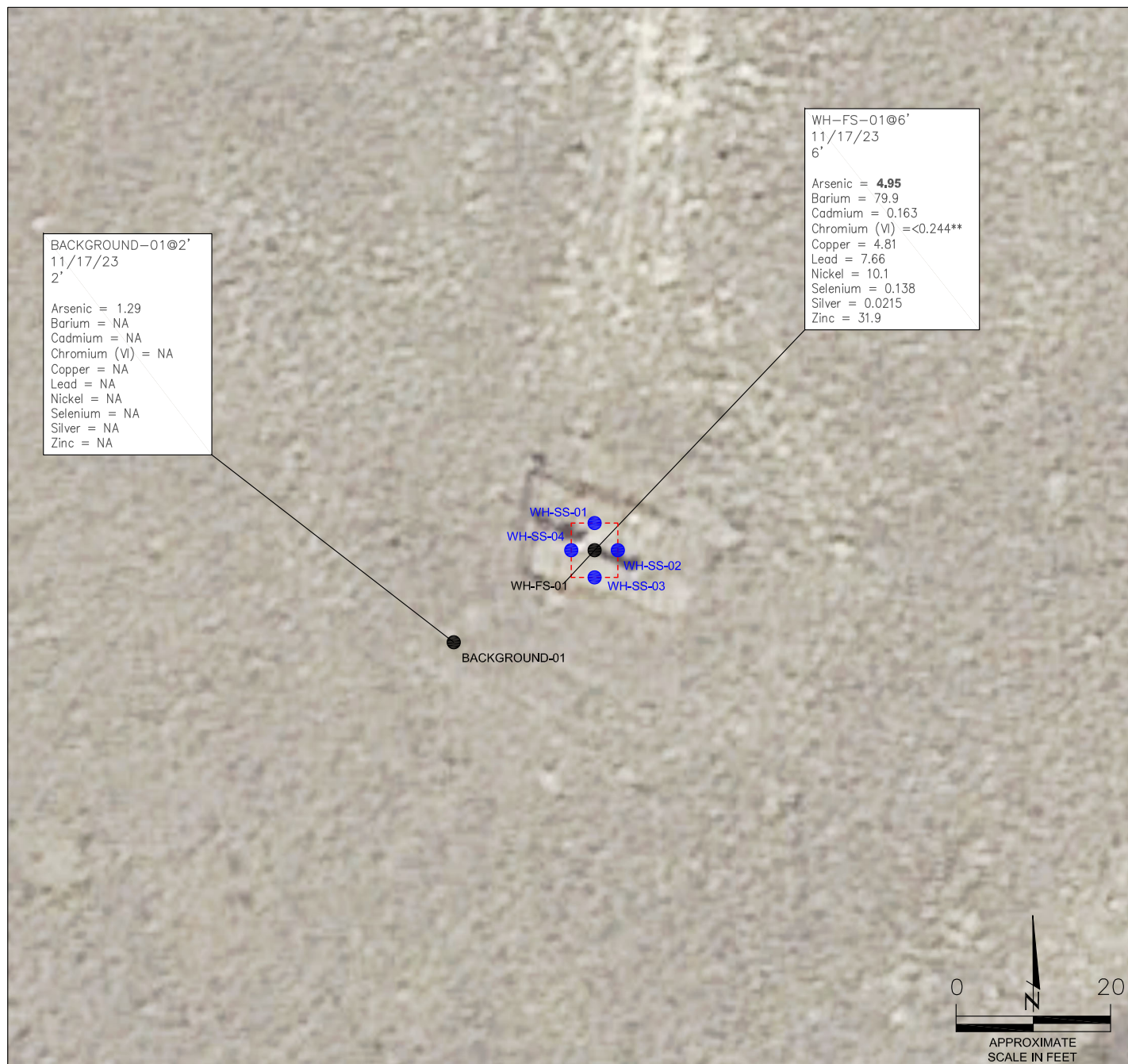
FIGURE NO.  
4

DRAWN BY:  
RS



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





#### LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

#### PARAMETERS

SAMPLE LOCATION  
DATE SAMPLE COLLECTED  
APPROXIMATE DEPTH  
Arsenic = (mg/kg)  
Barium = (mg/kg)  
Cadmium = (mg/kg)  
Chromium (VI) = (mg/kg)  
Copper = (mg/kg)  
Lead = (mg/kg)  
Nickel = (mg/kg)  
Selenium = (mg/kg)  
Silver = (mg/kg)  
Zinc = (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

NA = NOT ANALYZED

#### NOTES:

VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT/OR ABOVE LABORATORY REPORTING LIMITS AND/OR MINIMUM DETECTION LIMITS.

ELEVATED METALS ARE NATURALLY OCCURRING IN COLORADO. LOCAL CLEAN-UP LEVELS ARE 1.25\*BACKGROUND CONCENTRATIONS WHERE APPLICABLE.

VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS AND APPLICABLE LOCAL CLEAN-UP LEVELS.

\*\*ACHIEVABLE PRACTICAL QUANTITATIVE LIMITS FOR HEXAVALENT CHROMIUM (Cr VI) IN SOILS IS IN THE RANGE OF 0.1 TO 1 mg/kg.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

METALS IN SOIL MAP  
HUNTSMAN G #13-9  
CLOSURE ASSESSMENT  
40.310550 / -104.604642  
NE¼ SE¼ SEC.13 T4N R65W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-16321  
REMEDIAION # 31082

FIGURE NO.  
5

DRAWN BY:  
RS



**EAGLE**  
ENVIRONMENTAL  
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**  
**HUNTSMAN G #13-9**  
**CLOSURE ASSESSMENT**  
**40.310550 / -104.604642**  
**NE¼ SE¼ SEC.13 T4N R65W 6PM**  
**WELD COUNTY, COLORADO**  
**API # 05-123-16321**  
**REMEDIALTION # 31082**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-FS-01 @ 6' (40.310571 / -104.604668)	11/17/23	6	2.4	Y
WH-SS-01 @ 5' (40.310579 / -104.604668)	11/17/23	5	1.5	N
WH-SS-02 @ 5' (40.310571 / -104.604658)	11/17/23	5	1.8	N
WH-SS-03 @ 5' (40.310561 / -104.604668)	11/17/23	5	2.2	N
WH-SS-04 @ 5' (40.310571 / -104.604677)	11/17/23	5	1.7	N
WH-N @ 0.5' (40.310590 / -104.604668)	11/17/23	0.5	0.8	N
WH-E @ 0.5' (40.310571 / -104.604641)	11/17/23	0.5	0.6	N
WH-S @ 0.5' (40.310552 / -104.604667)	11/17/23	0.5	1.1	N
WH-W @ 0.5' (40.310570 / -104.604692)	11/17/23	0.5	1.0	N
Background-01 @ 2' (40.310539 / -104.604730)	11/17/23	2	0.3	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2  
SOIL ANALYTICAL RESULTS SUMMARY  
HUNTSMAN G #13-9  
CLOSURE ASSESSMENT  
40.310550 / -104.604642  
NE¼ SEC.13 T4N R65W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-16321  
REMEDATION # 31082

Sample Location				WH-FS-01 @ 6'		Background-01 @ 2'	
(Latitude / Longitude)				(40.310571 / -104.604668)		(40.310539 / -104.604730)	
Sample Date				11/17/2023		11/17/2023	
Sample Depth				6'		2'	
PID Reading (ppm-v)				2.4		0.3	
Regulatory Limits							
Chemical of Concern		Units	ECMC Table 915-1 RSSLs	ECMC Table 915-1 GSSLs	Local Clean-Up Level		
VOCs							
Benzene	mg/kg	1.2	0.0026	--	<0.00200	NA	
Toluene	mg/kg	490	0.69	--	<0.00200	NA	
Ethylbenzene	mg/kg	5.8	0.78	--	<0.00200	NA	
Total Xylenes	mg/kg	58	9.9	--	<0.00200	NA	
Naphthalene	mg/kg	2	0.0038	--	<0.00380	NA	
1,2,4-Trimethylbenzene	mg/kg	30	0.0081	--	<0.00200	NA	
1,3,5-Trimethylbenzene	mg/kg	27	0.0087	--	<0.00200	NA	
TOTAL PETROLEUM HYDROCARBONS							
TPH-GRO	mg/kg	500	--	--	<0.200	NA	
TPH-DRO	mg/kg	500	--	--	<25.0	NA	
TPH-RRO	mg/kg	500	--	--	<100	NA	
POLYCYCLIC AROMATIC HYDROCARBONS							
1-Methyl-naphthalene	mg/kg	18	0.006	--	<0.002	NA	
2-Methyl-naphthalene	mg/kg	24	0.019	--	<0.002	NA	
Acenaphthene	mg/kg	360	0.55	--	<0.020	NA	
Anthracene	mg/kg	1800	5.8	--	<0.020	NA	
Benzo(a)-anthracene	mg/kg	1.1	0.011	--	<0.005	NA	
Benzo(a)-pyrene	mg/kg	0.11	0.24	--	<0.020	NA	
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	--	<0.020	NA	
Benzo(k)-fluoranthene	mg/kg	11	2.9	--	<0.020	NA	
Chrysene	mg/kg	110	9	--	<0.020	NA	
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	--	<0.020	NA	
Fluoranthene	mg/kg	240	8.9	--	<0.020	NA	
Fluorene	mg/kg	240	0.54	--	<0.020	NA	
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	--	<0.020	NA	
Pyrene	mg/kg	180	1.3	--	<0.020	NA	
SOIL SUITABILITY (Inorganics)							
Boron	mg/L	2	--	--	0.133	NA	
pH	standard unit	6-8.3	--	--	<b>8.41</b>	<b>8.33</b>	
Sodium Adsorption Ratio (SAR)	--	<6	--	--	2.54	NA	
Specific Conductance (EC)	mmhos/cm	<4	--	--	0.402	NA	
METALS							
Arsenic	mg/kg	0.68	0.29	1.61	<b>4.95</b>	1.29	
Barium	mg/kg	15000	82	--	79.9	NA	
Cadmium	mg/kg	71	0.38	--	0.163	NA	
Copper	mg/kg	3100	46	--	4.81	NA	
Lead	mg/kg	400	14	--	7.66	NA	
Nickel	mg/kg	1500	26	--	10.1	NA	
Selenium	mg/kg	390	0.26	--	0.138	NA	
Silver	mg/kg	390	0.8	--	0.0215	NA	
Zinc	mg/kg	23000	370	--	31.9	NA	
Hexavalent Chromium	mg/kg	0.3**	0.00067**	0.1 to 1.0**	<0.244**	NA	
ECMC = Energy & Carbon Management Commission		NA - Not Analyzed		VOCs - Volatile Organic Compounds			
mg/kg = milligrams per kilogram							
mmhos/cm = millimhos per centimeter		RSSLs = Residential Soil Screening Levels					
PID = Photoionization Detector		GSSLs = Protection of Groundwater Soil Screening Levels					
ppm-v = parts per million by volume		TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics					
mg/L = milligrams per liter		TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics					
SAR = Sodium Adsorption Ratio		TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics					
Notes:							
Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit and/or minimum detection limit.							
Elevated metals are naturally occurring in Colorado. Local Clean-up Levels are 1.25*Background concentrations where applicable.							
Values presented in <b>BOLD</b> exceed ECMC Table 915-1 Regulatory Limits and applicable Local Clean-up Levels.							
**Achievable practical quantitative limits for Hexavalent Chromium in soils is in the range of 0.1 to 1 mg/kg.							





## **ATTACHMENT A**

### **Photo Log**

# Huntsman G #13-9

## API # 05-123-16321

## Remediation # 31082

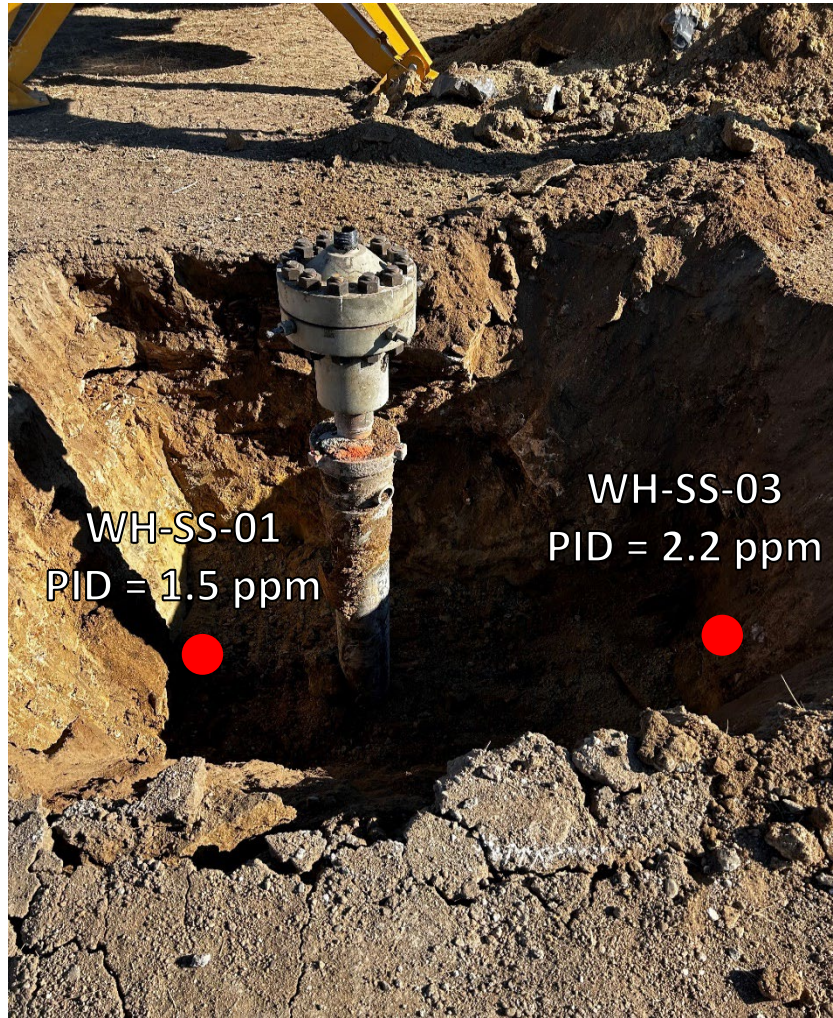
Closure Assessment

November 2023



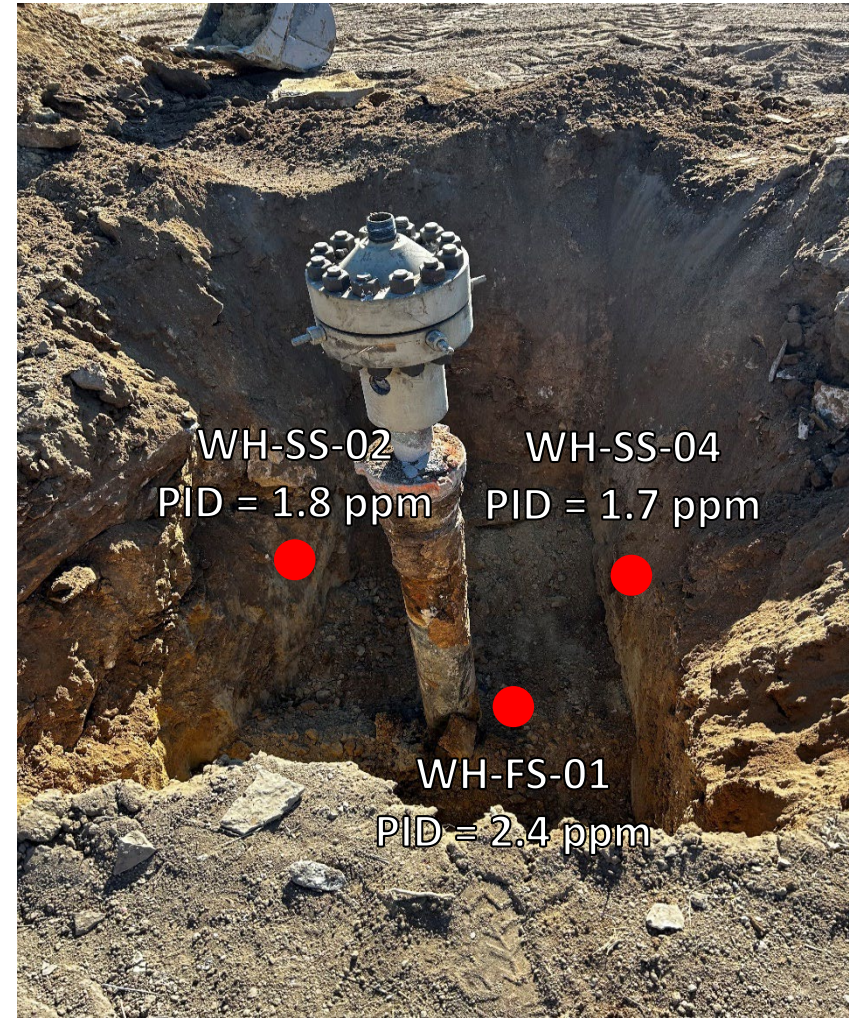


## Wellhead Excavation – 11/17/23



Looking east

No petroleum hydrocarbon staining or odor observed



Looking south

No petroleum hydrocarbon staining or odor observed



## Wellhead Surface – 11/17/23



Looking east

Site in good condition – no petroleum hydrocarbon staining or odor  
Observed on surface around wellhead



Looking north

Site in good condition – no petroleum hydrocarbon staining or odor  
Observed on surface around wellhead

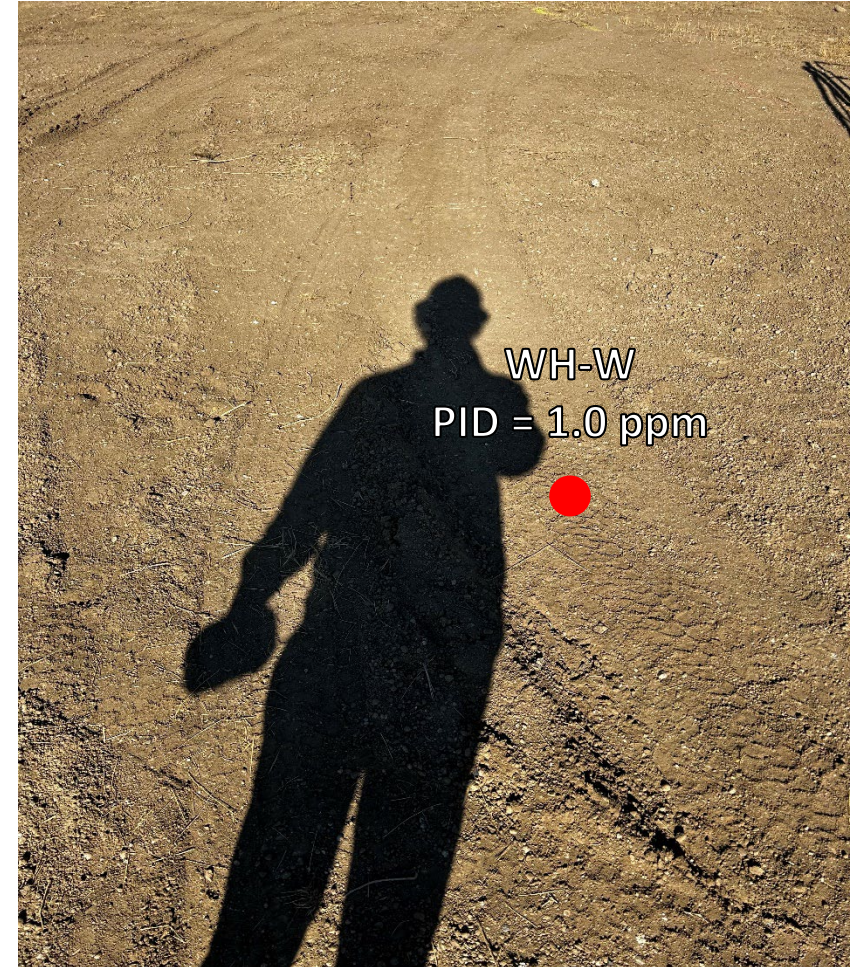


## Wellhead Surface – 11/17/23



Looking east

Site in good condition – no petroleum hydrocarbon staining or odor  
Observed on surface around wellhead



Looking north

Site in good condition – no petroleum hydrocarbon staining or odor  
Observed on surface around wellhead





## **ATTACHMENT B**

### **Laboratory Analytical Reports**



December 11, 2023

Eagle Environmental Consulting, LLC

Andrew Newberry

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Huntsman G #13-9

Project Number - [none]

Attached are your analytical results for Noble - Huntsman G #13-9 received by Origins Laboratory, Inc. November 17, 2023. This project is associated with Origins project number Y311467-01.

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@6'	Y311467-01	Soil	November 17, 2023 12:36	11/17/2023 14:20

Origins Laboratory, Inc.



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

Jordan A. Bynon, Project Manager



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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 4311467

Client: Eagle

Client Project ID: Huntsman G #13-9

Checklist Completed by: EHS/Ad

Shipped Via: HO

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

Date/time completed: 11/19/13

Airbill #: N/A

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

Water

Other:

Cooler Number/Temperature: 117 °C 1 °C 1 °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 <sup>(1)</sup> ?				<u>SP</u>
Is there ice present (document if blue ice is used)	<u>/</u>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<u>/</u>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			<u>/</u>	
Were all samples received intact <sup>(1)</sup> ?	<u>/</u>			
Was adequate sample volume provided <sup>(1)</sup> ?	<u>/</u>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<u>/</u>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<u>/</u>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<u>/</u>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<u>/</u>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<u>/</u>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<u>/</u>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<u>/</u>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed 11/20/13

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, LLC  
8000 W 44th Ave  
Wheat Ridge CO 80033

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

WH-FS-01@6'

11/17/2023 12:36:00PM

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

Origins Laboratory, Inc.  
Y311467-01 (Soil)

## Boron (DTPA Sorbitol)

Boron	0.133	0.100	mg/L	1	B3K2012	11/20/2023	11/21/2023	
-------	-------	-------	------	---	---------	------------	------------	--

## DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3K2001	11/20/2023	11/21/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	101 %	50-150			"	"	"	
------------------------	-------	--------	--	--	---	---	---	--

## GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3K1724	11/17/2023	11/19/2023	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.



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.

Jordan A. Bynon, Project Manager



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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

WH-FS-01@6'

11/17/2023 12:36:00PM

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

Origins Laboratory, Inc.  
Y311467-01 (Soil)

## GBTEX+TMBs by 8260D

Surrogate: 1,2-Dichloroethane-d4	97.6 %	70-130	B3K17 24	11/17/2023	11/19/2023
Surrogate: Toluene-d8	91.7 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	92.7 %	70-130	"	"	"

## Metals by Saturated Paste by EPA 6010

Calcium	0.772	0.499	meq/L	10	[CALC]	11/18/2023	11/20/2023
Magnesium	0.871	0.823	"	"	"	"	"
Sodium	2.30	0.435	"	"	"	"	"

## PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B3K2029	11/20/2023	11/23/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	U

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

WH-FS-01@6'

11/17/2023 12:36:00PM

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

Origins Laboratory, Inc.  
Y311467-01 (Soil)

## PAH by EPA 8270E

Fluoranthene	ND	0.020	mg/kg	1	B3K2029	11/20/2023	11/23/2023	U
Fluorene	ND	0.020	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	U
Pyrene	ND	0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	103 %	60-130	"	"	"
Surrogate: Anthracene-d10	87.5 %	60-130	"	"	"
Surrogate: Pyrene-d10	96.5 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	99.5 %	60-130	"	"	"

## pH in Soil by 9045D

pH	8.41	pH Units	1	B3K1805	11/18/2023	11/20/2023
----	------	----------	---	---------	------------	------------

## SAR by 20B Saturated Paste

SAR	2.54	0.0100	SAR	1	B3K1802	11/18/2023	11/20/2023
-----	------	--------	-----	---	---------	------------	------------

## Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.402	0.00500	mmhos/cm	1	B3K1805	11/18/2023	11/20/2023
---------------------------	-------	---------	----------	---	---------	------------	------------

## Table 915 metals by EPA 6020B

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

WH-FS-01@6'

11/17/2023 12:36:00PM

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

Origins Laboratory, Inc.  
Y311467-01 (Soil)

## Table 915 metals by EPA 6020B

Arsenic	4.95	0.000979	mg/kg	10	B3K2712	11/27/2023	11/29/2023
Barium	79.9	0.0979	"	"	"	"	"
Cadmium	0.163	0.000979	"	"	"	"	"
Copper	4.81	0.0979	"	"	"	"	"
Lead	7.66	0.0979	"	"	"	"	"
Nickel	10.1	0.0979	"	"	"	"	"
Selenium	0.138	0.000979	"	"	"	"	"
Silver	0.0215	0.000979	"	"	"	"	"
Zinc	31.9	0.979	"	"	"	"	"

## Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L718583	11/17/2023	11/22/2023
----------------------	----	-------	-----	-------	---	---------	------------	------------

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## 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 B3K1724 - EPA 5030 (soil)										
Blank (B3K1724-BLK1)					Prepared: 11/17/2023 Analyzed: 11/18/2023					
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	0.091		"	0.125		73.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		92.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		90.4	70-130			

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**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
<b>Batch B3K1724 - EPA 5030 (soil)</b>										
<b>LCS (B3K1724-BS1)</b>					Prepared: 11/17/2023 Analyzed: 11/18/2023					
1,2,4-Trimethylbenzene	0.100	0.00200	mg/kg	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.101	0.00200	"	0.100		101	70-130			
Benzene	0.0988	0.00200	"	0.100		98.8	70-130			
Ethylbenzene	0.0972	0.00200	"	0.100		97.2	70-130			
Naphthalene	0.113	0.00380	"	0.100		113	70-130			
Toluene	0.0926	0.00200	"	0.100		92.6	70-130			
o-Xylene	0.101	0.00200	"	0.100		101	70-130			
m,p-Xylene	0.192	0.00400	"	0.200		95.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.093		"	0.125		74.1	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		90.3	70-130			

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**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
<b>Batch B3K1724 - EPA 5030 (soil)</b>										
<b>Matrix Spike (B3K1724-MS1)</b>		<b>Source: Y311436-01</b>			Prepared: 11/17/2023 Analyzed: 11/18/2023					
1,2,4-Trimethylbenzene	0.0875	0.00200	mg/kg	0.100	ND	87.5	70-130			
1,3,5-Trimethylbenzene	0.0878	0.00200	"	0.100	ND	87.8	70-130			
Benzene	0.0852	0.00200	"	0.100	ND	85.2	70-130			
Ethylbenzene	0.0865	0.00200	"	0.100	ND	86.5	70-130			
Naphthalene	0.0961	0.00380	"	0.100	0.00144	94.7	70-130			
Toluene	0.0807	0.00200	"	0.100	ND	80.7	70-130			
o-Xylene	0.0791	0.00200	"	0.100	ND	79.1	70-130			
m,p-Xylene	0.160	0.00400	"	0.200	ND	79.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.092		"	0.125		73.3	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		92.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		91.9	70-130			

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## 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 B3K1724 - EPA 5030 (soil)										
Matrix Spike Dup (B3K1724-MSD1)		Source: Y311436-01			Prepared: 11/17/2023 Analyzed: 11/18/2023					
1,2,4-Trimethylbenzene	0.0882	0.00200	mg/kg	0.100	ND	88.2	70-130	0.797	20	
1,3,5-Trimethylbenzene	0.0879	0.00200	"	0.100	ND	87.9	70-130	0.0455	20	
Benzene	0.0880	0.00200	"	0.100	ND	88.0	70-130	3.26	20	
Ethylbenzene	0.0876	0.00200	"	0.100	ND	87.6	70-130	1.29	20	
Naphthalene	0.101	0.00380	"	0.100	0.00144	99.5	70-130	4.89	20	
Toluene	0.0842	0.00200	"	0.100	ND	84.2	70-130	4.27	20	
o-Xylene	0.0798	0.00200	"	0.100	ND	79.8	70-130	0.906	20	
m,p-Xylene	0.161	0.00400	"	0.200	ND	80.5	70-130	0.861	20	
Surrogate: 1,2-Dichloroethane-d4	0.094		"	0.125		74.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		92.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		90.6	70-130			

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**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 B3K2001 - EPA 3550B										
Blank (B3K2001-BLK1)					Prepared: 11/20/2023 Analyzed: 11/21/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	25		"	24.9		102	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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

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 B3K2001 - EPA 3550B

LCS (B3K2001-BS1)

Prepared: 11/20/2023 Analyzed: 11/21/2023

Diesel (C10-C28)	1000	50.0	mg/kg	1000		100	70-130			
Residual Range Organics (C28-C40)	986	200	"	1000		98.6	70-130			
Surrogate: o-Terphenyl	58		"	49.8		116	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.

Jordan A. Bynon, Project Manager

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## 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 B3K2001 - EPA 3550B

Matrix Spike (B3K2001-MS1)		Source: Y311466-01			Prepared: 11/20/2023 Analyzed: 11/21/2023					
Diesel (C10-C28)	915	50.0	mg/kg	1000	ND	91.5	70-130			
Residual Range Organics (C28-C40)	888	200	"	1000	ND	88.8	70-130			
Surrogate: o-Terphenyl	52		"	49.8		105	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.

Jordan A. Bynon, Project Manager

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## 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 B3K2001 - EPA 3550B

Matrix Spike Dup (B3K2001-MSD1)		Source: Y311466-01			Prepared: 11/20/2023 Analyzed: 11/21/2023					
Diesel (C10-C28)	922	50.0	mg/kg	1000	ND	92.2	70-130	0.787	35	
Residual Range Organics (C28-C40)	886	200	"	1000	ND	88.6	70-130	0.188	35	
Surrogate: o-Terphenyl	52		"	49.8		105	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.

Jordan A. Bynon, Project Manager



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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## 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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

## Metals by EPA 6000/7000 Series Methods - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

#### Batch B3K2712 - EPA 3050B

#### Blank (B3K2712-BLK1)

Prepared: 11/27/2023 Analyzed: 11/29/2023

Arsenic	ND	0.0100	mg/kg
Barium	ND	1.00	"
Cadmium	ND	0.0100	"
Copper	ND	1.00	"
Lead	ND	1.00	"
Nickel	ND	0.100	"
Selenium	ND	0.0100	"
Silver	ND	0.0100	"
Zinc	ND	1.00	"

#### LCS (B3K2712-BS1)

Prepared: 11/27/2023 Analyzed: 12/06/2023

Arsenic	5.11	0.0100	mg/kg	5.00	102	80-120
Barium	529	1.00	"	500	106	80-120
Cadmium	5.13	0.0100	"	5.00	103	80-120
Copper	54.6	1.00	"	50.0	109	80-120
Lead	4.96	1.00	"	5.00	99.3	80-120
Nickel	5.30	0.100	"	5.00	106	80-120
Selenium	4.46	0.0100	"	5.00	89.2	80-120
Silver	5.22	0.0100	"	5.00	104	80-120
Zinc	50.9	1.00	"	50.0	102	80-120

#### Matrix Spike (B3K2712-MS1)

Source: Y311466-01

Prepared: 11/27/2023 Analyzed: 11/29/2023

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**Metals by EPA 6000/7000 Series Methods - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B3K2712 - EPA 3050B</b>										
<b>Matrix Spike (B3K2712-MS1)</b>		<b>Source: Y311466-01</b>			Prepared: 11/27/2023 Analyzed: 11/29/2023					
Arsenic	8.54	0.0923	mg/kg	4.62	1.92	143	75-125			QM-07
Barium	564	9.23	"	462	41.1	113	75-125			
Cadmium	4.51	0.0923	"	4.62	0.0446	96.8	75-125			
Copper	50.4	9.23	"	46.2	2.37	104	75-125			
Lead	11.4	9.23	"	4.62	3.30	175	75-125			QM-07
Nickel	9.77	0.923	"	4.62	3.74	131	75-125			QM-07
Selenium	4.22	0.0923	"	4.62	0.0670	89.9	75-125			
Silver	4.58	0.0923	"	4.62	0.0152	98.9	75-125			
Zinc	60.7	9.23	"	46.2	12.6	104	75-125			
<b>Matrix Spike Dup (B3K2712-MSD1)</b>		<b>Source: Y311466-01</b>			Prepared: 11/27/2023 Analyzed: 11/29/2023					
Arsenic	6.16	0.0906	mg/kg	4.53	1.92	93.4	75-125	32.5	20	QR-DUP
Barium	506	9.06	"	453	41.1	103	75-125	10.8	20	
Cadmium	3.96	0.0906	"	4.53	0.0446	86.4	75-125	13.1	20	
Copper	47.9	9.06	"	45.3	2.37	100	75-125	5.19	20	
Lead	7.46	9.06	"	4.53	3.30	91.8	75-125	41.4	20	QR-DUP
Nickel	7.69	0.906	"	4.53	3.74	87.2	75-125	23.9	20	QR-DUP
Selenium	3.77	0.0906	"	4.53	0.0670	81.7	75-125	11.1	20	
Silver	4.02	0.0906	"	4.53	0.0152	88.3	75-125	13.1	20	
Zinc	49.7	9.06	"	45.3	12.6	81.9	75-125	20.0	20	

Origins Laboratory, Inc.



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

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B3K2029 - EPA 3580**

**Blank (B3K2029-BLK1)**

Prepared: 11/20/2023 Analyzed: 11/23/2023

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	210		ug/kg	200		103	60-130			
Surrogate: Anthracene-d10	180		"	200		89.3	60-130			
Surrogate: Pyrene-d10	200		"	200		97.6	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		98.8	60-130			

**LCS (B3K2029-BS1)**

Prepared: 11/20/2023 Analyzed: 11/23/2023

1-Methylnaphthalene	0.202	0.002	mg/kg	0.200		101	70-130			
2-Methylnaphthalene	0.196	0.002	"	0.200		98.1	70-130			
Acenaphthene	0.204	0.020	"	0.200		102	70-130			
Anthracene	0.163	0.020	"	0.200		81.3	70-130			

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B3K2029 - EPA 3580**

**LCS (B3K2029-BS1)**

Prepared: 11/20/2023 Analyzed: 11/23/2023

Benzo (a) anthracene	0.169	0.005	mg/kg	0.200		84.7	70-130
Benzo (a) pyrene	0.201	0.020	"	0.200		101	70-130
Benzo (b) fluoranthene	0.203	0.020	"	0.200		102	70-130
Benzo (g,h,i) perylene	0.202	0.020	"	0.200		101	70-130
Benzo (k) fluoranthene	0.192	0.020	"	0.200		96.0	70-130
Chrysene	0.196	0.020	"	0.200		98.0	70-130
Dibenz (a,h) anthracene	0.191	0.020	"	0.200		95.4	70-130
Fluoranthene	0.177	0.020	"	0.200		88.6	70-130
Fluorene	0.201	0.020	"	0.200		100	70-130
Indeno (1,2,3-cd) pyrene	0.236	0.020	"	0.200		118	70-130
Naphthalene	0.208	0.002	"	0.200		104	70-130
Phenanthrene	0.188	0.020	"	0.200		93.8	70-130
Pyrene	0.191	0.020	"	0.200		95.5	70-130
Surrogate: Fluorene-d10	190		ug/kg	200		97.4	60-130
Surrogate: Anthracene-d10	170		"	200		86.5	60-130
Surrogate: Pyrene-d10	190		"	200		97.1	60-130
Surrogate: Benzo (a) pyrene-d12	200		"	200		98.1	60-130

**Matrix Spike (B3K2029-MS1)**

Source: Y311455-01

Prepared: 11/20/2023 Analyzed: 11/23/2023

1-Methylnaphthalene	0.211	0.002	mg/kg	0.200	ND	106	70-130
2-Methylnaphthalene	0.206	0.002	"	0.200	ND	103	70-130
Acenaphthene	0.203	0.020	"	0.200	ND	101	70-130
Anthracene	0.165	0.020	"	0.200	ND	82.6	70-130
Benzo (a) anthracene	0.167	0.005	"	0.200	ND	83.6	70-130
Benzo (a) pyrene	0.200	0.020	"	0.200	ND	100	70-130
Benzo (b) fluoranthene	0.196	0.020	"	0.200	ND	98.2	70-130
Benzo (g,h,i) perylene	0.220	0.020	"	0.200	ND	110	70-130

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B3K2029 - EPA 3580**

Matrix Spike (B3K2029-MS1)		Source: Y311455-01			Prepared: 11/20/2023 Analyzed: 11/23/2023					
Benzo (k) fluoranthene	0.193	0.020	mg/kg	0.200	ND	96.5	70-130			
Chrysene	0.193	0.020	"	0.200	ND	96.4	70-130			
Dibenz (a,h) anthracene	0.194	0.020	"	0.200	ND	97.2	70-130			
Fluoranthene	0.201	0.020	"	0.200	ND	100	70-130			
Fluorene	0.211	0.020	"	0.200	ND	105	70-130			
Indeno (1,2,3-cd) pyrene	0.168	0.020	"	0.200	ND	84.1	70-130			
Naphthalene	0.211	0.002	"	0.200	ND	105	70-130			
Phenanthrene	0.189	0.020	"	0.200	ND	94.3	70-130			
Pyrene	0.179	0.020	"	0.200	ND	89.5	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	170		"	200		86.9	60-130			
Surrogate: Pyrene-d10	180		"	200		90.7	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		100	60-130			

Matrix Spike Dup (B3K2029-MSD1)		Source: Y311455-01			Prepared: 11/20/2023 Analyzed: 11/23/2023					
1-Methylnaphthalene	0.205	0.002	mg/kg	0.200	ND	102	70-130	3.17	20	
2-Methylnaphthalene	0.203	0.002	"	0.200	ND	102	70-130	1.62	20	
Acenaphthene	0.205	0.020	"	0.200	ND	102	70-130	0.822	20	
Anthracene	0.160	0.020	"	0.200	ND	80.1	70-130	3.10	20	
Benzo (a) anthracene	0.181	0.005	"	0.200	ND	90.6	70-130	8.07	20	
Benzo (a) pyrene	0.200	0.020	"	0.200	ND	100	70-130	0.229	20	
Benzo (b) fluoranthene	0.197	0.020	"	0.200	ND	98.3	70-130	0.139	20	
Benzo (g,h,i) perylene	0.221	0.020	"	0.200	ND	110	70-130	0.563	20	
Benzo (k) fluoranthene	0.189	0.020	"	0.200	ND	94.4	70-130	2.27	20	
Chrysene	0.193	0.020	"	0.200	ND	96.7	70-130	0.337	20	
Dibenz (a,h) anthracene	0.206	0.020	"	0.200	ND	103	70-130	5.99	20	
Fluoranthene	0.198	0.020	"	0.200	ND	98.8	70-130	1.51	20	

Origins Laboratory, Inc.



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

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B3K2029 - EPA 3580</b>										
<b>Matrix Spike Dup (B3K2029-MSD1)</b>	<b>Source: Y311455-01</b>				Prepared: 11/20/2023 Analyzed: 11/23/2023					
Fluorene	0.213	0.020	mg/kg	0.200	ND	106	70-130	0.785	20	
Indeno (1,2,3-cd) pyrene	0.195	0.020	"	0.200	ND	97.3	70-130	14.6	20	
Naphthalene	0.206	0.002	"	0.200	ND	103	70-130	2.28	20	
Phenanthrene	0.187	0.020	"	0.200	ND	93.6	70-130	0.788	20	
Pyrene	0.184	0.020	"	0.200	ND	92.1	70-130	2.80	20	
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	180		"	200		87.6	60-130			
Surrogate: Pyrene-d10	190		"	200		94.9	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.4	60-130			

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## Classical Chemistry Parameters - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

### Batch B3K1802 - Saturated Paste Metals

#### Blank (B3K1802-BLK1)

Prepared: 11/18/2023 Analyzed: 11/20/2023

SAR	ND	0.0100	SAR
Calcium PPM	ND	10.0	mg/L
Magnesium PPM	ND	10.0	"
Sodium PPM	ND	10.0	"

#### Duplicate (B3K1802-DUP1)

Source: Y311439-01

Prepared: 11/18/2023 Analyzed: 11/20/2023

Calcium PPM	56.0	10.0	mg/L	57.7	3.06	50
SAR	ND	0.0100	SAR	1.01		200
Magnesium PPM	16.4	10.0	mg/L	15.8	4.04	50
Sodium PPM	36.8	10.0	"	33.5	9.40	50

### Batch B3K2012 - DTPA Sorbitol Preparation

#### Blank (B3K2012-BLK1)

Prepared: 11/20/2023 Analyzed: 11/21/2023

Boron	ND	0.100	mg/L
-------	----	-------	------

#### Duplicate (B3K2012-DUP1)

Source: Y311409-02

Prepared: 11/20/2023 Analyzed: 11/21/2023

Boron	3.25	0.0998	mg/L	2.86	13.0	50
-------	------	--------	------	------	------	----

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B3K1805 - Saturated Paste pH/EC</b>										
<b>Blank (B3K1805-BLK1)</b>					Prepared: 11/18/2023 Analyzed: 11/20/2023					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
<b>Duplicate (B3K1805-DUP1)</b>					<b>Source: Y311439-01</b> Prepared: 11/18/2023 Analyzed: 11/20/2023					
pH	8.08		pH Units		8.14			0.740	25	
Specific Conductance (EC)	0.598	0.00500	mmhos/cm		0.569			4.97	25	

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## Total Metals by 7196A - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch L718583 -</b>										
<b>DUP (L 84277-DUP)</b>		<b>Source: 84277</b>			Prepared: Analyzed: 11/22/2023					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500	-		0	20	
<b>MS (L 84277-MS)</b>		<b>Source: 84277</b>			Prepared: Analyzed: 11/22/2023					
Chromium, Hexavalent	36.5	2.5	mg/Kg	38.5	<1.22	95	75-125			
<b>LCS (LCS)</b>					Prepared: Analyzed: 11/22/2023					
Chromium, Hexavalent	7.09	0.5	mg/Kg	8		89	75-125			
<b>LRB (LRB)</b>					Prepared: Analyzed: 11/22/2023					
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## Notes and Definitions

U Sample is Non-Detect.

QR-DUP RPD exceeds QC acceptance criteria, this indicates source sample is not homogenous.

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported 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.

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.*





January 15, 2024

Eagle Environmental Consulting, LLC

Andrew Newberry

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Huntsman G #13-9

Project Number - [none]

Attached are your analytical results for Noble - Huntsman G #13-9 received by Origins Laboratory, Inc. December 13, 2023. This project is associated with Origins project number Y312378-01.

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Background-01@2'	Y312378-01	Soil	November 17, 2023 12:38	12/13/2023 11:40

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

www.originslaboratory.com

**ORIGINS**  
LABORATORY, INC

1312378

page 1 of 1

Client: Eagle Environmental Consulting  
Address: 8000 W 44th Ave  
Telephone Number: 303-433-0479  
Email Address: anewberry@eagle-environmental.com

Project Manager: Andrew Newberry  
Project Name: Huntsman G #13-9  
Project Number: 1  
Samples Collected By: SL

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other	Method	
Background-01001	11/17/03	1238	2										1
													2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By: Andrew Newberry Date: 12/13/03 Time: 7:40

Relinquished By: Bill to Jeff Date: 12/13/03 Time: 7:40

Received By: Bill to Jeff Date: 12/13/03 Time: 7:40

Received By: Bill to Jeff Date: 12/13/03 Time: 7:40

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

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

Origins Laboratory, Inc.

*Byron*

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

Origins Laboratory

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

### Sample Receipt Checklist

Origins Work Order: V312378

Client: Eagle

Client Project ID: Huntsman G #B-9

Checklist Completed by: TSH

Shipped Via: HD

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

Date/time completed: 12/13/23

Airbill #: N/A

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

Water

Other:

(Describe)

Cooler Number/Temperature: 1 / 2 °C / °C / °C / °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 <sup>(1)</sup> ?	<u>X</u>			
Is there ice present (document if blue ice is used)	<u>X</u>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<u>X</u>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			<u>X</u>	
Were all samples received intact <sup>(1)</sup> ?	<u>X</u>			
Was adequate sample volume provided <sup>(1)</sup> ?	<u>X</u>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<u>X</u>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<u>X</u>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<u>X</u>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<u>X</u>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<u>X</u>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed

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, LLC  
8000 W 44th Ave  
Wheat Ridge CO 80033

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

Background-01@2'

11/17/2023 12:38:00PM

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

Origins Laboratory, Inc.  
Y312378-01 (Soil)

pH in Soil by 9045D

pH	8.33			pH Units	1	B3L1523	12/15/2023	12/17/2023	
----	------	--	--	----------	---	---------	------------	------------	--

Total Metals by 6020B

Arsenic	1.29	0.0855	0.25	mg/Kg	5	L724504	12/22/2023	01/11/2024	
---------	------	--------	------	-------	---	---------	------------	------------	--

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

**Saturated Paste - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B3L1523 - Saturated Paste pH/EC**

<b>Duplicate (B3L1523-DUP1)</b>		<b>Source: Y312336-01</b>			Prepared: 12/15/2023 Analyzed: 12/17/2023					
pH	8.16		pH Units		8.20			0.489	25	

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.*

Jordan A. Bynon, Project Manager

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

## Total Metals by 6020B - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L724504 - 3050B										
<b>MSD (L 86302-MSD-L724504)</b>		<b>Source: 86302</b>			Prepared: 12/22/2023 Analyzed: 01/11/2024					
Arsenic	2.72	0.25	mg/Kg	2.5	1.09	65	75-125	6.8	80	*
<b>MS (L 86302-MS-L724504)</b>		<b>Source: 86302</b>			Prepared: 12/22/2023 Analyzed: 01/11/2024					
Arsenic	2.54	0.25	mg/Kg	2.32	1.09	62	75-125			*
<b>LCS (LCS-L724504)</b>					Prepared: 12/22/2023 Analyzed: 01/12/2024					
Arsenic	2.36	0.25	mg/Kg	2.5		94	80-120			
<b>LRB (LRB-L724504)</b>					Prepared: 12/22/2023 Analyzed: 01/11/2024					
Arsenic	ND	0.25	mg/Kg							

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

Andrew Newberry  
Project Number: [none]  
Project: Noble - Huntsman G #13-9

### Notes and Definitions

\* 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.

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.*

Jordan A. Bynon, Project Manager