

Wellhead Closure Checklist

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

Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: Gibson # 11-9		Date: 2-23-24					Remediation Project #: 31628	
Associated Wells: 05-123-23102		Age of Site: years					Number of photos Attached: 6	
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)						40.506190 / -104.448170		Estimated Facility Size (acres):
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good condition								
USCS Soil Type: SC				Estimated Depth to Groundwater: ~10-15'				
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None observed								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None observed								
Wellhead(s)								
Well API	05-123-23102							
Age	years							
Condition of surface around wellhead	Good - No odor/no staining							
PID Readings	WH-N: 0.8	WH-E: 0.8	WH-S: 1.1	WH-W: 1.0				
Condition of subsurface (staining present)	Good - No odor/no staining							
PID Readings	2.0	2.7	1.9	1.2	1.9			
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01			
Photo Number(s)	See photo log							
Other observations regarding wellheads: Well casing cut/capped following assessment								
Summary								
Was impacted soil identified? (No) Yes - less than 10 cubic yards Yes - more than 10 cubic yards								
Total number of samples field screened: 9				Total number of samples collected: 9				
Highest PID Reading: 2.7				Total number of samples submitted to lab for analysis: 2				
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? (No) Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils								
Measured depth to groundwater:				Was remedial groundwater removal conducted? Yes No				
Date Groundwater was encountered:				Commencement date of removal:				
Sheen on groundwater? Yes No				Volume of groundwater removed prior to sampling:				
Free product observed? Yes No				Volume of groundwater removed post sampling:				
Total number of samples collected:				Total Volume of groundwater removed:				
Total number of samples submitted to lab for analysis:								



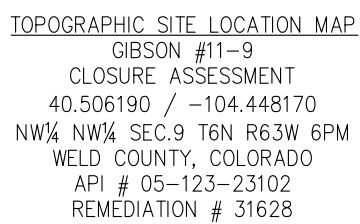
FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

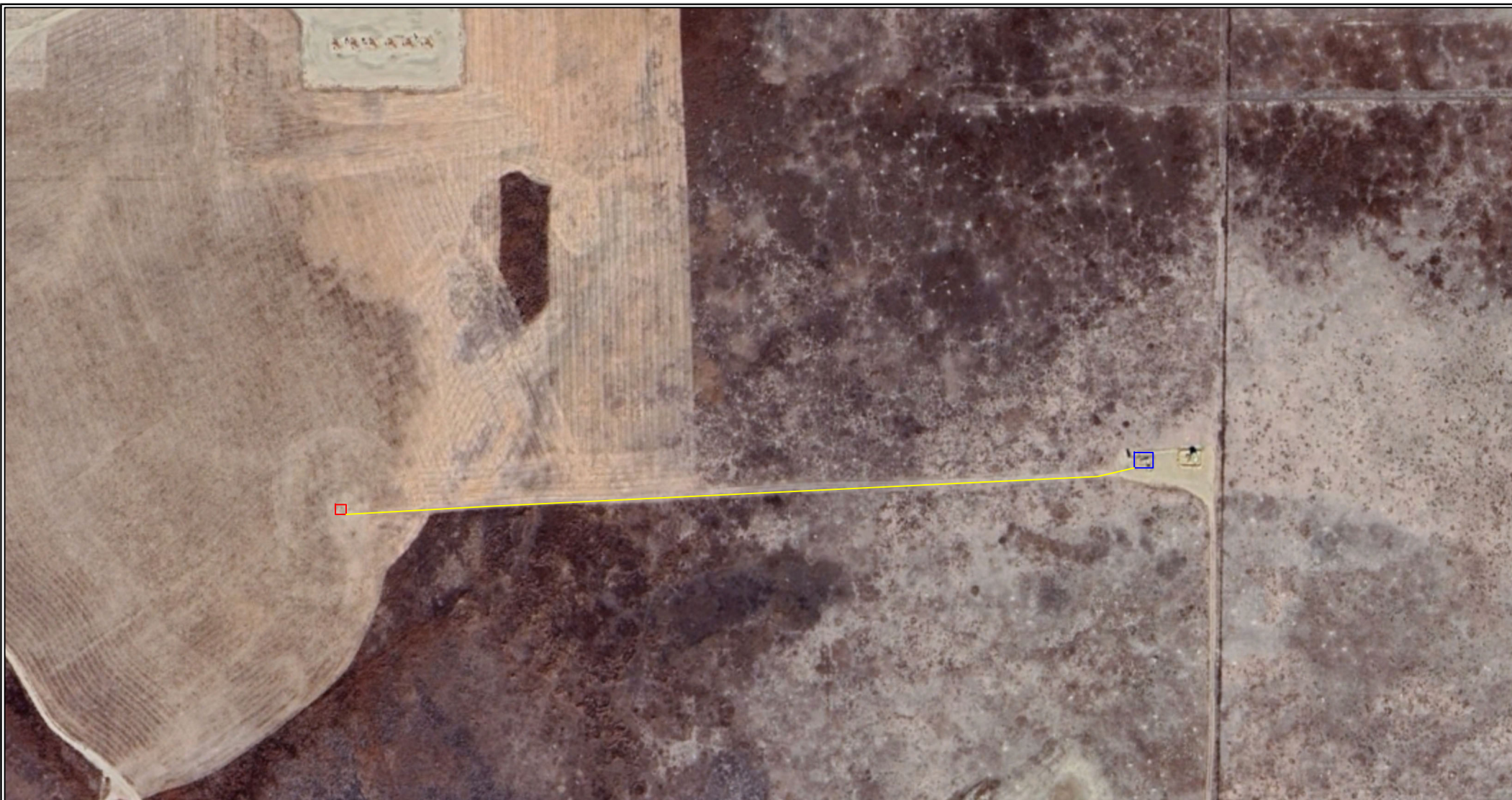
Figure 3: Soil Sampling Location Map

Figure 4: Soil Analytical Map



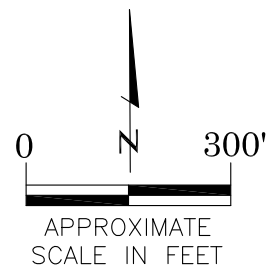
8000 W 44th Ave, Wheat Ridge, CO 80033
Ph: 303-433-0479 • F: 303-325-5449

FIGURE NO. 1



LEGEND

- FORMER GIBSON #11-9 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



AERIAL SITE LOCATION MAP

GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDATION # 31628

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

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

PARAMETERS

SAMPLE LOCATION
DATE
DEPTH (FEET)
B = BENZENE (mg/kg)
T = TOLUENE (mg/kg)
E = ETHYLBENZENE (mg/kg)
X = TOTAL XYLENES (mg/kg)
N = NAPHTHALENE (mg/kg)
G = TPH-GRO (mg/kg)
D = TPH-DRO (mg/kg)
R = TPH-RRO (mg/kg)
1,2,4-TMB = 1,2,4 TRIMETHYLBENZENE (mg/kg)
1,3,5-TMB = 1,3,5 TRIMETHYLBENZENE (mg/kg)
Brn= BORON (mg/L)
EC = SPECIFIC CONDUCTANCE (mmhos/cm)
SAR= SODIUM ADSORPTION RATIO
pH = pH (pH UNITS)
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (mg/kg)

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

(BRL) = ALL VALUES BELOW REGULATORY LIMITS

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

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

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

SAMPLE LOCATION MAP

GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW1/4 NW1/4 Sec.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDATION # 31628

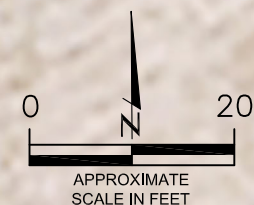
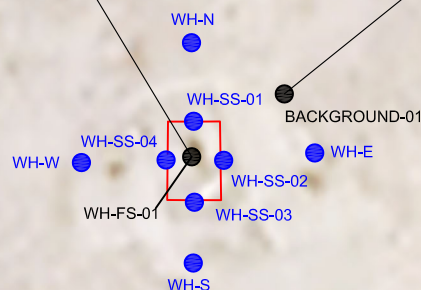
FIGURE NO.
3

DRAWN BY:
RS



WH-FS-01@7'
02/23/24
7'
(BRL)

BACKGROUND-01@2'
02/23/24
2'
Brn= 0.395
EC = 0.333
SAR= 0.620
pH = **8.32**



LEGEND

- INITIAL 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

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.

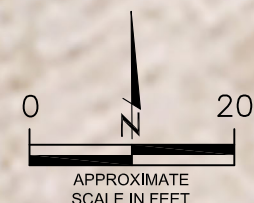
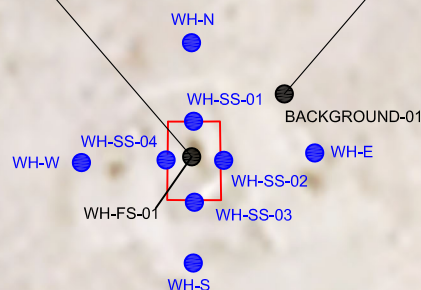
*VALUES EXCEED ECMC TABLE 915-1 PROTECTION OF GROUNDWATER SOIL SCREENING LEVELS, ONLY.

**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

WH-FS-01@7'
02/23/24
7'
Arsenic = **4.55**
Barium = **89.4***
Cadmium = 0.322
Chromium (VI) = <0.244**
Copper = <9.06
Lead = 9.58
Nickel = 5.73
Selenium = **0.405***
Silver = 0.252
Zinc = <33.5

BACKGROUND-01@2'
02/23/24
2'
Arsenic = 3.29
Barium = 62.8
Cadmium = 0.134
Chromium (VI) = <0.244**
Copper = <9.77
Lead = 7.16
Nickel = 5.67
Selenium = <0.254
Silver = <0.0977
Zinc = <36.2



METALS IN SOIL MAP
GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDIAL # 31628

FIGURE NO.
4

DRAWN BY:
RS





TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDATION # 31628

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-FS-01 @ 7' (40.506162 / -104.448213)	02/23/24	7	1.9	Y
WH-SS-01 @ 6' (40.506171 / -104.448212)	02/23/24	6	2.0	N
WH-SS-02 @ 6' (40.506169 / -104.448207)	02/23/24	6	2.7	N
WH-SS-03 @ 6' (40.506162 / -104.448215)	02/23/24	6	1.9	N
WH-SS-04 @ 6' (40.506168 / -104.448229)	02/23/24	6	1.2	N
WH-N @ 0.5' (40.506190 / -104.448217)	02/23/24	0.5	0.8	N
WH-E @ 0.5' (40.506169 / -104.448189)	02/23/24	0.5	1.1	N
WH-S @ 0.5' (40.506145 / -104.448214)	02/23/24	0.5	0.8	N
WH-W @ 0.5' (40.506167 / -104.448255)	02/23/24	0.5	1.0	N
Background-01 @ 2' (40.506146 / -104.448250)	02/23/24	2	1.3	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDATION # 31628

Sample Location				WH-FS-01 @ 7'		Background-01 @ 2'	
(Latitude / Longitude)				(40.506162 / -104.448213)		(40.506146 / -104.448250)	
Sample Date				2/23/2024		2/23/2024	
Sample Depth				7		2	
PID Reading (ppm-v)				1.9		1.3	
Regulatory Limits							
Chemical of Concern	Units	ECMC Table 915-1 RSSLs	ECMC Table 915-1 GSSLs	Local Clean-Up Level			
VOLATILE ORGANIC COMPOUNDS							
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	--	--	0.295		0.395
pH	standard unit	6-8.3	--	--	8.08		8.32
Sodium Adsorption Ratio (SAR)	--	<6	--	--	0.520		0.620
Specific Conductance (EC)	mmhos/cm	<4	--	--	0.792		0.333
METALS							
Arsenic	mg/kg	0.68	0.29	4.11	4.55		3.29
Barium	mg/kg	15000	82	--	89.4*		62.8
Cadmium	mg/kg	71	0.38	--	0.322		0.134
Copper	mg/kg	3100	46	--	<9.06		<9.77
Lead	mg/kg	400	14	--	9.58		7.16
Nickel	mg/kg	1500	26	--	5.73		5.67
Selenium	mg/kg	390	0.26	--	0.405*		<0.254
Silver	mg/kg	390	0.8	--	0.252		<0.0977
Zinc	mg/kg	23000	370	--	<33.5		<36.2
Hexavalent Chromium	mg/kg	0.3**	0.00067**	0.1 to 1.0**	<0.244**		<0.244**
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 NA - Not Analyzed RSSLs = Residential Soil Screening Levels GSSLs = Protection of Groundwater Soil Screening Levels TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics Notes: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit and/or minimum detection limit. 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. Values presented with asterisk (*) exceed ECMC Table 915-1 GSSLs, only. **Achievable practical quantitative limits for Hexavalent Chromium in soils is in the range of 0.1 to 1 mg/kg.							



ATTACHMENT A

Photo Log

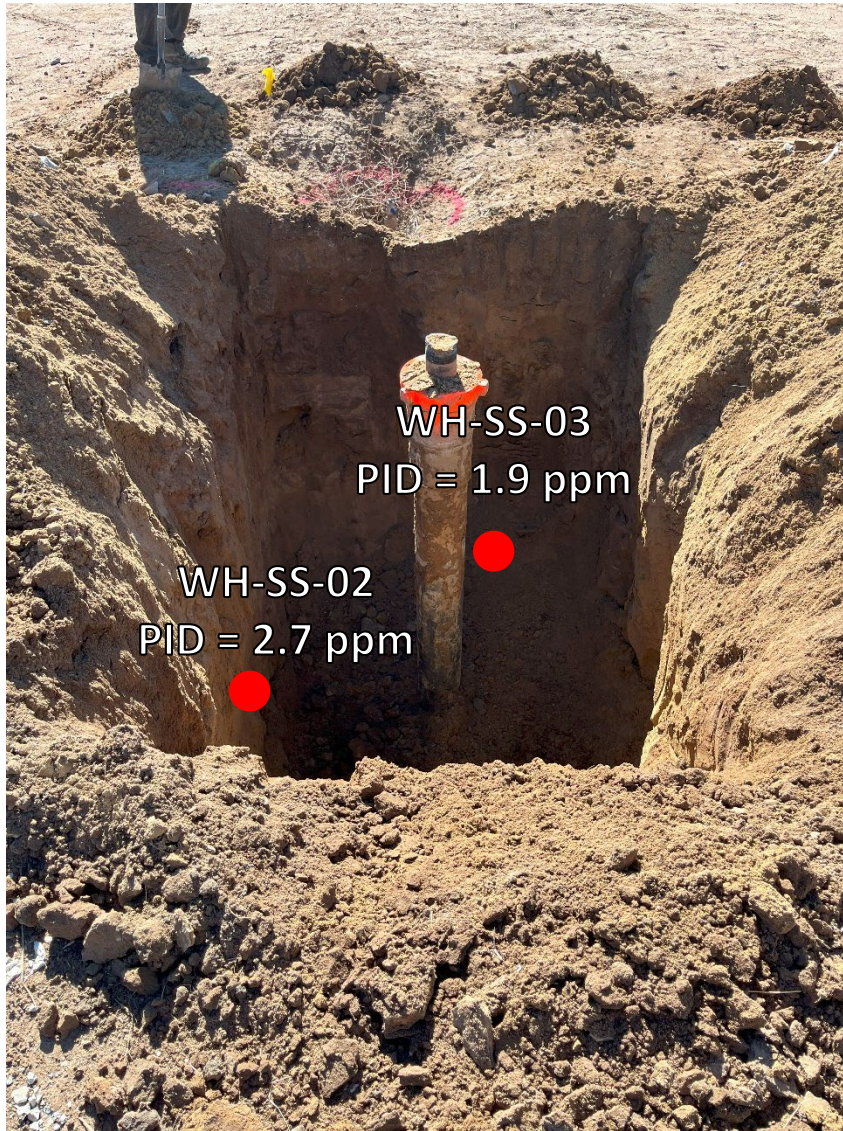
Gibson #11-9
API # 05-123-23102
Remediation # 31628

Closure Assessment

February 2024



Wellhead Excavation – 02/23/24



WH-SS-03

PID = 1.9 ppm

WH-SS-02

PID = 2.7 ppm

Looking south

No petroleum hydrocarbon staining or odor observed



WH-SS-04

PID = 1.2 ppm

WH-SS-01

PID = 2.0 ppm

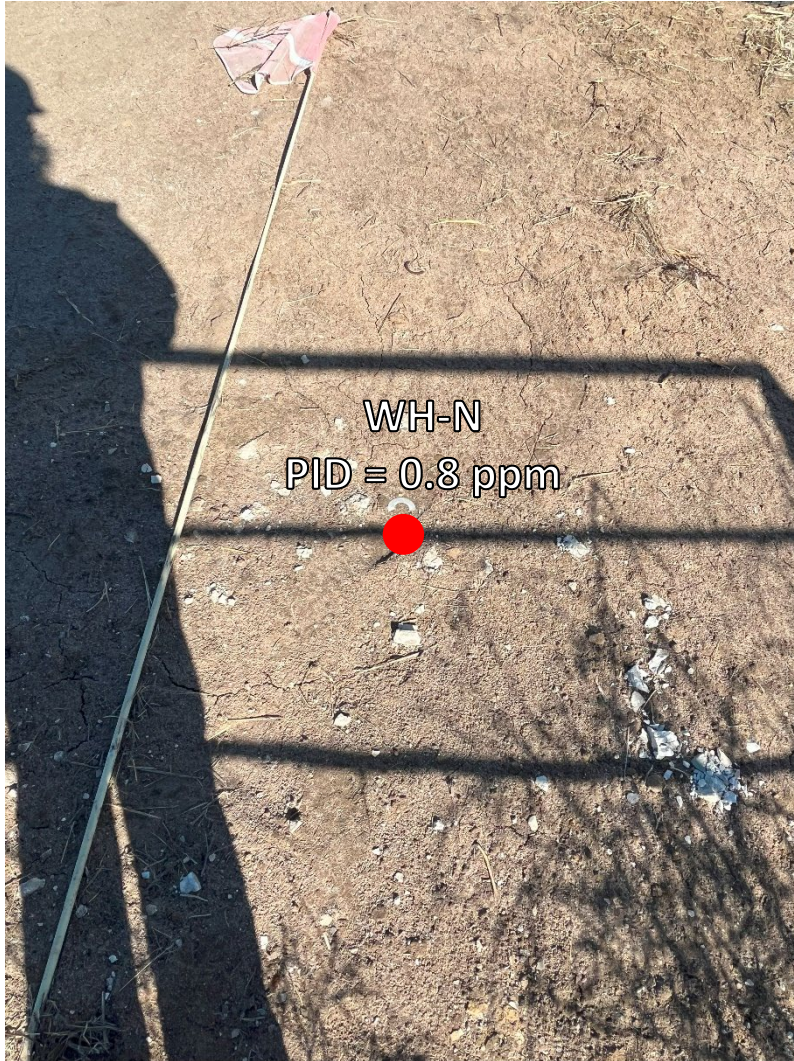
WH-FS-01

PID = 1.9 ppm

Looking west

No petroleum hydrocarbon staining or odor observed

Wellhead Surface – 02/23/24



Looking north

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



Looking east

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

Wellhead Surface – 02/23/24



Looking south

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



Looking west

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



ATTACHMENT B

Laboratory Analytical Report



March 26, 2024

Eagle Environmental Consulting, LLC

Andrew Newberry

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Gibson #11-9

Project Number - [none]

Attached are your analytical results for Noble - Gibson #11-9 received by Origins Laboratory, Inc. February 27, 2024. This project is associated with Origins project number Y402680-01.

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 - Gibson #11-9

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-FS-01@7'	Y402680-01	Soil	February 23, 2024 10:34	02/27/2024 16:26
Background-01@2'	Y402680-02	Soil	February 23, 2024 10:32	02/27/2024 16:26

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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

ORIGINS

LABORATORY, INC

4402000

www.originslaboratory.com

page 1 of 1

Client: Cogale Environmental Consulting

Address: 2000 W 44th Ave

Wheat Ridge CO 80033

Telephone Number: 303-493-0477

Email Address: newberry@cogale-environ.com

Project Manager: Andrew Newberry

Project Name: Gibson Hill-9

Project Number:

Samples Collected By: R/EG

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #		
WH-FS-01071	2/23/24	1034	3	X				X			EC, SAR, pH	1
Background-01021	↓	1032	2	X				X			- Saturated paste prep	2
											MDLs Needed	3
												4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<i>Andrew Newberry</i>	2/27/24	1026	<i>[Signature]</i>	2/27/24	1020	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

B:ill to Jeff

Temp Received- 4

Date Results Needed

Noble

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 - Gibson #11-9

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1402070

Client: Eagle

Client Project ID: Gibson #11-9

Checklist Completed by: JH/CHS

Shipped Via: 410

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

Date/time completed: 2/28/24

Airbill #: N/A

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

Cooler Number/Temperature: 1,4 °C _____ °C _____ °C (Describe) _____ °C

Thermometer ID: 7004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for sub-contracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

2/29/24
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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

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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

WH-FS-01@7'

2/23/2024 10:34:00AM

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

Origins Laboratory, Inc.
Y402680-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.295	0.0997	mg/L	1	B4C0116	03/01/2024	03/05/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4B2901	02/29/2024	03/03/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	79.8 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4B2823	02/28/2024	02/29/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Naphthalene	ND	0.00380	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

WH-FS-01@7'

2/23/2024 10:34:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y402680-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 1,2-Dichloroethane-d4	99.2 %	70-130	B4B28 23	02/28/2024	02/29/2024
Surrogate: Toluene-d8	101 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	94.5 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	4.12	0.499	meq/L	10	[CALC]	03/04/2024	03/05/2024
Magnesium	1.87	0.823	"	"	"	"	"
Sodium	0.900	0.435	"	"	"	"	"

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4B2927	02/29/2024	03/01/2024	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.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

WH-FS-01@7'

2/23/2024 10:34:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y402680-01 (Soil)

PAH by EPA 8270E

Fluoranthene	ND	0.020	mg/kg	1	B4B2927	02/29/2024	03/01/2024	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	100 %	60-130	"	"	"
Surrogate: Pyrene-d10	98.9 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	102 %	60-130	"	"	"

pH in Soil by 9045D

pH	8.08	pH Units	1	B4C0422	03/04/2024	03/05/2024
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SAR by 20B Saturated Paste

SAR	0.520	0.0100	SAR	1	B4C0410	03/04/2024	03/05/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.792	0.00500	mmhos/cm	1	B4C0422	03/04/2024	03/05/2024
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

WH-FS-01@7'

2/23/2024 10:34:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y402680-01 (Soil)

Table 915 metals by EPA 6020B

Arsenic	4.55	0.263	mg/kg	10	B4B2825	02/28/2024	03/15/2024
Barium	89.4	9.06	"	"	"	"	"
Cadmium	0.322	0.0906	"	"	"	"	"
Copper	ND	9.06	"	"	"	"	"
Lead	9.58	0.906	"	"	"	"	"
Nickel	5.73	0.906	"	"	"	"	"
Selenium	0.405	0.236	"	"	"	"	"
Silver	0.252	0.0906	"	"	"	"	"
Zinc	ND	33.5	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L737857	02/23/2024	03/14/2024
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Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

Background-01@2'
2/23/2024 10:32:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y402680-02 (Soil)

Boron (DTPA Sorbitol)

Boron	0.395	0.0995	mg/L	1	B4C0116	03/01/2024	03/05/2024
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Metals by Saturated Paste by EPA 6010

Calcium	1.28	0.499	meq/L	10	[CALC]	03/04/2024	03/05/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	0.619	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.32		pH Units	1	B4C0422	03/04/2024	03/05/2024
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SAR by 20B Saturated Paste

SAR	0.620	0.0100	SAR	1	B4C0410	03/04/2024	03/05/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.333	0.00500	mmhos/cm	1	B4C0422	03/04/2024	03/05/2024
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Table 915 metals by EPA 6020B

Arsenic	3.29	0.283	mg/kg	10	B4B2825	02/28/2024	03/11/2024
Barium	62.8	9.77	"	"	"	"	"
Cadmium	0.134	0.0977	"	"	"	"	"
Copper	ND	9.77	"	"	"	"	"

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

Background-01@2'
2/23/2024 10:32:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y402680-02 (Soil)

Table 915 metals by EPA 6020B

Lead	7.16		0.977	mg/kg	10	B4B2825	02/28/2024	03/11/2024
Nickel	5.67		0.977	"	"	"	"	"
Selenium	ND		0.254	"	"	"	"	"
Silver	ND		0.0977	"	"	"	"	"
Zinc	ND		36.2	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L737857	02/23/2024	03/14/2024
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Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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 B4B2823 - EPA 5030 (soil)										
Blank (B4B2823-BLK1)					Prepared: 02/28/2024 Analyzed: 02/28/2024					
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	103		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	101		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	95.9		70-130			

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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 B4B2823 - EPA 5030 (soil)										
LCS (B4B2823-BS1)					Prepared: 02/28/2024 Analyzed: 02/28/2024					
1,2,4-Trimethylbenzene	0.0831	0.00200	mg/kg	0.100		83.1	70-130			
1,3,5-Trimethylbenzene	0.0824	0.00200	"	0.100		82.4	70-130			
Benzene	0.0934	0.00200	"	0.100		93.4	70-130			
Ethylbenzene	0.0896	0.00200	"	0.100		89.6	70-130			
Naphthalene	0.0961	0.00380	"	0.100		96.1	70-130			
Toluene	0.0919	0.00200	"	0.100		91.9	70-130			
o-Xylene	0.0897	0.00200	"	0.100		89.7	70-130			
m,p-Xylene	0.185	0.00400	"	0.200		92.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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 B4B2823 - EPA 5030 (soil)										
Matrix Spike (B4B2823-MS1)		Source: Y402618-08			Prepared: 02/28/2024 Analyzed: 02/28/2024					
1,2,4-Trimethylbenzene	0.113	0.00200	mg/kg	0.100	ND	113	70-130			
1,3,5-Trimethylbenzene	0.116	0.00200	"	0.100	ND	116	70-130			
Benzene	0.113	0.00200	"	0.100	ND	113	70-130			
Ethylbenzene	0.126	0.00200	"	0.100	ND	126	70-130			
Naphthalene	0.0884	0.00380	"	0.100	ND	88.4	70-130			
Toluene	0.120	0.00200	"	0.100	ND	120	70-130			
o-Xylene	0.121	0.00200	"	0.100	ND	121	70-130			
m,p-Xylene	0.257	0.00400	"	0.200	ND	129	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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 B4B2823 - EPA 5030 (soil)										
Matrix Spike Dup (B4B2823-MSD1)			Source: Y402618-08		Prepared: 02/28/2024 Analyzed: 02/28/2024					
1,2,4-Trimethylbenzene	0.123	0.00200	mg/kg	0.100	ND	123	70-130	8.23	20	
1,3,5-Trimethylbenzene	0.123	0.00200	"	0.100	ND	123	70-130	5.83	20	
Benzene	0.130	0.00200	"	0.100	ND	130	70-130	14.4	20	
Ethylbenzene	0.131	0.00200	"	0.100	ND	131	70-130	3.28	20	QM-07
Naphthalene	0.121	0.00380	"	0.100	ND	121	70-130	30.8	20	QR-02
Toluene	0.132	0.00200	"	0.100	ND	132	70-130	9.17	20	QM-07
o-Xylene	0.129	0.00200	"	0.100	ND	129	70-130	6.40	20	
m,p-Xylene	0.270	0.00400	"	0.200	ND	135	70-130	4.75	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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 B4B2901 - EPA 3550B										
Blank (B4B2901-BLK1)					Prepared: 02/29/2024 Analyzed: 03/02/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	20		"	24.9		80.4	50-150			

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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 B4B2901 - EPA 3550B										
LCS (B4B2901-BS1)					Prepared: 02/29/2024 Analyzed: 03/02/2024					
Diesel (C10-C28)	836	50.0	mg/kg	1000		83.6	70-130			
Residual Range Organics (C28-C40)	850	200	"	1000		85.0	70-130			
Surrogate: o-Terphenyl	40		"	49.8		80.9	50-150			

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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 B4B2901 - EPA 3550B										
Matrix Spike (B4B2901-MS1)		Source: Y402648-01			Prepared: 02/29/2024 Analyzed: 03/02/2024					
Diesel (C10-C28)	834	50.0	mg/kg	1000	ND	83.4	70-130			
Residual Range Organics (C28-C40)	852	200	"	1000	ND	85.2	70-130			
Surrogate: o-Terphenyl	39		"	49.8		77.7	50-150			

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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 B4B2901 - EPA 3550B										
Matrix Spike Dup (B4B2901-MSD1)		Source: Y402648-01			Prepared: 02/29/2024 Analyzed: 03/02/2024					
Diesel (C10-C28)	827	50.0	mg/kg	1000	ND	82.7	70-130	0.864	35	
Residual Range Organics (C28-C40)	836	200	"	1000	ND	83.6	70-130	1.93	35	
Surrogate: o-Terphenyl	40		"	49.8		79.5	50-150			

Origins Laboratory, Inc.



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Jordan A. Bynon, Project Manager

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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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
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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
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Batch B4B2825 - EPA 3050B

Blank (B4B2825-BLK1)

Prepared: 02/28/2024 Analyzed: 03/11/2024

Arsenic	ND	0.290	mg/kg
Barium	ND	10.0	"
Cadmium	ND	0.100	"
Copper	ND	10.0	"
Lead	ND	1.00	"
Nickel	ND	1.00	"
Selenium	ND	0.260	"
Silver	ND	0.100	"
Zinc	ND	37.0	"

LCS (B4B2825-BS1)

Prepared: 02/28/2024 Analyzed: 03/19/2024

Arsenic	5.01	0.290	mg/kg	5.00	100	80-120
Barium	547	10.0	"	500	109	80-120
Cadmium	5.82	0.100	"	5.00	116	80-120
Copper	56.2	10.0	"	50.0	112	80-120
Lead	5.27	1.00	"	5.00	105	80-120
Nickel	5.43	1.00	"	5.00	109	80-120
Selenium	10.3	0.260	"	9.50	109	80-120
Silver	5.40	0.100	"	5.00	108	80-120
Zinc	53.7	37.0	"	50.0	107	80-120

Matrix Spike (B4B2825-MS1)

Source: Y402680-01

Prepared: 02/28/2024 Analyzed: 03/15/2024

Origins Laboratory, Inc.



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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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
Batch B4B2825 - EPA 3050B										
Matrix Spike (B4B2825-MS1)			Source: Y402680-01		Prepared: 02/28/2024 Analyzed: 03/15/2024					
Arsenic	8.56	0.279	mg/kg	4.81	4.55	83.5	75-125			
Barium	607	9.61	"	481	89.4	108	75-125			
Cadmium	5.04	0.0961	"	4.81	0.322	98.1	75-125			
Copper	52.3	9.61	"	48.1	8.85	90.4	75-125			
Lead	15.8	0.961	"	4.81	9.58	130	75-125			QM-07
Nickel	10.0	0.961	"	4.81	5.73	89.6	75-125			
Selenium	9.77	0.250	"	9.13	0.405	103	75-125			
Silver	5.24	0.0961	"	4.81	0.252	104	75-125			
Zinc	80.6	35.6	"	48.1	32.4	100	75-125			
Matrix Spike Dup (B4B2825-MSD1)			Source: Y402680-01		Prepared: 02/28/2024 Analyzed: 03/15/2024					
Arsenic	8.98	0.243	mg/kg	4.18	4.55	106	75-125	4.80	20	
Barium	560	8.37	"	418	89.4	112	75-125	8.14	20	
Cadmium	4.38	0.0837	"	4.18	0.322	97.1	75-125	13.9	20	
Copper	46.0	8.37	"	41.8	8.85	88.7	75-125	12.9	20	
Lead	16.8	0.837	"	4.18	9.58	174	75-125	6.25	20	QM-07
Nickel	8.99	0.837	"	4.18	5.73	78.1	75-125	10.9	20	
Selenium	8.48	0.218	"	7.95	0.405	102	75-125	14.1	20	
Silver	4.49	0.0837	"	4.18	0.252	101	75-125	15.4	20	
Zinc	71.0	31.0	"	41.8	32.4	92.3	75-125	12.7	20	

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

Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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
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Batch B4B2927 - EPA 3580

Blank (B4B2927-BLK1)

Prepared: 02/29/2024 Analyzed: 03/01/2024

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	200		ug/kg	200		99.3	60-130			
Surrogate: Anthracene-d10	200		"	200		98.0	60-130			
Surrogate: Pyrene-d10	200		"	200		98.5	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		97.5	60-130			

LCS (B4B2927-BS1)

Prepared: 02/29/2024 Analyzed: 03/01/2024

1-Methylnaphthalene	0.193	0.002	mg/kg	0.200		96.5	70-130			
2-Methylnaphthalene	0.189	0.002	"	0.200		94.5	70-130			
Acenaphthene	0.196	0.020	"	0.200		97.9	70-130			
Anthracene	0.192	0.020	"	0.200		96.2	70-130			

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Andrew Newberry
Project Number: [none]
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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
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Batch B4B2927 - EPA 3580

LCS (B4B2927-BS1)

Prepared: 02/29/2024 Analyzed: 03/01/2024

Benzo (a) anthracene	0.183	0.005	mg/kg	0.200		91.6	70-130
Benzo (a) pyrene	0.216	0.020	"	0.200		108	70-130
Benzo (b) fluoranthene	0.228	0.020	"	0.200		114	70-130
Benzo (g,h,i) perylene	0.206	0.020	"	0.200		103	70-130
Benzo (k) fluoranthene	0.234	0.020	"	0.200		117	70-130
Chrysene	0.218	0.020	"	0.200		109	70-130
Dibenz (a,h) anthracene	0.222	0.020	"	0.200		111	70-130
Fluoranthene	0.196	0.020	"	0.200		97.8	70-130
Fluorene	0.189	0.020	"	0.200		94.6	70-130
Indeno (1,2,3-cd) pyrene	0.195	0.020	"	0.200		97.5	70-130
Naphthalene	0.200	0.002	"	0.200		100	70-130
Phenanthrene	0.200	0.020	"	0.200		100	70-130
Pyrene	0.202	0.020	"	0.200		101	70-130
Surrogate: Fluorene-d10	190		ug/kg	200		97.2	60-130
Surrogate: Anthracene-d10	200		"	200		98.9	60-130
Surrogate: Pyrene-d10	200		"	200		97.6	60-130
Surrogate: Benzo (a) pyrene-d12	210		"	200		106	60-130

Matrix Spike (B4B2927-MS1)

Source: Y402618-01

Prepared: 02/29/2024 Analyzed: 03/01/2024

1-Methylnaphthalene	0.220	0.002	mg/kg	0.200	0.0004	110	70-130
2-Methylnaphthalene	0.217	0.002	"	0.200	ND	109	70-130
Acenaphthene	0.223	0.020	"	0.200	ND	111	70-130
Anthracene	0.235	0.020	"	0.200	ND	118	70-130
Benzo (a) anthracene	0.199	0.005	"	0.200	0.002	98.3	70-130
Benzo (a) pyrene	0.238	0.020	"	0.200	0.001	118	70-130
Benzo (b) fluoranthene	0.232	0.020	"	0.200	0.0004	116	70-130
Benzo (g,h,i) perylene	0.204	0.020	"	0.200	0.001	101	70-130

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Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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
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Batch B4B2927 - EPA 3580

Matrix Spike (B4B2927-MS1)		Source: Y402618-01			Prepared: 02/29/2024 Analyzed: 03/01/2024					
Benzo (k) fluoranthene	0.238	0.020	mg/kg	0.200	ND	119	70-130			
Chrysene	0.225	0.020	"	0.200	0.0005	112	70-130			
Dibenz (a,h) anthracene	0.261	0.020	"	0.200	0.001	130	70-130			
Fluoranthene	0.205	0.020	"	0.200	0.0004	102	70-130			
Fluorene	0.222	0.020	"	0.200	0.0002	111	70-130			
Indeno (1,2,3-cd) pyrene	0.232	0.020	"	0.200	ND	116	70-130			
Naphthalene	0.228	0.002	"	0.200	ND	114	70-130			
Phenanthrene	0.233	0.020	"	0.200	0.0002	117	70-130			
Pyrene	0.230	0.020	"	0.200	ND	115	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		98.9	60-130			
Surrogate: Anthracene-d10	210		"	200		107	60-130			
Surrogate: Pyrene-d10	190		"	200		94.6	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			

Matrix Spike Dup (B4B2927-MSD1)		Source: Y402618-01			Prepared: 02/29/2024 Analyzed: 03/01/2024					
1-Methylnaphthalene	0.193	0.002	mg/kg	0.200	0.0004	96.1	70-130	13.2	20	
2-Methylnaphthalene	0.189	0.002	"	0.200	ND	94.5	70-130	13.8	20	
Acenaphthene	0.194	0.020	"	0.200	ND	96.8	70-130	14.0	20	
Anthracene	0.185	0.020	"	0.200	ND	92.4	70-130	24.0	20	QR-02
Benzo (a) anthracene	0.183	0.005	"	0.200	0.002	90.4	70-130	8.30	20	
Benzo (a) pyrene	0.214	0.020	"	0.200	0.001	107	70-130	10.5	20	
Benzo (b) fluoranthene	0.209	0.020	"	0.200	0.0004	104	70-130	10.2	20	
Benzo (g,h,i) perylene	0.204	0.020	"	0.200	0.001	101	70-130	0.219	20	
Benzo (k) fluoranthene	0.203	0.020	"	0.200	ND	101	70-130	16.0	20	
Chrysene	0.211	0.020	"	0.200	0.0005	105	70-130	6.39	20	
Dibenz (a,h) anthracene	0.230	0.020	"	0.200	0.001	115	70-130	12.7	20	
Fluoranthene	0.179	0.020	"	0.200	0.0004	89.5	70-130	13.5	20	

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Andrew Newberry
Project Number: [none]
Project: Noble - Gibson #11-9

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
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Batch B4B2927 - EPA 3580

Matrix Spike Dup (B4B2927-MSD1)		Source: Y402618-01			Prepared: 02/29/2024 Analyzed: 03/01/2024					
Fluorene	0.186	0.020	mg/kg	0.200	0.0002	92.6	70-130	17.7	20	
Indeno (1,2,3-cd) pyrene	0.210	0.020	"	0.200	ND	105	70-130	10.3	20	
Naphthalene	0.196	0.002	"	0.200	ND	98.0	70-130	14.9	20	
Phenanthrene	0.199	0.020	"	0.200	0.0002	99.5	70-130	15.8	20	
Pyrene	0.199	0.020	"	0.200	ND	99.6	70-130	14.6	20	
Surrogate: Fluorene-d10	190		ug/kg	200		97.1	60-130			
Surrogate: Anthracene-d10	210		"	200		104	60-130			
Surrogate: Pyrene-d10	200		"	200		100	60-130			
Surrogate: Benzo (a) pyrene-d12	220		"	200		108	60-130			

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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
Batch B4C0116 - DTPA Sorbitol Preparation										
Blank (B4C0116-BLK1)					Prepared: 03/01/2024 Analyzed: 03/05/2024					
Boron	ND	0.100	mg/L							
Duplicate (B4C0116-DUP1)					Source: Y402618-01 Prepared: 03/01/2024 Analyzed: 03/05/2024					
Boron	0.424	0.100	mg/L		0.415			2.24	50	
Batch B4C0410 - Saturated Paste Metals										
Blank (B4C0410-BLK1)					Prepared: 03/04/2024 Analyzed: 03/05/2024					
Calcium PPM	ND	10.0	mg/L							
SAR	ND	0.0100	SAR							
Magnesium PPM	ND	10.0	mg/L							
Sodium PPM	ND	10.0	"							
Duplicate (B4C0410-DUP1)					Source: Y402679-02 Prepared: 03/04/2024 Analyzed: 03/05/2024					
Calcium PPM	25.3	10.0	mg/L		23.2			8.37	50	
SAR	ND	0.0100	SAR		5.06				200	
Magnesium PPM	5.66	10.0	mg/L		5.15			9.44	50	
Sodium PPM	113	10.0	"		104			8.97	50	

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Project Number: [none]
Project: Noble - Gibson #11-9

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C0422 - Saturated Paste pH/EC										
Blank (B4C0422-BLK1)					Prepared: 03/04/2024 Analyzed: 03/05/2024					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B4C0422-DUP1)					Source: Y402679-02 Prepared: 03/04/2024 Analyzed: 03/05/2024					
pH	8.46		pH Units		8.37			1.07	25	
Specific Conductance (EC)	0.756	0.00500	mmhos/cm		0.710			6.36	25	

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Project: Noble - Gibson #11-9

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
Batch L737857 -										
DUP (L 98947-DUP)		Source: 98947			Prepared: Analyzed: 03/14/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500		-	0	20	
MS (L 98947-MS)		Source: 98947			Prepared: Analyzed: 03/14/2024					
Chromium, Hexavalent	4.02	2.5	mg/Kg	39.8	< 0.244	10	75-125			*
LCS (LCS)					Prepared: Analyzed: 03/14/2024					
Chromium, Hexavalent	6.03	0.5	mg/Kg	8		75	75-125			
LRB (LRB)					Prepared: Analyzed: 03/14/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

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Notes and Definitions

U Sample is Non-Detect.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

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

* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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

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