



**EAGLE**  
ENVIRONMENTAL  
CONSULTING, INC.

4101 Inca Street, Denver, CO 80211 • Phone: 303-433-0479 • Fax: 303-325-5449 • [www.eagle-enviro.com](http://www.eagle-enviro.com)

December 31, 2018

Mr. Jacob Evans  
Noble Energy, Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, Colorado 80631

**Cecil USX A #1-6, 7, 8, 9, 10, 11, 17, 19**  
**Water Vault Removal**  
**40.515042 / -104.497730**  
**SE¼ NW¼ SEC.1 T6N R64W 6PM**  
**Weld County, Colorado**  
**Location ID 310486**

Dear Mr. Evans,

Eagle Environmental Consulting, Inc. (EAGLE) is pleased to present the results from the water vault removal at the Cecil USX A #1-6, 7, 8, 9, 10, 11, 17, 19 site (site).

On December 12, 2018, EAGLE collected soil samples following the removal of two water vaults at the site. Per Noble Standard Operation Procedures, a soil sample was collected from each sidewall and the floor for field screening. The sidewall soil samples (SS-01@3', SS-02@3', SS-03@3', and SS-04@3') and the floor soil sample (SS-05@4') were submitted for laboratory analysis.

Based on laboratory analytical results, the soil samples SS-01@3', SS-02@3', SS-03@3', SS-04@3' and SS-05@4' did not contain concentrations of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, or total petroleum hydrocarbons (TPH) exceeding Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 regulatory limits. Additionally, sidewall soil sample's (SS-04@3') specific conductance, pH, and sodium adsorption ratio (SAR) values were within COGCC Table 910-1 regulatory limits.

EAGLE sincerely appreciates the opportunity to provide our services. If you have any questions or require further information, please contact us at (303) 433-0479.

Sincerely,

***EAGLE ENVIRONMENTAL CONSULTING, INC.***

Andrew Newberry  
Project Geologist

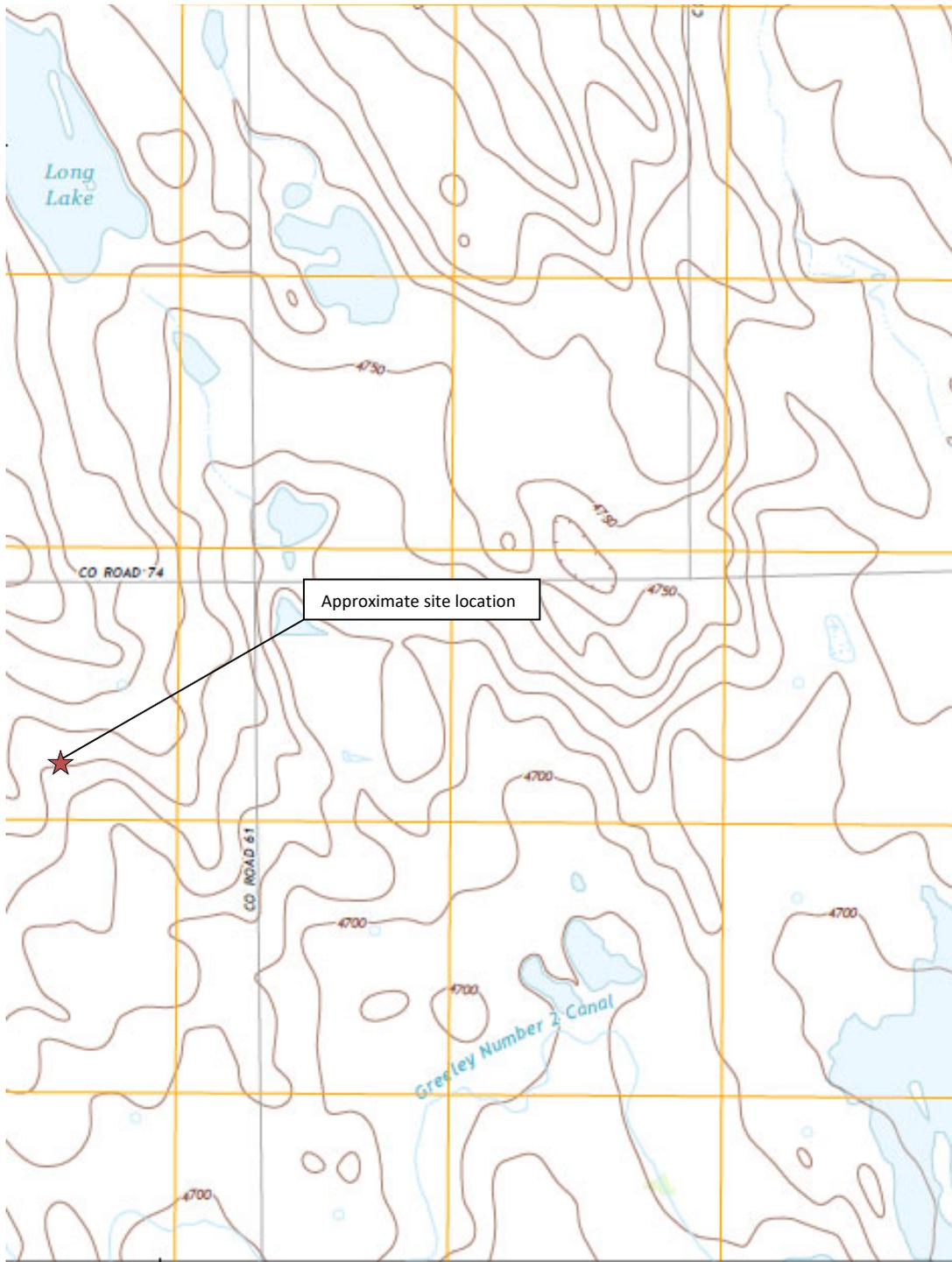


## **FIGURES**

**Figure 1: Topographic Site Location Map**

**Figure 2: Aerial Site Location Map**

**Figure 3: Soil Analytical Map**



**Topographical Site Location Map**  
 Cecil USX A #1-6,7,8,9,10,11,17,19  
 Water Vault Removal  
 40.515042 / -104.497730  
 SE¼ NW¼ SEC.1 T6N R64W 6PM  
 Weld County, Colorado  
 Location ID 310486



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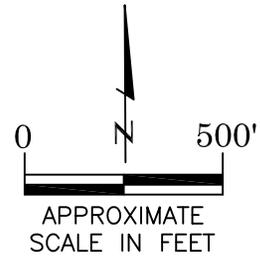
Source: USGS 7.5 Minute Topographic Map, Cornish, CO Quadrangle 2013

**Figure 1**



**LEGEND**

- CECIL USX A #1-6, 7, 8, 9, 10, 11, 17, 19 TANK BATTERY
- CECIL USX A #1-6 WELL HEAD
- CECIL USX A #1-7 WELL HEAD
- CECIL USX A #1-8 WELL HEAD
- CECIL USX A #1-9 WELL HEAD
- CECIL USX A #1-10 WELL HEAD
- CECIL USX A #1-11 WELL HEAD
- CECIL USX A #1-17 WELL HEAD
- CECIL USX A #1-19 WELL HEAD
  
- APPROXIMATE LOCATION OF WATER VAULT REMOVAL



AERIAL SITE LOCATION MAP  
 CECIL USX A #1-6, 7, 8, 9, 10, 11, 17, 19  
 WATER VAULT REMOVAL  
 40.515042 / -104.497730  
 SE1/4 NW1/4 SEC.1 T6N R64W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 310486

DATE:  
12/21/18

FIG. NO. DRAWN BY:  
2 AMN



**EAGLE**  
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 CONSULTING, INC.  
 4101 INCA STREET, DENVER, CO 80211  
 Ph: 303-433-0479 • F: 303-325-5449



SS-01@3'  
12/12/18  
3'  
B = <0.002  
T = <0.002  
E = <0.002  
X = <0.002  
N = <0.008  
G = <0.200  
D = <50.0  
EC = NA  
SAR= NA  
pH = NA

SS-02@3'  
12/12/18  
3'  
B = <0.002  
T = <0.002  
E = <0.002  
X = <0.002  
N = <0.008  
G = <0.200  
D = <50.0  
EC = NA  
SAR= NA  
pH = NA

SS-05@4'  
12/12/18  
4'  
B = <0.002  
T = <0.002  
E = <0.002  
X = <0.002  
N = <0.008  
G = <0.200  
D = <50.0  
EC = NA  
SAR= NA  
pH = NA

SS-04@3'  
12/12/18  
3'  
B = <0.002  
T = <0.002  
E = <0.002  
X = <0.002  
N = <0.008  
G = <0.200  
D = <50.0  
EC = 0.0242  
SAR= 2.23  
pH = 8.24

SS-03@3'  
12/12/18  
3'  
B = <0.002  
T = <0.002  
E = <0.002  
X = <0.002  
N = <0.008  
G = <0.200  
D = <50.0  
EC = NA  
SAR= NA  
pH = NA

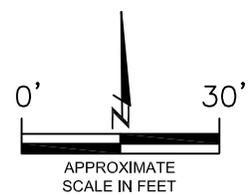
**LEGEND**

- - - - APPROXIMATE EXCAVATION BOUNDARIES
- APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

**PARAMETERS**

SOIL 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)  
EC = SPECIFIC CONDUCTANCE (mmhos/cm)  
SAR= SODIUM ADSORPTION RATIO  
pH = pH (pH UNITS)

mg/kg = MILLIGRAMS PER KILOGRAM  
mmhos/cm = MILLIMHOS PER CENTIMETER  
TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS  
TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS  
NA = NOT ANALYZED  
NOTE: VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS



**SOIL ANALYTICAL MAP**  
CECIL USX A #1-6, 7, 8, 9, 10, 11, 17, 19  
WATER VAULT REMOVAL  
40.515042 / -104.497730  
SE1/4 NW1/4 SEC.1 T6N R64W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 310486

DATE:  
12/21/18  
DRAWN BY:  
kf  
FIG.  
NO. 3

**EAGLE**  
ENVIRONMENTAL  
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4101 INCA STREET, DENVER, CO 80211  
Ph: 303-433-0479 • F: 303-325-5449



## **ATTACHMENT A**

### **Laboratory Analytical Report**



December 19, 2018

Eagle Environmental Consulting, Inc.

Martin C Eckert III

4101 Inca Street

Denver

CO 80211

**Project Name - Noble - Cecil USX A  
#1-6,7,8,9,10,11,17,19**

**Project Number - [none]**

Attached are your analytical results for Noble - Cecil USX A #1-6,7,8,9,10,11,17,19 received by Origins Laboratory, Inc. December 12, 2018. This project is associated with Origins project number Y812195-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Eagle Environmental Consulting, Inc.  
4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Noble - Cecil USX A  
#1-6,7,8,9,10,11,17,19

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-01@3'	Y812195-01	Soil	December 12, 2018 15:16	12/12/2018 16:49
SS-02@3'	Y812195-02	Soil	December 12, 2018 15:18	12/12/2018 16:49
SS-03@3'	Y812195-03	Soil	December 12, 2018 15:20	12/12/2018 16:49
SS-04@3'	Y812195-04	Soil	December 12, 2018 15:22	12/12/2018 16:49
SS-05@4'	Y812195-05	Soil	December 12, 2018 15:24	12/12/2018 16:49

Origins Laboratory, Inc.



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

Eagle Environmental Consulting, Inc.  
 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

www.originslaboratory.com

page  of

**ORIGINS** LABORATORY, INC

Client: Eagle Environmental Consulting  
 Address: 4101 Inca Street  
 Telephone Number: 303.433.0479  
 Email Address: MCE@eagle-environment.com

Project Manager: Martin Eckert  
 Project Name: Cecil USX A #1-6,7,8,9,10,11,17,19  
 Project Number: [blank]  
 Samples Collected By: K. Bismark

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analyst	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #		
SS-0123	12/12/18	1516	1	X				X			CIBTEX 8200C TPH - Dec 2015 Naphthalene	1
SS-0223		1518	1	X				X				2
SS-0323		1520	1	X				X				3
SS-0423		1522	2	X				X		X+PH, EC, SAR		4
SS-0524		1524	1	X				X				5
												6
												7
												8
												9
												10

Relinquished By: [Signature] Date: 12/12/18 Time: 1649

Received By: [Signature] Date: 12/12/18 Time: 1649

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

11.1.16 17 - 815902334 77 Data Pacific Standard

Origins Laboratory, Inc.

*Jefe Pellegrini*

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

Eagle Environmental Consulting, Inc.  
 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y812195

Client: Eagle

Client Project ID: Noble - Cecil USX A 1-6,7,8,9,10

Checklist Completed by: JG

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

Date/time completed: 12/13/2018

Airbill #: N/A

Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_ (Describe)

Cooler Number/Temperature: 1 12.7 °C \_\_\_\_\_ °C \_\_\_\_\_ °C \_\_\_\_\_ °C

Thermometer ID: T003

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> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)?	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" 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 checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
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)		<input checked="" type="checkbox"/>		
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) [Signature] Date/Time Reviewed 12/14/18

Origins Laboratory, Inc.

*Jefe Pellegrini*

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

Eagle Environmental Consulting, Inc.  
 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

SS-01@3'

12/12/2018 3:16:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y812195-01 (Soil)

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8L1305	KDK	12/13/2018	12/14/2018	U
Surrogate: <i>o</i> -Terphenyl	89.6 %	59-131			"	"	"	"	

**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8L1704	KDK	12/14/2018	12/14/2018	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Napthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	114 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.6 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.  
 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

SS-02@3'

12/12/2018 3:18:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y812195-02 (Soil)

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8L1305	KDK	12/13/2018	12/14/2018	U
Surrogate: o-Terphenyl	80.0 %	59-131			"	"	"	"	

**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8L1704	KDK	12/14/2018	12/14/2018	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Napthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	110 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.2 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.  
 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

SS-03@3'

12/12/2018 3:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y812195-03 (Soil)

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8L1305	KDK	12/13/2018	12/14/2018	U
Surrogate: <i>o</i> -Terphenyl	88.7 %	59-131			"	"	"	"	

**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8L1704	KDK	12/14/2018	12/14/2018	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Napthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	113 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.  
 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

SS-04@3'

12/12/2018 3:22:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y812195-04 (Soil)

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8L1305	KDK	12/13/2018	12/14/2018	U
Surrogate: o-Terphenyl	89.8 %	59-131			"	"	"	"	

**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8L1704	KDK	12/14/2018	12/14/2018	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Napthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	115 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.5 %	70-130			"	"	"	"	

**Metals (Saturated Paste Prep)**

Calcium	21.43		me/L	1	'[none]'		12/17/2018	12/18/2018	
Magnesium	6.86		"	"	"		"	"	
Sodium	8.40		"	"	"		"	"	

**pH in Soil by EPA 9045D**

Origins Laboratory, Inc.



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 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

**SS-04@3'**

**12/12/2018 3:22:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812195-04 (Soil)**

**pH in Soil by EPA 9045D**

pH	8.24		pH Units	1	B8L1307	OLAB	12/13/2018	12/13/2018	
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**SAR by 20B Saturated Paste**

SAR	2.23			1	'[none]'		12/17/2018	12/18/2018	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.0242	0.00500	mmhos/cm	1	B8L1308	OLAB	12/13/2018	12/13/2018	
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Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.  
 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

SS-05@4'

12/12/2018 3:24:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	---------	----------	----------	-------

**Origins Laboratory, Inc.**  
 Y812195-05 (Soil)

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8L1305	KDK	12/13/2018	12/14/2018	U
Surrogate: <i>o</i> -Terphenyl	80.4 %	59-131			"	"	"	"	

**GBTEX + Napthalene by 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8L1704	KDK	12/14/2018	12/14/2018	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Napthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	113 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.4 %	70-130			"	"	"	"	

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Eagle Environmental Consulting, Inc.  
 4101 Inca Street  
 Denver CO 80211

Martin C Eckert III  
 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8L1704 - EPA 5030 (soil)**

**Blank (B8L1704-BLK1)**

Prepared: 12/17/2018 Analyzed: 12/17/2018

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.2	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8L1704 - EPA 5030 (soil)

**LCS (B8L1704-BS1)**

Prepared: 12/17/2018 Analyzed: 12/17/2018

Benzene	0.118	0.002	mg/kg	0.100		118	70-130			
Toluene	0.112	0.002	"	0.100		112	70-130			
Ethylbenzene	0.102	0.002	"	0.100		102	70-130			
m,p-Xylene	0.208	0.004	"	0.200		104	70-130			
o-Xylene	0.099	0.002	"	0.100		99.4	70-130			
Naphthalene	0.096	0.008	"	0.100		95.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8L1704 - EPA 5030 (soil)

Matrix Spike (B8L1704-MS1)	Source: Y812195-01			Prepared: 12/17/2018 Analyzed: 12/17/2018						
Benzene	0.098	0.002	mg/kg	0.100	ND	97.5	70-130			
Toluene	0.085	0.002	"	0.100	ND	84.9	70-130			
Ethylbenzene	0.082	0.002	"	0.100	ND	82.0	70-130			
m,p-Xylene	0.167	0.004	"	0.200	ND	83.5	70-130			
o-Xylene	0.080	0.002	"	0.100	ND	80.1	70-130			
Naphthalene	0.071	0.008	"	0.100	ND	70.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8L1704 - EPA 5030 (soil)

Matrix Spike Dup (B8L1704-MSD1)	Source: Y812195-01			Prepared: 12/17/2018 Analyzed: 12/17/2018						
Benzene	0.109	0.002	mg/kg	0.100	ND	109	70-130	11.5	20	
Toluene	0.093	0.002	"	0.100	ND	93.2	70-130	9.39	20	
Ethylbenzene	0.090	0.002	"	0.100	ND	89.8	70-130	8.99	20	
m,p-Xylene	0.183	0.004	"	0.200	ND	91.7	70-130	9.33	20	
o-Xylene	0.088	0.002	"	0.100	ND	88.3	70-130	9.64	20	
Naphthalene	0.084	0.008	"	0.100	ND	84.4	70-130	17.6	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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 Project: Noble - Cecil USX A  
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**Volatile Organic Compounds by GC/MS SW846 8260C - 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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**Extractable Petroleum Hydrocarbons by 8015C - 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 B8L1305 - EPA 3580**

<b>Blank (B8L1305-BLK1)</b>					Prepared: 12/13/2018 Analyzed: 12/13/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	40		"	50.0		80.3	59-131			
<b>Blank (B8L1305-BLK2)</b>					Prepared: 12/13/2018 Analyzed: 12/13/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	41		"	50.0		82.6	59-131			
<b>LCS (B8L1305-BS1)</b>					Prepared: 12/13/2018 Analyzed: 12/13/2018					
Diesel (C10-C28)	940	50.0	mg/kg	1000		94.0	64-121			
Surrogate: o-Terphenyl	47		"	50.0		94.0	59-131			
<b>LCS (B8L1305-BS2)</b>					Prepared: 12/13/2018 Analyzed: 12/13/2018					
Diesel (C10-C28)	955	50.0	mg/kg	1000		95.5	64-121			
Surrogate: o-Terphenyl	47		"	50.0		93.5	59-131			
<b>Matrix Spike (B8L1305-MS1)</b>					Source: Y812193-02 Prepared: 12/13/2018 Analyzed: 12/13/2018					
Diesel (C10-C28)	952	50.0	mg/kg	1000	ND	95.2	53-125			
Surrogate: o-Terphenyl	45		"	50.0		90.5	59-131			
<b>Matrix Spike (B8L1305-MS2)</b>					Source: Y812199-01 Prepared: 12/13/2018 Analyzed: 12/13/2018					
Diesel (C10-C28)	1050	50.0	mg/kg	1000	ND	105	53-125			
Surrogate: o-Terphenyl	49		"	50.0		98.8	59-131			

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 Denver CO 80211

Martin C Eckert III  
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 Project: Noble - Cecil USX A  
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8L1305 - EPA 3580</b>										
<b>Matrix Spike Dup (B8L1305-MSD1)</b>		<b>Source: Y812193-02</b>			Prepared: 12/13/2018 Analyzed: 12/13/2018					
Diesel (C10-C28)	1070	50.0	mg/kg	1000	ND	107	53-125	12.1	20	
Surrogate: o-Terphenyl	50		"	50.0		99.7	59-131			
<b>Matrix Spike Dup (B8L1305-MSD2)</b>		<b>Source: Y812199-01</b>			Prepared: 12/13/2018 Analyzed: 12/13/2018					
Diesel (C10-C28)	1000	50.0	mg/kg	1000	ND	100	53-125	4.70	20	
Surrogate: o-Terphenyl	46		"	50.0		91.3	59-131			

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 Project Number: [none]  
 Project: Noble - Cecil USX A  
 #1-6,7,8,9,10,11,17,19

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8L1307 - NO PREP</b>										
<b>Duplicate (B8L1307-DUP1)</b>		<b>Source: Y812193-01</b>			Prepared: 12/13/2018 Analyzed: 12/13/2018					
pH	8.55		pH Units		8.55			0.00	25	
<b>Batch B8L1308 - NO PREP</b>										
<b>Blank (B8L1308-BLK1)</b>		Prepared: 12/13/2018 Analyzed: 12/13/2018								
Specific Conductance (EC)	0.00310	0.00500	mmhos/cm							
<b>Duplicate (B8L1308-DUP1)</b>		<b>Source: Y812193-01</b>			Prepared: 12/13/2018 Analyzed: 12/13/2018					
Specific Conductance (EC)	0.0911	0.00500	mmhos/cm		0.0911			0.00	25	

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4101 Inca Street  
Denver CO 80211

Martin C Eckert III  
Project Number: [none]  
Project: Noble - Cecil USX A  
#1-6,7,8,9,10,11,17,19

**Notes and Definitions**

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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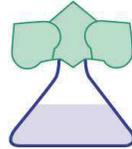
Jen Pellegrini For Noelle Doyle Mathis, President

# American Agricultural Laboratory, Inc.

700 West D Street / PO Box 370 / McCook, Nebraska 69001

Office: 308-345-3670 / FAX: 308-345-7880

www.AmAgLab.com



95029

ORIGINS LABORATORY INC

1725 ELK PLACE

DENVER CO 80211

NAME : ORIGINS

DATE RECEIVED: 12/17/2018

DATE REPORTED: 12/19/2018

## SOIL TEST RESULTS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH		EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA)		PHOSPHORUS						
				1 : 1 Soil	Buffer Woodruff				ppm	lbs/A	P1 ppm	Bicarb ppm	P2 ppm	M2 ppm	M3 ppm		
2583766	Y812195	04	0-8														

LAB NUMBER	SULFATE-S Ca-P ppm	NH4OAc (Exchangeable)				DTPA				BORON Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION						
		K ppm	Ca ppm	Mg ppm	Na ppm	Zn ppm	Fe ppm	Mn ppm	Cu ppm			BASE	H	Ca	Mg	K	Na	
2583766																		

LAB NUMBER	SOLUBLE (SAT. EXT.)			SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS				CHLORIDE ppm	EXCH. NH4-N ppm	ALUMINUM ppm	TOTAL N %
	Ca me/L	Mg me/L	Na me/L				SAND %	SILT %	CLAY %	SOIL TEXTURE				
2583766	21.43	6.86	8.40	2.23	2	0								

## SUGGESTED FERTILIZER RECOMMENDATIONS

LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N	P2O5	K2O	S	Zn	MgO	Fe	Mn	Cu	B	Cl	LIME REC 60% ECCE T/A
2583766	Y812195	04								lbs/A						

Analysis By: American Agricultural Lab

Recommendations By: American Agricultural Lab



# Your Lab's letterhead here...

Address

City, St. Zip

Phone/Fax

# SUBCONTRACT ORDER

### Sending Laboratory:

Origins Laboratory, Inc.  
1725 West Elk Place  
Denver, CO 80211  
Phone: 303.433.1322  
Fax: 303.265.9645

Project Manager: Noelle Doyle Mathis

### Subcontracted Laboratory:

American Agricultural Laboratory, Inc  
210 East 1st Street  
McCook, NE 69001  
Phone: (308) 345-3670  
Fax: (308) 345-7880

### Work Order: Y812195

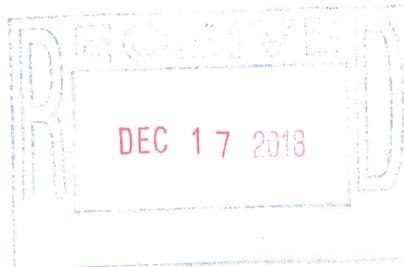
648

Analysis	Due	Expires	Comments
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Sample ID: Y812195-04 Soil Sampled: 12/12/2018 15:22

SAR (Saturated Paste Prep) 12/19/2018 12/13/2018 15:22

Containers Supplied:



  
\_\_\_\_\_  
Released By

12/13/18  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Received By

\_\_\_\_\_  
Date