



June 18, 2024

Eagle Environmental Consulting, LLC

Andrew Newberry

8000 W 44th Ave

Wheat Ridge CO 80033

Project Name - Noble - Pioneer USX #Y07-08D

Project Number - [none]

Attached are your analytical results for Noble - Pioneer USX #Y07-08D received by Origins Laboratory, Inc. May 13, 2024. This project is associated with Origins project number Y405399-01.

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 - Pioneer USX #Y07-08D

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL05@4'	Y405399-01	Soil	May 13, 2024 9:25	05/13/2024 17:03
FL07@4'	Y405399-02	Soil	May 13, 2024 9:50	05/13/2024 17:03

Chain of Custody Modification Request

On 6/3/2024, Garrett Krug from Eagle Environmental contacted Jordan Bynon via email regarding Y405399 requesting that Table 915 Metals be added to both samples. Requested modifications to the chain of custody were made by Jordan Bynon on 6/3/2024.

Origins Laboratory, Inc.



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Andrew Newberry  
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4405399

**ORIGINS**  
 LABORATORY, INC

page | of |

Client: Eagle Environmental Consulting  
 Address: 8000 W 44th Ave  
 Wheat Ridge, CO 80033  
 Telephone Number: 303-493-0479  
 Email Address: anewberry@eagle-environ.com

Project Manager: Andrew Newberry  
 Project Name: Pioneer USX #Y07-08D  
 Project Number: \_\_\_\_\_  
 Samples Collected By: RS

Fax: 303.265.9645 | Phone: 303.433.1322

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 #	Other	GC/MS/IC/ANION	IMS - GC/MS	PAHs - GC/MS SIM	
FLO5e4	5/13/24	915	3	X				X				X	X	X	EC, SAR, pH = 1
FLO7e4	↓	950	3	X				X				X	X	X	Saturated peak prep 2
															3
															4
															MDLs needed
															5
															6
															7
															8
															9
															10

Date Results Needed: None

Temp Received: 6.3

Bill to Wade

Origins Laboratory, Inc.



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Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 405399 Client: Eagle  
 Client Project ID: Pioneer USX #407-07C  
 Checklist Completed by: JTH/EAH Shipped Via: HLV  
 Date/time completed: 5/14/12 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 143 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe)  
 Thermometer ID: 7005

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? <b>If yes, contact client and note in narrative.</b>			<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 HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+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 5/15/12

Origins Laboratory, Inc.

[Signature]

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Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Pioneer USX #Y07-08D

**FL05@4'**  
**5/13/2024 9:25:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405399-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.192		0.0988	mg/L	1	B4E1513	05/15/2024	05/16/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4E1401	05/14/2024	05/17/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	97.4 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4E1433	05/14/2024	05/15/2024	Ua
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Benzene	ND		0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Naphthalene	ND		0.00380	"	"	"	"	"	Ua
Toluene	ND		0.00200	"	"	"	"	"	Ua
Xylenes, total	ND		0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	Ua

Origins Laboratory, Inc.



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**5/13/2024 9:25:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405399-01 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: 1,2-Dichloroethane-d4	107 %		70-130			B4E14 33	05/14/2024	05/15/2024	
Surrogate: Toluene-d8	98.2 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	2.01		0.499	meq/L	10	[CALC]	05/14/2024	05/15/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4E1425	05/14/2024	05/16/2024	Ua
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	Ua
Acenaphthene	ND		0.020	"	"	"	"	"	Ua
Anthracene	ND		0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Chrysene	ND		0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	Ua

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**FL05@4'**

**5/13/2024 9:25:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405399-01 (Soil)**

**PAH by EPA 8270E**

Fluoranthene	ND		0.020	mg/kg	1	B4E1425	05/14/2024	05/16/2024	Ua
Fluorene	ND		0.020	"	"	"	"	"	Ua
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	Ua
Pyrene	ND		0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	101 %		60-130			"	"	"	
Surrogate: Anthracene-d10	98.6 %		60-130			"	"	"	
Surrogate: Pyrene-d10	86.8 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	94.5 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	8.33			pH Units	1	B4E1420	05/14/2024	05/15/2024	
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**SAR by 20B Saturated Paste**

SAR	0.185		0.0100	SAR	1	B4E1415	05/14/2024	05/15/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.278		0.00500	mmhos/cm	1	B4E1420	05/14/2024	05/15/2024	
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**Table 915 metals by EPA 6020B**

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**FL05@4'**

**5/13/2024 9:25:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405399-01 (Soil)**

**Table 915 metals by EPA 6020B**

Arsenic	3.19		0.244	mg/kg	10	B4F0331	06/03/2024	06/04/2024	
Barium	73.1		8.41	"	"	"	"	"	
Cadmium	0.107		0.0841	"	"	"	"	"	
Copper	ND		8.41	"	"	"	"	"	
Lead	5.95		0.841	"	"	"	"	"	
Nickel	5.89		0.841	"	"	"	"	"	
Selenium	ND		0.219	"	"	"	"	"	
Silver	ND		0.0841	"	"	"	"	"	
Zinc	ND		31.1	"	"	"	"	"	

**Total Metals 7196A**

Hexavalent Chromium	ND	0.119	0.298	mg/kg dry	1	2624460	06/12/2024	06/12/2024	U
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**FL07@4'**  
**5/13/2024 9:50:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405399-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND		0.100	mg/L	1	B4E1513	05/15/2024	05/16/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4E1401	05/14/2024	05/17/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

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

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4E1433	05/14/2024	05/15/2024	Ua
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Benzene	ND		0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Naphthalene	ND		0.00380	"	"	"	"	"	Ua
Toluene	ND		0.00200	"	"	"	"	"	Ua
Xylenes, total	ND		0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	Ua

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**FL07@4'**

**5/13/2024 9:50:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405399-02 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: 1,2-Dichloroethane-d4	104 %		70-130			B4E14 33	05/14/2024	05/15/2024	
Surrogate: Toluene-d8	98.7 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	ND		0.499	meq/L	10	[CALC]	05/14/2024	05/15/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4E1425	05/14/2024	05/16/2024	Ua
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	Ua
Acenaphthene	ND		0.020	"	"	"	"	"	Ua
Anthracene	ND		0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Chrysene	ND		0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	Ua

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**FL07@4'**

**5/13/2024 9:50:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405399-02 (Soil)**

**PAH by EPA 8270E**

Fluoranthene	ND		0.020	mg/kg	1	B4E1425	05/14/2024	05/16/2024	Ua
Fluorene	ND		0.020	"	"	"	"	"	Ua
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	Ua
Pyrene	ND		0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	102 %		60-130			"	"	"	
Surrogate: Anthracene-d10	100 %		60-130			"	"	"	
Surrogate: Pyrene-d10	86.8 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	97.8 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	7.94			pH Units	1	B4E1420	05/14/2024	05/15/2024	
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**SAR by 20B Saturated Paste**

SAR	0.166		0.0100	SAR	1	B4E1415	05/14/2024	05/15/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.0661		0.00500	mmhos/cm	1	B4E1420	05/14/2024	05/15/2024	
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**Table 915 metals by EPA 6020B**

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**FL07@4'**

**5/13/2024 9:50:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405399-02 (Soil)**

**Table 915 metals by EPA 6020B**

Arsenic	1.59		0.251	mg/kg	10	B4F0331	06/03/2024	06/04/2024	
Barium	29.6		8.64	"	"	"	"	"	
Cadmium	ND		0.0864	"	"	"	"	"	
Copper	ND		8.64	"	"	"	"	"	
Lead	3.10		0.864	"	"	"	"	"	
Nickel	2.51		0.864	"	"	"	"	"	
Selenium	ND		0.225	"	"	"	"	"	
Silver	ND		0.0864	"	"	"	"	"	
Zinc	ND		32.0	"	"	"	"	"	

**Total Metals 7196A**

Hexavalent Chromium	0.147	0.128	0.321	mg/kg dry	1	2624460	06/12/2024	06/12/2024	J
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**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
<b>Batch B4E1401 - EPA 3550B</b>										
<b>Blank (B4E1401-BLK1)</b>										
					Prepared: 05/14/2024 Analyzed: 05/17/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	24		"	24.9		97.0	50-150			

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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E1401 - EPA 3550B**

**LCS (B4E1401-BS1)**

Prepared: 05/14/2024 Analyzed: 05/17/2024

Diesel (C10-C28)	901	50.0	mg/kg	1000		90.1	70-130			
Residual Range Organics (C28-C40)	948	200	"	1000		94.8	70-130			
Surrogate: o-Terphenyl	58		"	49.8		116	50-150			

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Andrew Newberry  
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 Project: Noble - Pioneer USX #Y07-08D

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E1401 - EPA 3550B**

<b>Matrix Spike (B4E1401-MS1)</b>	<b>Source: Y405341-01</b>			Prepared: 05/14/2024 Analyzed: 05/17/2024						
Diesel (C10-C28)	871	50.0	mg/kg	1000	ND	87.1	70-130			
Residual Range Organics (C28-C40)	921	200	"	1000	ND	92.1	70-130			
Surrogate: o-Terphenyl	52		"	49.8		104	50-150			

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 Wheat Ridge CO 80033

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Pioneer USX #Y07-08D

**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
<b>Batch B4E1401 - EPA 3550B</b>										
<b>Matrix Spike Dup (B4E1401-MSD1)</b>					<b>Source: Y405341-01</b>					Prepared: 05/14/2024 Analyzed: 05/17/2024
Diesel (C10-C28)	901	50.0	mg/kg	1000	ND	90.1	70-130	3.40	35	
Residual Range Organics (C28-C40)	958	200	"	1000	ND	95.8	70-130	3.98	35	
Surrogate: o-Terphenyl	52		"	49.8		105	50-150			

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Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Pioneer USX #Y07-08D

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E1433 - EPA 5030 (soil)**

**Blank (B4E1433-BLK1)**

Prepared: 05/14/2024 Analyzed: 05/15/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							Ua
1,3,5-Trimethylbenzene	ND	0.00200	"							Ua
Benzene	ND	0.00200	"							Ua
Ethylbenzene	ND	0.00200	"							Ua
Naphthalene	ND	0.00380	"							Ua
Toluene	ND	0.00200	"							Ua
Xylenes, total	ND	0.00200	"							Ua
Gasoline Range Hydrocarbons	ND	0.200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125	98.9		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	97.8		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	105		70-130			

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Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Pioneer USX #Y07-08D

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4E1433 - EPA 5030 (soil)

**LCS (B4E1433-BS1)**

Prepared: 05/14/2024 Analyzed: 05/15/2024

1,2,4-Trimethylbenzene	0.107	0.00200	mg/kg	0.100		107	70-130			
1,3,5-Trimethylbenzene	0.106	0.00200	"	0.100		106	70-130			
Benzene	0.101	0.00200	"	0.100		101	70-130			
Ethylbenzene	0.106	0.00200	"	0.100		106	70-130			
Naphthalene	0.110	0.00380	"	0.100		110	70-130			
Toluene	0.0990	0.00200	"	0.100		99.0	70-130			
o-Xylene	0.106	0.00200	"	0.100		106	70-130			
m,p-Xylene	0.206	0.00400	"	0.200		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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 Project: Noble - Pioneer USX #Y07-08D

**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4E1433 - EPA 5030 (soil)

Matrix Spike (B4E1433-MS1)	Source: Y405379-01			Prepared: 05/14/2024 Analyzed: 05/15/2024						
1,2,4-Trimethylbenzene	0.0996	0.00200	mg/kg	0.100	ND	99.6	70-130			
1,3,5-Trimethylbenzene	0.101	0.00200	"	0.100	ND	101	70-130			
Benzene	0.0895	0.00200	"	0.100	ND	89.5	70-130			
Ethylbenzene	0.100	0.00200	"	0.100	ND	100	70-130			
Naphthalene	0.0822	0.00380	"	0.100	ND	82.2	70-130			
Toluene	0.0913	0.00200	"	0.100	ND	91.3	70-130			
o-Xylene	0.0989	0.00200	"	0.100	ND	98.9	70-130			
m,p-Xylene	0.196	0.00400	"	0.200	ND	98.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		87.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4E1433 - EPA 5030 (soil)

Matrix Spike Dup (B4E1433-MSD1)	Source: Y405379-01			Prepared: 05/14/2024 Analyzed: 05/15/2024						
1,2,4-Trimethylbenzene	0.110	0.00200	mg/kg	0.100	ND	110	70-130	9.87	20	
1,3,5-Trimethylbenzene	0.110	0.00200	"	0.100	ND	110	70-130	8.73	20	
Benzene	0.104	0.00200	"	0.100	ND	104	70-130	15.0	20	
Ethylbenzene	0.110	0.00200	"	0.100	ND	110	70-130	9.03	20	
Naphthalene	0.107	0.00380	"	0.100	ND	107	70-130	26.6	20	QR-02
Toluene	0.103	0.00200	"	0.100	ND	103	70-130	12.4	20	
o-Xylene	0.110	0.00200	"	0.100	ND	110	70-130	10.6	20	
m,p-Xylene	0.214	0.00400	"	0.200	ND	107	70-130	8.86	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**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 B4F0331 - EPA 3050B**

**Blank (B4F0331-BLK1)**

Prepared: 06/03/2024 Analyzed: 06/04/2024

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 (B4F0331-BS1)**

Prepared: 06/03/2024 Analyzed: 06/04/2024

Arsenic	5.56	0.290	mg/kg	5.00		111	80-120			
Barium	540	10.0	"	500		108	80-120			
Cadmium	5.49	0.100	"	5.00		110	80-120			
Copper	55.0	10.0	"	50.0		110	80-120			
Lead	5.26	1.00	"	5.00		105	80-120			
Nickel	5.17	1.00	"	5.00		103	80-120			
Selenium	10.2	0.260	"	9.50		107	80-120			
Silver	5.25	0.100	"	5.00		105	80-120			
Zinc	50.9	37.0	"	50.0		102	80-120			

**Matrix Spike (B4F0331-MS1)**

Source: Y406017-02

Prepared: 06/03/2024 Analyzed: 06/04/2024

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Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Pioneer USX #Y07-08D

**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 B4F0331 - EPA 3050B**

<b>Matrix Spike (B4F0331-MS1)</b>		<b>Source: Y406017-02</b>			Prepared: 06/03/2024 Analyzed: 06/04/2024					
Arsenic	8.89	0.250	mg/kg	4.31	4.29	107	75-125			
Barium	588	8.62	"	431	130	106	75-125			
Cadmium	4.58	0.0862	"	4.31	0.120	103	75-125			
Copper	50.7	8.62	"	43.1	7.84	99.5	75-125			
Lead	13.5	0.862	"	4.31	8.40	119	75-125			
Nickel	11.5	0.862	"	4.31	8.42	72.6	75-125			QM-07
Selenium	8.60	0.224	"	8.19	0.450	99.5	75-125			
Silver	4.32	0.0862	"	4.31	0.0247	99.7	75-125			
Zinc	66.4	31.9	"	43.1	26.7	92.3	75-125			

<b>Matrix Spike Dup (B4F0331-MSD1)</b>		<b>Source: Y406017-02</b>			Prepared: 06/03/2024 Analyzed: 06/04/2024					
Arsenic	9.35	0.263	mg/kg	4.53	4.29	112	75-125	5.05	20	
Barium	642	9.06	"	453	130	113	75-125	8.87	20	
Cadmium	5.23	0.0906	"	4.53	0.120	113	75-125	13.3	20	
Copper	56.2	9.06	"	45.3	7.84	107	75-125	10.3	20	
Lead	14.7	0.906	"	4.53	8.40	140	75-125	8.72	20	QM-07
Nickel	12.9	0.906	"	4.53	8.42	98.9	75-125	11.1	20	
Selenium	9.94	0.236	"	8.61	0.450	110	75-125	14.5	20	
Silver	4.82	0.0906	"	4.53	0.0247	106	75-125	11.0	20	
Zinc	73.5	33.5	"	45.3	26.7	103	75-125	10.1	20	

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Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Pioneer USX #Y07-08D

**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 B4E1425 - EPA 3580**

**Blank (B4E1425-BLK1)**

Prepared: 05/14/2024 Analyzed: 05/16/2024

1-Methylnaphthalene	ND	0.002	mg/kg							Ua
2-Methylnaphthalene	ND	0.002	"							Ua
Acenaphthene	ND	0.020	"							Ua
Anthracene	ND	0.020	"							Ua
Benzo (a) anthracene	ND	0.005	"							Ua
Benzo (a) pyrene	ND	0.020	"							Ua
Benzo (b) fluoranthene	ND	0.020	"							Ua
Benzo (g,h,i) perylene	ND	0.020	"							Ua
Benzo (k) fluoranthene	ND	0.020	"							Ua
Chrysene	ND	0.020	"							Ua
Dibenz (a,h) anthracene	ND	0.020	"							Ua
Fluoranthene	ND	0.020	"							Ua
Fluorene	ND	0.020	"							Ua
Indeno (1,2,3-cd) pyrene	ND	0.020	"							Ua
Naphthalene	ND	0.002	"							Ua
Phenanthrene	ND	0.020	"							Ua
Pyrene	ND	0.020	"							Ua
Surrogate: Fluorene-d10	200		ug/kg	200		101	60-130			
Surrogate: Anthracene-d10	200		"	200		100	60-130			
Surrogate: Pyrene-d10	170		"	200		87.1	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		97.5	60-130			

**LCS (B4E1425-BS1)**

Prepared: 05/14/2024 Analyzed: 05/16/2024

1-Methylnaphthalene	0.180	0.002	mg/kg	0.200		90.1	70-130			
2-Methylnaphthalene	0.181	0.002	"	0.200		90.7	70-130			
Acenaphthene	0.178	0.020	"	0.200		88.9	70-130			
Anthracene	0.180	0.020	"	0.200		90.0	70-130			

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Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Pioneer USX #Y07-08D

**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 B4E1425 - EPA 3580**

**LCS (B4E1425-BS1)**

Prepared: 05/14/2024 Analyzed: 05/16/2024

Benzo (a) anthracene	0.180	0.005	mg/kg	0.200		90.1	70-130			
Benzo (a) pyrene	0.180	0.020	"	0.200		90.0	70-130			
Benzo (b) fluoranthene	0.186	0.020	"	0.200		92.9	70-130			
Benzo (g,h,i) perylene	0.174	0.020	"	0.200		87.0	70-130			
Benzo (k) fluoranthene	0.184	0.020	"	0.200		91.9	70-130			
Chrysene	0.191	0.020	"	0.200		95.6	70-130			
Dibenz (a,h) anthracene	0.194	0.020	"	0.200		96.9	70-130			
Fluoranthene	0.187	0.020	"	0.200		93.7	70-130			
Fluorene	0.180	0.020	"	0.200		90.2	70-130			
Indeno (1,2,3-cd) pyrene	0.174	0.020	"	0.200		87.1	70-130			
Naphthalene	0.179	0.002	"	0.200		89.6	70-130			
Phenanthrene	0.180	0.020	"	0.200		90.0	70-130			
Pyrene	0.161	0.020	"	0.200		80.4	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		101	60-130			
Surrogate: Pyrene-d10	180		"	200		90.3	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.2	60-130			

**Matrix Spike (B4E1425-MS1)**

**Source: Y405336-01**

Prepared: 05/14/2024 Analyzed: 05/17/2024

1-Methylnaphthalene	0.193	0.002	mg/kg	0.200	ND	96.6	70-130			
2-Methylnaphthalene	0.193	0.002	"	0.200	ND	96.5	70-130			
Acenaphthene	0.194	0.020	"	0.200	ND	96.9	70-130			
Anthracene	0.193	0.020	"	0.200	ND	96.6	70-130			
Benzo (a) anthracene	0.201	0.005	"	0.200	ND	100	70-130			
Benzo (a) pyrene	0.188	0.020	"	0.200	ND	94.1	70-130			
Benzo (b) fluoranthene	0.199	0.020	"	0.200	0.0003	99.4	70-130			
Benzo (g,h,i) perylene	0.190	0.020	"	0.200	ND	95.2	70-130			

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 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 B4E1425 - EPA 3580**

<b>Matrix Spike (B4E1425-MS1)</b>		<b>Source: Y405336-01</b>			Prepared: 05/14/2024 Analyzed: 05/17/2024					
Benzo (k) fluoranthene	0.183	0.020	mg/kg	0.200	0.0005	91.2	70-130			
Chrysene	0.204	0.020	"	0.200	ND	102	70-130			
Dibenz (a,h) anthracene	0.216	0.020	"	0.200	ND	108	70-130			
Fluoranthene	0.203	0.020	"	0.200	ND	101	70-130			
Fluorene	0.200	0.020	"	0.200	ND	100	70-130			
Indeno (1,2,3-cd) pyrene	0.187	0.020	"	0.200	ND	93.5	70-130			
Naphthalene	0.191	0.002	"	0.200	ND	95.7	70-130			
Phenanthrene	0.192	0.020	"	0.200	ND	96.0	70-130			
Pyrene	0.172	0.020	"	0.200	ND	85.9	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		99.5	60-130			
Surrogate: Pyrene-d10	180		"	200		87.6	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		94.8	60-130			

<b>Matrix Spike Dup (B4E1425-MSD1)</b>		<b>Source: Y405336-01</b>			Prepared: 05/14/2024 Analyzed: 05/16/2024					
1-Methylnaphthalene	0.193	0.002	mg/kg	0.200	ND	96.5	70-130	0.136	20	
2-Methylnaphthalene	0.192	0.002	"	0.200	ND	96.2	70-130	0.355	20	
Acenaphthene	0.193	0.020	"	0.200	ND	96.6	70-130	0.317	20	
Anthracene	0.194	0.020	"	0.200	ND	96.9	70-130	0.389	20	
Benzo (a) anthracene	0.192	0.005	"	0.200	ND	95.8	70-130	4.70	20	
Benzo (a) pyrene	0.190	0.020	"	0.200	ND	95.1	70-130	1.07	20	
Benzo (b) fluoranthene	0.200	0.020	"	0.200	0.0003	100	70-130	0.708	20	
Benzo (g,h,i) perylene	0.189	0.020	"	0.200	ND	94.6	70-130	0.693	20	
Benzo (k) fluoranthene	0.186	0.020	"	0.200	0.0005	92.8	70-130	1.74	20	
Chrysene	0.202	0.020	"	0.200	ND	101	70-130	0.831	20	
Dibenz (a,h) anthracene	0.215	0.020	"	0.200	ND	108	70-130	0.269	20	
Fluoranthene	0.206	0.020	"	0.200	ND	103	70-130	1.39	20	

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Andrew Newberry  
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 Project: Noble - Pioneer USX #Y07-08D

**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 B4E1425 - EPA 3580

Matrix Spike Dup (B4E1425-MSD1)	Source: Y405336-01			Prepared: 05/14/2024 Analyzed: 05/16/2024						
Fluorene	0.195	0.020	mg/kg	0.200	ND	97.5	70-130	2.59	20	
Indeno (1,2,3-cd) pyrene	0.196	0.020	"	0.200	ND	97.8	70-130	4.46	20	
Naphthalene	0.191	0.002	"	0.200	ND	95.4	70-130	0.365	20	
Phenanthrene	0.195	0.020	"	0.200	ND	97.4	70-130	1.51	20	
Pyrene	0.171	0.020	"	0.200	ND	85.6	70-130	0.344	20	
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	200		"	200		100	60-130			
Surrogate: Pyrene-d10	180		"	200		87.6	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.6	60-130			

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

Andrew Newberry  
 Project Number: [none]  
 Project: Noble - Pioneer USX #Y07-08D

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E1415 - Saturated Paste Metals**

**Blank (B4E1415-BLK1)**

Prepared: 05/14/2024 Analyzed: 05/15/2024

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

**Duplicate (B4E1415-DUP1)**

Source: Y405360-01

Prepared: 05/14/2024 Analyzed: 05/15/2024

SAR	ND	0.0100	SAR	0.116					200	
Calcium PPM	18.0	10.0	mg/L	16.3				9.97	50	
Magnesium PPM	2.53	10.0	"	2.31				9.09	50	
Sodium PPM	2.25	10.0	"	1.89				17.4	50	

**Batch B4E1513 - DTPA Sorbitol Preparation**

**Blank (B4E1513-BLK1)**

Prepared: 05/15/2024 Analyzed: 05/16/2024

Boron	ND	0.100	mg/L							
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**Duplicate (B4E1513-DUP1)**

Source: Y405399-01

Prepared: 05/15/2024 Analyzed: 05/16/2024

Boron	0.181	0.0988	mg/L	0.192				5.82	50	
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 Project: Noble - Pioneer USX #Y07-08D

**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 B4E1420 - Saturated Paste pH/EC</b>										
<b>Blank (B4E1420-BLK1)</b>					Prepared: 05/14/2024 Analyzed: 05/15/2024					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
<b>Duplicate (B4E1420-DUP1)</b>					<b>Source: Y405360-01</b> Prepared: 05/14/2024 Analyzed: 05/15/2024					
Specific Conductance (EC)	0.149	0.00500	mmhos/cm		0.138		7.82		25	
pH	7.93		pH Units		7.90		0.379		25	

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**Total Metals 7196A - Quality Control**  
**GEL Laboratories, LLC**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2624460 - SW846 3060A</b>										
<b>BLANK (1205757402-BLK)</b>					Prepared: 06/12/2024 Analyzed: 06/12/2024					
Hexavalent Chromium	ND	0.399	mg/kg				-			U
<b>LCS (1205757403-BKS)</b>					Prepared: 06/12/2024 Analyzed: 06/12/2024					
Hexavalent Chromium	3.87	0.390	mg/kg	3.90		99.3	80-120			
<b>DUP (1205757404 D)</b>					Source: 670251001 Prepared: 06/12/2024 Analyzed: 06/12/2024					
Hexavalent Chromium	ND	0.324	mg/kg dry		<0.130		0-50	N/A	50	U
<b>MS (1205757405 S)</b>					Source: 670251001 Prepared: 06/12/2024 Analyzed: 06/12/2024					
Hexavalent Chromium	2.04	0.325	mg/kg dry	3.25	<0.130	61.7	75-125			
<b>DUP (1205757406 D)</b>					Source: 670416002 Prepared: 06/12/2024 Analyzed: 06/12/2024					
Hexavalent Chromium	ND	0.284	mg/kg dry		<0.113		0-50	N/A	50	U
<b>MS (1205757407 S)</b>					Source: 670416002 Prepared: 06/12/2024 Analyzed: 06/12/2024					
Hexavalent Chromium	2.54	0.284	mg/kg dry	2.84	<0.113	88.1	75-125			
<b>ILCS (1205757408-ILCS)</b>					Prepared: 06/12/2024 Analyzed: 06/12/2024					
Hexavalent Chromium	7.72	0.374	mg/kg	7.59		102	80-120			

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### Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

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.

J Greater than the detection limit but less than the reporting limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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

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Jordan A. Bynon, Project Manager