



May 11, 2023

Absaroka

Joel Mason

112 High St.

Buffalo

WY

82834

Project Name - FEO - Spicer Annex Wellhead

Project Number - FEO.CO.0701.29

Attached are your analytical results for FEO - Spicer Annex Wellhead received by Origins Laboratory, Inc. May 01, 2023. This project is associated with Origins project number Y305014-01.

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

Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS_Spicer #4 @7'	Y305014-01	Soil	April 26, 2023 16:10	05/01/2023 11:00
SS_Spicer #3@7'	Y305014-02	Soil	April 26, 2023 16:40	05/01/2023 11:00
SS_Spicer #2 @7'	Y305014-03	Soil	April 26, 2023 16:40	05/01/2023 11:00
SS_Spicer #3 @2'	Y305014-04	Soil	April 26, 2023 15:10	05/01/2023 11:00
BG_Spicer_01@5'	Y305014-05	Soil	April 27, 2023 12:00	05/01/2023 11:00

Origins Laboratory, Inc.



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ORIGINS

LABORATORY, INC

Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: B05014

Client: Absaroka

Client Project ID: FEO Spicer Annex WH

Checklist Completed by: TSH/MS

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

Date/time completed: 4/5/11/23

Airbill #: na

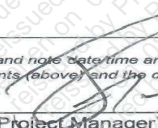
Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____

Cooler Number/Temperature: 1 / 5 °C / _____ °C / _____ °C (Describe) _____ °C

Thermometer ID: 7003

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"/>			
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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			<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) 

Date/Time Reviewed 5/2/23

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

SS Spicer #4 @7'
4/26/2023 4:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.115		0.0982	mg/L	1	B3E0207	05/02/2023	05/10/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	75.1		25.0	mg/kg	1	B3E0128	05/01/2023	05/04/2023	
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	91.9 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.00304		0.00200	mg/kg	1	B3E0123	05/01/2023	05/02/2023	
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	106 %		70-130			"	"	"	
Surrogate: Toluene-d8	98.4 %		70-130			"	"	"	

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 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

SS Spicer #4 @7'
4/26/2023 4:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	98.7 %		70-130			B3E01 23	05/01/2023	05/02/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	1.02		0.499	meq/L	10	[CALC]	05/02/2023	05/05/2023	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	4.89		0.435	"	"	"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	0.0358	0.00109	0.00201	mg/Kg	1	L679906	05/04/2023	05/05/2023	
2-Methylnaphthalene	0.0291	0.00194	0.00201	"	"	"	"	"	
Acenaphthene	0.00429	0.000304	0.00067	"	"	"	"	"	
Anthracene	ND	0.000334	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"	
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"	
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"	
Chrysene	0.00205	0.000624	0.00067	"	"	"	"	"	
Dibenz(a,h)anthracene	0.000654	0.000614	0.00067	"	"	"	"	"	J
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"	
Fluorene	0.0143	0.000286	0.00067	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"	

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4/26/2023 4:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y305014-01 (Soil)

PAH by 8270D SIM

Naphthalene	0.00779	0.00145	0.00201	mg/Kg	1	L679906	05/04/2023	05/05/2023	
Pyrene	0.0164	0.000643	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	51.8 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	62.7 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	59 %		29-110			"	"	"	

pH in Soil by 9045D

pH	8.17			pH Units	1	B3E0220	05/02/2023	05/03/2023	
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SAR by 20B Saturated Paste

SAR	6.11			SAR	1	B3E0216	05/02/2023	05/05/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.916		0.00500	mmhos/cm	1	B3E0220	05/02/2023	05/03/2023	
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Table 915 metals by EPA 6020B

Arsenic	3.70		0.0947	mg/kg	10	B3E0124	05/01/2023	05/04/2023	
Barium	139		9.47	"	"	"	"	"	
Cadmium	0.213		0.0947	"	"	"	"	"	

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SS Spicer #4 @7'
4/26/2023 4:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-01 (Soil)

Table 915 metals by EPA 6020B

Copper	11.6		9.47	mg/kg	10	B3E0124	05/01/2023	05/04/2023	
Lead	ND		9.47	"	"	"	"	"	"
Nickel	10.4		9.47	"	"	"	"	"	"
Selenium	0.109		0.0947	"	"	"	"	"	"
Silver	ND		0.0947	"	"	"	"	"	"
Zinc	ND		94.7	"	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L680209	04/26/2023	05/05/2023	
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Project Number: FEO.CO.0701.29
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SS Spicer #3@7'
4/26/2023 4:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-02 (Soil)

Boron (DTPA Sorbitol)

Boron	0.215		0.0989	mg/L	1	B3E0207	05/02/2023	05/10/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	655		25.0	mg/kg	1	B3E0128	05/01/2023	05/04/2023	
Residual Range Organics (C28-C40)	167		100	"	"	"	"	"	

Surrogate: <i>o</i> -Terphenyl	102 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.00500		0.00200	mg/kg	1	B3E0123	05/01/2023	05/02/2023	
1,3,5-Trimethylbenzene	0.0247		0.00200	"	"	"	"	"	
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Xylenes, total	0.0111		0.00200	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %		70-130			"	"	"	
Surrogate: Toluene-d8	100 %		70-130			"	"	"	

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Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

SS Spicer #3@7'
4/26/2023 4:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-02 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	110 %	70-130	B3E01 23	05/01/2023	05/02/2023
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Metals by Saturated Paste by EPA 6010

Calcium	2.50	0.499	meq/L	10	[CALC]	05/02/2023	05/05/2023
Magnesium	ND	0.823	"	"	"	"	"
Sodium	ND	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	0.111	0.00549	0.0101	mg/Kg	5	L679906	05/04/2023	05/05/2023
2-Methylnaphthalene	0.0788	0.00972	0.0101	"	"	"	"	"
Acenaphthene	0.0225	0.00152	0.00335	"	"	"	"	"
Anthracene	0.0129	0.00167	0.00335	"	"	"	"	"
Benzo(a)anthracene	0.00289	0.00247	0.00335	"	"	"	"	"
Benzo(a)pyrene	ND	0.00234	0.00335	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.00293	0.00335	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.00219	0.00335	"	"	"	"	"
Chrysene	0.0124	0.00312	0.00335	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.00307	0.00335	"	"	"	"	"
Fluoranthene	0.00303	0.00197	0.00335	"	"	"	"	"
Fluorene	0.0564	0.00143	0.00335	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.00314	0.00335	"	"	"	"	"

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Project: FEO - Spicer Annex Wellhead

SS Spicer #3@7'
4/26/2023 4:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y305014-02 (Soil)

PAH by 8270D SIM

Naphthalene	0.0222	0.0073	0.0101	mg/Kg	5	L679906	05/04/2023	05/05/2023	
Pyrene	0.0522	0.00322	0.00335	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	61 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	70.6 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	72.4 %		29-110			"	"	"	

pH in Soil by 9045D

pH	8.47			pH Units	1	B3E0220	05/02/2023	05/03/2023	
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SAR by 20B Saturated Paste

SAR	0.295			SAR	1	B3E0216	05/02/2023	05/05/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.649		0.00500	mmhos/cm	1	B3E0220	05/02/2023	05/03/2023	
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Table 915 metals by EPA 6020B

Arsenic	4.47		0.0856	mg/kg	10	B3E0124	05/01/2023	05/04/2023	
Barium	569		8.56	"	"	"	"	"	
Cadmium	0.276		0.0856	"	"	"	"	"	

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SS Spicer #3@7'
4/26/2023 4:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-02 (Soil)

Table 915 metals by EPA 6020B

Copper	21.7		8.56	mg/kg	10	B3E0124	05/01/2023	05/04/2023	
Lead	ND		8.56	"	"	"	"	"	"
Nickel	13.1		8.56	"	"	"	"	"	"
Selenium	0.189		0.0856	"	"	"	"	"	"
Silver	ND		0.0856	"	"	"	"	"	"
Zinc	ND		85.6	"	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L680209	04/26/2023	05/05/2023	
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 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

SS Spicer #2 @7'
4/26/2023 4:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-03 (Soil)

Boron (DTPA Sorbitol)

Boron	ND		0.0988	mg/L	1	B3E0207	05/02/2023	05/10/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B3E0128	05/01/2023	05/04/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	90.5 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B3E0123	05/01/2023	05/02/2023	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.0 %		70-130			"	"	"	
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SS Spicer #2 @7'
4/26/2023 4:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-03 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	99.4 %		70-130			B3E01 23	05/01/2023	05/02/2023	
Surrogate: 4-Bromofluorobenzene	96.4 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	6.69		0.499	meq/L	10	[CALC]	05/02/2023	05/05/2023	
Magnesium	2.57		0.823	"	"	"	"	"	
Sodium	4.73		0.435	"	"	"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L679906	05/04/2023	05/05/2023	
2-Methylnaphthalene	ND	0.00194	0.00201	"	"	"	"	"	
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"	
Anthracene	ND	0.000334	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"	
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"	
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"	
Chrysene	0.000649	0.000624	0.00067	"	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"	
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"	

Origins Laboratory, Inc.



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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

SS Spicer #2 @7'
4/26/2023 4:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y305014-03 (Soil)

PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L679906	05/04/2023	05/05/2023	
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"	"
Naphthalene	ND	0.00145	0.00201	"	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	57.2 %		33-115			"	"	"	"
Surrogate: 4-Terphenyl-d14	67 %		33-122			"	"	"	"
Surrogate: Nitrobenzene-d5	62.7 %		29-110			"	"	"	"

pH in Soil by 9045D

pH	7.70			pH Units	1	B3E0220	05/02/2023	05/03/2023	
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SAR by 20B Saturated Paste

SAR	2.20			SAR	1	B3E0216	05/02/2023	05/05/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.441		0.00500	mmhos/cm	1	B3E0220	05/02/2023	05/03/2023	
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Table 915 metals by EPA 6020B

Arsenic	2.88		0.0916	mg/kg	10	B3E0124	05/01/2023	05/04/2023	
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Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

SS Spicer #2 @7'
4/26/2023 4:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-03 (Soil)

Table 915 metals by EPA 6020B

Barium	380		9.16	mg/kg	10	B3E0124	05/01/2023	05/04/2023	
Cadmium	0.511		0.0916	"	"	"	"	"	
Copper	12.8		9.16	"	"	"	"	"	
Lead	ND		9.16	"	"	"	"	"	
Nickel	21.2		9.16	"	"	"	"	"	
Selenium	0.111		0.0916	"	"	"	"	"	
Silver	ND		0.0916	"	"	"	"	"	
Zinc	ND		91.6	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.249	0.512	mg/Kg	1	L680209	04/26/2023	05/05/2023	
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Origins Laboratory, Inc.



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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

SS Spicer #3 @2'
4/26/2023 3:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-04 (Soil)

Boron (DTPA Sorbitol)

Boron	ND		0.997	mg/L	10	B3E0207	05/02/2023	05/10/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	9640		250	mg/kg	10	B3E0128	05/01/2023	05/10/2023	
Residual Range Organics (C28-C40)	593		100	"	1	"	"	05/04/2023	

Surrogate: o-Terphenyl	313 %		50-150			"	"	05/10/2023	06
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B3E0123	05/01/2023	05/03/2023	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	0.162		0.00200	"	"	"	"	"	
Toluene	0.0161		0.00200	"	"	"	"	"	
Xylenes, total	1.87		0.00200	"	"	"	"	05/03/2023	
Gasoline Range Hydrocarbons	473		5.00	"	25	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	113 %		70-130			"	"	05/03/2023	
Surrogate: Toluene-d8	127 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

SS Spicer #3 @2'
4/26/2023 3:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-04 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene 172 % 70-130 B3E01 23 05/01/2023 05/03/2023 GC

Metals by Saturated Paste by EPA 6010

Calcium	1.10	0.499	meq/L	10	[CALC]	05/02/2023	05/05/2023
Magnesium	ND	0.823	"	"	"	"	"
Sodium	ND	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	4.49	0.109	0.201	mg/Kg	100	L679906	05/04/2023	05/05/2023
2-Methylnaphthalene	4.91	0.194	0.201	"	"	"	"	
Acenaphthene	0.85	0.0304	0.067	"	"	"	"	
Anthracene	ND	0.0334	0.067	"	"	"	"	
Benzo(a)anthracene	ND	0.0493	0.067	"	"	"	"	
Benzo(a)pyrene	ND	0.0468	0.067	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0585	0.067	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0437	0.067	"	"	"	"	
Chrysene	ND	0.0624	0.067	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0614	0.067	"	"	"	"	
Fluoranthene	ND	0.0394	0.067	"	"	"	"	
Fluorene	1.19	0.0286	0.067	"	"	"	"	

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

SS Spicer #3 @2'
4/26/2023 3:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y305014-04 (Soil)

PAH by 8270D SIM

Indeno(1,2,3-cd)pyrene	ND	0.0627	0.067	mg/Kg	100	L679906	05/04/2023	05/05/2023	
Naphthalene	2.11	0.145	0.201	"	"	"	"	"	
Pyrene	0.77	0.0643	0.067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	67.2 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	64.1 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	0 %		29-110			"	"	"	*

pH in Soil by 9045D

pH	7.44			pH Units	1	B3E0220	05/02/2023	05/03/2023	
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SAR by 20B Saturated Paste

SAR	0.177			SAR	1	B3E0216	05/02/2023	05/05/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.46		0.00500	mmhos/cm	1	B3E0220	05/02/2023	05/03/2023	
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Table 915 metals by EPA 6020B

Arsenic	3.85		0.0912	mg/kg	10	B3E0124	05/01/2023	05/04/2023	
Barium	182		9.12	"	"	"	"	"	

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

SS Spicer #3 @2'
4/26/2023 3:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-04 (Soil)

Table 915 metals by EPA 6020B

Cadmium	0.281		0.0912	mg/kg	10	B3E0124	05/01/2023	05/04/2023	
Copper	12.5		9.12	"	"	"	"	"	"
Lead	ND		9.12	"	"	"	"	"	"
Nickel	13.1		9.12	"	"	"	"	"	"
Selenium	0.274		0.0912	"	"	"	"	"	"
Silver	ND		0.0912	"	"	"	"	"	"
Zinc	ND		91.2	"	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.247	0.507	mg/Kg	1	L680209	04/26/2023	05/05/2023	
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 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

BG Spicer 01@5'
4/27/2023 12:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y305014-05 (Soil)

Boron (DTPA Sorbitol)

Boron	0.103		0.0984	mg/L	1	B3E0207	05/02/2023	05/10/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	2.06		0.499	meq/L	10	[CALC]	05/02/2023	05/05/2023	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	0.734		0.435	"	"	"	"	"	

pH in Soil by 9045D

pH	8.41			pH Units	1	B3E0220	05/02/2023	05/03/2023	
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SAR by 20B Saturated Paste

SAR	0.621			SAR	1	B3E0216	05/02/2023	05/05/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.218		0.00500	mmhos/cm	1	B3E0220	05/02/2023	05/03/2023	
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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

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 B3E0123 - EPA 5030 (soil)

Blank (B3E0123-BLK1)

Prepared: 05/01/2023 Analyzed: 05/02/2023

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.5	70-130			

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Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

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 B3E0123 - EPA 5030 (soil)

LCS (B3E0123-BS1)

Prepared: 05/01/2023 Analyzed: 05/02/2023

1,2,4-Trimethylbenzene	0.0898	0.00200	mg/kg	0.100		89.8	70-130			
1,3,5-Trimethylbenzene	0.0905	0.00200	"	0.100		90.5	70-130			
Benzene	0.102	0.00200	"	0.100		102	70-130			
Ethylbenzene	0.0959	0.00200	"	0.100		95.9	70-130			
Naphthalene	0.0840	0.00380	"	0.100		84.0	70-130			
Toluene	0.102	0.00200	"	0.100		102	70-130			
o-Xylene	0.0925	0.00200	"	0.100		92.5	70-130			
m,p-Xylene	0.198	0.00400	"	0.200		99.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

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 B3E0123 - EPA 5030 (soil)

Matrix Spike (B3E0123-MS1)

Source: Y305003-01

Prepared: 05/01/2023 Analyzed: 05/02/2023

1,2,4-Trimethylbenzene	0.0825	0.00200	mg/kg	0.100	ND	82.5	70-130			
1,3,5-Trimethylbenzene	0.0818	0.00200	"	0.100	ND	81.8	70-130			
Benzene	0.0965	0.00200	"	0.100	ND	96.5	70-130			
Ethylbenzene	0.0888	0.00200	"	0.100	ND	88.8	70-130			
Naphthalene	0.0734	0.00380	"	0.100	ND	73.4	70-130			
Toluene	0.0962	0.00200	"	0.100	ND	96.2	70-130			
o-Xylene	0.0866	0.00200	"	0.100	ND	86.6	70-130			
m,p-Xylene	0.183	0.00400	"	0.200	ND	91.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

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 B3E0123 - EPA 5030 (soil)

Matrix Spike Dup (B3E0123-MSD1)

Source: Y305003-01

Prepared: 05/01/2023 Analyzed: 05/02/2023

1,2,4-Trimethylbenzene	0.0747	0.00200	mg/kg	0.100	ND	74.7	70-130	9.97	20	
1,3,5-Trimethylbenzene	0.0726	0.00200	"	0.100	ND	72.6	70-130	12.0	20	
Benzene	0.0882	0.00200	"	0.100	ND	88.2	70-130	9.03	20	
Ethylbenzene	0.0812	0.00200	"	0.100	ND	81.2	70-130	8.89	20	
Naphthalene	0.0712	0.00380	"	0.100	ND	71.2	70-130	2.96	20	
Toluene	0.0869	0.00200	"	0.100	ND	86.9	70-130	10.2	20	
o-Xylene	0.0799	0.00200	"	0.100	ND	79.9	70-130	7.98	20	
m,p-Xylene	0.168	0.00400	"	0.200	ND	83.9	70-130	8.72	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		107	70-130			

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Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

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 B3E0128 - EPA 3550B

Blank (B3E0128-BLK1)

Prepared: 05/01/2023 Analyzed: 05/04/2023

Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	26		"	24.9		104	50-150			

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Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

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 B3E0128 - EPA 3550B

LCS (B3E0128-BS1)

Prepared: 05/01/2023 Analyzed: 05/04/2023

Diesel (C10-C28)	930	50.0	mg/kg	1000		93.0	70-130			
Residual Range Organics (C28-C40)	987	200	"	1000		98.7	70-130			
Surrogate: o-Terphenyl	48		"	49.8		97.0	50-150			

Origins Laboratory, Inc.

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 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

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 B3E0128 - EPA 3550B

Matrix Spike (B3E0128-MS1)

Source: Y305004-01

Prepared: 05/01/2023 Analyzed: 05/04/2023

Diesel (C10-C28)	913	50.0	mg/kg	1000	ND	91.3	70-130			
Residual Range Organics (C28-C40)	984	200	"	1000	ND	98.4	70-130			
Surrogate: o-Terphenyl	46		"	49.8		91.9	50-150			

Origins Laboratory, Inc.

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.29
 Project: FEO - Spicer Annex Wellhead

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 B3E0128 - EPA 3550B

Matrix Spike Dup (B3E0128-MSD1)

Source: Y305004-01

Prepared: 05/01/2023 Analyzed: 05/04/2023

Diesel (C10-C28)	1090	50.0	mg/kg	1000	ND	109	70-130	18.1	35	
Residual Range Organics (C28-C40)	1170	200	"	1000	ND	117	70-130	17.3	35	
Surrogate: o-Terphenyl	51		"	49.8		103	50-150			

Origins Laboratory, Inc.

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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

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 B3E0124 - EPA 3050B

Blank (B3E0124-BLK1)

Prepared: 05/01/2023 Analyzed: 05/04/2023

Arsenic	ND	0.000100	mg/kg							
Barium	ND	0.0100	"							
Cadmium	ND	0.000100	"							
Copper	ND	0.0100	"							
Lead	ND	0.0100	"							
Nickel	ND	0.0100	"							
Selenium	ND	0.000100	"							
Silver	ND	0.000100	"							
Zinc	ND	0.100	"							

LCS (B3E0124-BS1)

Prepared: 05/01/2023 Analyzed: 05/04/2023

Arsenic	0.0487	0.000100	mg/kg	0.0500		97.4	80-120			
Barium	5.21	0.0100	"	5.00		104	80-120			
Cadmium	0.0521	0.000100	"	0.0500		104	80-120			
Copper	0.509	0.0100	"	0.500		102	80-120			
Lead	0.0507	0.0100	"	0.0500		101	80-120			
Nickel	0.0506	0.0100	"	0.0500		101	80-120			
Selenium	0.0521	0.000100	"	0.0500		104	80-120			
Silver	0.0496	0.000100	"	0.0500		99.3	80-120			
Zinc	0.485	0.100	"	0.500		97.0	80-120			

Matrix Spike (B3E0124-MS1)

Source: Y305007-01

Prepared: 05/01/2023 Analyzed: 05/04/2023

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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

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 B3E0124 - EPA 3050B

Matrix Spike (B3E0124-MS1)

Source: Y305007-01

Prepared: 05/01/2023 Analyzed: 05/04/2023

Arsenic	7.74	0.0926	mg/kg	4.63	4.04	80.0	75-125			
Barium	748	9.26	"	463	253	107	75-125			
Cadmium	4.77	0.0926	"	4.63	0.151	99.8	75-125			
Copper	53.3	9.26	"	46.3	11.5	90.3	75-125			
Lead	15.7	9.26	"	4.63	11.4	92.9	75-125			
Nickel	16.7	9.26	"	4.63	13.3	72.9	75-125			QM-07
Selenium	4.12	0.0926	"	4.63	0.197	84.8	75-125			
Silver	4.43	0.0926	"	4.63	0.0345	95.0	75-125			
Zinc	93.3	92.6	"	46.3	52.8	87.5	75-125			

Matrix Spike Dup (B3E0124-MSD1)

Source: Y305007-01

Prepared: 05/01/2023 Analyzed: 05/04/2023

Arsenic	8.26	0.0975	mg/kg	4.87	4.04	86.5	75-125	6.44	20	
Barium	670	9.75	"	487	253	85.7	75-125	11.0	20	
Cadmium	5.04	0.0975	"	4.87	0.151	100	75-125	5.44	20	
Copper	55.6	9.75	"	48.7	11.5	90.5	75-125	4.26	20	
Lead	15.9	9.75	"	4.87	11.4	94.0	75-125	1.78	20	
Nickel	17.3	9.75	"	4.87	13.3	83.1	75-125	3.96	20	
Selenium	4.38	0.0975	"	4.87	0.197	85.9	75-125	6.08	20	
Silver	4.65	0.0975	"	4.87	0.0345	94.8	75-125	4.83	20	
Zinc	94.9	97.5	"	48.7	52.8	86.5	75-125	1.73	20	

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Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B3E0207 - DTPA Sorbitol Preparation

Blank (B3E0207-BLK1)

Prepared: 05/02/2023 Analyzed: 05/03/2023

Boron ND 0.100 mg/L

Duplicate (B3E0207-DUP1)

Source: Y304640-03

Prepared: 05/02/2023 Analyzed: 05/03/2023

Boron 0.813 0.102 mg/L 0.718 12.4 50

Batch B3E0216 - Saturated Paste Metals

Blank (B3E0216-BLK1)

Prepared: 05/02/2023 Analyzed: 05/03/2023

SAR 0.00 SAR

Calcium PPM ND 10.0 mg/L

Magnesium PPM ND 10.0 "

Sodium PPM ND 10.0 "

Duplicate (B3E0216-DUP1)

Source: Y305006-01

Prepared: 05/02/2023 Analyzed: 05/03/2023


Calcium PPM 54.5 10.0 mg/L 52.4 3.95 50

SAR 0.00 SAR 0.0660 200 200

Magnesium PPM 8.64 10.0 mg/L 8.51 1.47 50

Sodium PPM 2.09 10.0 " 1.96 6.87 50

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Saturated Paste - 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 B3E0220 - Saturated Paste pH/EC

Blank (B3E0220-BLK1)

Prepared: 05/02/2023 Analyzed: 05/03/2023

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B3E0220-DUP1)

Source: Y305006-01

Prepared: 05/02/2023 Analyzed: 05/03/2023

Specific Conductance (EC) 0.479 0.00500 mmhos/cm 0.416 14.2 25

pH 8.33 pH Units 8.35 0.240 25

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Project: FEO - Spicer Annex Wellhead

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Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L679906 - 3550B

MSD (L 86560-MSD-L679906)

Source: 86560

Prepared: 05/04/2023 Analyzed: 05/05/2023

Acenaphthene	0.114	0.00067	mg/Kg	0.162	<0.000304	70.3	30-130	3.5	30	
Anthracene	0.12	0.00067	"	0.162	<0.000334	74	30-130	6	30	
Naphthalene	0.106	0.00201	"	0.162	<0.00145	65.4	30-130	6	30	
Benzo(a)anthracene	0.119	0.00067	"	0.162	<0.000493	73.4	30-130	3.4	30	
Benzo(k)fluoranthene	0.132	0.00067	"	0.162	<0.000437	81.4	30-130	7.8	30	
Indeno(1,2,3-cd)pyrene	0.134	0.00067	"	0.162	<0.000627	82.7	30-130	4.5	30	
Chrysene	0.129	0.00067	"	0.162	<0.000624	79.6	30-130	8	30	
Pyrene	0.124	0.00067	"	0.162	<0.000643	76.5	30-130	4.1	30	
2-Methylnaphthalene	0.107	0.00201	"	0.162	<0.00194	66	30-130	4.7	30	
Dibenz(a,h)anthracene	0.133	0.00067	"	0.162	<0.000614	82	30-130	2.2	30	
Benzo(a)pyrene	0.126	0.00067	"	0.162	<0.000468	77.7	30-130	8.2	30	
Benzo(b)fluoranthene	0.109	0.00067	"	0.162	<0.000585	67.2	30-130	5.6	30	
Fluoranthene	0.128	0.00067	"	0.162	<0.000394	79	30-130	6.4	30	
1-Methylnaphthalene	0.108	0.00201	"	0.162	<0.00109	66.6	30-130	4.7	30	
Fluorene	0.115	0.00067	"	0.162	<0.000286	70.9	30-130	4.4	30	

Surrogate: 4-Terphenyl-d14	71.3	"	"	0.325	221	71.3	33-122			
Surrogate: Nitrobenzene-d5	60.6	"	"	0.325	210	60.6	29-110			
Surrogate: 2-Fluorobiphenyl	64	"	"	0.325	190	64	33-115			

MS (L 86560-MS-L679906)

Source: 86560

Prepared: 05/04/2023 Analyzed: 05/05/2023

Pyrene	0.119	0.00067	mg/Kg	0.162	<0.000643	73.4	30-130			
Naphthalene	0.0998	0.00201	"	0.162	<0.00145	61.6	30-130			
Indeno(1,2,3-cd)pyrene	0.128	0.00067	"	0.162	<0.000627	79	30-130			
Fluorene	0.11	0.00067	"	0.162	<0.000286	67.9	30-130			
Fluoranthene	0.12	0.00067	"	0.162	<0.000394	74	30-130			
2-Methylnaphthalene	0.102	0.00201	"	0.162	<0.00194	62.9	30-130			
1-Methylnaphthalene	0.103	0.00201	"	0.162	<0.00109	63.5	30-130			

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Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

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Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L679906 - 3550B

MS (L 86560-MS-L679906)

Source: 86560

Prepared: 05/04/2023 Analyzed: 05/05/2023

Anthracene	0.113	0.00067	mg/Kg	0.162	<0.000334	69.7	30-130			
Benzo(a)anthracene	0.115	0.00067	"	0.162	<0.000493	70.9	30-130			
Benzo(a)pyrene	0.116	0.00067	"	0.162	<0.000468	71.6	30-130			
Benzo(b)fluoranthene	0.103	0.00067	"	0.162	<0.000585	63.5	30-130			
Benzo(k)fluoranthene	0.122	0.00067	"	0.162	<0.000437	75.3	30-130			
Chrysene	0.119	0.00067	"	0.162	<0.000624	73.4	30-130			
Dibenz(a,h)anthracene	0.136	0.00067	"	0.162	<0.000614	83.9	30-130			
Acenaphthene	0.11	0.00067	"	0.162	<0.000304	67.9	30-130			

Surrogate: 2-Fluorobiphenyl	61.5		"	0.325	190	61.5	33-115			
Surrogate: Nitrobenzene-d5	56.3		"	0.325	210	56.3	29-110			
Surrogate: 4-Terphenyl-d14	66.4		"	0.325	221	66.4	33-122			

LCS (LCS-L679906)

Prepared: 05/04/2023 Analyzed: 05/05/2023

Benzo(b)fluoranthene	0.0975	0.00067	mg/Kg	0.167		58.3	30-130			
Pyrene	0.122	0.00067	"	0.167		73	30-130			
Benzo(k)fluoranthene	0.11	0.00067	"	0.167		65.8	30-130			
Chrysene	0.126	0.00067	"	0.167		75.4	30-130			
Dibenz(a,h)anthracene	0.0943	0.00067	"	0.167		56.4	30-130			
Fluoranthene	0.124	0.00067	"	0.167		74.2	30-130			
Fluorene	0.113	0.00067	"	0.167		67.6	30-130			
Naphthalene	0.109	0.00201	"	0.167		65.2	30-130			
Anthracene	0.119	0.00067	"	0.167		71.2	30-130			
Indeno(1,2,3-cd)pyrene	0.088	0.00067	"	0.167		52.6	30-130			
Acenaphthene	0.112	0.00067	"	0.167		67	30-130			
2-Methylnaphthalene	0.107	0.00201	"	0.167		64	30-130			
1-Methylnaphthalene	0.112	0.00201	"	0.167		67	30-130			
Benzo(a)pyrene	0.123	0.00067	"	0.167		73.6	30-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L679906 - 3550B

LCS (LCS-L679906)

Prepared: 05/04/2023 Analyzed: 05/05/2023

Benzo(a)anthracene	0.125	0.00067	mg/Kg	0.167		74.8	30-130			
Surrogate: Nitrobenzene-d5	72		"	0.333		72	29-110			
Surrogate: 4-Terphenyl-d14	77.4		"	0.333		77.4	33-122			
Surrogate: 2-Fluorobiphenyl	69.9		"	0.333		69.9	33-115			

LRB (LRB-L679906)

Prepared: 05/04/2023 Analyzed: 05/05/2023

Indeno(1,2,3-cd)pyrene	ND	0.00067	mg/Kg				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00201	"				-			
Naphthalene	ND	0.00201	"				-			
Fluoranthene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00201	"				-			
Pyrene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	67.5		"	0.333		67.5	29-110			
Surrogate: 4-Terphenyl-d14	71.1		"	0.333		71.1	33-122			
Surrogate: 2-Fluorobiphenyl	60.9		"	0.333		60.9	33-115			

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**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
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Batch L680209 -

DUP (L 86237-DUP)

Source: Y305014-01

Prepared: Analyzed: 05/05/2023

Chromium, Hexavalent

ND

0.5 mg/Kg

<0.500

-

0

20

MS (L 86237-MS)

Source: Y305014-01

Prepared: Analyzed: 05/05/2023

Chromium, Hexavalent

33.1

2.5 mg/Kg

38.9

<1.22

85

75-125

LCS (LCS)

Prepared: Analyzed: 05/05/2023

Chromium, Hexavalent

6.85

0.5 mg/Kg

8

86

75-125

LRB (LRB)

Prepared: Analyzed: 05/05/2023

Chromium, Hexavalent

ND

0.5 mg/Kg

-

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Project Number: FEO.CO.0701.29
Project: FEO - Spicer Annex Wellhead

Notes and Definitions

- U Sample is Non-Detect.
 - S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
 - S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
 - 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 Estimated Value. Analyte below reported quantitation limit.
 - I I
 - * 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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