

September 18, 2023

Absaroka

Joel Mason

112 High St.

Buffalo WY 82834

Project Name - Grizzly 3-32H

Project Number - FEO.CO.0701.09

Attached are your analytical results for Grizzly 3-32H received by Origins Laboratory, Inc. September 06, 2023. This project is associated with Origins project number Y309051-01.

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



Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-Grizzly-01@3'	Y309051-01	Soil	September 5, 2023 9:54	09/06/2023 07:30
SS-Grizzly-02@3'	Y309051-02	Soil	September 5, 2023 10:00	09/06/2023 07:30
SS-Grizzly-03@3'	Y309051-03	Soil	September 5, 2023 10:03	09/06/2023 07:30
SS-Grizzly-04@3'	Y309051-04	Soil	September 5, 2023 10:06	09/06/2023 07:30
SS-Grizzly-05@3'	Y309051-05	Soil	September 5, 2023 10:09	09/06/2023 07:30
SS-Grizzly-06@3'	Y309051-06	Soil	September 5, 2023 10:12	09/06/2023 07:30
SS-Grizzly-07@3'	Y309051-07	Soil	September 5, 2023 10:15	09/06/2023 07:30
SS-Grizzly-08@3'	Y309051-08	Soil	September 5, 2023 10:18	09/06/2023 07:30

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: YB09051

Client: Absaroka

Client Project ID: Grizzly 3-22-11

Checklist Completed by: TJH/EMS

Shipped Via: TUD

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

Date/time completed: 9/6/23

Airbill #: N/A

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

Cooler Number/Temperature: 1 14.5 °C 1 °C 1 °C (Describe) °C

Thermometer ID: 7004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
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"/>	<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): <u>There is an extra container for all samples (excluding SS-Grizzly-08@3). Additional container is not on COC and is in non-lab approved containers.</u>				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 9/6/23

Origins Laboratory, Inc.

Jefe Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-01@3'
9/5/2023 9:54:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.709		0.100	mg/L	1	B310715	09/07/2023	09/08/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B310602	09/06/2023	09/06/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	94.3 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B310620	09/06/2023	09/06/2023	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	102 %		70-130			"	"	"	
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Absaroka
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Project: Grizzly 3-32H

SS-Grizzly-01@3'
9/5/2023 9:54:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	108 %		70-130			B31062 0	09/06/2023	09/06/2023	
Surrogate: 4-Bromofluorobenzene	107 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	8.65	0.499	meq/L	10	[CALC]		09/07/2023	09/08/2023	
Magnesium	3.76	0.823	"	"	"	"	"	"	
Sodium	13.7	0.435	"	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B310623		09/06/2023	09/06/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	"	U

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SS-Grizzly-01@3'
9/5/2023 9:54:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-01 (Soil)

PAH by EPA 8270E

Fluorene	ND		0.020	mg/kg	1	B310623	09/06/2023	09/06/2023	U
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	97.9 %		60-130			"	"	"	
Surrogate: Anthracene-d10	95.3 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	99.2 %		60-130			"	"	"	
Surrogate: Pyrene-d10	95.4 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.55			pH Units	1	B310720	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	5.49		0.0100	SAR	1	B310711	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	2.99		0.00500	mmhos/cm	1	B310720	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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 Project: Grizzly 3-32H

SS-Grizzly-01@3'
9/5/2023 9:54:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-01 (Soil)

Table 915 metals by EPA 6020B

Arsenic	2.27		0.0917	mg/kg	10	B310615	09/06/2023	09/13/2023	
Barium	90.9		9.17	"	"	"	"	"	
Cadmium	0.151		0.0917	"	"	"	"	"	
Copper	11.7		9.17	"	"	"	"	"	
Lead	ND		9.17	"	"	"	"	"	U
Nickel	ND		9.17	"	"	"	"	"	U
Selenium	0.0936		0.0917	"	"	"	"	"	
Silver	ND		0.0917	"	"	"	"	"	U
Zinc	ND		91.7	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L703870	09/05/2023	09/12/2023	
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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-02@3'
9/5/2023 10:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-02 (Soil)

Boron (DTPA Sorbitol)

Boron	2.33		0.0999	mg/L	1	B310715	09/07/2023	09/08/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B310602	09/06/2023	09/06/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	96.0 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B310620	09/06/2023	09/06/2023	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	103 %		70-130			"	"	"	
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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

SS-Grizzly-02@3'
9/5/2023 10:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-02 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	108 %		70-130			B31062 0	09/06/2023	09/06/2023	
Surrogate: 4-Bromofluorobenzene	104 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	1.07		0.499	meq/L	10	[CALC]	09/07/2023	09/08/2023	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	25.3		0.435	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND		0.002	mg/kg	1	B310623	09/06/2023	09/06/2023	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U
Anthracene	ND		0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	U
Fluoranthene	ND		0.020	"	"	"	"	"	U

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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-02@3'
9/5/2023 10:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-02 (Soil)

PAH by EPA 8270E

Fluorene	ND		0.020	mg/kg	1	B310623	09/06/2023	09/06/2023	U
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	89.2 %		60-130			"	"	"	
Surrogate: Anthracene-d10	101 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	99.3 %		60-130			"	"	"	
Surrogate: Pyrene-d10	84.6 %		60-130			"	"	"	

pH in Soil by 9045D

pH	8.09			pH Units	1	B310720	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	30.5		0.0100	SAR	1	B310711	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	2.85		0.00500	mmhos/cm	1	B310720	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-02@3'
9/5/2023 10:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-02 (Soil)

Table 915 metals by EPA 6020B

Arsenic	2.53		0.0938	mg/kg	10	B310615	09/06/2023	09/13/2023	
Barium	90.5		9.38	"	"	"	"	"	
Cadmium	0.155		0.0938	"	"	"	"	"	
Copper	11.1		9.38	"	"	"	"	"	
Lead	ND		9.38	"	"	"	"	"	U
Nickel	9.69		9.38	"	"	"	"	"	
Selenium	0.153		0.0938	"	"	"	"	"	
Silver	ND		0.0938	"	"	"	"	"	U
Zinc	ND		93.8	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L703871	09/05/2023	09/12/2023	
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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-03@3'
9/5/2023 10:03:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-03 (Soil)

Boron (DTPA Sorbitol)

Boron	3.05		0.0985	mg/L	1	B310715	09/07/2023	09/08/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	290		25.0	mg/kg	1	B310602	09/06/2023	09/06/2023	
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	93.3 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B310620	09/06/2023	09/06/2023	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	103 %		70-130			"	"	"	
Surrogate: Toluene-d8	109 %		70-130			"	"	"	

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 Project: Grizzly 3-32H

SS-Grizzly-03@3'
9/5/2023 10:03:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-03 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	108 %	70-130				B31062 0	09/06/2023	09/06/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	ND	0.499	meq/L	10	[CALC]		09/07/2023	09/08/2023	
Magnesium	ND	0.823	"	"	"	"	"	"	
Sodium	11.6	0.435	"	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B310623		09/06/2023	09/06/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	"	U
Fluorene	ND	0.020	"	"	"	"	"	"	U

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

SS-Grizzly-03@3'
9/5/2023 10:03:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-03 (Soil)

PAH by EPA 8270E

Indeno (1,2,3-cd) pyrene	ND		0.020	mg/kg	1	B310623	09/06/2023	09/06/2023	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	150 %		60-130			"	"	"	S-04
Surrogate: Anthracene-d10	96.5 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	101 %		60-130			"	"	"	
Surrogate: Pyrene-d10	79.4 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.98			pH Units	1	B310720	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	25.6		0.0100	SAR	1	B310711	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.677		0.00500	mmhos/cm	1	B310720	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Arsenic	2.14		0.0946	mg/kg	10	B310615	09/06/2023	09/13/2023	
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Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-03@3'
9/5/2023 10:03:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-03 (Soil)

Table 915 metals by EPA 6020B

Barium	81.9		9.46	mg/kg	10	B310615	09/06/2023	09/13/2023	
Cadmium	0.150		0.0946	"	"	"	"	"	
Copper	ND		9.46	"	"	"	"	"	U
Lead	ND		9.46	"	"	"	"	"	U
Nickel	ND		9.46	"	"	"	"	"	U
Selenium	ND		0.0946	"	"	"	"	"	U
Silver	ND		0.0946	"	"	"	"	"	U
Zinc	ND		94.6	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L703871	09/05/2023	09/12/2023	
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Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-04@3'
9/5/2023 10:06:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-04 (Soil)

Boron (DTPA Sorbitol)

Boron	0.347		0.0983	mg/L	1	B310715	09/07/2023	09/08/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B310602	09/06/2023	09/06/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	91.4 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B310620	09/06/2023	09/06/2023	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	103 %		70-130			"	"	"	
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Jen Pellegrini For Noelle Doyle Mathis, President

Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

SS-Grizzly-04@3'
9/5/2023 10:06:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-04 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	109 %		70-130			B31062 0	09/06/2023	09/06/2023	
Surrogate: 4-Bromofluorobenzene	106 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	4.43		0.499	meq/L	10	[CALC]	09/07/2023	09/08/2023	
Magnesium	1.88		0.823	"	"	"	"	"	
Sodium	0.907		0.435	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND		0.002	mg/kg	1	B310623	09/06/2023	09/06/2023	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U
Anthracene	ND		0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	U
Fluoranthene	ND		0.020	"	"	"	"	"	U

Origins Laboratory, Inc.



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 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-04@3'
9/5/2023 10:06:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-04 (Soil)

PAH by EPA 8270E

Fluorene	ND		0.020	mg/kg	1	B310623	09/06/2023	09/06/2023	U
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	103 %		60-130			"	"	"	
Surrogate: Anthracene-d10	112 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	101 %		60-130			"	"	"	
Surrogate: Pyrene-d10	88.5 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.71			pH Units	1	B310720	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	0.511		0.0100	SAR	1	B310711	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.807		0.00500	mmhos/cm	1	B310720	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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Joel Mason
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 Project: Grizzly 3-32H

SS-Grizzly-04@3'
9/5/2023 10:06:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-04 (Soil)

Table 915 metals by EPA 6020B

Arsenic	3.39		0.0864	mg/kg	10	B310615	09/06/2023	09/13/2023	
Barium	85.2		8.64	"	"	"	"	"	
Cadmium	0.190		0.0864	"	"	"	"	"	
Copper	9.27		8.64	"	"	"	"	"	
Lead	ND		8.64	"	"	"	"	"	U
Nickel	10.5		8.64	"	"	"	"	"	
Selenium	0.105		0.0864	"	"	"	"	"	
Silver	ND		0.0864	"	"	"	"	"	U
Zinc	ND		86.4	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L703871	09/05/2023	09/12/2023	
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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-05@3'
9/5/2023 10:09:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-05 (Soil)

Boron (DTPA Sorbitol)

Boron	0.508		0.100	mg/L	1	B310715	09/07/2023	09/08/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B310602	09/06/2023	09/06/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	96.9 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B310620	09/06/2023	09/06/2023	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	102 %		70-130			"	"	"	
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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-05@3'
9/5/2023 10:09:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-05 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	110 %		70-130			B31062 0	09/06/2023	09/06/2023	
Surrogate: 4-Bromofluorobenzene	103 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	2.42	0.499	meq/L	10	[CALC]		09/07/2023	09/08/2023	
Magnesium	0.956	0.823	"	"	"	"	"	"	
Sodium	0.931	0.435	"	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B310623		09/06/2023	09/07/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	"	U

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 Project: Grizzly 3-32H

SS-Grizzly-05@3'
9/5/2023 10:09:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-05 (Soil)

PAH by EPA 8270E

Fluorene	ND		0.020	mg/kg	1	B310623	09/06/2023	09/07/2023	U
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	98.4 %		60-130			"	"	"	
Surrogate: Anthracene-d10	100 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	98.8 %		60-130			"	"	"	
Surrogate: Pyrene-d10	84.6 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.80			pH Units	1	B310720	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	0.717		0.0100	SAR	1	B310711	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.464		0.00500	mmhos/cm	1	B310720	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-05@3'
9/5/2023 10:09:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-05 (Soil)

Table 915 metals by EPA 6020B

Arsenic	2.60	0.0920	0.0920	mg/kg	10	B310615	09/06/2023	09/13/2023	
Barium	96.7	9.20	9.20	"	"	"	"	"	
Cadmium	0.182	0.0920	0.0920	"	"	"	"	"	
Copper	ND	9.20	9.20	"	"	"	"	"	U
Lead	ND	9.20	9.20	"	"	"	"	"	U
Nickel	ND	9.20	9.20	"	"	"	"	"	U
Selenium	0.103	0.0920	0.0920	"	"	"	"	"	
Silver	ND	0.0920	0.0920	"	"	"	"	"	U
Zinc	ND	92.0	92.0	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L703871	09/05/2023	09/12/2023	
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 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-06@3'
9/5/2023 10:12:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-06 (Soil)

Boron (DTPA Sorbitol)

Boron	0.706		0.0993	mg/L	1	B310715	09/07/2023	09/08/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B310602	09/06/2023	09/06/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

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

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B310620	09/06/2023	09/06/2023	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	104 %		70-130			"	"	"	
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 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-06@3'
9/5/2023 10:12:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-06 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	108 %		70-130			B31062 0	09/06/2023	09/06/2023	
Surrogate: 4-Bromofluorobenzene	105 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	4.98		0.499	meq/L	10	[CALC]	09/07/2023	09/08/2023	
Magnesium	2.44		0.823	"	"	"	"	"	
Sodium	13.7		0.435	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND		0.002	mg/kg	1	B310623	09/06/2023	09/07/2023	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U
Anthracene	ND		0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	U
Fluoranthene	ND		0.020	"	"	"	"	"	U

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-06@3'
9/5/2023 10:12:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-06 (Soil)

PAH by EPA 8270E

Fluorene	ND		0.020	mg/kg	1	B310623	09/06/2023	09/07/2023	U
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	113 %		60-130			"	"	"	
Surrogate: Anthracene-d10	100 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	102 %		60-130			"	"	"	
Surrogate: Pyrene-d10	94.6 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.36			pH Units	1	B310720	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	7.13		0.0100	SAR	1	B310711	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	2.34		0.00500	mmhos/cm	1	B310720	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-06@3'
9/5/2023 10:12:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-06 (Soil)

Table 915 metals by EPA 6020B

Arsenic	3.93		0.0866	mg/kg	10	B310615	09/06/2023	09/13/2023	
Barium	174		8.66	"	"	"	"	"	
Cadmium	0.223		0.0866	"	"	"	"	"	
Copper	14.8		8.66	"	"	"	"	"	
Lead	ND		8.66	"	"	"	"	"	U
Nickel	14.3		8.66	"	"	"	"	"	
Selenium	0.158		0.0866	"	"	"	"	"	
Silver	ND		0.0866	"	"	"	"	"	U
Zinc	ND		86.6	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L703871	09/05/2023	09/12/2023	
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Origins Laboratory, Inc.



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Absaroka
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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-07@3'
9/5/2023 10:15:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-07 (Soil)

Boron (DTPA Sorbitol)

Boron	0.528		0.0992	mg/L	1	B310715	09/07/2023	09/08/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B310602	09/06/2023	09/06/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	94.3 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B310620	09/06/2023	09/06/2023	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	103 %		70-130			"	"	"	
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 Project: Grizzly 3-32H

SS-Grizzly-07@3'
9/5/2023 10:15:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-07 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	109 %		70-130			B31062 0	09/06/2023	09/06/2023	
Surrogate: 4-Bromofluorobenzene	106 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	1.80	0.499	meq/L	10	[CALC]		09/07/2023	09/08/2023	
Magnesium	1.10	0.823	"	"	"	"	"	"	
Sodium	1.44	0.435	"	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B310623		09/06/2023	09/07/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	"	U

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Joel Mason
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Project: Grizzly 3-32H

SS-Grizzly-07@3'
9/5/2023 10:15:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-07 (Soil)

PAH by EPA 8270E

Fluorene	ND		0.020	mg/kg	1	B310623	09/06/2023	09/07/2023	U
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	115 %		60-130			"	"	"	
Surrogate: Anthracene-d10	101 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	103 %		60-130			"	"	"	
Surrogate: Pyrene-d10	92.9 %		60-130			"	"	"	

pH in Soil by 9045D

pH	8.01			pH Units	1	B310720	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	1.20		0.0100	SAR	1	B310711	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.444		0.00500	mmhos/cm	1	B310720	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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SS-Grizzly-07@3'
9/5/2023 10:15:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-07 (Soil)

Table 915 metals by EPA 6020B

Arsenic	3.07	0.0925	0.0925	mg/kg	10	B310615	09/06/2023	09/13/2023	
Barium	91.9	9.25	9.25	"	"	"	"	"	
Cadmium	0.151	0.0925	0.0925	"	"	"	"	"	
Copper	12.7	9.25	9.25	"	"	"	"	"	
Lead	ND	9.25	9.25	"	"	"	"	"	U
Nickel	10.9	9.25	9.25	"	"	"	"	"	
Selenium	0.159	0.0925	0.0925	"	"	"	"	"	
Silver	ND	0.0925	0.0925	"	"	"	"	"	U
Zinc	ND	92.5	92.5	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L703871	09/05/2023	09/12/2023	
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 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

SS-Grizzly-08@3'
9/5/2023 10:18:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-08 (Soil)

Boron (DTPA Sorbitol)

Boron	0.180		0.101	mg/L	1	B310715	09/07/2023	09/08/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B310602	09/06/2023	09/06/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	98.7 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B310620	09/06/2023	09/06/2023	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	104 %		70-130			"	"	"	
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Joel Mason
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Project: Grizzly 3-32H

SS-Grizzly-08@3'
9/5/2023 10:18:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-08 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	109 %		70-130			B31062 0	09/06/2023	09/06/2023	
Surrogate: 4-Bromofluorobenzene	104 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	2.17	0.499	meq/L	10	[CALC]		09/07/2023	09/08/2023	
Magnesium	1.13	0.823	"	"	"	"	"	"	
Sodium	0.933	0.435	"	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B310623		09/06/2023	09/07/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	"	U

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 Project: Grizzly 3-32H

SS-Grizzly-08@3'
9/5/2023 10:18:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-08 (Soil)

PAH by EPA 8270E

Fluorene	ND		0.020	mg/kg	1	B310623	09/06/2023	09/07/2023	U
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	108 %		60-130			"	"	"	
Surrogate: Anthracene-d10	116 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	100 %		60-130			"	"	"	
Surrogate: Pyrene-d10	99.5 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.99			pH Units	1	B310720	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	0.726		0.0100	SAR	1	B310711	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.442		0.00500	mmhos/cm	1	B310720	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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 Project: Grizzly 3-32H

SS-Grizzly-08@3'
9/5/2023 10:18:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309051-08 (Soil)

Table 915 metals by EPA 6020B

Arsenic	2.65	0.0884	0.0884	mg/kg	10	B310615	09/06/2023	09/13/2023	
Barium	87.5	8.84	8.84	"	"	"	"	"	
Cadmium	0.137	0.0884	0.0884	"	"	"	"	"	
Copper	11.9	8.84	8.84	"	"	"	"	"	
Lead	ND	8.84	8.84	"	"	"	"	"	U
Nickel	10.8	8.84	8.84	"	"	"	"	"	
Selenium	0.138	0.0884	0.0884	"	"	"	"	"	
Silver	ND	0.0884	0.0884	"	"	"	"	"	U
Zinc	ND	88.4	88.4	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L703871	09/05/2023	09/12/2023	
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 Project: Grizzly 3-32H

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B310602 - EPA 3550B										
Blank (B310602-BLK1)										
					Prepared: 09/06/2023 Analyzed: 09/06/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	23		"	24.9		94.0	50-150			

Origins Laboratory, Inc.



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 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B310602 - EPA 3550B

LCS (B310602-BS1)

Prepared: 09/06/2023 Analyzed: 09/06/2023

Diesel (C10-C28)	784	50.0	mg/kg	1000		78.4	70-130			
Residual Range Organics (C28-C40)	975	200	"	1000		97.5	70-130			
Surrogate: o-Terphenyl	47		"	49.8		94.5	50-150			

Origins Laboratory, Inc.



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 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B310602 - EPA 3550B

Matrix Spike (B310602-MS1)	Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/06/2023						
Diesel (C10-C28)	819	50.0	mg/kg	1000	ND	81.9	70-130			
Residual Range Organics (C28-C40)	1030	200	"	1000	ND	103	70-130			
<i>Surrogate: o-Terphenyl</i>	45		"	49.8		89.9	50-150			

Origins Laboratory, Inc.



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 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B310602 - EPA 3550B

Matrix Spike Dup (B310602-MSD1)	Source: Y309051-01		Prepared: 09/06/2023 Analyzed: 09/06/2023							
Diesel (C10-C28)	795	50.0	mg/kg	1000	ND	79.5	70-130	2.88	35	
Residual Range Organics (C28-C40)	1030	200	"	1000	ND	103	70-130	0.587	35	
<i>Surrogate: o-Terphenyl</i>	42		"	49.8		84.5	50-150			

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 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B310620 - EPA 5030 (soil)

Blank (B310620-BLK1)

Prepared: 09/06/2023 Analyzed: 09/06/2023

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	99.6		70-130			
Surrogate: Toluene-d8	0.14		"	0.125	110		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	103		70-130			

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B310620 - EPA 5030 (soil)

LCS (B310620-BS1)

Prepared: 09/06/2023 Analyzed: 09/06/2023

1,2,4-Trimethylbenzene	0.114	0.00200	mg/kg	0.100		114	70-130			
1,3,5-Trimethylbenzene	0.119	0.00200	"	0.100		119	70-130			
Benzene	0.115	0.00200	"	0.100		115	70-130			
Ethylbenzene	0.111	0.00200	"	0.100		111	70-130			
Naphthalene	0.107	0.00380	"	0.100		107	70-130			
Toluene	0.112	0.00200	"	0.100		112	70-130			
o-Xylene	0.110	0.00200	"	0.100		110	70-130			
m,p-Xylene	0.222	0.00400	"	0.200		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.6	70-130			

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Joel Mason
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 Project: Grizzly 3-32H

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 B310620 - EPA 5030 (soil)

Matrix Spike (B310620-MS1)	Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/06/2023						
1,2,4-Trimethylbenzene	0.109	0.00200	mg/kg	0.100	ND	109	70-130			
1,3,5-Trimethylbenzene	0.101	0.00200	"	0.100	ND	101	70-130			
Benzene	0.0808	0.00200	"	0.100	ND	80.8	70-130			
Ethylbenzene	0.0980	0.00200	"	0.100	ND	98.0	70-130			
Naphthalene	0.105	0.00380	"	0.100	ND	105	70-130			
Toluene	0.0968	0.00200	"	0.100	ND	96.8	70-130			
o-Xylene	0.101	0.00200	"	0.100	ND	101	70-130			
m,p-Xylene	0.196	0.00400	"	0.200	ND	98.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		108	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.8	70-130			

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 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B310620 - EPA 5030 (soil)

Matrix Spike Dup (B310620-MSD1)	Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/06/2023						
1,2,4-Trimethylbenzene	0.104	0.00200	mg/kg	0.100	ND	104	70-130	5.05	20	
1,3,5-Trimethylbenzene	0.0988	0.00200	"	0.100	ND	98.8	70-130	1.98	20	
Benzene	0.0753	0.00200	"	0.100	ND	75.3	70-130	7.07	20	
Ethylbenzene	0.320	0.00200	"	0.100	ND	320	70-130	106	20	QM-07
Naphthalene	0.0941	0.00380	"	0.100	ND	94.1	70-130	10.9	20	
Toluene	0.0912	0.00200	"	0.100	ND	91.2	70-130	5.91	20	
o-Xylene	0.0988	0.00200	"	0.100	ND	98.8	70-130	1.96	20	
m,p-Xylene	0.190	0.00400	"	0.200	ND	94.8	70-130	3.55	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.4	70-130			

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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B3I0615 - EPA 3050B

Blank (B3I0615-BLK1)

Prepared: 09/06/2023 Analyzed: 09/07/2023

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

LCS (B3I0615-BS1)

Prepared: 09/06/2023 Analyzed: 09/07/2023

Arsenic	0.0475	0.000100	mg/kg	0.0500		95.1	80-120			
Barium	4.93	0.0100	"	5.00		98.6	80-120			
Cadmium	0.0479	0.000100	"	0.0500		95.8	80-120			
Copper	0.487	0.0100	"	0.500		97.3	80-120			
Lead	0.0485	0.0100	"	0.0500		97.0	80-120			
Nickel	0.0477	0.0100	"	0.0500		95.4	80-120			
Selenium	0.0451	0.000100	"	0.0500		90.3	80-120			
Silver	0.0495	0.000100	"	0.0500		98.9	80-120			
Zinc	0.498	0.100	"	0.500		99.6	80-120			

Matrix Spike (B3I0615-MS1)

Source: Y309051-01

Prepared: 09/06/2023 Analyzed: 09/07/2023

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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B3I0615 - EPA 3050B

Matrix Spike (B3I0615-MS1)		Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/07/2023					
Arsenic	6.79	0.0888	mg/kg	4.44	2.27	102	75-125			
Barium	534	8.88	"	444	90.9	99.8	75-125			
Cadmium	4.53	0.0888	"	4.44	0.151	98.6	75-125			
Copper	52.3	8.88	"	44.4	11.7	91.5	75-125			
Lead	9.08	8.88	"	4.44	4.93	93.5	75-125			
Nickel	13.1	8.88	"	4.44	9.10	89.3	75-125			
Selenium	4.29	0.0888	"	4.44	0.0936	94.5	75-125			
Silver	4.58	0.0888	"	4.44	0.0431	102	75-125			
Zinc	76.0	88.8	"	44.4	31.3	101	75-125			U

Matrix Spike Dup (B3I0615-MSD1)		Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/07/2023					
Arsenic	7.25	0.0908	mg/kg	4.54	2.27	110	75-125	6.50	20	
Barium	557	9.08	"	454	90.9	103	75-125	4.25	20	
Cadmium	4.66	0.0908	"	4.54	0.151	99.3	75-125	2.82	20	
Copper	55.2	9.08	"	45.4	11.7	95.9	75-125	5.42	20	
Lead	9.53	9.08	"	4.54	4.93	101	75-125	4.85	20	
Nickel	14.1	9.08	"	4.54	9.10	109	75-125	7.39	20	
Selenium	4.26	0.0908	"	4.54	0.0936	91.7	75-125	0.859	20	
Silver	4.72	0.0908	"	4.54	0.0431	103	75-125	3.06	20	
Zinc	81.6	90.8	"	45.4	31.3	111	75-125	7.15	20	U

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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B310623 - EPA 3580

Blank (B310623-BLK1)

Prepared: 09/06/2023 Analyzed: 09/06/2023

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	220		ug/kg	200		110	60-130			
Surrogate: Anthracene-d10	200		"	200		101	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		97.0	60-130			
Surrogate: Pyrene-d10	230		"	200		114	60-130			

LCS (B310623-BS1)

Prepared: 09/06/2023 Analyzed: 09/06/2023

1-Methylnaphthalene	0.186	0.002	mg/kg	0.200		93.2	70-130			
2-Methylnaphthalene	0.187	0.002	"	0.200		93.6	70-130			
Acenaphthene	0.183	0.020	"	0.200		91.5	70-130			
Anthracene	0.174	0.020	"	0.200		87.0	70-130			

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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B3I0623 - EPA 3580

LCS (B3I0623-BS1)

Prepared: 09/06/2023 Analyzed: 09/06/2023

Benzo (a) anthracene	0.191	0.005	mg/kg	0.200		95.4	70-130			
Benzo (a) pyrene	0.157	0.020	"	0.200		78.5	70-130			
Benzo (b) fluoranthene	0.192	0.020	"	0.200		95.9	70-130			
Benzo (g,h,i) perylene	0.222	0.020	"	0.200		111	70-130			
Benzo (k) fluoranthene	0.179	0.020	"	0.200		89.7	70-130			
Chrysene	0.175	0.020	"	0.200		87.6	70-130			
Dibenz (a,h) anthracene	0.227	0.020	"	0.200		114	70-130			
Fluoranthene	0.211	0.020	"	0.200		106	70-130			
Fluorene	0.197	0.020	"	0.200		98.4	70-130			
Indeno (1,2,3-cd) pyrene	0.193	0.020	"	0.200		96.3	70-130			
Naphthalene	0.185	0.002	"	0.200		92.7	70-130			
Phenanthrene	0.179	0.020	"	0.200		89.7	70-130			
Pyrene	0.171	0.020	"	0.200		85.3	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	220		"	200		109	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		97.8	60-130			
Surrogate: Pyrene-d10	190		"	200		96.3	60-130			

Matrix Spike (B3I0623-MS1)

Source: Y309051-01

Prepared: 09/06/2023 Analyzed: 09/06/2023

1-Methylnaphthalene	0.200	0.002	mg/kg	0.200	0.0004	99.6	70-130			
2-Methylnaphthalene	0.195	0.002	"	0.200	ND	97.4	70-130			
Acenaphthene	0.186	0.020	"	0.200	ND	93.2	70-130			
Anthracene	0.209	0.020	"	0.200	ND	105	70-130			
Benzo (a) anthracene	0.194	0.005	"	0.200	0.0009	96.4	70-130			
Benzo (a) pyrene	0.181	0.020	"	0.200	ND	90.7	70-130			
Benzo (b) fluoranthene	0.200	0.020	"	0.200	0.003	98.0	70-130			
Benzo (g,h,i) perylene	0.186	0.020	"	0.200	0.0009	92.5	70-130			

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Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

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 B310623 - EPA 3580

Matrix Spike (B310623-MS1)		Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/06/2023					
Benzo (k) fluoranthene	0.167	0.020	mg/kg	0.200	0.004	81.5	70-130			
Chrysene	0.180	0.020	"	0.200	0.0002	90.1	70-130			
Dibenz (a,h) anthracene	0.189	0.020	"	0.200	0.002	93.2	70-130			
Fluoranthene	0.146	0.020	"	0.200	0.0006	72.6	70-130			
Fluorene	0.172	0.020	"	0.200	0.003	84.5	70-130			
Indeno (1,2,3-cd) pyrene	0.174	0.020	"	0.200	0.002	86.0	70-130			
Naphthalene	0.186	0.002	"	0.200	ND	93.0	70-130			
Phenanthrene	0.186	0.020	"	0.200	0.0009	92.6	70-130			
Pyrene	0.189	0.020	"	0.200	0.0007	94.2	70-130			
Surrogate: Fluorene-d10	220		ug/kg	200		112	60-130			
Surrogate: Anthracene-d10	210		"	200		104	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.1	60-130			
Surrogate: Pyrene-d10	200		"	200		101	60-130			

Matrix Spike Dup (B310623-MSD1)		Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/06/2023					
1-Methylnaphthalene	0.186	0.002	mg/kg	0.200	0.0004	92.6	70-130	7.33	20	
2-Methylnaphthalene	0.193	0.002	"	0.200	ND	96.6	70-130	0.829	20	
Acenaphthene	0.187	0.020	"	0.200	ND	93.5	70-130	0.372	20	
Anthracene	0.192	0.020	"	0.200	ND	96.2	70-130	8.34	20	
Benzo (a) anthracene	0.186	0.005	"	0.200	0.0009	92.4	70-130	4.15	20	
Benzo (a) pyrene	0.162	0.020	"	0.200	ND	81.2	70-130	11.1	20	
Benzo (b) fluoranthene	0.199	0.020	"	0.200	0.003	97.6	70-130	0.394	20	
Benzo (g,h,i) perylene	0.151	0.020	"	0.200	0.0009	75.2	70-130	20.5	20	QR-02
Benzo (k) fluoranthene	0.153	0.020	"	0.200	0.004	74.6	70-130	8.70	20	
Chrysene	0.184	0.020	"	0.200	0.0002	91.8	70-130	1.82	20	
Dibenz (a,h) anthracene	0.202	0.020	"	0.200	0.002	99.6	70-130	6.60	20	
Fluoranthene	0.183	0.020	"	0.200	0.0006	91.1	70-130	22.5	20	QR-02

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 Project: Grizzly 3-32H

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 B310623 - EPA 3580

Matrix Spike Dup (B310623-MSD1)	Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/06/2023						
Fluorene	0.186	0.020	mg/kg	0.200	0.003	91.6	70-130	7.91	20	
Indeno (1,2,3-cd) pyrene	0.174	0.020	"	0.200	0.002	86.3	70-130	0.247	20	
Naphthalene	0.188	0.002	"	0.200	ND	93.9	70-130	0.982	20	
Phenanthrene	0.182	0.020	"	0.200	0.0009	90.5	70-130	2.28	20	
Pyrene	0.184	0.020	"	0.200	0.0007	91.7	70-130	2.71	20	
Surrogate: Fluorene-d10	220		ug/kg	200		109	60-130			
Surrogate: Anthracene-d10	180		"	200		89.7	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			
Surrogate: Pyrene-d10	210		"	200		103	60-130			

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Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B3I0711 - Saturated Paste Metals

Blank (B3I0711-BLK1)

Prepared: 09/07/2023 Analyzed: 09/08/2023

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

Duplicate (B3I0711-DUP1)

Source: Y309051-02

Prepared: 09/07/2023 Analyzed: 09/08/2023

SAR	ND	0.0100	SAR		30.5				200	U
Calcium PPM	22.2	10.0	mg/L		21.4			3.81	50	
Magnesium PPM	3.89	10.0	"		3.74			3.93	50	U
Sodium PPM	576	10.0	"		582			1.02	50	

Batch B3I0715 - DTPA Sorbitol Preparation

Blank (B3I0715-BLK1)

Prepared: 09/07/2023 Analyzed: 09/08/2023

Boron	ND	0.100	mg/L							U
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Duplicate (B3I0715-DUP1)

Source: Y309051-01

Prepared: 09/07/2023 Analyzed: 09/08/2023

Boron	0.704	0.100	mg/L		0.709			0.610	50	
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 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

Saturated Paste - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B310720 - Saturated Paste pH/EC										
Blank (B310720-BLK1)					Prepared: 09/07/2023 Analyzed: 09/08/2023					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							U
Duplicate (B310720-DUP1)					Source: Y309051-01 Prepared: 09/07/2023 Analyzed: 09/08/2023					
pH	8.02		pH Units		7.55			6.04	25	
Specific Conductance (EC)	2.82	0.00500	mmhos/cm		2.99			5.93	25	

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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.

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L703871 -										
DUP (L 87469-DUP)		Source: Y309051-08			Prepared: Analyzed: 09/12/2023					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500		-	0	20	
MS (L 87469-MS)		Source: Y309051-08			Prepared: Analyzed: 09/12/2023					
Chromium, Hexavalent	34	2.51	mg/Kg	40.1	<1.22	85	75-125			
LCS (LCS)		Prepared: Analyzed: 09/12/2023								
Chromium, Hexavalent	6.67	0.5	mg/Kg	8		83	75-125			
LRB (LRB)		Prepared: Analyzed: 09/12/2023								
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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.

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L703870 -										
DUP (L 87446-DUP)		Source: 87446			Prepared: Analyzed: 09/12/2023					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500		-	0	20	
MS (L 87446-MS)		Source: 87446			Prepared: Analyzed: 09/12/2023					
Chromium, Hexavalent	26.6	2.5	mg/Kg	38.6	<1.22	69	75-125			*

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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.

Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

Notes and Definitions

- U Sample is Non-Detect.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- * QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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.

September 18, 2023

Absaroka

Joel Mason

112 High St.

Buffalo

WY 82834

Project Name - Grizzly 3-32H

Project Number - FEO.CO.0701.09

Attached are your analytical results for Grizzly 3-32H received by Origins Laboratory, Inc. September 06, 2023. This project is associated with Origins project number Y309052-01.

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



Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BG-Grizzly-02@3'	Y309052-01	Soil	September 5, 2023 11:40	09/06/2023 07:30

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.

Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4309052

Client: Absaroka

Client Project ID: Grizzly 3-32H

Checklist Completed by: JPM/EHS

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

Date/time completed: 9/6/23

Airbill #: N/A

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

Cooler Number/Temperature: 1, 4.5 °C / _____ °C / _____ °C (Describe) _____ °C

Thermometer ID: 1004

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"/>	<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 HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with Na ₂ SO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):	<u>Extra container in non lab approved container provided.</u>			

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 9/6/23

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.

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

BG-Grizzly-02@3'
9/5/2023 11:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y309052-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.204	0.0984	mg/L	1	B310715	KAP	09/07/2023	09/08/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	ND	0.499	meq/L	10	[CALC]	KAP	09/07/2023	09/08/2023	
Magnesium	ND	0.823	"	"	"	KAP	"	"	
Sodium	ND	0.435	"	"	"	KAP	"	"	

pH in Soil by 9045D

pH	7.29		pH Units	1	B310720	HJD	09/07/2023	09/08/2023	
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SAR by 20B Saturated Paste

SAR	0.182	0.0100	SAR	1	B310711	KAP	09/07/2023	09/08/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.0937	0.00500	mmhos/cm	1	B310720	HJD	09/07/2023	09/08/2023	
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Table 915 metals by EPA 6020B

Arsenic	2.19	0.0935	mg/kg	10	B310615	CIH	09/06/2023	09/13/2023	
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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.

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B3I0615 - EPA 3050B

Blank (B3I0615-BLK1)

Prepared: 09/06/2023 Analyzed: 09/07/2023

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

LCS (B3I0615-BS1)

Prepared: 09/06/2023 Analyzed: 09/07/2023

Arsenic	0.0475	0.000100	mg/kg	0.0500		95.1	80-120			
Barium	4.93	0.0100	"	5.00		98.6	80-120			
Cadmium	0.0479	0.000100	"	0.0500		95.8	80-120			
Copper	0.487	0.0100	"	0.500		97.3	80-120			
Lead	0.0485	0.0100	"	0.0500		97.0	80-120			
Nickel	0.0477	0.0100	"	0.0500		95.4	80-120			
Selenium	0.0451	0.000100	"	0.0500		90.3	80-120			
Silver	0.0495	0.000100	"	0.0500		98.9	80-120			
Zinc	0.498	0.100	"	0.500		99.6	80-120			

Matrix Spike (B3I0615-MS1)

Source: Y309051-01

Prepared: 09/06/2023 Analyzed: 09/07/2023

Arsenic	6.79	0.0888	mg/kg	4.44	2.27	102	75-125			
Barium	534	8.88	"	444	90.9	99.8	75-125			
Cadmium	4.53	0.0888	"	4.44	0.151	98.6	75-125			
Copper	52.3	8.88	"	44.4	11.7	91.5	75-125			
Lead	9.08	8.88	"	4.44	4.93	93.5	75-125			

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.

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3I0615 - EPA 3050B										
Matrix Spike (B3I0615-MS1)			Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/07/2023				
Nickel	13.1	8.88	mg/kg	4.44	9.10	89.3	75-125			
Selenium	4.29	0.0888	"	4.44	0.0936	94.5	75-125			
Silver	4.58	0.0888	"	4.44	0.0431	102	75-125			
Zinc	76.0	88.8	"	44.4	31.3	101	75-125			U
Matrix Spike Dup (B3I0615-MSD1)			Source: Y309051-01			Prepared: 09/06/2023 Analyzed: 09/07/2023				
Arsenic	7.25	0.0908	mg/kg	4.54	2.27	110	75-125	6.50	20	
Barium	557	9.08	"	454	90.9	103	75-125	4.25	20	
Cadmium	4.66	0.0908	"	4.54	0.151	99.3	75-125	2.82	20	
Copper	55.2	9.08	"	45.4	11.7	95.9	75-125	5.42	20	
Lead	9.53	9.08	"	4.54	4.93	101	75-125	4.85	20	
Nickel	14.1	9.08	"	4.54	9.10	109	75-125	7.39	20	
Selenium	4.26	0.0908	"	4.54	0.0936	91.7	75-125	0.859	20	
Silver	4.72	0.0908	"	4.54	0.0431	103	75-125	3.06	20	
Zinc	81.6	90.8	"	45.4	31.3	111	75-125	7.15	20	U

Origins Laboratory, Inc.



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

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B3I0711 - Saturated Paste Metals

Blank (B3I0711-BLK1)

Prepared: 09/07/2023 Analyzed: 09/08/2023

SAR	ND	0.0100	SAR							U
Calcium PPM	ND	10.0	mg/L							U
Magnesium PPM	ND	10.0	"							U
Sodium PPM	0.810	10.0	"							

Duplicate (B3I0711-DUP1)

Source: Y309051-02

Prepared: 09/07/2023 Analyzed: 09/08/2023

Calcium PPM	22.2	10.0	mg/L		21.4			3.81	50	
SAR	ND	0.0100	SAR		30.5				200	U
Magnesium PPM	3.89	10.0	mg/L		3.74			3.93	50	
Sodium PPM	576	10.0	"		582			1.02	50	

Batch B3I0715 - DTPA Sorbitol Preparation

Blank (B3I0715-BLK1)

Prepared: 09/07/2023 Analyzed: 09/08/2023

Boron	ND	0.100	mg/L							U
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Duplicate (B3I0715-DUP1)

Source: Y309051-01

Prepared: 09/07/2023 Analyzed: 09/08/2023

Boron	0.704	0.100	mg/L		0.709			0.610	50	
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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.

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FEO.CO.0701.09
 Project: Grizzly 3-32H

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 B310720 - Saturated Paste pH/EC

Blank (B310720-BLK1)

Prepared: 09/07/2023 Analyzed: 09/08/2023

Specific Conductance (EC) 0.00200 0.00500 mmhos/cm

Duplicate (B310720-DUP1)

Source: Y309051-01

Prepared: 09/07/2023 Analyzed: 09/08/2023

Specific Conductance (EC)	2.82	0.00500	mmhos/cm	2.99	5.93	25
pH	8.02		pH Units	7.55	6.04	25

Origins Laboratory, Inc.



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

Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FEO.CO.0701.09
Project: Grizzly 3-32H

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.

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.

April 19, 2023

Absaroka

Joel Mason

112 High St.

Buffalo

WY

82834

Project Name - FED - NP Remediation 2023

Project Number - FED.CO.0701.09 Grizzly

Attached are your analytical results for FED - NP Remediation 2023 received by Origins Laboratory, Inc. March 10, 2023. This project is associated with Origins project number Y303259-01.

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



Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-01@6"	Y303259-01	Soil	March 9, 2023 10:15	03/10/2023 08:00
SS-01@1'	Y303259-02	Soil	March 9, 2023 10:30	03/10/2023 08:00
SS-02@6"	Y303259-03	Soil	March 9, 2023 10:20	03/10/2023 08:00
SS-02@1'	Y303259-04	Soil	March 9, 2023 10:35	03/10/2023 08:00
SS-02@2'	Y303259-05	Soil	March 9, 2023 11:00	03/10/2023 08:00
SS-BG-01@2'	Y303259-06	Soil	March 9, 2023 12:30	03/10/2023 08:00
SS-02@2' Rerun 1	Y303259-07	Soil	March 9, 2023 11:00	03/10/2023 08:00
SS-02@2' Rerun 2	Y303259-08	Soil	March 9, 2023 11:00	03/10/2023 08:00

Sodium rerun on SS-02@2' per Joel's email on 04/04/2023. The full SAR metals and calculations are reported for all three results. JAB

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.

Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FED.CO.0701.09 Grizzly 3.32H
Project: FED - NP Remediation 2023

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: UR203259

Client: Absaroka

Client Project ID: FED - NP Remediation 2023

Checklist Completed by: JM

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

Date/time completed: 3/10/23

Airbill #: nil

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

Cooler Number/Temperature: 1 / 3 °C _____ °C _____ °C (Describe) _____ °C

Thermometer ID: 7004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	/			
Is there ice present (document if blue ice is used)	/			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			/	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			/	
Were all samples received intact ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		/		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	/			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	/			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	/			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			/	
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)			/	
Additional Comments (if any): <u>* Whiteout on COC tk</u>				

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

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 3/10/23

Origins Laboratory, Inc.

[Signature]

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

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-01@6"

3/9/2023 10:15:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.727		0.0985	mg/L	1	B3C1309	03/13/2023	03/15/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	427		25.0	mg/kg	1	B3C1001	03/10/2023	03/15/2023	
Residual Range Organics (C28-C40)	150		100	"	"	"	"	"	

Surrogate: o-Terphenyl	89.4 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B3C1041	03/11/2023	03/14/2023	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	0.237		0.200	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	93.3 %		70-130			"	"	"	
Surrogate: Toluene-d8	112 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FED.CO.0701.09 Grizzly 3.32H
Project: FED - NP Remediation 2023

SS-01@6"

3/9/2023 10:15:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene 109 % 70-130 B3C10 41 03/11/2023 03/14/2023

Metals by Saturated Paste by EPA 6010

Calcium	1.34	0.499	meq/L	10	[CALC]	03/14/2023	03/16/2023
Magnesium	ND	0.823	"	"	"	"	"
Sodium	11.5	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	0.551	0.0218	0.0402	mg/Kg	20	L670250	03/16/2023	03/17/2023
2-Methylnaphthalene	0.495	0.0387	0.0402	"	"	"	"	"
Acenaphthene	0.0615	0.00608	0.0134	"	"	"	"	"
Anthracene	0.0176	0.00668	0.0134	"	"	"	"	"
Benzo(a)anthracene	0.0454	0.00986	0.0134	"	"	"	"	"
Benzo(a)pyrene	0.0175	0.00936	0.0134	"	"	"	"	"
Benzo(b)fluoranthene	0.0141	0.0117	0.0134	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.00874	0.0134	"	"	"	"	"
Chrysene	0.0603	0.0125	0.0134	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.0123	0.0134	"	"	"	"	"
Fluoranthene	0.0218	0.00788	0.0134	"	"	"	"	"
Fluorene	0.267	0.00572	0.0134	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.0125	0.0134	"	"	"	"	"

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-01@6"

3/9/2023 10:15:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y303259-01 (Soil)

PAH by 8270D SIM

Naphthalene	0.0564	0.029	0.0402	mg/Kg	20	L670250	03/16/2023	03/17/2023	
Pyrene	0.0691	0.0129	0.0134	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	56.4 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	68.5 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	50.9 %		29-110			"	"	"	

pH in Soil by 9045D

pH	7.99			pH Units	1	B3C1412	03/14/2023	03/15/2023	
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SAR by 20B Saturated Paste

SAR	13.1			SAR	1	B3C1408	03/14/2023	03/16/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.17		0.00500	mmhos/cm	1	B3C1412	03/14/2023	03/15/2023	
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Table 915 metals by EPA 6020B

Arsenic	3.04		0.0952	mg/kg	10	B3C1502	03/15/2023	03/16/2023	
Barium	282		9.52	"	"	"	"	"	
Cadmium	0.142		0.0952	"	"	"	"	"	

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-01@6"

3/9/2023 10:15:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-01 (Soil)

Table 915 metals by EPA 6020B

Copper	ND		9.52	mg/kg	10	B3C1502	03/15/2023	03/16/2023	
Lead	ND		9.52	"	"	"	"	"	
Nickel	ND		9.52	"	"	"	"	"	
Selenium	0.190		0.0952	"	"	"	"	"	
Silver	ND		0.0952	"	"	"	"	"	
Zinc	ND		95.2	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.249	0.511	mg/Kg	1	L670224	03/09/2023	03/16/2023	
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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.

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-01@1'

3/9/2023 10:30:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-02 (Soil)

Boron (DTPA Sorbitol)

Boron	0.371		0.0981	mg/L	1	B3C1309	03/13/2023	03/15/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	62.3		25.0	mg/kg	1	B3C1001	03/10/2023	03/15/2023	
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	88.1 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

Benzene	ND		0.00200	mg/kg	1	B3C1041	03/11/2023	03/14/2023	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	96.5 %		70-130			"	"	"	
Surrogate: Toluene-d8	104 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-01@1'

3/9/2023 10:30:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y303259-02 (Soil)

Metals by Saturated Paste by EPA 6010

Calcium	2.00	0.499	meq/L	10	[CALC]	03/14/2023	03/16/2023
Magnesium	ND	0.823	"	"	"	"	"
Sodium	5.26	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.05		pH Units	1	B3C1412	03/14/2023	03/15/2023
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SAR by 20B Saturated Paste

SAR	4.88		SAR	1	B3C1408	03/14/2023	03/16/2023
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.742	0.00500	mmhos/cm	1	B3C1412	03/14/2023	03/15/2023
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Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-02@6"

3/9/2023 10:20:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-03 (Soil)

Boron (DTPA Sorbitol)

Boron	1.59		0.0999	mg/L	1	B3C1309	03/13/2023	03/15/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	188		25.0	mg/kg	1	B3C1001	03/10/2023	03/15/2023	
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	89.3 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.0198		0.00200	mg/kg	1	B3C1041	03/11/2023	03/14/2023	
1,3,5-Trimethylbenzene	0.00368		0.00200	"	"	"	"	"	
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	1.58		0.200	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	93.3 %		70-130			"	"	"	
Surrogate: Toluene-d8	101 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FED.CO.0701.09 Grizzly 3.32H
Project: FED - NP Remediation 2023

SS-02@6"

3/9/2023 10:20:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-03 (Soil)

GBTEX+TMBs by 8260D

Surrogate: 4-Bromofluorobenzene	95.2 %		70-130			B3C10 41	03/11/2023	03/14/2023	
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Metals by Saturated Paste by EPA 6010

Calcium	9.40		0.499	meq/L	10	[CALC]	03/14/2023	03/16/2023	
Magnesium	0.904		0.823	"	"	"	"	"	
Sodium	28.0		0.435	"	"	"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	0.257	0.00549	0.0101	mg/Kg	5	L670250	03/16/2023	03/17/2023	
2-Methylnaphthalene	0.267	0.00972	0.0101	"	"	"	"	"	
Acenaphthene	0.0121	0.00152	0.00335	"	"	"	"	"	
Anthracene	ND	0.00167	0.00335	"	"	"	"	"	
Benzo(a)anthracene	0.00248	0.00247	0.00335	"	"	"	"	"	J
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	0.0126	0.00312	0.00335	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00307	0.00335	"	"	"	"	"	
Fluoranthene	0.00198	0.00197	0.00335	"	"	"	"	"	J
Fluorene	0.0449	0.00143	0.00335	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00314	0.00335	"	"	"	"	"	

Origins Laboratory, Inc.



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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FED.CO.0701.09 Grizzly 3.32H
Project: FED - NP Remediation 2023

SS-02@6"

3/9/2023 10:20:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y303259-03 (Soil)

PAH by 8270D SIM

Naphthalene	0.0894	0.0073	0.0101	mg/Kg	5	L670250	03/16/2023	03/17/2023	
Pyrene	0.00814	0.00322	0.00335	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	64.7 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	71 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	58.3 %		29-110			"	"	"	

pH in Soil by 9045D

pH	7.73			pH Units	1	B3C1412	03/14/2023	03/15/2023	
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SAR by 20B Saturated Paste

SAR	12.3			SAR	1	B3C1408	03/14/2023	03/16/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	4.02		0.00500	mmhos/cm	1	B3C1412	03/14/2023	03/15/2023	
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Table 915 metals by EPA 6020B

Arsenic	3.72		0.0913	mg/kg	10	B3C1502	03/15/2023	03/16/2023	
Barium	176		9.13	"	"	"	"	"	
Cadmium	0.163		0.0913	"	"	"	"	"	

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-02@6"

3/9/2023 10:20:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-03 (Soil)

Table 915 metals by EPA 6020B

Copper	11.8		9.13	mg/kg	10	B3C1502	03/15/2023	03/16/2023	
Lead	ND		9.13	"	"	"	"	"	
Nickel	ND		9.13	"	"	"	"	"	
Selenium	0.130		0.0913	"	"	"	"	"	
Silver	ND		0.0913	"	"	"	"	"	
Zinc	ND		91.3	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.245	0.504	mg/Kg	1	L670224	03/09/2023	03/16/2023	
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Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-02@1'

3/9/2023 10:35:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-04 (Soil)

Boron (DTPA Sorbitol)

Boron	1.11		0.0998	mg/L	1	B3C1309	03/13/2023	03/15/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	96.0		25.0	mg/kg	1	B3C1001	03/10/2023	03/15/2023	
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	86.3 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

Benzene	ND		0.00200	mg/kg	1	B3C1041	03/11/2023	03/14/2023	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Xylenes, total	0.00862		0.00200	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.33		0.200	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	98.8 %		70-130			"	"	"	
Surrogate: Toluene-d8	104 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.6 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-02@1'

3/9/2023 10:35:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y303259-04 (Soil)

Metals by Saturated Paste by EPA 6010

Calcium	18.7	0.499	meq/L	10	[CALC]	03/15/2023	03/17/2023
Magnesium	1.73	0.823	"	"	"	"	"
Sodium	38.9	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	7.68		pH Units	1	B3C1515	03/15/2023	03/16/2023
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SAR by 20B Saturated Paste

SAR	12.2		SAR	1	B3C1505	03/15/2023	03/17/2023
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	6.56	0.00500	mmhos/cm	1	B3C1515	03/15/2023	03/16/2023
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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.

Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-02@2'

3/9/2023 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-05 (Soil)

Boron (DTPA Sorbitol)

Boron	7.07		0.0988	mg/L	1	B3C1404	03/14/2023	03/15/2023	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B3C1001	03/10/2023	03/15/2023	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	97.8 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B3C1041	03/11/2023	03/14/2023	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	98.1 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FED.CO.0701.09 Grizzly 3.32H
Project: FED - NP Remediation 2023

SS-02@2'
3/9/2023 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-05 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	100 %		70-130			B3C10 41	03/11/2023	03/14/2023	
Surrogate: 4-Bromofluorobenzene	107 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	15.6		0.499	meq/L	10	[CALC]	03/15/2023	03/17/2023	
Magnesium	1.72		0.823	"	"	"	"	"	
Sodium	129		4.35	"	100	"	"	03/17/2023	

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L670250	03/16/2023	03/17/2023	
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	0.000771	0.000468	0.00067	"	"	"	"	"	
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"	
Chrysene	ND	0.000624	0.00067	"	"	"	"	"	
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: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-02@2'

3/9/2023 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y303259-05 (Soil)

PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L670250	03/16/2023	03/17/2023	
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	52.4 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	60.3 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	50.3 %		29-110			"	"	"	

pH in Soil by 9045D

pH	7.33			pH Units	1	B3C1515	03/15/2023	03/16/2023	
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SAR by 20B Saturated Paste

SAR	44.0			SAR	1	B3C1505	03/15/2023	03/17/2023	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	13.5		0.00500	mmhos/cm	1	B3C1515	03/15/2023	03/16/2023	
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Table 915 metals by EPA 6020B

Arsenic	3.40		0.0887	mg/kg	10	B3C1416	03/14/2023	03/14/2023	
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Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-02@2'

3/9/2023 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-05 (Soil)

Table 915 metals by EPA 6020B

Barium	141		8.87	mg/kg	10	B3C1416	03/14/2023	03/14/2023	
Cadmium	0.276		0.0887	"	"	"	"	"	
Copper	14.7		8.87	"	"	"	"	"	
Lead	ND		8.87	"	"	"	"	"	
Nickel	10.5		8.87	"	"	"	"	"	
Selenium	0.193		0.0887	"	"	"	"	"	
Silver	ND		0.0887	"	"	"	"	"	
Zinc	ND		88.7	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	2.46	5.04	mg/Kg	1	L670224	03/09/2023	03/16/2023	
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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

SS-BG-01@2'
3/9/2023 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-06 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.0998	mg/L	1	B3C1404	03/14/2023	03/15/2023
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Metals by Saturated Paste by EPA 6010

Calcium	11.0	0.499	meq/L	10	[CALC]	03/15/2023	03/17/2023
Magnesium	19.9	0.823	"	"	"	"	"
Sodium	20.4	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	6.78		pH Units	1	B3C1515	03/15/2023	03/16/2023
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SAR by 20B Saturated Paste

SAR	5.20		SAR	1	B3C1505	03/15/2023	03/17/2023
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.150	0.00500	mmhos/cm	1	B3C1515	03/15/2023	03/16/2023
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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FED.CO.0701.09 Grizzly 3.32H
Project: FED - NP Remediation 2023

SS-02@2' Rerun 1
3/9/2023 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-07 (Soil)

Metals by Saturated Paste by EPA 6010

Calcium	22.5	4.99	meq/L	100	[CALC]	04/07/2023	04/12/2023
Magnesium	ND	8.23	"	"	"	"	"
Sodium	158	4.35	"	"	"	"	"

SAR by 20B Saturated Paste

SAR	44.7		SAR	1	B3D0712	"	"
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Origins Laboratory, Inc.



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Absaroka
112 High St.
Buffalo WY 82834

Joel Mason
Project Number: FED.CO.0701.09 Grizzly 3.32H
Project: FED - NP Remediation 2023

SS-02@2' Rerun 2
3/9/2023 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y303259-08 (Soil)

Metals by Saturated Paste by EPA 6010

Calcium	24.9	4.99	meq/L	100	[CALC]	04/07/2023	04/12/2023
Magnesium	ND	8.23	"	"	"	"	"
Sodium	154	4.35	"	"	"	"	"

SAR by 20B Saturated Paste

SAR	41.3		SAR	1	B3D0712	"	"
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Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3C1001 - EPA 3580										
Blank (B3C1001-BLK1)										
					Prepared: 03/10/2023 Analyzed: 03/14/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	23		"	24.9		90.8	50-150			

Origins Laboratory, Inc.



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Absaroka
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Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1001 - EPA 3580

LCS (B3C1001-BS1)

Prepared: 03/10/2023 Analyzed: 03/14/2023

Diesel (C10-C28)	855	50.0	mg/kg	1000		85.5	70-130			
Residual Range Organics (C28-C40)	889	200	"	1000		88.9	70-130			
Surrogate: o-Terphenyl	47		"	49.8		94.4	50-150			

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1001 - EPA 3580

Matrix Spike (B3C1001-MS1)	Source: Y303237-01			Prepared: 03/10/2023 Analyzed: 03/14/2023						
Diesel (C10-C28)	846	50.0	mg/kg	1000	ND	84.6	70-130			
Residual Range Organics (C28-C40)	972	200	"	1000	ND	97.2	70-130			
Surrogate: o-Terphenyl	42		"	49.8		84.1	50-150			

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Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3C1001 - EPA 3580										
Matrix Spike Dup (B3C1001-MSD1)					Source: Y303237-01					Prepared: 03/10/2023 Analyzed: 03/14/2023
Diesel (C10-C28)	826	50.0	mg/kg	1000	ND	82.6	70-130	2.46	35	
Residual Range Organics (C28-C40)	910	200	"	1000	ND	91.0	70-130	6.63	35	
Surrogate: o-Terphenyl	42		"	49.8		83.6	50-150			

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Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1041 - EPA 5030 (soil)

Blank (B3C1041-BLK1)

Prepared: 03/11/2023 Analyzed: 03/14/2023

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		95.5	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		109	70-130			

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1041 - EPA 5030 (soil)

LCS (B3C1041-BS1)

Prepared: 03/11/2023 Analyzed: 03/14/2023

1,2,4-Trimethylbenzene	0.0981	0.00200	mg/kg	0.100		98.1	70-130			
1,3,5-Trimethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Benzene	0.102	0.00200	"	0.100		102	70-130			
Ethylbenzene	0.0999	0.00200	"	0.100		99.9	70-130			
Naphthalene	0.0915	0.00380	"	0.100		91.5	70-130			
Toluene	0.0942	0.00200	"	0.100		94.2	70-130			
o-Xylene	0.0863	0.00200	"	0.100		86.3	70-130			
m,p-Xylene	0.200	0.00400	"	0.200		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.0	70-130			

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1041 - EPA 5030 (soil)

Matrix Spike (B3C1041-MS1)	Source: Y303257-01			Prepared: 03/11/2023 Analyzed: 03/14/2023						
1,2,4-Trimethylbenzene	0.0835	0.00200	mg/kg	0.100	ND	83.5	70-130			
1,3,5-Trimethylbenzene	0.0874	0.00200	"	0.100	ND	87.4	70-130			
Benzene	0.0856	0.00200	"	0.100	ND	85.6	70-130			
Ethylbenzene	0.0941	0.00200	"	0.100	ND	94.1	70-130			
Naphthalene	0.0717	0.00380	"	0.100	ND	71.7	70-130			
Toluene	0.0782	0.00200	"	0.100	ND	78.2	70-130			
o-Xylene	0.0812	0.00200	"	0.100	ND	81.2	70-130			
m,p-Xylene	0.186	0.00400	"	0.200	ND	93.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1041 - EPA 5030 (soil)

Matrix Spike Dup (B3C1041-MSD1)	Source: Y303257-01			Prepared: 03/11/2023 Analyzed: 03/14/2023						
1,2,4-Trimethylbenzene	0.0802	0.00200	mg/kg	0.100	ND	80.2	70-130	4.10	20	
1,3,5-Trimethylbenzene	0.0834	0.00200	"	0.100	ND	83.4	70-130	4.68	20	
Benzene	0.0909	0.00200	"	0.100	ND	90.9	70-130	6.01	20	
Ethylbenzene	0.0950	0.00200	"	0.100	ND	95.0	70-130	0.910	20	
Naphthalene	0.0726	0.00380	"	0.100	ND	72.6	70-130	1.19	20	
Toluene	0.0803	0.00200	"	0.100	ND	80.3	70-130	2.63	20	
o-Xylene	0.0796	0.00200	"	0.100	ND	79.6	70-130	1.89	20	
m,p-Xylene	0.190	0.00400	"	0.200	ND	94.8	70-130	1.84	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1416 - EPA 3050B

Blank (B3C1416-BLK1)

Prepared: 03/14/2023 Analyzed: 03/14/2023

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 (B3C1416-BS1)

Prepared: 03/14/2023 Analyzed: 03/14/2023

Arsenic	0.0526	0.000100	mg/kg	0.0500		105	80-120			
Barium	5.27	0.0100	"	5.00		105	80-120			
Cadmium	0.0539	0.000100	"	0.0500		108	80-120			
Copper	0.553	0.0100	"	0.500		111	80-120			
Lead	0.0515	0.0100	"	0.0500		103	80-120			
Nickel	0.0547	0.0100	"	0.0500		109	80-120			
Selenium	0.0506	0.000100	"	0.0500		101	80-120			
Silver	0.0500	0.000100	"	0.0500		100	80-120			
Zinc	0.525	0.100	"	0.500		105	80-120			

Matrix Spike (B3C1416-MS1)

Source: Y303227-01

Prepared: 03/14/2023 Analyzed: 03/14/2023

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1416 - EPA 3050B

Matrix Spike (B3C1416-MS1)

Source: Y303227-01

Prepared: 03/14/2023 Analyzed: 03/14/2023

Arsenic	8.57	0.0948	mg/kg	4.74	3.59	105	75-125			
Barium	706	9.48	"	474	214	104	75-125			
Cadmium	5.16	0.0948	"	4.74	0.126	106	75-125			
Copper	56.1	9.48	"	47.4	6.72	104	75-125			
Lead	12.8	9.48	"	4.74	7.23	119	75-125			
Nickel	14.2	9.48	"	4.74	7.68	138	75-125			QM-07
Selenium	4.36	0.0948	"	4.74	0.129	89.2	75-125			
Silver	4.68	0.0948	"	4.74	0.0310	98.1	75-125			
Zinc	79.5	94.8	"	47.4	29.6	105	75-125			

Matrix Spike Dup (B3C1416-MSD1)

Source: Y303227-01

Prepared: 03/14/2023 Analyzed: 03/14/2023

Arsenic	7.70	0.0904	mg/kg	4.52	3.59	91.0	75-125	10.7	20	
Barium	658	9.04	"	452	214	98.3	75-125	6.97	20	
Cadmium	4.99	0.0904	"	4.52	0.126	108	75-125	3.46	20	
Copper	53.4	9.04	"	45.2	6.72	103	75-125	5.03	20	
Lead	10.9	9.04	"	4.52	7.23	81.1	75-125	16.4	20	
Nickel	11.9	9.04	"	4.52	7.68	92.9	75-125	17.8	20	
Selenium	4.41	0.0904	"	4.52	0.129	94.7	75-125	1.22	20	
Silver	4.53	0.0904	"	4.52	0.0310	99.6	75-125	3.25	20	
Zinc	71.5	90.4	"	45.2	29.6	92.8	75-125	10.5	20	

Batch B3C1502 - EPA 3050B

Blank (B3C1502-BLK1)

Prepared: 03/15/2023 Analyzed: 03/16/2023

Arsenic	ND	0.000100	mg/kg							
Barium	ND	0.0100	"							
Cadmium	ND	0.000100	"							

Origins Laboratory, Inc.



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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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 B3C1502 - EPA 3050B

Blank (B3C1502-BLK1)

Prepared: 03/15/2023 Analyzed: 03/16/2023

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

LCS (B3C1502-BS1)

Prepared: 03/15/2023 Analyzed: 03/16/2023

Arsenic	0.0515	0.000100	mg/kg	0.0500		103	80-120			
Barium	5.21	0.0100	"	5.00		104	80-120			
Cadmium	0.0527	0.000100	"	0.0500		105	80-120			
Copper	0.542	0.0100	"	0.500		108	80-120			
Lead	0.0522	0.0100	"	0.0500		104	80-120			
Nickel	0.0520	0.0100	"	0.0500		104	80-120			
Selenium	0.0502	0.000100	"	0.0500		100	80-120			
Silver	0.0495	0.000100	"	0.0500		98.9	80-120			
Zinc	0.531	0.100	"	0.500		106	80-120			

Matrix Spike (B3C1502-MS1)

Source: Y303257-01

Prepared: 03/15/2023 Analyzed: 03/16/2023

Arsenic	6.37	0.0939	mg/kg	4.70	1.71	99.1	75-125			
Barium	528	9.39	"	470	34.6	105	75-125			
Cadmium	4.90	0.0939	"	4.70	0.0408	103	75-125			
Copper	55.9	9.39	"	47.0	3.25	112	75-125			
Lead	10.1	9.39	"	4.70	5.93	89.3	75-125			
Nickel	7.42	9.39	"	4.70	2.58	103	75-125			
Selenium	4.42	0.0939	"	4.70	0.0855	92.2	75-125			
Silver	4.64	0.0939	"	4.70	0.0237	98.3	75-125			

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Absaroka
 112 High St.
 Buffalo WY 82834

Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3C1502 - EPA 3050B										
Matrix Spike (B3C1502-MS1)			Source: Y303257-01			Prepared: 03/15/2023 Analyzed: 03/16/2023				
Zinc	67.4	93.9	mg/kg	47.0	16.1	109	75-125			
Matrix Spike Dup (B3C1502-MSD1)			Source: Y303257-01			Prepared: 03/15/2023 Analyzed: 03/16/2023				
Arsenic	6.19	0.0933	mg/kg	4.67	1.71	96.0	75-125	2.82	20	
Barium	531	9.33	"	467	34.6	106	75-125	0.545	20	
Cadmium	4.79	0.0933	"	4.67	0.0408	102	75-125	2.10	20	
Copper	54.8	9.33	"	46.7	3.25	110	75-125	2.02	20	
Lead	10.1	9.33	"	4.67	5.93	89.1	75-125	0.368	20	
Nickel	7.32	9.33	"	4.67	2.58	102	75-125	1.42	20	
Selenium	4.55	0.0933	"	4.67	0.0855	95.7	75-125	3.02	20	
Silver	4.53	0.0933	"	4.67	0.0237	96.5	75-125	2.49	20	
Zinc	63.5	93.3	"	46.7	16.1	102	75-125	5.94	20	

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 Project: FED - NP Remediation 2023

Classical Chemistry Parameters - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B3C1309 - DTPA Sorbitol Preparation										
Blank (B3C1309-BLK1)					Prepared: 03/13/2023 Analyzed: 03/15/2023					
Boron	ND	0.100	mg/L							
Duplicate (B3C1309-DUP1)		Source: Y303257-01			Prepared: 03/13/2023 Analyzed: 03/15/2023					
Boron	ND	0.985	mg/L		ND				50	
Batch B3C1404 - DTPA Sorbitol Preparation										
Blank (B3C1404-BLK1)					Prepared: 03/14/2023 Analyzed: 03/15/2023					
Boron	ND	0.100	mg/L							
Duplicate (B3C1404-DUP1)		Source: Y303259-05			Prepared: 03/14/2023 Analyzed: 03/15/2023					
Boron	5.84	0.0981	mg/L		7.07			19.1	50	
Batch B3C1408 - Saturated Paste Metals										
Blank (B3C1408-BLK1)					Prepared: 03/14/2023 Analyzed: 03/16/2023					
SAR	0.00		SAR							
Calcium PPM	ND	10.0	mg/L							
Magnesium PPM	ND	10.0	"							
Sodium PPM	ND	10.0	"							
Duplicate (B3C1408-DUP1)		Source: Y303259-01			Prepared: 03/14/2023 Analyzed: 03/16/2023					
SAR	0.00		SAR		13.1			200	200	
Calcium PPM	16.4	10.0	mg/L		26.8			48.0	50	
Magnesium PPM	1.47	10.0	"		2.27			42.5	50	
Sodium PPM	218	10.0	"		263			19.0	50	

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 Project: FED - NP Remediation 2023

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 B3C1505 - Saturated Paste Metals

Blank (B3C1505-BLK1)

Prepared: 03/15/2023 Analyzed: 03/17/2023

Calcium PPM	ND	10.0	mg/L							
SAR	0.00		SAR							
Magnesium PPM	ND	10.0	mg/L							
Sodium PPM	ND	10.0	"							

Duplicate (B3C1505-DUP1)

Source: Y303259-04

Prepared: 03/15/2023 Analyzed: 03/17/2023

Calcium PPM	370	10.0	mg/L		374			1.23	50	
SAR	0.00		SAR		12.2			200	200	
Magnesium PPM	21.2	10.0	mg/L		21.0			1.10	50	
Sodium PPM	937	10.0	"		895			4.66	50	

Batch B3D0712 - Saturated Paste Metals

Blank (B3D0712-BLK1)

Prepared: 04/07/2023 Analyzed: 04/12/2023

SAR	0.00		SAR							
Calcium PPM	ND	10.0	mg/L							
Magnesium PPM	ND	10.0	"							
Sodium PPM	ND	10.0	"							

Duplicate (B3D0712-DUP1)

Source: Y304103-01

Prepared: 04/07/2023 Analyzed: 04/12/2023

Calcium PPM	42.9	10.0	mg/L		48.2			11.6	50	
SAR	0.00		SAR		2.47			200	200	
Magnesium PPM	9.40	10.0	mg/L		10.9			14.9	50	
Sodium PPM	61.3	10.0	"		72.9			17.2	50	

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 Project: FED - NP Remediation 2023

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 B3C1412 - Saturated Paste pH/EC

Blank (B3C1412-BLK1)

Prepared: 03/14/2023 Analyzed: 03/15/2023

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B3C1412-DUP1)

Source: Y303259-01

Prepared: 03/14/2023 Analyzed: 03/15/2023

pH 8.14 pH Units 7.99 1.86 25

Specific Conductance (EC) 1.11 0.00500 mmhos/cm 1.17 5.85 25

Batch B3C1515 - Saturated Paste pH/EC

Blank (B3C1515-BLK1)

Prepared: 03/15/2023 Analyzed: 03/16/2023

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B3C1515-DUP1)

Source: Y303259-04

Prepared: 03/15/2023 Analyzed: 03/16/2023

pH 7.70 pH Units 7.68 0.260 25

Specific Conductance (EC) 6.68 0.00500 mmhos/cm 6.56 1.81 25

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Joel Mason
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Project: FED - NP Remediation 2023

PAH by 8270D SIM - 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 L670250 - 3550B

MSD (L 98530-MSD-L670250)	Source: 98530			Prepared: 03/16/2023 Analyzed: 03/17/2023						
Indeno(1,2,3-cd)pyrene	0.111	0.00067	mg/Kg	0.165	<0.000627	67.2	30-130	5.5	30	
Benzo(a)pyrene	0.123	0.00067	"	0.165	<0.000468	74.5	30-130	2.4	30	
1-Methylnaphthalene	0.103	0.00201	"	0.165	<0.00109	62.4	30-130	0.9	30	
2-Methylnaphthalene	0.103	0.00201	"	0.165	<0.00194	62.4	30-130	1.9	30	
Acenaphthene	0.107	0.00067	"	0.165	<0.000304	64.8	30-130	0	30	
Benzo(a)anthracene	0.112	0.00067	"	0.165	<0.000493	67.8	30-130	3.5	30	
Pyrene	0.112	0.00067	"	0.165	<0.000643	67.8	30-130	2.7	30	
Benzo(b)fluoranthene	0.0803	0.00067	"	0.165	<0.000585	48.6	30-130	11.1	30	
Benzo(k)fluoranthene	0.0985	0.00067	"	0.165	<0.000437	59.6	30-130	9.2	30	
Chrysene	0.119	0.00067	"	0.165	<0.000624	72.1	30-130	7.8	30	
Dibenz(a,h)anthracene	0.153	0.00067	"	0.165	<0.000614	92.7	30-130	6.7	30	
Fluoranthene	0.115	0.00067	"	0.165	<0.000394	69.6	30-130	2.6	30	
Fluorene	0.116	0.00067	"	0.165	<0.000286	70.3	30-130	0.8	30	
Naphthalene	0.097	0.00201	"	0.165	<0.00145	58.7	30-130	2.5	30	
Anthracene	0.121	0.00067	"	0.165	<0.000334	73.3	30-130	2.5	30	
Surrogate: 2-Fluorobiphenyl	54.5		"	0.33	176	54.5	33-115			
Surrogate: 4-Terphenyl-d14	60.9		"	0.33	204	60.9	33-122			
Surrogate: Nitrobenzene-d5	51.8		"	0.33	172	51.8	29-110			

MS (L 98530-MS-L670250)	Source: 98530			Prepared: 03/16/2023 Analyzed: 03/17/2023						
Fluorene	0.115	0.00067	mg/Kg	0.166	<0.000286	69.2	30-130			
Pyrene	0.109	0.00067	"	0.166	<0.000643	65.6	30-130			
Indeno(1,2,3-cd)pyrene	0.105	0.00067	"	0.166	<0.000627	63.2	30-130			
Benzo(a)anthracene	0.116	0.00067	"	0.166	<0.000493	69.8	30-130			
Fluoranthene	0.112	0.00067	"	0.166	<0.000394	67.4	30-130			
Naphthalene	0.0946	0.00201	"	0.166	<0.00145	56.9	30-130			
Anthracene	0.118	0.00067	"	0.166	<0.000334	71	30-130			

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Joel Mason
 Project Number: FED.CO.0701.09 Grizzly 3.32H
 Project: FED - NP Remediation 2023

PAH by 8270D SIM - 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 L670250 - 3550B

MS (L 98530-MS-L670250)	Source: 98530			Prepared: 03/16/2023 Analyzed: 03/17/2023						
2-Methylnaphthalene	0.101	0.00201	mg/Kg	0.166	<0.00194	60.8	30-130			
1-Methylnaphthalene	0.102	0.00201	"	0.166	<0.00109	61.4	30-130			
Benzo(a)pyrene	0.12	0.00067	"	0.166	<0.000468	72.2	30-130			
Benzo(b)fluoranthene	0.0898	0.00067	"	0.166	<0.000585	54	30-130			
Benzo(k)fluoranthene	0.108	0.00067	"	0.166	<0.000437	65	30-130			
Chrysene	0.11	0.00067	"	0.166	<0.000624	66.2	30-130			
Dibenz(a,h)anthracene	0.143	0.00067	"	0.166	<0.000614	86.1	30-130			
Acenaphthene	0.107	0.00067	"	0.166	<0.000304	64.4	30-130			
Surrogate: Nitrobenzene-d5	51		"	0.331	172	51	29-110			
Surrogate: 4-Terphenyl-d14	57		"	0.331	204	57	33-122			
Surrogate: 2-Fluorobiphenyl	52.8		"	0.331	176	52.8	33-115			

LCS (LCS-L670250)	Prepared: 03/16/2023 Analyzed: 03/17/2023									
Benzo(k)fluoranthene	0.117	0.00067	mg/Kg	0.167		70	30-130			
Fluoranthene	0.135	0.00067	"	0.167		80.8	30-130			
Naphthalene	0.122	0.00201	"	0.167		73	30-130			
Indeno(1,2,3-cd)pyrene	0.13	0.00067	"	0.167		77.8	30-130			
Fluorene	0.14	0.00067	"	0.167		83.8	30-130			
1-Methylnaphthalene	0.127	0.00201	"	0.167		76	30-130			
Dibenz(a,h)anthracene	0.166	0.00067	"	0.167		99.4	30-130			
2-Methylnaphthalene	0.126	0.00201	"	0.167		75.4	30-130			
Acenaphthene	0.129	0.00067	"	0.167		77.2	30-130			
Anthracene	0.146	0.00067	"	0.167		87.4	30-130			
Benzo(a)anthracene	0.135	0.00067	"	0.167		80.8	30-130			
Benzo(a)pyrene	0.147	0.00067	"	0.167		88	30-130			
Benzo(b)fluoranthene	0.095	0.00067	"	0.167		56.8	30-130			
Pyrene	0.132	0.00067	"	0.167		79	30-130			

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 Project: FED - NP Remediation 2023

PAH by 8270D SIM - 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 L670250 - 3550B

LCS (LCS-L670250)

Prepared: 03/16/2023 Analyzed: 03/17/2023

Chrysene	0.131	0.00067	mg/Kg	0.167		78.4	30-130			
Surrogate: Nitrobenzene-d5	64.5		"	0.333		64.5	29-110			
Surrogate: 4-Terphenyl-d14	71.1		"	0.333		71.1	33-122			
Surrogate: 2-Fluorobiphenyl	66.3		"	0.333		66.3	33-115			

LRB (LRB-L670250)

Prepared: 03/16/2023 Analyzed: 03/17/2023

Dibenz(a,h)anthracene	ND	0.00067	mg/Kg				-			
Pyrene	ND	0.00067	"				-			
Naphthalene	ND	0.00201	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00201	"				-			
1-Methylnaphthalene	ND	0.00201	"				-			
Surrogate: Nitrobenzene-d5	57.6		"	0.333		57.6	29-110			
Surrogate: 4-Terphenyl-d14	73.2		"	0.333		73.2	33-122			
Surrogate: 2-Fluorobiphenyl	62.7		"	0.333		62.7	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
Batch L670224 -										
DUP (L 98559-DUP)		Source: 98559			Prepared: Analyzed: 03/16/2023					
Chromium, Hexavalent	ND	0.513	mg/Kg		<0.513		-	0	20	
MS (L 98559-MS)		Source: 98559			Prepared: Analyzed: 03/16/2023					
Chromium, Hexavalent	39.8	2.5	mg/Kg	39.9	<1.22	100	75-125			
LCS (LCS)		Prepared: Analyzed: 03/16/2023								
Chromium, Hexavalent	6.71	0.5	mg/Kg	8		84	75-125			
LRB (LRB)		Prepared: Analyzed: 03/16/2023								
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

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Joel Mason
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Project: FED - NP Remediation 2023

Notes and Definitions

U Sample is Non-Detect.

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.

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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