

# ORIGINS LABORATORY

Absaroka  
Max Dahlgren  
112 High St.

Buffalo WY 82834

December 16, 2024

**Project Name - KMG - McDonald 2-4A Wellhead      Project Number - [none]**

Attached are your analytical results for KMG - McDonald 2-4A Wellhead received by Origins Laboratory November 07, 2024. This project is associated with Origins project number E4K0200-01.

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  
303.433.1322  
projectmanager@originslab.com



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

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B01@6'	E4K0200-01	Soil	November 7, 2024 9:00	11/07/2024 15:30
FL-B01@3'	E4K0200-02	Soil	November 7, 2024 9:10	11/07/2024 15:30
WH-BG01@3"	E4K0200-03	Soil	November 7, 2024 9:15	11/07/2024 15:30
WH-BG01@3'	E4K0200-04	Soil	November 7, 2024 9:20	11/07/2024 15:30
WH-BG01@6'	E4K0200-05	Soil	November 7, 2024 9:25	11/07/2024 15:30
WH-BG02@3"	E4K0200-06	Soil	November 7, 2024 9:30	11/07/2024 15:30
WH-BG02@3'	E4K0200-07	Soil	November 7, 2024 9:35	11/07/2024 15:30
WH-BG02@6'	E4K0200-08	Soil	November 7, 2024 9:40	11/07/2024 15:30
WH-BG03@3"	E4K0200-09	Soil	November 7, 2024 9:45	11/07/2024 15:30
WH-BG03@3'	E4K0200-10	Soil	November 7, 2024 9:50	11/07/2024 15:30
WH-BG03@6'	E4K0200-11	Soil	November 7, 2024 9:55	11/07/2024 15:30
FL-B02@6'	E4K0200-12	Soil	November 7, 2024 12:00	11/07/2024 15:30

Origins Laboratory



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Jordan A. Bynon, Project Manager

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Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**ORIGINS**

**CHC2020**

Page 1 of 1

Client: OVY Absaroka  
Address: \_\_\_\_\_  
Project Manager: Max Dahlgren  
Project Name: McDonald 2-4A Wellhead  
Telephone Number: 970-431-6099  
Project Number: \_\_\_\_\_  
Collected By: TJSE  
Email Address: ovy.com@absarokasolutions.com  
Invoice/Billing Info: On file - Ovy  
Analysis: \_\_\_\_\_  
Comments: \_\_\_\_\_

Sample ID	Date Sampled	Time Sampled	# of Containers	Matrix	Preservation	Analysis			Comments
						Full 915	Baron	PH, SAR, EC	
WH-B01 @ 6'	11/17/2024	9:00	3	S	UNP	X	X	X	
FL-B01 @ 3'	11/17/2024	9:10	3	S	UNP	X	X	X	
WH-B001 @ 3'	11/17/2024	9:15	2	S	UNP	X	X	X	
WH-B001 @ 3'	11/17/2024	9:20	2	S	UNP	X	X	X	
WH-B001 @ 6'	11/17/2024	9:25	2	S	UNP	X	X	X	
WH-B002 @ 3'	11/17/2024	9:30	2	S	UNP	X	X	X	
WH-B02 @ 3'	11/17/2024	9:35	2	S	UNP	X	X	X	
WH-B02 @ 6'	11/17/2024	9:40	2	S	UNP	X	X	X	
WH-B03 @ 3'	11/17/2024	9:45	2	S	UNP	X	X	X	
WH-B03 @ 3'	11/17/2024	9:50	2	S	UNP	X	X	X	

Temp Received - 7.4 Received On Ice?  Yes  No  
 Standard  48 Hr  72  
 SAME  24  
 DAV

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*Bynon*

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Jordan A. Bynon, Project Manager



# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

Origins Laboratory

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

### Sample Receipt Checklist

Origins Work Order: E4K0200

Client: Absaroka

Client Project ID: McDonald

Checklist Completed by: JAD KK

Shipped Via: AD

Date/time completed: 11/7/24

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

Airbill #: N/A

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

Cooler Number/Temperature: 174 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °C

Thermometer ID: 7007

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>SO</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH < 2 for samples preserved with HNO3, HCl, H2SO4) / (pH > 10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) JAD

Date/Time Reviewed 11/7/24

Origins Laboratory  
*J. Bynon*

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Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-B01@6'

11/7/2024 9:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0200-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.368	0.0996	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4K0756	11/07/2024	11/08/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	54.1 %	50-150	"	"	"	"	"	"
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4K0762	11/07/2024	11/07/2024	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	113 %	70-130	"	"	"	"	"	"
Surrogate: Toluene-d8	99.5 %	70-130	"	"	"	"	"	"

Origins Laboratory

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Jordan A. Bynon, Project Manager



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Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-B01@6'

11/7/2024 9:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0200-01 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: 4-Bromofluorobenzene	100 %	70-130	B4K07 62	11/07/2024	11/07/2024
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**Metals by Saturated Paste by EPA 6010**

Calcium	5.31	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	0.578	0.435	"	"	"	"	"

**PAH by EPA 8270E extracted via 3580A**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4K0759	11/07/2024	11/27/2024	Ua
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	Ua
Acenaphthene	ND	0.020	"	"	"	"	"	Ua
Anthracene	ND	0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	Ua
Chrysene	ND	0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	Ua
Fluoranthene	ND	0.020	"	"	"	"	"	Ua
Fluorene	ND	0.020	"	"	"	"	"	Ua

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Jordan A. Bynon, Project Manager



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Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-B01@6'

11/7/2024 9:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
E4K0200-01 (Soil)

**PAH by EPA 8270E extracted via 3580A**

Indeno (1,2,3-cd) pyrene	ND	0.020	mg/kg	1	B4K0759	11/07/2024	11/27/2024	Ua
Naphthalene	ND	0.002	"	"	"	"	"	Ua
Pyrene	ND	0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	107 %	60-130	"	"	"	"	"	"
Surrogate: Anthracene-d10	80.6 %	60-130	"	"	"	"	"	"
Surrogate: Pyrene-d10	102 %	60-130	"	"	"	"	"	"
Surrogate: Benzo (a) pyrene-d12	105 %	60-130	"	"	"	"	"	"

**pH in Soil by 9045D**

pH	9.95		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	0.345	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.736	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	7.40	0.247	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
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Jordan A. Bynon, Project Manager

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Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-B01@6'

11/7/2024 9:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-01 (Soil)

### Table 915 metals by EPA 6020B

Barium	200		8.52	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Cadmium	0.261		0.0852	"	"	"	"	"	
Copper	15.9		8.52	"	"	"	"	"	
Lead	13.5		0.852	"	"	"	"	"	
Nickel	17.1		0.852	"	"	"	"	"	
Selenium	0.241		0.221	"	"	"	"	"	
Silver	ND		0.0852	"	"	"	"	"	
Zinc	59.2		31.5	"	"	"	"	"	

### Total Metals by 7196A

Hexavalent Chromium	ND	0.0937	0.234	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

FL-B01@3'

11/7/2024 9:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-02 (Soil)

### Boron (DTPA Sorbitol)

Boron	0.197	0.0988	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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### DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4K0756	11/07/2024	11/08/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: <i>o</i> -Terphenyl	55.3 %	50-150	"	"	"	"	"	"
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### GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4K0762	11/07/2024	11/07/2024	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	113 %	70-130	"	"	"	"	"	"
Surrogate: Toluene-d8	101 %	70-130	"	"	"	"	"	"

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Jordan A. Bynon, Project Manager



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Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

FL-B01@3'

11/7/2024 9:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0200-02 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: 4-Bromofluorobenzene	99.4 %	70-130		B4K07 62	11/07/2024	11/07/2024
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.84	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024
Magnesium	1.13	0.823	"	"	"	"	"
Sodium	ND	0.435	"	"	"	"	"

**PAH by EPA 8270E extracted via 3580A**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4K0759	11/07/2024	11/27/2024	Ua
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	Ua
Acenaphthene	ND	0.020	"	"	"	"	"	Ua
Anthracene	ND	0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	Ua
Chrysene	ND	0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	Ua
Fluoranthene	ND	0.020	"	"	"	"	"	Ua
Fluorene	ND	0.020	"	"	"	"	"	Ua

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

FL-B01@3'

11/7/2024 9:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
E4K0200-02 (Soil)

**PAH by EPA 8270E extracted via 3580A**

Indeno (1,2,3-cd) pyrene	ND	0.020	mg/kg	1	B4K0759	11/07/2024	11/27/2024	Ua
Naphthalene	ND	0.002	"	"	"	"	"	Ua
Pyrene	ND	0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	106 %	60-130	"	"	"	"	"	"
Surrogate: Anthracene-d10	80.6 %	60-130	"	"	"	"	"	"
Surrogate: Pyrene-d10	89.8 %	60-130	"	"	"	"	"	"
Surrogate: Benzo (a) pyrene-d12	109 %	60-130	"	"	"	"	"	"

**pH in Soil by 9045D**

pH	8.17		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	0.147	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.387	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	7.81	0.247	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

FL-B01@3'

11/7/2024 9:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-02 (Soil)

### Table 915 metals by EPA 6020B

Barium	155		8.53	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Cadmium	0.181		0.0853	"	"	"	"	"	"
Copper	13.8		8.53	"	"	"	"	"	"
Lead	12.9		0.853	"	"	"	"	"	"
Nickel	16.6		0.853	"	"	"	"	"	"
Selenium	ND		0.222	"	"	"	"	"	"
Silver	ND		0.0853	"	"	"	"	"	"
Zinc	53.8		31.6	"	"	"	"	"	"

### Total Metals by 7196A

Hexavalent Chromium	ND	0.133	0.332	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**WH-BG01@3"**

**11/7/2024 9:15:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
E4K0200-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	1.03	0.0996	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	8.13	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	2.45	0.823	"	"	"	"	"	
Sodium	ND	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	7.44		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	0.103	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.984	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	6.99	0.279	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	160	9.64	"	"	"	"	"	
Cadmium	0.305	0.0964	"	"	"	"	"	
Copper	15.8	9.64	"	"	"	"	"	

Origins Laboratory

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

Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**WH-BG01@3"**

**11/7/2024 9:15:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-03 (Soil)

### Table 915 metals by EPA 6020B

Lead	12.6		0.964	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	16.4		0.964	"	"	"	"	"	
Selenium	0.349		0.251	"	"	"	"	"	
Silver	ND		0.0964	"	"	"	"	"	
Zinc	68.6		35.7	"	"	"	"	"	

### Total Metals by 7196A

Hexavalent Chromium	ND	0.161	0.402	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Origins Laboratory  


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Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-BG01@3'

11/7/2024 9:20:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0200-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.632	0.0989	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.71	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	4.09	0.823	"	"	"	"	"	
Sodium	3.73	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.20		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	2.02	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.972	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	8.34	0.289	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	126	9.97	"	"	"	"	"	
Cadmium	0.125	0.0997	"	"	"	"	"	
Copper	10.2	9.97	"	"	"	"	"	

Origins Laboratory

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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-BG01@3'

11/7/2024 9:20:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-04 (Soil)

### Table 915 metals by EPA 6020B

Lead	10.0	0.997	0.997	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	13.2	0.997	0.997	"	"	"	"	"	
Selenium	ND	0.259	0.259	"	"	"	"	"	
Silver	ND	0.0997	0.0997	"	"	"	"	"	
Zinc	49.3	36.9	36.9	"	"	"	"	"	

### Total Metals by 7196A

Hexavalent Chromium	ND	0.130	0.325	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Origins Laboratory



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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-BG01@6'

11/7/2024 9:25:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
E4K0200-05 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.988	0.101	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	5.24	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	9.23	0.823	"	"	"	"	"	
Sodium	6.07	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.17		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	2.26	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.67	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	7.12	0.273	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	197	9.43	"	"	"	"	"	
Cadmium	0.148	0.0943	"	"	"	"	"	
Copper	ND	9.43	"	"	"	"	"	

Origins Laboratory

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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-BG01@6'

11/7/2024 9:25:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-05 (Soil)

### Table 915 metals by EPA 6020B

Lead	8.14		0.943	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	9.63		0.943	"	"	"	"	"	
Selenium	0.268		0.245	"	"	"	"	"	
Silver	ND		0.0943	"	"	"	"	"	
Zinc	ND		34.9	"	"	"	"	"	

### Total Metals by 7196A

Hexavalent Chromium	ND	0.167	0.418	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Absaroka  
 112 High St.  
 Buffalo WY 82834

Max Dahlgren  
 Project Number: [none]  
 Project: KMG - McDonald 2-4A Wellhead

**WH-BG02@3"**

**11/7/2024 9:30:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
 E4K0200-06 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.572	0.101	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	4.97	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	2.01	0.823	"	"	"	"	"	
Sodium	ND	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	7.57		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	0.213	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.750	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	6.27	0.265	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	153	9.13	"	"	"	"	"	
Cadmium	0.267	0.0913	"	"	"	"	"	
Copper	13.8	9.13	"	"	"	"	"	

Origins Laboratory

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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**WH-BG02@3"**

**11/7/2024 9:30:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
E4K0200-06 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	11.1		0.913	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	14.9		0.913	"	"	"	"	"	
Selenium	0.273		0.237	"	"	"	"	"	
Silver	ND		0.0913	"	"	"	"	"	
Zinc	58.8		33.8	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.174	0.434	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-BG02@3'

11/7/2024 9:35:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
E4K0200-07 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.608	0.101	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	3.34	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	5.31	0.823	"	"	"	"	"	
Sodium	3.43	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.26		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	1.65	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.19	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	11.3	0.280	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	159	9.65	"	"	"	"	"	
Cadmium	0.203	0.0965	"	"	"	"	"	
Copper	14.2	9.65	"	"	"	"	"	

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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**WH-BG02@3'**

**11/7/2024 9:35:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
E4K0200-07 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	11.4		0.965	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	17.2		0.965	"	"	"	"	"	
Selenium	0.321		0.251	"	"	"	"	"	
Silver	ND		0.0965	"	"	"	"	"	
Zinc	58.5		35.7	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.142	0.356	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Absaroka  
 112 High St.  
 Buffalo WY 82834

Max Dahlgren  
 Project Number: [none]  
 Project: KMG - McDonald 2-4A Wellhead

**WH-BG02@6'**

**11/7/2024 9:40:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
 E4K0200-08 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.737	0.0995	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.90	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	4.26	0.823	"	"	"	"	"	
Sodium	3.92	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.34		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	2.07	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.14	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.76	0.268	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	114	9.24	"	"	"	"	"	
Cadmium	0.0952	0.0924	"	"	"	"	"	
Copper	ND	9.24	"	"	"	"	"	

Origins Laboratory

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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**WH-BG02@6'**

**11/7/2024 9:40:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-08 (Soil)

### Table 915 metals by EPA 6020B

Lead	6.03		0.924	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	8.39		0.924	"	"	"	"	"	
Selenium	ND		0.240	"	"	"	"	"	
Silver	ND		0.0924	"	"	"	"	"	
Zinc	ND		34.2	"	"	"	"	"	

### Total Metals by 7196A

Hexavalent Chromium	ND	0.138	0.344	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Origins Laboratory



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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**WH-BG03@3"**

**11/7/2024 9:45:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
E4K0200-09 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.634	0.0994	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.84	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	0.885	0.823	"	"	"	"	"	
Sodium	ND	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	7.92		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	0.139	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.386	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	8.62	0.273	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	191	9.43	"	"	"	"	"	
Cadmium	0.317	0.0943	"	"	"	"	"	
Copper	16.6	9.43	"	"	"	"	"	

Origins Laboratory

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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**WH-BG03@3"**

**11/7/2024 9:45:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
E4K0200-09 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	13.9		0.943	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	18.5		0.943	"	"	"	"	"	
Selenium	0.305		0.245	"	"	"	"	"	
Silver	ND		0.0943	"	"	"	"	"	
Zinc	67.6		34.9	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.124	0.311	mg/kg dry	1	2716830	12/07/2024	12/10/2024	U
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Origins Laboratory



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Jordan A. Bynon, Project Manager



Absaroka  
 112 High St.  
 Buffalo WY 82834

Max Dahlgren  
 Project Number: [none]  
 Project: KMG - McDonald 2-4A Wellhead

**WH-BG03@3'**

**11/7/2024 9:50:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
 E4K0200-10 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.464	0.0999	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.39	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	1.61	0.823	"	"	"	"	"	
Sodium	ND	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.32		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	0.283	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.354	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	8.23	0.243	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	158	8.38	"	"	"	"	"	
Cadmium	0.206	0.0838	"	"	"	"	"	
Copper	14.5	8.38	"	"	"	"	"	

Origins Laboratory

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

Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-BG03@3'

11/7/2024 9:50:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-10 (Soil)

### Table 915 metals by EPA 6020B

Lead	11.7	0.838	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	17.3	0.838	"	"	"	"	"	"
Selenium	ND	0.218	"	"	"	"	"	"
Silver	ND	0.0838	"	"	"	"	"	"
Zinc	57.7	31.0	"	"	"	"	"	"

### Total Metals by 7196A

Hexavalent Chromium	ND	0.119	0.298	mg/kg dry	1	2716832	12/07/2024	12/10/2024	U
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Origins Laboratory



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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-BG03@6'

11/7/2024 9:55:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
E4K0200-11 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.262	0.0991	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.62	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024	
Magnesium	2.39	0.823	"	"	"	"	"	
Sodium	1.22	0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.38		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	0.861	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.522	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	6.02	0.247	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Barium	70.9	8.53	"	"	"	"	"	
Cadmium	ND	0.0853	"	"	"	"	"	
Copper	ND	8.53	"	"	"	"	"	

Origins Laboratory

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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

WH-BG03@6'

11/7/2024 9:55:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-11 (Soil)

### Table 915 metals by EPA 6020B

Lead	7.07	0.853	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Nickel	8.38	0.853	"	"	"	"	"	"
Selenium	ND	0.222	"	"	"	"	"	"
Silver	ND	0.0853	"	"	"	"	"	"
Zinc	32.2	31.6	"	"	"	"	"	"

### Total Metals by 7196A

Hexavalent Chromium	ND	0.143	0.357	mg/kg dry	1	2716832	12/07/2024	12/10/2024	U
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Origins Laboratory



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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

FL-B02@6'

11/7/2024 12:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0200-12 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.649	0.0986	mg/L	1	B4K0808	11/08/2024	11/11/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4K0756	11/07/2024	11/08/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	61.4 %	50-150	"	"	"	"	"	"
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4K0762	11/07/2024	11/07/2024	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	117 %	70-130	"	"	"	"	"	"
Surrogate: Toluene-d8	97.5 %	70-130	"	"	"	"	"	"

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

FL-B02@6'

11/7/2024 12:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0200-12 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: 4-Bromofluorobenzene	102 %	70-130	B4K07 62	11/07/2024	11/07/2024
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**Metals by Saturated Paste by EPA 6010**

Calcium	3.06	0.499	meq/L	10	[CALC]	11/11/2024	11/12/2024
Magnesium	1.50	0.823	"	"	"	"	"
Sodium	ND	0.435	"	"	"	"	"

**PAH by EPA 8270E extracted via 3580A**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4K0759	11/07/2024	11/27/2024	Ua
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	Ua
Acenaphthene	ND	0.020	"	"	"	"	"	Ua
Anthracene	ND	0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	Ua
Chrysene	ND	0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	Ua
Fluoranthene	ND	0.020	"	"	"	"	"	Ua
Fluorene	ND	0.020	"	"	"	"	"	Ua

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

FL-B02@6'

11/7/2024 12:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
E4K0200-12 (Soil)

**PAH by EPA 8270E extracted via 3580A**

Indeno (1,2,3-cd) pyrene	ND	0.020	mg/kg	1	B4K0759	11/07/2024	11/27/2024	Ua
Naphthalene	ND	0.002	"	"	"	"	"	Ua
Pyrene	ND	0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	106 %	60-130	"	"	"	"	"	"
Surrogate: Anthracene-d10	80.8 %	60-130	"	"	"	"	"	"
Surrogate: Pyrene-d10	89.1 %	60-130	"	"	"	"	"	"
Surrogate: Benzo (a) pyrene-d12	103 %	60-130	"	"	"	"	"	"

**pH in Soil by 9045D**

pH	8.05		pH Units	1	B4K1121	11/11/2024	11/12/2024	
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**SAR by 20B Saturated Paste**

SAR	0.221	0.0100	SAR	1	B4K1110	11/11/2024	11/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.529	0.00500	mmhos/cm	1	B4K1121	11/11/2024	11/12/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.58	0.267	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
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Origins Laboratory

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Jordan A. Bynon, Project Manager

# ORIGINS LABORATORY

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

FL-B02@6'

11/7/2024 12:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0200-12 (Soil)

### Table 915 metals by EPA 6020B

Barium	157		9.22	mg/kg	10	B4K0760	11/07/2024	11/08/2024	
Cadmium	0.219		0.0922	"	"	"	"	"	
Copper	13.0		9.22	"	"	"	"	"	
Lead	11.5		0.922	"	"	"	"	"	
Nickel	14.6		0.922	"	"	"	"	"	
Selenium	0.291		0.240	"	"	"	"	"	
Silver	ND		0.0922	"	"	"	"	"	
Zinc	49.5		34.1	"	"	"	"	"	

### Total Metals by 7196A

Hexavalent Chromium	ND	0.126	0.315	mg/kg dry	1	2716832	12/07/2024	12/10/2024	U
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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0756 - EPA 3550B**

**Blank (B4K0756-BLK1)**

Prepared: 11/07/2024 Analyzed: 11/07/2024

Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	15		"	24.9		60.7	50-150			

Origins Laboratory

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4K0756 - EPA 3550B

LCS (B4K0756-BS1)

Prepared: 11/07/2024 Analyzed: 11/07/2024

Diesel (C10-C28)	971	50.0	mg/kg	1000		97.1	70-130			
Residual Range Organics (C28-C40)	898	200	"	1000		89.8	70-130			
Surrogate: o-Terphenyl	41		"	49.8		83.2	50-150			

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Jordan A. Bynon, Project Manager



Absaroka  
 112 High St.  
 Buffalo WY 82834

Max Dahlgren  
 Project Number: [none]  
 Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4K0756 - EPA 3550B</b>										
<b>Matrix Spike (B4K0756-MS1)</b>			<b>Source: E4K0196-01</b>			Prepared: 11/07/2024 Analyzed: 11/07/2024				
Diesel (C10-C28)	940	50.0	mg/kg	1000	ND	94.0	70-130			
Residual Range Organics (C28-C40)	886	200	"	1000	ND	88.6	70-130			
Surrogate: o-Terphenyl	38		"	49.8		76.0	50-150			

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Absaroka  
 112 High St.  
 Buffalo WY 82834

Max Dahlgren  
 Project Number: [none]  
 Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0756 - EPA 3550B**

**Matrix Spike Dup (B4K0756-MSD1)**

**Source: E4K0196-01**

Prepared: 11/07/2024 Analyzed: 11/07/2024

Diesel (C10-C28)	974	50.0	mg/kg	1000	ND	97.4	70-130	3.56	35	
Residual Range Organics (C28-C40)	908	200	"	1000	ND	90.8	70-130	2.37	35	
Surrogate: o-Terphenyl	39		"	49.8		78.2	50-150			

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Jordan A. Bynon, Project Manager



Absaroka  
 112 High St.  
 Buffalo WY 82834

Max Dahlgren  
 Project Number: [none]  
 Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4K0762 - EPA 5030 (soil)

Blank (B4K0762-BLK1)

Prepared: 11/07/2024 Analyzed: 11/07/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							Ua
1,3,5-Trimethylbenzene	ND	0.00200	"							Ua
Benzene	ND	0.00200	"							Ua
Ethylbenzene	ND	0.00200	"							Ua
Naphthalene	ND	0.00380	"							Ua
Toluene	ND	0.00200	"							Ua
Xylenes, total	ND	0.00200	"							Ua
Gasoline Range Hydrocarbons	ND	0.200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	101		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	103		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	99.3		70-130			

Origins Laboratory

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Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0762 - EPA 5030 (soil)**

**LCS (B4K0762-BS1)**

Prepared: 11/07/2024 Analyzed: 11/07/2024

1,2,4-Trimethylbenzene	0.116	0.00200	mg/kg	0.100		116	70-130			
1,3,5-Trimethylbenzene	0.117	0.00200	"	0.100		117	70-130			
Benzene	0.115	0.00200	"	0.100		115	70-130			
Ethylbenzene	0.113	0.00200	"	0.100		113	70-130			
Naphthalene	0.104	0.00380	"	0.100		104	70-130			
Toluene	0.112	0.00200	"	0.100		112	70-130			
o-Xylene	0.109	0.00200	"	0.100		109	70-130			
m,p-Xylene	0.226	0.00400	"	0.200		113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory

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Jordan A. Bynon, Project Manager



Absaroka  
 112 High St.  
 Buffalo WY 82834

Max Dahlgren  
 Project Number: [none]  
 Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4K0762 - EPA 5030 (soil)

Matrix Spike (B4K0762-MS1)

Source: E4K0199-01

Prepared: 11/07/2024 Analyzed: 11/07/2024

1,2,4-Trimethylbenzene	0.104	0.00200	mg/kg	0.100	ND	104	70-130			
1,3,5-Trimethylbenzene	0.102	0.00200	"	0.100	ND	102	70-130			
Benzene	0.102	0.00200	"	0.100	ND	102	70-130			
Ethylbenzene	0.103	0.00200	"	0.100	ND	103	70-130			
Naphthalene	0.0924	0.00380	"	0.100	0.00100	91.4	70-130			
Toluene	0.100	0.00200	"	0.100	ND	100	70-130			
o-Xylene	0.101	0.00200	"	0.100	ND	101	70-130			
m,p-Xylene	0.204	0.00400	"	0.200	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0762 - EPA 5030 (soil)**

**Matrix Spike Dup (B4K0762-MSD1)**

**Source: E4K0199-01**

Prepared: 11/07/2024 Analyzed: 11/07/2024

1,2,4-Trimethylbenzene	0.104	0.00200	mg/kg	0.100	ND	104	70-130	0.173	20	
1,3,5-Trimethylbenzene	0.104	0.00200	"	0.100	ND	104	70-130	2.25	20	
Benzene	0.103	0.00200	"	0.100	ND	103	70-130	1.23	20	
Ethylbenzene	0.110	0.00200	"	0.100	ND	110	70-130	6.64	20	
Naphthalene	0.0968	0.00380	"	0.100	0.00100	95.8	70-130	4.67	20	
Toluene	0.101	0.00200	"	0.100	ND	101	70-130	0.418	20	
o-Xylene	0.104	0.00200	"	0.100	ND	104	70-130	3.40	20	
m,p-Xylene	0.225	0.00400	"	0.200	ND	112	70-130	9.52	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

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

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**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0760 - EPA 3050B**

**Blank (B4K0760-BLK1)**

Prepared: 11/07/2024 Analyzed: 11/08/2024

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

**LCS (B4K0760-BS1)**

Prepared: 11/07/2024 Analyzed: 11/08/2024

Arsenic	5.54	0.290	mg/kg	5.00		111	80-120			
Barium	513	10.0	"	500		103	80-120			
Cadmium	5.58	0.100	"	5.00		112	80-120			
Copper	54.3	10.0	"	50.0		109	80-120			
Lead	5.02	1.00	"	5.00		100	80-120			
Nickel	5.62	1.00	"	5.00		112	80-120			
Selenium	5.23	0.260	"	5.00		105	80-120			
Silver	5.81	0.100	"	5.00		116	80-120			
Zinc	53.8	37.0	"	50.0		108	80-120			

**Matrix Spike (B4K0760-MS1)**

Source: E4K0200-05

Prepared: 11/07/2024 Analyzed: 11/08/2024

Origins Laboratory

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**Metals by EPA 6000/7000 Series Methods - Quality Control**  
**Origins Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0760 - EPA 3050B**

<b>Matrix Spike (B4K0760-MS1)</b>			<b>Source: E4K0200-05</b>			Prepared: 11/07/2024 Analyzed: 11/08/2024				
Arsenic	12.9	0.250	mg/kg	4.31	7.12	134	75-125			QM-07
Barium	700	8.62	"	431	197	117	75-125			
Cadmium	4.84	0.0862	"	4.31	0.148	109	75-125			
Copper	51.9	8.62	"	43.1	7.35	103	75-125			
Lead	11.3	0.862	"	4.31	8.14	73.2	75-125			QM-07
Nickel	14.5	0.862	"	4.31	9.63	112	75-125			
Selenium	4.61	0.224	"	4.31	0.268	101	75-125			
Silver	4.66	0.0862	"	4.31	0.0330	107	75-125			
Zinc	82.6	31.9	"	43.1	31.0	120	75-125			

<b>Matrix Spike Dup (B4K0760-MSD1)</b>			<b>Source: E4K0200-05</b>			Prepared: 11/07/2024 Analyzed: 11/08/2024				
Arsenic	12.3	0.281	mg/kg	4.84	7.12	108	75-125	4.69	20	QM-07
Barium	742	9.68	"	484	197	113	75-125	5.80	20	
Cadmium	5.29	0.0968	"	4.84	0.148	106	75-125	8.93	20	
Copper	56.0	9.68	"	48.4	7.35	101	75-125	7.77	20	
Lead	11.5	0.968	"	4.84	8.14	70.0	75-125	2.04	20	QM-07
Nickel	15.0	0.968	"	4.84	9.63	111	75-125	3.56	20	
Selenium	5.00	0.252	"	4.84	0.268	97.7	75-125	8.09	20	
Silver	5.14	0.0968	"	4.84	0.0330	106	75-125	9.78	20	
Zinc	84.1	35.8	"	48.4	31.0	110	75-125	1.82	20	

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0759 - EPA 3580**

**Blank (B4K0759-BLK1)**

Prepared: 11/07/2024 Analyzed: 11/27/2024

1-Methylnaphthalene	ND	0.002	mg/kg							Ua
2-Methylnaphthalene	ND	0.002	"							Ua
Acenaphthene	ND	0.020	"							Ua
Anthracene	ND	0.020	"							Ua
Benzo (a) anthracene	ND	0.005	"							Ua
Benzo (a) pyrene	ND	0.020	"							Ua
Benzo (b) fluoranthene	ND	0.020	"							Ua
Benzo (g,h,i) perylene	ND	0.020	"							Ua
Benzo (k) fluoranthene	ND	0.020	"							Ua
Chrysene	ND	0.020	"							Ua
Dibenz (a,h) anthracene	ND	0.020	"							Ua
Fluoranthene	ND	0.020	"							Ua
Fluorene	ND	0.020	"							Ua
Indeno (1,2,3-cd) pyrene	ND	0.020	"							Ua
Naphthalene	ND	0.002	"							Ua
Phenanthrene	ND	0.020	"							Ua
Pyrene	ND	0.020	"							Ua

Surrogate: Fluorene-d10	210		ug/kg	200		106	60-130			
Surrogate: Anthracene-d10	170		"	200		84.6	60-130			
Surrogate: Pyrene-d10	190		"	200		94.6	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		104	60-130			

**LCS (B4K0759-BS1)**

Prepared: 11/07/2024 Analyzed: 11/27/2024

1-Methylnaphthalene	0.198	0.002	mg/kg	0.200		99.1	70-130			
2-Methylnaphthalene	0.203	0.002	"	0.200		101	70-130			
Acenaphthene	0.183	0.020	"	0.200		91.7	70-130			
Anthracene	0.169	0.020	"	0.200		84.4	70-130			

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Jordan A. Bynon, Project Manager



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112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0759 - EPA 3580**

**LCS (B4K0759-BS1)**

Prepared: 11/07/2024 Analyzed: 11/27/2024

Benzo (a) anthracene	0.185	0.005	mg/kg	0.200		92.7	70-130			
Benzo (a) pyrene	0.194	0.020	"	0.200		96.9	70-130			
Benzo (b) fluoranthene	0.229	0.020	"	0.200		115	70-130			
Benzo (g,h,i) perylene	0.194	0.020	"	0.200		96.8	70-130			
Benzo (k) fluoranthene	0.231	0.020	"	0.200		116	70-130			
Chrysene	0.209	0.020	"	0.200		104	70-130			
Dibenz (a,h) anthracene	0.215	0.020	"	0.200		107	70-130			
Fluoranthene	0.176	0.020	"	0.200		88.1	70-130			
Fluorene	0.193	0.020	"	0.200		96.7	70-130			
Indeno (1,2,3-cd) pyrene	0.196	0.020	"	0.200		97.9	70-130			
Naphthalene	0.189	0.002	"	0.200		94.3	70-130			
Phenanthrene	0.185	0.020	"	0.200		92.5	70-130			
Pyrene	0.170	0.020	"	0.200		85.0	70-130			

Surrogate: Fluorene-d10	210		ug/kg	200		107	60-130			
Surrogate: Anthracene-d10	170		"	200		84.0	60-130			
Surrogate: Pyrene-d10	200		"	200		98.0	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

**Matrix Spike (B4K0759-MS1)**

**Source: E4K0200-01**

Prepared: 11/07/2024 Analyzed: 11/27/2024

1-Methylnaphthalene	0.203	0.002	mg/kg	0.200	0.0009	101	70-130			
2-Methylnaphthalene	0.206	0.002	"	0.200	0.001	102	70-130			
Acenaphthene	0.189	0.020	"	0.200	0.0007	94.2	70-130			
Anthracene	0.164	0.020	"	0.200	ND	81.9	70-130			
Benzo (a) anthracene	0.159	0.005	"	0.200	0.002	78.2	70-130			
Benzo (a) pyrene	0.207	0.020	"	0.200	0.004	102	70-130			
Benzo (b) fluoranthene	0.230	0.020	"	0.200	0.005	113	70-130			
Benzo (g,h,i) perylene	0.213	0.020	"	0.200	0.006	103	70-130			

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Jordan A. Bynon, Project Manager



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 Buffalo WY 82834

Max Dahlgren  
 Project Number: [none]  
 Project: KMG - McDonald 2-4A Wellhead

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0759 - EPA 3580**

<b>Matrix Spike (B4K0759-MS1)</b>		<b>Source: E4K0200-01</b>			<b>Prepared: 11/07/2024 Analyzed: 11/27/2024</b>					
Benzo (k) fluoranthene	0.225	0.020	mg/kg	0.200	0.004	110	70-130			
Chrysene	0.192	0.020	"	0.200	0.004	93.6	70-130			
Dibenz (a,h) anthracene	0.236	0.020	"	0.200	0.014	111	70-130			
Fluoranthene	0.167	0.020	"	0.200	0.002	82.6	70-130			
Fluorene	0.204	0.020	"	0.200	0.008	98.4	70-130			
Indeno (1,2,3-cd) pyrene	0.199	0.020	"	0.200	0.010	94.5	70-130			
Naphthalene	0.191	0.002	"	0.200	ND	95.4	70-130			
Phenanthrene	0.192	0.020	"	0.200	0.005	93.5	70-130			
Pyrene	0.160	0.020	"	0.200	0.002	78.8	70-130			
Surrogate: Fluorene-d10	220		ug/kg	200		108	60-130			
Surrogate: Anthracene-d10	160		"	200		82.3	60-130			
Surrogate: Pyrene-d10	180		"	200		88.5	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		106	60-130			

<b>Matrix Spike Dup (B4K0759-MSD1)</b>		<b>Source: E4K0200-01</b>			<b>Prepared: 11/07/2024 Analyzed: 11/27/2024</b>					
1-Methylnaphthalene	0.207	0.002	mg/kg	0.200	0.0009	103	70-130	1.68	20	
2-Methylnaphthalene	0.209	0.002	"	0.200	0.001	104	70-130	1.47	20	
Acenaphthene	0.191	0.020	"	0.200	0.0007	95.3	70-130	1.22	20	
Anthracene	0.164	0.020	"	0.200	ND	82.0	70-130	0.203	20	
Benzo (a) anthracene	0.161	0.005	"	0.200	0.002	79.3	70-130	1.47	20	
Benzo (a) pyrene	0.195	0.020	"	0.200	0.004	95.7	70-130	6.04	20	
Benzo (b) fluoranthene	0.234	0.020	"	0.200	0.005	115	70-130	1.60	20	
Benzo (g,h,i) perylene	0.227	0.020	"	0.200	0.006	110	70-130	6.46	20	
Benzo (k) fluoranthene	0.206	0.020	"	0.200	0.004	101	70-130	9.01	20	
Chrysene	0.159	0.020	"	0.200	0.004	77.2	70-130	18.8	20	
Dibenz (a,h) anthracene	0.218	0.020	"	0.200	0.014	102	70-130	8.14	20	
Fluoranthene	0.178	0.020	"	0.200	0.002	87.8	70-130	6.04	20	

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Jordan A. Bynon, Project Manager



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Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0759 - EPA 3580**

**Matrix Spike Dup (B4K0759-MSD1)**

**Source: E4K0200-01**

Prepared: 11/07/2024 Analyzed: 11/27/2024

Fluorene	0.196	0.020	mg/kg	0.200	0.008	94.3	70-130	4.02	20	
Indeno (1,2,3-cd) pyrene	0.201	0.020	"	0.200	0.010	95.5	70-130	0.966	20	
Naphthalene	0.193	0.002	"	0.200	ND	96.4	70-130	0.986	20	
Phenanthrene	0.192	0.020	"	0.200	0.005	93.2	70-130	0.341	20	
Pyrene	0.170	0.020	"	0.200	0.002	83.8	70-130	6.08	20	
Surrogate: Fluorene-d10	210		ug/kg	200		105	60-130			
Surrogate: Anthracene-d10	160		"	200		78.9	60-130			
Surrogate: Pyrene-d10	190		"	200		92.6	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			

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Jordan A. Bynon, Project Manager



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112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**Classical Chemistry Parameters - Quality Control**  
**Origins Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K0808 - DTPA Sorbitol Preparation**

**Blank (B4K0808-BLK1)**

Prepared: 11/08/2024 Analyzed: 11/11/2024

Boron ND 0.100 mg/L

**Duplicate (B4K0808-DUP1)**

**Source: E4K0196-21**

Prepared: 11/08/2024 Analyzed: 11/11/2024

Boron 1.14 0.100 mg/L 1.11 2.55 50

**Batch B4K1110 - Saturated Paste Metals**

**Blank (B4K1110-BLK1)**

Prepared: 11/11/2024 Analyzed: 11/12/2024

SAR ND 0.0100 SAR

Calcium PPM ND 10.0 mg/L

Magnesium PPM ND 10.0 "

Sodium PPM ND 10.0 "

**Duplicate (B4K1110-DUP1)**

**Source: E4K0200-01**

Prepared: 11/11/2024 Analyzed: 11/12/2024

SAR ND 0.0100 SAR 0.345 200

Calcium PPM 91.7 10.0 mg/L 106 14.8 50

Magnesium PPM 7.23 10.0 " 3.73 63.9 50 QR-DUP

Sodium PPM 12.1 10.0 " 13.3 9.46 50

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Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

**Saturated Paste - Quality Control**  
**Origins Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4K1121 - Saturated Paste pH/EC**

**Blank (B4K1121-BLK1)**

Prepared: 11/11/2024 Analyzed: 11/12/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

**Duplicate (B4K1121-DUP1)**

**Source: E4K0200-01**

Prepared: 11/11/2024 Analyzed: 11/12/2024

Specific Conductance (EC)	0.703	0.00500	mmhos/cm		0.736		4.55	25	
pH	9.49		pH Units		9.95		4.73	25	

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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2716832 - SW846 3060A

**BLANK (1205941280-BLK)**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	ND	0.360	mg/kg				-			U
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**LCS (1205941281-BKS)**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	3.21	0.326	mg/kg	3.26		98.3	80-120			
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**DUP (1205941282 D)**

Source: E4K0200-10

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	ND	0.299	mg/kg dry		<0.119		0-50	N/A	50	U
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**MS (1205941283 S)**

Source: E4K0200-10

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	2.57	0.384	mg/kg dry	3.84	<0.154	66.2	75-125			
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**DUP (1205941284 D)**

Source: E4K0200-11

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	ND	0.352	mg/kg dry		<0.141		0-50	N/A	50	U
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**MS (1205941285 S)**

Source: E4K0200-11

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	2.53	0.354	mg/kg dry	3.54	<0.141	70.4	75-125			
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**ILCS (1205941286-ILCS)**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	6.53	0.303	mg/kg	6.09		107	80-120			
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Jordan A. Bynon, Project Manager



Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2716830 - SW846 3060A**

**BLANK (1205941273-BLK)**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	ND	0.240	mg/kg				-			U
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**LCS (1205941274-BKS)**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	3.10	0.319	mg/kg	3.19		97.2	80-120			
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**DUP (1205941275 D)**

**Source: 695181001**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	ND	0.277	mg/kg dry		<0.111		0-50	N/A	50	U
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**MS (1205941276 S)**

**Source: 695181001**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	2.57	0.277	mg/kg dry	2.77	<0.111	91.6	75-125			
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**DUP (1205941277 D)**

**Source: 695181002**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	ND	0.392	mg/kg dry		<0.157		0-50	N/A	50	U
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**MS (1205941278 S)**

**Source: 695181002**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	3.03	0.352	mg/kg dry	3.52	<0.141	84.8	75-125			
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**ILCS (1205941279-ILCS)**

Prepared: 12/07/2024 Analyzed: 12/10/2024

Hexavalent Chromium	6.08	0.286	mg/kg	5.82		104	80-120			
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Jordan A. Bynon, Project Manager

Absaroka  
112 High St.  
Buffalo WY 82834

Max Dahlgren  
Project Number: [none]  
Project: KMG - McDonald 2-4A Wellhead

## Notes and Definitions

- Ua Sample is Non-Detect.
- U Result not detected above the detection limit
- QR-DUP RPD exceeds QC acceptance criteria, this indicates source sample is not homogenous.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- All soil results are reported on a wet weight basis.

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*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.*