



Ensolum

October 09, 2024

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Sherwood L Fed 30-29D
Wellhead**

Project Number - 09A1417184

Attached are your analytical results for KMG - Sherwood L Fed 30-29D Wellhead received by Origins Laboratory September 19, 2024. This project is associated with Origins project number E409584-01.

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

Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417184
Project: KMG - Sherwood L Fed 30-29D Wellhead

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL03/FL04-N01@2'	E409584-01	Soil	September 19, 2024 9:43	09/19/2024 16:33
FL03/FL04-E01@2'	E409584-02	Soil	September 19, 2024 9:24	09/19/2024 16:33
FL03/FL04-S01@2'	E409584-03	Soil	September 19, 2024 9:38	09/19/2024 16:33
FL03/FL04-W01@2'	E409584-04	Soil	September 19, 2024 9:41	09/19/2024 16:33
FL03/FL04-B01@4'	E409584-05	Soil	September 19, 2024 9:30	09/19/2024 16:33

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11049 W 44th Avenue, Suite 103
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Jeremy Espinoza
Project Number: 09A1417184
Project: KMG - Sherwood L Fed 30-29D Wellhead

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: EU09584 Client: ENSOLUM
 Checklist Completed by: JWTPB Client Project ID: Sherwood
 Date/time completed: 9/19/24 Shipped Via: HD
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____ (Describe)
 Cooler Number/Temperature: 1 °C 1 °C 1 °C 1 °C
 Thermometer ID: TC05

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 HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			/	
Additional Comments (if any):				

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

JWTPB
Reviewed by (Project Manager)

9/19/24
Date/Time Reviewed

Origins Laboratory

J. Bynon

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Jeremy Espinoza
Project Number: 09A1417184
Project: KMG - Sherwood L Fed 30-29D Wellhead

FL03/FL04-N01@2'
9/19/2024 9:43:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.234		0.0983	mg/L	1	B4J0406	10/04/2024	10/07/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4I1943	09/19/2024	09/19/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	92.3 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

Gasoline Range Hydrocarbons	ND		0.200	mg/kg	1	B4I1942	09/19/2024	09/19/2024	U
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Surrogate: 1,2-Dichloroethane-d4	77.4 %		70-130			"	"	"	
Surrogate: Toluene-d8	96.8 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	81.7 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4I1944	09/19/2024	09/20/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	0.025		0.020	"	"	"	"	"	

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FL03/FL04-N01@2'
9/19/2024 9:43:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-01 (Soil)

PAH by EPA 8270E extracted via 3580A

Anthracene	0.071		0.020	mg/kg	1	B411944	09/19/2024	09/20/2024	
Benzo (a) anthracene	0.174		0.005	"	"	"	"	"	
Benzo (a) pyrene	0.126		0.020	"	"	"	"	"	
Benzo (b) fluoranthene	0.118		0.020	"	"	"	"	"	
Benzo (k) fluoranthene	0.051		0.020	"	"	"	"	"	
Chrysene	0.141		0.020	"	"	"	"	"	
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	U
Fluoranthene	0.482		0.020	"	"	"	"	"	
Fluorene	0.028		0.020	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.074		0.020	"	"	"	"	"	
Naphthalene	0.003		0.002	"	"	"	"	"	
Pyrene	0.353		0.020	"	"	"	"	"	

Surrogate: Fluorene-d10	101 %		60-130			"	"	"	
Surrogate: Anthracene-d10	96.0 %		60-130			"	"	"	
Surrogate: Pyrene-d10	96.9 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	96.8 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.58			pH Units	1	B412727	09/27/2024	10/01/2024	
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9/19/2024 9:43:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-01 (Soil)

Table 915 metals by EPA 6020B

Arsenic	3.53	0.244	mg/kg	10	B411946	09/19/2024	09/20/2024
Barium	69.4	8.41	"	"	"	"	"
Cadmium	0.426	0.0841	"	"	"	"	"
Copper	21.8	8.41	"	"	"	"	"
Lead	17.7	0.841	"	"	"	"	"
Nickel	4.90	0.841	"	"	"	"	"
Selenium	ND	0.219	"	"	"	"	"
Silver	0.248	0.0841	"	"	"	"	"
Zinc	59.8	31.1	"	"	"	"	"

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FL03/FL04-E01@2'
9/19/2024 9:24:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-02 (Soil)

Boron (DTPA Sorbitol)

Boron	ND		0.101	mg/L	1	B4J0406	10/04/2024	10/07/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4I1943	09/19/2024	09/19/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	94.4 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

Gasoline Range Hydrocarbons	ND		0.200	mg/kg	1	B4I1942	09/19/2024	09/19/2024	U
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Surrogate: 1,2-Dichloroethane-d4	78.4 %		70-130			"	"	"	
Surrogate: Toluene-d8	96.0 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	82.8 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4I1944	09/19/2024	09/19/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U

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FL03/FL04-E01@2'
9/19/2024 9:24:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-02 (Soil)

PAH by EPA 8270E extracted via 3580A

Anthracene	ND	0.020	mg/kg	1	B411944	09/19/2024	09/19/2024	U
Benzo (a) anthracene	0.015	0.005	"	"	"	"	"	
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
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	U
Naphthalene	ND	0.002	"	"	"	"	"	U
Pyrene	0.025	0.020	"	"	"	"	"	

Surrogate: Fluorene-d10	101 %	60-130	"	"	"
Surrogate: Anthracene-d10	97.8 %	60-130	"	"	"
Surrogate: Pyrene-d10	96.7 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	94.9 %	60-130	"	"	"

pH in Soil by 9045D

pH	7.27	pH Units	1	B412727	09/27/2024	10/01/2024
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FL03/FL04-E01@2'
9/19/2024 9:24:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-02 (Soil)

Table 915 metals by EPA 6020B

Arsenic	12.1		0.287	mg/kg	10	B411946	09/19/2024	09/20/2024	
Barium	110		9.90	"	"	"	"	"	
Cadmium	1.33		0.0990	"	"	"	"	"	
Copper	105		9.90	"	"	"	"	"	
Lead	87.9		0.990	"	"	"	"	"	
Nickel	6.93		0.990	"	"	"	"	"	
Selenium	0.261		0.257	"	"	"	"	"	
Silver	1.29		0.0990	"	"	"	"	"	
Zinc	238		36.6	"	"	"	"	"	

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FL03/FL04-S01@2'
9/19/2024 9:38:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-03 (Soil)

Boron (DTPA Sorbitol)

Boron	0.129		0.0993	mg/L	1	B4J0406	10/04/2024	10/07/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4I1943	09/19/2024	09/19/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	85.9 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

Gasoline Range Hydrocarbons	ND		0.200	mg/kg	1	B4I1942	09/19/2024	09/19/2024	U
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Surrogate: 1,2-Dichloroethane-d4	78.0 %		70-130			"	"	"	
Surrogate: Toluene-d8	97.5 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	82.4 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4I1944	09/19/2024	09/20/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	0.022		0.020	"	"	"	"	"	

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Jeremy Espinoza
Project Number: 09A1417184
Project: KMG - Sherwood L Fed 30-29D Wellhead

FL03/FL04-S01@2'
9/19/2024 9:38:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-03 (Soil)

PAH by EPA 8270E extracted via 3580A

Anthracene	0.070		0.020	mg/kg	1	B411944	09/19/2024	09/20/2024	
Benzo (a) anthracene	0.158		0.005	"	"	"	"	"	
Benzo (a) pyrene	0.102		0.020	"	"	"	"	"	
Benzo (b) fluoranthene	0.103		0.020	"	"	"	"	"	
Benzo (k) fluoranthene	0.043		0.020	"	"	"	"	"	
Chrysene	0.151		0.020	"	"	"	"	"	
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	U
Fluoranthene	0.440		0.020	"	"	"	"	"	
Fluorene	0.029		0.020	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.063		0.020	"	"	"	"	"	
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	0.328		0.020	"	"	"	"	"	

Surrogate: Fluorene-d10	101 %		60-130			"	"	"	
Surrogate: Anthracene-d10	96.2 %		60-130			"	"	"	
Surrogate: Pyrene-d10	96.5 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	97.1 %		60-130			"	"	"	

pH in Soil by 9045D

pH	7.67			pH Units	1	B412727	09/27/2024	10/01/2024	
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FL03/FL04-S01@2'
9/19/2024 9:38:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-03 (Soil)

Table 915 metals by EPA 6020B

Arsenic	4.26		0.257	mg/kg	10	B411946	09/19/2024	09/20/2024	
Barium	63.0		8.87	"	"	"	"	"	
Cadmium	0.434		0.0887	"	"	"	"	"	
Copper	25.7		8.87	"	"	"	"	"	
Lead	23.7		0.887	"	"	"	"	"	
Nickel	4.20		0.887	"	"	"	"	"	
Selenium	ND		0.231	"	"	"	"	"	
Silver	0.364		0.0887	"	"	"	"	"	
Zinc	72.3		32.8	"	"	"	"	"	

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FL03/FL04-W01@2'
9/19/2024 9:41:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-04 (Soil)

Boron (DTPA Sorbitol)

Boron	0.182		0.0987	mg/L	1	B4J0406	10/04/2024	10/07/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4I1943	09/19/2024	09/19/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	93.8 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

Gasoline Range Hydrocarbons	ND		0.200	mg/kg	1	B4I1942	09/19/2024	09/19/2024	U
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Surrogate: 1,2-Dichloroethane-d4	79.4 %		70-130			"	"	"	
Surrogate: Toluene-d8	97.2 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	83.2 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4I1944	09/19/2024	09/19/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U

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FL03/FL04-W01@2'
9/19/2024 9:41:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-04 (Soil)

PAH by EPA 8270E extracted via 3580A

Anthracene	ND		0.020	mg/kg	1	B411944	09/19/2024	09/19/2024	U
Benzo (a) anthracene	0.009		0.005	"	"	"	"	"	
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
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	0.020		0.020	"	"	"	"	"	

Surrogate: Fluorene-d10	101 %	60-130	"	"	"
Surrogate: Anthracene-d10	97.0 %	60-130	"	"	"
Surrogate: Pyrene-d10	96.8 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	94.5 %	60-130	"	"	"

pH in Soil by 9045D

pH	7.57	pH Units	1	B412727	09/27/2024	10/01/2024
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Ensolum
 11049 W 44th Avenue, Suite 103
 Wheat Ridge CO 80033

Jeremy Espinoza
 Project Number: 09A1417184
 Project: KMG - Sherwood L Fed 30-29D Wellhead

FL03/FL04-W01@2'
9/19/2024 9:41:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-04 (Soil)

Table 915 metals by EPA 6020B

Arsenic	4.08		0.269	mg/kg	10	B411946	09/19/2024	09/20/2024	
Barium	82.5		9.27	"	"	"	"	"	
Cadmium	0.477		0.0927	"	"	"	"	"	
Copper	25.5		9.27	"	"	"	"	"	
Lead	22.3		0.927	"	"	"	"	"	
Nickel	6.01		0.927	"	"	"	"	"	
Selenium	ND		0.241	"	"	"	"	"	
Silver	0.263		0.0927	"	"	"	"	"	
Zinc	78.2		34.3	"	"	"	"	"	

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Jeremy Espinoza
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 Project: KMG - Sherwood L Fed 30-29D Wellhead

FL03/FL04-B01@4'
9/19/2024 9:30:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-05 (Soil)

Boron (DTPA Sorbitol)

Boron	0.287		0.0986	mg/L	1	B4J0406	10/04/2024	10/07/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4I1943	09/19/2024	09/19/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

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

Gasoline Range Hydrocarbons	ND		0.200	mg/kg	1	B4I1942	09/19/2024	09/19/2024	U
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Surrogate: 1,2-Dichloroethane-d4	78.3 %		70-130			"	"	"	
Surrogate: Toluene-d8	97.8 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	81.8 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4I1944	09/19/2024	09/19/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U

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Jeremy Espinoza
 Project Number: 09A1417184
 Project: KMG - Sherwood L Fed 30-29D Wellhead

FL03/FL04-B01@4'
9/19/2024 9:30:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-05 (Soil)

PAH by EPA 8270E extracted via 3580A

Anthracene	0.031	0.020	mg/kg	1	B411944	09/19/2024	09/19/2024	
Benzo (a) anthracene	0.015	0.005	"	"	"	"	"	
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	0.042	0.020	"	"	"	"	"	
Fluorene	ND	0.020	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	U
Naphthalene	ND	0.002	"	"	"	"	"	U
Pyrene	0.035	0.020	"	"	"	"	"	

Surrogate: Fluorene-d10	101 %	60-130		"	"	"
Surrogate: Anthracene-d10	97.6 %	60-130		"	"	"
Surrogate: Pyrene-d10	100 %	60-130		"	"	"
Surrogate: Benzo (a) pyrene-d12	95.7 %	60-130		"	"	"

pH in Soil by 9045D

pH	8.25	pH Units	1	B412727	09/27/2024	10/01/2024
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Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417184
Project: KMG - Sherwood L Fed 30-29D Wellhead

FL03/FL04-B01@4'
9/19/2024 9:30:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409584-05 (Soil)

Table 915 metals by EPA 6020B

Arsenic	3.41		0.256	mg/kg	10	B411946	09/19/2024	09/20/2024	
Barium	94.9		8.82	"	"	"	"	"	
Cadmium	0.478		0.0882	"	"	"	"	"	
Copper	21.4		8.82	"	"	"	"	"	
Lead	20.5		0.882	"	"	"	"	"	
Nickel	6.24		0.882	"	"	"	"	"	
Selenium	ND		0.229	"	"	"	"	"	
Silver	0.221		0.0882	"	"	"	"	"	
Zinc	70.9		32.6	"	"	"	"	"	

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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 B411942 - EPA 5030 (soil)

Blank (B411942-BLK1)

Prepared: 09/19/2024 Analyzed: 09/19/2024

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	0.099		"	0.125	79.1		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	95.9		70-130			
Surrogate: 4-Bromofluorobenzene	0.10		"	0.125	82.9		70-130			

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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 B4I1942 - EPA 5030 (soil)

LCS (B4I1942-BS1)

Prepared: 09/19/2024 Analyzed: 09/19/2024

1,2,4-Trimethylbenzene	0.0903	0.00200	mg/kg	0.100		90.3	70-130			
1,3,5-Trimethylbenzene	0.0955	0.00200	"	0.100		95.5	70-130			
Benzene	0.108	0.00200	"	0.100		108	70-130			
Ethylbenzene	0.0973	0.00200	"	0.100		97.3	70-130			
Naphthalene	0.0962	0.00380	"	0.100		96.2	70-130			
Toluene	0.0964	0.00200	"	0.100		96.4	70-130			
o-Xylene	0.0964	0.00200	"	0.100		96.4	70-130			
m,p-Xylene	0.208	0.00400	"	0.200		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.096		"	0.125		77.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		88.4	70-130			

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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 B411942 - EPA 5030 (soil)

Matrix Spike (B411942-MS1)	Source: E409584-01			Prepared: 09/19/2024 Analyzed: 09/19/2024						
1,2,4-Trimethylbenzene	0.0805	0.00200	mg/kg	0.100	ND	80.5	70-130			
1,3,5-Trimethylbenzene	0.0840	0.00200	"	0.100	ND	84.0	70-130			
Benzene	0.104	0.00200	"	0.100	ND	104	70-130			
Ethylbenzene	0.0888	0.00200	"	0.100	ND	88.8	70-130			
Naphthalene	0.0804	0.00380	"	0.100	ND	80.4	70-130			
Toluene	0.0906	0.00200	"	0.100	ND	90.6	70-130			
o-Xylene	0.0889	0.00200	"	0.100	ND	88.9	70-130			
m,p-Xylene	0.191	0.00400	"	0.200	ND	95.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.097		"	0.125		77.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		86.8	70-130			

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**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 B4I1942 - EPA 5030 (soil)

Matrix Spike Dup (B4I1942-MSD1)	Source: E409584-01			Prepared: 09/19/2024 Analyzed: 09/19/2024						
1,2,4-Trimethylbenzene	0.0801	0.00200	mg/kg	0.100	ND	80.1	70-130	0.548	20	
1,3,5-Trimethylbenzene	0.0832	0.00200	"	0.100	ND	83.2	70-130	0.956	20	
Benzene	0.103	0.00200	"	0.100	ND	103	70-130	0.309	20	
Ethylbenzene	0.0877	0.00200	"	0.100	ND	87.7	70-130	1.25	20	
Naphthalene	0.0809	0.00380	"	0.100	ND	80.9	70-130	0.570	20	
Toluene	0.0909	0.00200	"	0.100	ND	90.9	70-130	0.264	20	
o-Xylene	0.0877	0.00200	"	0.100	ND	87.7	70-130	1.31	20	
m,p-Xylene	0.188	0.00400	"	0.200	ND	94.0	70-130	1.70	20	
Surrogate: 1,2-Dichloroethane-d4	0.098		"	0.125		78.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		87.7	70-130			

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Jeremy Espinoza
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 Project: KMG - Sherwood L Fed 30-29D 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
Batch B411943 - EPA 3550B										
Blank (B411943-BLK1)										
					Prepared: 09/19/2024 Analyzed: 09/19/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	27		"	24.9		110	50-150			

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 Project: KMG - Sherwood L Fed 30-29D 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 B4I1943 - EPA 3550B

LCS (B4I1943-BS1)

Prepared: 09/19/2024 Analyzed: 09/19/2024

Diesel (C10-C28)	1160	50.0	mg/kg	1000		116	70-130			
Residual Range Organics (C28-C40)	1300	200	"	1000		130	70-130			
Surrogate: o-Terphenyl	59		"	49.8		118	50-150			

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Jeremy Espinoza
 Project Number: 09A1417184
 Project: KMG - Sherwood L Fed 30-29D 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 B4I1943 - EPA 3550B

Matrix Spike (B4I1943-MS1)	Source: E409584-01			Prepared: 09/19/2024 Analyzed: 09/19/2024						
Diesel (C10-C28)	956	50.0	mg/kg	1000	ND	95.6	70-130			
Residual Range Organics (C28-C40)	1130	200	"	1000	ND	113	70-130			
Surrogate: o-Terphenyl	51		"	49.8		102	50-150			

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Jeremy Espinoza
Project Number: 09A1417184
Project: KMG - Sherwood L Fed 30-29D 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
Batch B4I1943 - EPA 3550B										
Matrix Spike Dup (B4I1943-MSD1)		Source: E409584-01			Prepared: 09/19/2024 Analyzed: 09/19/2024					
Diesel (C10-C28)	969	50.0	mg/kg	1000	ND	96.9	70-130	1.32	35	
Residual Range Organics (C28-C40)	1150	200	"	1000	ND	115	70-130	1.75	35	
Surrogate: o-Terphenyl	58		"	49.8		117	50-150			

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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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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 B4I1946 - EPA 3050B

Blank (B4I1946-BLK1)

Prepared: 09/19/2024 Analyzed: 09/20/2024

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 (B4I1946-BS1)

Prepared: 09/19/2024 Analyzed: 09/20/2024

Arsenic	5.28	0.290	mg/kg	5.00	106	80-120
Barium	553	10.0	"	500	111	80-120
Cadmium	5.03	0.100	"	5.00	101	80-120
Copper	54.8	10.0	"	50.0	110	80-120
Lead	5.10	1.00	"	5.00	102	80-120
Nickel	5.44	1.00	"	5.00	109	80-120
Selenium	5.38	0.260	"	5.00	108	80-120
Silver	5.34	0.100	"	5.00	107	80-120
Zinc	52.0	37.0	"	50.0	104	80-120

Matrix Spike (B4I1946-MS1)

Source: E409584-01

Prepared: 09/19/2024 Analyzed: 09/20/2024

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Jeremy Espinoza
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 Project: KMG - Sherwood L Fed 30-29D 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 B411946 - EPA 3050B

Matrix Spike (B411946-MS1)	Source: E409584-01			Prepared: 09/19/2024 Analyzed: 09/20/2024						
Arsenic	9.25	0.284	mg/kg	4.89	3.53	117	75-125			
Barium	623	9.78	"	489	69.4	113	75-125			
Cadmium	5.51	0.0978	"	4.89	0.426	104	75-125			
Copper	79.1	9.78	"	48.9	21.8	117	75-125			
Lead	24.9	0.978	"	4.89	17.7	148	75-125			QM-07
Nickel	10.2	0.978	"	4.89	4.90	109	75-125			
Selenium	4.76	0.254	"	4.89	0.0942	95.4	75-125			
Silver	5.65	0.0978	"	4.89	0.248	110	75-125			
Zinc	114	36.2	"	48.9	59.8	110	75-125			

Matrix Spike Dup (B411946-MSD1)	Source: E409584-01			Prepared: 09/19/2024 Analyzed: 09/20/2024						
Arsenic	8.59	0.258	mg/kg	4.45	3.53	114	75-125	7.39	20	
Barium	575	8.89	"	445	69.4	114	75-125	7.97	20	
Cadmium	5.04	0.0889	"	4.45	0.426	104	75-125	8.94	20	
Copper	72.3	8.89	"	44.5	21.8	114	75-125	9.01	20	
Lead	25.0	0.889	"	4.45	17.7	163	75-125	0.0703	20	QM-07
Nickel	9.67	0.889	"	4.45	4.90	107	75-125	5.53	20	
Selenium	4.44	0.231	"	4.45	0.0942	97.6	75-125	7.05	20	
Silver	5.18	0.0889	"	4.45	0.248	111	75-125	8.77	20	
Zinc	109	32.9	"	44.5	59.8	111	75-125	3.92	20	

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Jeremy Espinoza
 Project Number: 09A1417184
 Project: KMG - Sherwood L Fed 30-29D 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 B4I1944 - EPA 3580

Blank (B4I1944-BLK1)

Prepared: 09/19/2024 Analyzed: 09/19/2024

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	200		ug/kg	200		98.5	60-130			
Surrogate: Anthracene-d10	200		"	200		99.0	60-130			
Surrogate: Pyrene-d10	180		"	200		92.1	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		93.5	60-130			

LCS (B4I1944-BS1)

Prepared: 09/19/2024 Analyzed: 09/19/2024

1-Methylnaphthalene	0.189	0.002	mg/kg	0.200		94.5	70-130			
2-Methylnaphthalene	0.188	0.002	"	0.200		94.1	70-130			
Acenaphthene	0.167	0.020	"	0.200		83.3	70-130			
Anthracene	0.168	0.020	"	0.200		84.0	70-130			

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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417184
Project: KMG - Sherwood L Fed 30-29D 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 B4I1944 - EPA 3580

LCS (B4I1944-BS1)

Prepared: 09/19/2024 Analyzed: 09/19/2024

Benzo (a) anthracene	0.185	0.005	mg/kg	0.200		92.6	70-130			
Benzo (a) pyrene	0.172	0.020	"	0.200		86.1	70-130			
Benzo (b) fluoranthene	0.154	0.020	"	0.200		77.0	70-130			
Benzo (g,h,i) perylene	0.236	0.020	"	0.200		118	70-130			
Benzo (k) fluoranthene	0.153	0.020	"	0.200		76.5	70-130			
Chrysene	0.166	0.020	"	0.200		82.8	70-130			
Dibenz (a,h) anthracene	0.225	0.020	"	0.200		113	70-130			
Fluoranthene	0.190	0.020	"	0.200		94.8	70-130			
Fluorene	0.165	0.020	"	0.200		82.3	70-130			
Indeno (1,2,3-cd) pyrene	0.232	0.020	"	0.200		116	70-130			
Naphthalene	0.170	0.002	"	0.200		84.9	70-130			
Phenanthrene	0.170	0.020	"	0.200		85.1	70-130			
Pyrene	0.163	0.020	"	0.200		81.7	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	190		"	200		96.2	60-130			
Surrogate: Pyrene-d10	190		"	200		92.9	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

Matrix Spike (B4I1944-MS1)

Source: E409582-01

Prepared: 09/19/2024 Analyzed: 09/19/2024

1-Methylnaphthalene	0.197	0.002	mg/kg	0.200	0.001	98.1	70-130			
2-Methylnaphthalene	0.198	0.002	"	0.200	0.002	97.7	70-130			
Acenaphthene	0.176	0.020	"	0.200	ND	88.0	70-130			
Anthracene	0.182	0.020	"	0.200	0.002	90.0	70-130			
Benzo (a) anthracene	0.189	0.005	"	0.200	0.008	90.5	70-130			
Benzo (a) pyrene	0.187	0.020	"	0.200	0.008	89.5	70-130			
Benzo (b) fluoranthene	0.179	0.020	"	0.200	0.004	87.6	70-130			
Benzo (g,h,i) perylene	0.230	0.020	"	0.200	0.005	113	70-130			

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Project: KMG - Sherwood L Fed 30-29D 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 B4I1944 - EPA 3580

Matrix Spike (B4I1944-MS1)	Source: E409582-01				Prepared: 09/19/2024 Analyzed: 09/19/2024					
Benzo (k) fluoranthene	0.163	0.020	mg/kg	0.200	0.0006	81.4	70-130			
Chrysene	0.193	0.020	"	0.200	0.007	93.0	70-130			
Dibenz (a,h) anthracene	0.221	0.020	"	0.200	ND	110	70-130			
Fluoranthene	0.202	0.020	"	0.200	0.010	95.7	70-130			
Fluorene	0.172	0.020	"	0.200	ND	86.2	70-130			
Indeno (1,2,3-cd) pyrene	0.231	0.020	"	0.200	0.004	113	70-130			
Naphthalene	0.178	0.002	"	0.200	0.001	88.2	70-130			
Phenanthrene	0.182	0.020	"	0.200	0.004	89.3	70-130			
Pyrene	0.187	0.020	"	0.200	0.016	85.3	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		97.8	60-130			
Surrogate: Anthracene-d10	190		"	200		94.6	60-130			
Surrogate: Pyrene-d10	190		"	200		94.7	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.2	60-130			

Matrix Spike Dup (B4I1944-MSD1)	Source: E409582-01				Prepared: 09/19/2024 Analyzed: 09/19/2024					
1-Methylnaphthalene	0.196	0.002	mg/kg	0.200	0.001	97.4	70-130	0.751	20	
2-Methylnaphthalene	0.198	0.002	"	0.200	0.002	98.0	70-130	0.317	20	
Acenaphthene	0.179	0.020	"	0.200	ND	89.6	70-130	1.76	20	
Anthracene	0.182	0.020	"	0.200	0.002	90.0	70-130	0.0133	20	
Benzo (a) anthracene	0.191	0.005	"	0.200	0.008	91.6	70-130	1.24	20	
Benzo (a) pyrene	0.184	0.020	"	0.200	0.008	87.9	70-130	1.73	20	
Benzo (b) fluoranthene	0.179	0.020	"	0.200	0.004	87.5	70-130	0.0775	20	
Benzo (g,h,i) perylene	0.228	0.020	"	0.200	0.005	111	70-130	0.919	20	
Benzo (k) fluoranthene	0.159	0.020	"	0.200	0.0006	79.3	70-130	2.66	20	
Chrysene	0.196	0.020	"	0.200	0.007	94.5	70-130	1.50	20	
Dibenz (a,h) anthracene	0.215	0.020	"	0.200	ND	107	70-130	2.64	20	
Fluoranthene	0.207	0.020	"	0.200	0.010	98.5	70-130	2.76	20	

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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 B4I1944 - EPA 3580

Matrix Spike Dup (B4I1944-MSD1)	Source: E409582-01			Prepared: 09/19/2024 Analyzed: 09/19/2024						
Fluorene	0.177	0.020	mg/kg	0.200	ND	88.7	70-130	2.83	20	
Indeno (1,2,3-cd) pyrene	0.221	0.020	"	0.200	0.004	109	70-130	4.31	20	
Naphthalene	0.180	0.002	"	0.200	0.001	89.5	70-130	1.43	20	
Phenanthrene	0.186	0.020	"	0.200	0.004	91.4	70-130	2.31	20	
Pyrene	0.187	0.020	"	0.200	0.016	85.5	70-130	0.192	20	
Surrogate: Fluorene-d10	200		ug/kg	200		99.4	60-130			
Surrogate: Anthracene-d10	200		"	200		98.4	60-130			
Surrogate: Pyrene-d10	190		"	200		92.8	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.4	60-130			

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 Project: KMG - Sherwood L Fed 30-29D Wellhead

Classical Chemistry Parameters - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4J0406 - DTPA Sorbitol Preparation										
Blank (B4J0406-BLK1)					Prepared: 10/04/2024 Analyzed: 10/07/2024					
Boron	ND	0.100	mg/L							
Duplicate (B4J0406-DUP1)					Source: E409584-01 Prepared: 10/04/2024 Analyzed: 10/07/2024					
Boron	0.246	0.101	mg/L		0.234			5.26	50	

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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 B412727 - Saturated Paste pH/EC

Duplicate (B412727-DUP1)

Source: E409541-02

Prepared: 09/27/2024 Analyzed: 10/01/2024

pH	7.89		pH Units		8.15			3.24	25	
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Project: KMG - Sherwood L Fed 30-29D Wellhead

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.

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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