

# ORIGINS LABORATORY

Eagle Environmental Consulting, LLC

Dan Coloccia

8000 W 44th Ave

Wheat Ridge CO 80033

February 24, 2025

**Project Name - KMG - Aggregate State 24 22  
25-9HZ O SA**

**Project Number - [none]**

Attached are your analytical results for KMG - Aggregate State 24 22 25-9HZ O SA received by Origins Laboratory January 28, 2025. This project is associated with Origins project number E5A0599-01.

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



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

Dan Coloccia  
Project Number: [none]  
Project: KMG - Aggregate State 24 22 25-9HZ O  
SA

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Initial Waste Characterization@3"	E5A0599-01	Soil	January 28, 2025 14:10	01/28/2025 16:01

Origins Laboratory

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Jordan A. Bynon, Project Manager

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Dan Coloccia  
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 SA

# ORIGINS

LABORATORY INC

Client: Eagle Environmental (env)

Address: 8000 W 44th Ave

Telephone Number: Wheat Ridge CO 80033

Email Address: 303-433-0479

ORIGINS WORK ORDER: **ESAC004**

Page 1 of 1

Project Manager: D Coloccia

Project Name: Aggregate State 24 22 25-9HZ O SA

Project Number: 66

Collected By: Initial

S=soil | SO=soil | O=oil | A=Air | G=gas | UNP=Unpres | HCL=Hydrochloric | HNO3=Nitric | H2SO4=Sulfuric | NaOH=sodium Hydroxide

L=Liquid

WV=Waste Water

SW=Surface Water

GW=Groundwater


#	Sample ID	Date	Time	# of Containers	Matrix Preservative	Analysis		Comments
						Date	Time	
1	Initial Waste Communication eqv	1/28/15	14:10	3	UNP	X		
2								
3								
4								
5								
6								
7								
8								
9								
10								

Relinquished By: Dr. Ash Date: 1/28/15 Time: 1601  
 Received By: WS Date: 1/28/15 Time: 1601

1725 Elk Place Denver, Co. 80221 | # 303.433.1322 | originslab.com

Temp Received: 47 Received On Ice?  Yes  No

Turnaround Time  
 SAME DAY  
 24 Hr  
 48 Hr  
 72 Hr  
 Standard

Origins Laboratory  


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

**Sample Receipt Checklist**

Origins Work Order: ESR0599 Client: Eagle

Checklist Completed by: SM/JR Client Project ID: Aggregate State

Date/time completed: 01/28/25 Shipped Via: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler Number/Temperature: 1147 °C


Thermometer ID: 7-007

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> ?	/			
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 <sup>(1)</sup> ?	/			
Was adequate sample volume provided <sup>(1)</sup> ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		/		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	/			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	/			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	/			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	/			
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 <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)			/	
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.

SM/JR 01/28/25

Reviewed by (Project Manager) Date/Time Reviewed

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**Initial Waste Characterization@3"**

**1/28/2025 2:10:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
 E5A0599-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.329		0.101	mg/L	1	B5A2847	01/28/2025	01/30/2025	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	24000		250	mg/kg	10	B5A2826	01/28/2025	01/29/2025	
Residual Range Organics (C28-C40)	5470		1000	"	"	"	"	"	

Surrogate: o-Terphenyl	%		50-150			"	"	"	S-06, U
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	101		5.00	mg/kg	2500	B5A2824	01/28/2025	01/29/2025	
1,3,5-Trimethylbenzene	36.3		0.500	"	250	"	"	01/28/2025	
Benzene	2.71		0.0500	"	25	"	"	01/29/2025	
Ethylbenzene	15.0		0.500	"	250	"	"	01/28/2025	
Toluene	49.7		0.500	"	"	"	"	"	
Xylenes, total	190		0.500	"	"	"	"	"	
Gasoline Range Hydrocarbons	5520		500	"	2500	"	"	01/29/2025	

Surrogate: 1,2-Dichloroethane-d4	104 %		70-130			"	"	01/28/2025	
Surrogate: Toluene-d8	111 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	93.5 %		70-130			"	"	"	

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**Initial Waste Characterization@3"**

**1/28/2025 2:10:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
 E5A0599-01 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	2.53	0.499	meq/L	10	[CALC]	01/28/2025	01/31/2025	
Magnesium	1.51	0.823	"	"	"	"	"	
Sodium	1.23	0.435	"	"	"	"	"	

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

1-Methylnaphthalene	17.9	0.200	mg/kg	100	B5A2827	01/28/2025	02/20/2025	
2-Methylnaphthalene	43.9	0.200	"	"	"	"	"	
Acenaphthene	ND	0.200	"	10	"	"	02/20/2025	U
Anthracene	ND	0.200	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.050	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.200	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.200	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.200	"	"	"	"	"	U
Chrysene	ND	0.200	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.200	"	"	"	"	"	U
Fluoranthene	ND	0.200	"	"	"	"	"	U
Fluorene	2.74	0.200	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.200	"	"	"	"	"	U
Naphthalene	11.6	0.200	"	100	"	"	02/20/2025	
Pyrene	ND	0.200	"	10	"	"	02/20/2025	U
Surrogate: Fluorene-d10	99.5 %	60-130	"	"	"	"	"	

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**1/28/2025 2:10:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
 E5A0599-01 (Soil)**

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

Surrogate: Anthracene-d10	111 %		60-130			B5A28 27	01/28/2025	02/20/2025	
Surrogate: Pyrene-d10	91.5 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	83.6 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	8.14			pH Units	1	B5A2909	01/29/2025	01/30/2025	
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**SAR by 20B Saturated Paste**

SAR	0.864		0.0100	SAR	1	B5A2846	01/28/2025	01/31/2025	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.611		0.00500	mmhos/cm	1	B5A2909	01/29/2025	01/30/2025	
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**Table 915 metals by EPA 6020B**

Arsenic	2.29		0.266	mg/kg	10	B5A2835	01/28/2025	01/29/2025	
Barium	47.0		9.19	"	"	"	"	"	
Cadmium	ND		0.0919	"	"	"	"	"	
Copper	ND		9.19	"	"	"	"	"	
Lead	4.35		0.919	"	"	"	"	"	
Nickel	6.76		0.919	"	"	"	"	"	
Selenium	ND		0.239	"	"	"	"	"	

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**1/28/2025 2:10:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E5A0599-01 (Soil)**

**Table 915 metals by EPA 6020B**

Silver	ND		0.0919	mg/kg	10	B5A2835	01/28/2025	01/29/2025	
Zinc	ND		34.0	"	"	"	"	"	

**Total Metals by SW7199**

Chromium, Hexavalent	ND	0.20	0.20	mg/kg	1	B1B0666	02/17/2025	02/17/2025	
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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 B5A2824 - EPA 5030 (soil)

Blank (B5A2824-BLK1)

Prepared: 01/28/2025 Analyzed: 01/28/2025

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	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	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 B5A2824 - EPA 5030 (soil)

**LCS (B5A2824-BS1)**

Prepared: 01/28/2025 Analyzed: 01/28/2025

1,2,4-Trimethylbenzene	0.0896	0.00200	mg/kg	0.100		89.6	70-130			
1,3,5-Trimethylbenzene	0.0930	0.00200	"	0.100		93.0	70-130			
Benzene	0.0900	0.00200	"	0.100		90.0	70-130			
Ethylbenzene	0.0866	0.00200	"	0.100		86.6	70-130			
Naphthalene	0.0892	0.00380	"	0.100		89.2	70-130			
Toluene	0.0868	0.00200	"	0.100		86.8	70-130			
o-Xylene	0.0877	0.00200	"	0.100		87.7	70-130			
m,p-Xylene	0.177	0.00400	"	0.200		88.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.5	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 B5A2824 - EPA 5030 (soil)

Matrix Spike (B5A2824-MS1)

Source: E5A0581-48

Prepared: 01/28/2025 Analyzed: 01/28/2025

1,2,4-Trimethylbenzene	0.0906	0.00200	mg/kg	0.100	ND	90.6	70-130			
1,3,5-Trimethylbenzene	0.0938	0.00200	"	0.100	ND	93.8	70-130			
Benzene	0.0799	0.00200	"	0.100	ND	79.9	70-130			
Ethylbenzene	0.0869	0.00200	"	0.100	ND	86.9	70-130			
Naphthalene	0.0874	0.00380	"	0.100	ND	87.4	70-130			
Toluene	0.0831	0.00200	"	0.100	ND	83.1	70-130			
o-Xylene	0.0876	0.00200	"	0.100	ND	87.6	70-130			
m,p-Xylene	0.178	0.00400	"	0.200	ND	88.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.2	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 B5A2824 - EPA 5030 (soil)

Matrix Spike Dup (B5A2824-MSD1)

Source: E5A0581-48

Prepared: 01/28/2025 Analyzed: 01/28/2025

1,2,4-Trimethylbenzene	0.0881	0.00200	mg/kg	0.100	ND	88.1	70-130	2.75	20	
1,3,5-Trimethylbenzene	0.0917	0.00200	"	0.100	ND	91.7	70-130	2.35	20	
Benzene	0.0798	0.00200	"	0.100	ND	79.8	70-130	0.150	20	
Ethylbenzene	0.0855	0.00200	"	0.100	ND	85.5	70-130	1.65	20	
Naphthalene	0.0966	0.00380	"	0.100	ND	96.6	70-130	10.0	20	
Toluene	0.0822	0.00200	"	0.100	ND	82.2	70-130	1.04	20	
o-Xylene	0.0861	0.00200	"	0.100	ND	86.1	70-130	1.73	20	
m,p-Xylene	0.173	0.00400	"	0.200	ND	86.3	70-130	2.97	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.4	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
<b>Batch B5A2826 - EPA 3550B</b>										
<b>Blank (B5A2826-BLK1)</b>										
					Prepared: 01/28/2025 Analyzed: 01/28/2025					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	19		"	24.9		76.9	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
<b>Batch B5A2826 - EPA 3550B</b>										
<b>LCS (B5A2826-BS1)</b>										
					Prepared: 01/28/2025 Analyzed: 01/28/2025					
Diesel (C10-C28)	851	50.0	mg/kg	1000		85.1	70-130			
Residual Range Organics (C28-C40)	917	200	"	1000		91.7	70-130			
Surrogate: o-Terphenyl	41		"	49.8		81.7	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
<b>Batch B5A2826 - EPA 3550B</b>										
<b>Matrix Spike (B5A2826-MS1)</b>			<b>Source: E5A0581-48</b>			Prepared: 01/28/2025 Analyzed: 01/28/2025				
Diesel (C10-C28)	893	50.0	mg/kg	1000	ND	89.3	70-130			
Residual Range Organics (C28-C40)	972	200	"	1000	ND	97.2	70-130			
Surrogate: o-Terphenyl	41		"	49.8		83.1	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
<b>Batch B5A2826 - EPA 3550B</b>										
<b>Matrix Spike Dup (B5A2826-MSD1)</b>										
			<b>Source: E5A0581-48</b>			Prepared: 01/28/2025 Analyzed: 01/28/2025				
Diesel (C10-C28)	931	50.0	mg/kg	1000	ND	93.1	70-130	4.19	35	
Residual Range Organics (C28-C40)	1030	200	"	1000	ND	103	70-130	5.80	35	
Surrogate: o-Terphenyl	43		"	49.8		86.7	50-150			

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Dan Coloccia  
 Project Number: [none]  
 Project: KMG - Aggregate State 24 22 25-9HZ O  
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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 B5A2835 - EPA 3050B**

**Blank (B5A2835-BLK1)**

Prepared: 01/28/2025 Analyzed: 01/29/2025

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 (B5A2835-BS1)**

Prepared: 01/28/2025 Analyzed: 01/29/2025

Arsenic	5.29	0.290	mg/kg	5.00		106	80-120			
Barium	545	10.0	"	500		109	80-120			
Cadmium	5.39	0.100	"	5.00		108	80-120			
Copper	48.7	10.0	"	50.0		97.4	80-120			
Lead	5.55	1.00	"	5.00		111	80-120			
Nickel	5.26	1.00	"	5.00		105	80-120			
Selenium	4.75	0.260	"	5.00		95.1	80-120			
Silver	5.56	0.100	"	5.00		111	80-120			
Zinc	52.8	37.0	"	50.0		106	80-120			

**Matrix Spike (B5A2835-MS1)**

Source: E5A0598-06

Prepared: 01/28/2025 Analyzed: 01/29/2025

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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 B5A2835 - EPA 3050B**

**Matrix Spike (B5A2835-MS1)**

**Source: E5A0598-06**

Prepared: 01/28/2025 Analyzed: 01/29/2025

Arsenic	7.94	0.284	mg/kg	4.90	2.63	108	75-125			
Barium	616	9.79	"	490	76.3	110	75-125			
Cadmium	5.43	0.0979	"	4.90	0.134	108	75-125			
Copper	59.4	9.79	"	49.0	6.83	107	75-125			
Lead	11.0	0.979	"	4.90	6.80	85.9	75-125			
Nickel	10.2	0.979	"	4.90	5.77	90.9	75-125			
Selenium	4.96	0.255	"	4.90	0.0688	99.9	75-125			
Silver	5.41	0.0979	"	4.90	0.0255	110	75-125			
Zinc	77.7	36.2	"	49.0	28.0	102	75-125			

**Matrix Spike Dup (B5A2835-MSD1)**

**Source: E5A0598-06**

Prepared: 01/28/2025 Analyzed: 01/29/2025

Arsenic	7.09	0.245	mg/kg	4.23	2.63	105	75-125	11.3	20	
Barium	545	8.46	"	423	76.3	111	75-125	12.2	20	
Cadmium	4.90	0.0846	"	4.23	0.134	113	75-125	10.2	20	
Copper	52.3	8.46	"	42.3	6.83	107	75-125	12.7	20	
Lead	11.2	0.846	"	4.23	6.80	104	75-125	1.63	20	
Nickel	9.80	0.846	"	4.23	5.77	95.1	75-125	4.25	20	
Selenium	4.04	0.220	"	4.23	0.0688	94.0	75-125	20.3	20	QR-02
Silver	4.99	0.0846	"	4.23	0.0255	117	75-125	8.01	20	
Zinc	74.6	31.3	"	42.3	28.0	110	75-125	4.15	20	

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Jordan A. Bynon, Project Manager



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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 B5A2827 - EPA 3580**

**Blank (B5A2827-BLK1)**

Prepared: 01/28/2025 Analyzed: 01/28/2025

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		99.0	60-130			
Surrogate: Anthracene-d10	190		"	200		97.2	60-130			
Surrogate: Pyrene-d10	200		"	200		98.8	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		107	60-130			

**LCS (B5A2827-BS1)**

Prepared: 01/28/2025 Analyzed: 01/28/2025

1-Methylnaphthalene	0.220	0.002	mg/kg	0.200		110	70-130			
2-Methylnaphthalene	0.217	0.002	"	0.200		109	70-130			
Acenaphthene	0.218	0.020	"	0.200		109	70-130			
Anthracene	0.198	0.020	"	0.200		99.2	70-130			

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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 B5A2827 - EPA 3580**

**LCS (B5A2827-BS1)**

Prepared: 01/28/2025 Analyzed: 01/28/2025

Benzo (a) anthracene	0.217	0.005	mg/kg	0.200		109	70-130			
Benzo (a) pyrene	0.238	0.020	"	0.200		119	70-130			
Benzo (b) fluoranthene	0.240	0.020	"	0.200		120	70-130			
Benzo (g,h,i) perylene	0.246	0.020	"	0.200		123	70-130			
Benzo (k) fluoranthene	0.227	0.020	"	0.200		114	70-130			
Chrysene	0.219	0.020	"	0.200		109	70-130			
Dibenz (a,h) anthracene	0.236	0.020	"	0.200		118	70-130			
Fluoranthene	0.222	0.020	"	0.200		111	70-130			
Fluorene	0.215	0.020	"	0.200		108	70-130			
Indeno (1,2,3-cd) pyrene	0.248	0.020	"	0.200		124	70-130			
Naphthalene	0.219	0.002	"	0.200		110	70-130			
Phenanthrene	0.225	0.020	"	0.200		113	70-130			
Pyrene	0.222	0.020	"	0.200		111	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		99.6	60-130			
Surrogate: Anthracene-d10	190		"	200		97.4	60-130			
Surrogate: Pyrene-d10	190		"	200		97.2	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			

**Matrix Spike (B5A2827-MS1)**

**Source: E5A0581-48**

Prepared: 01/28/2025 Analyzed: 01/28/2025

1-Methylnaphthalene	0.219	0.002	mg/kg	0.200	0.0006	109	70-130			
2-Methylnaphthalene	0.216	0.002	"	0.200	ND	108	70-130			
Acenaphthene	0.215	0.020	"	0.200	ND	108	70-130			
Anthracene	0.215	0.020	"	0.200	0.0006	107	70-130			
Benzo (a) anthracene	0.219	0.005	"	0.200	0.001	109	70-130			
Benzo (a) pyrene	0.226	0.020	"	0.200	0.002	112	70-130			
Benzo (b) fluoranthene	0.232	0.020	"	0.200	0.0008	116	70-130			
Benzo (g,h,i) perylene	0.189	0.020	"	0.200	0.002	93.5	70-130			

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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 B5A2827 - EPA 3580**

**Matrix Spike (B5A2827-MS1)**

Source: E5A0581-48

Prepared: 01/28/2025 Analyzed: 01/28/2025

Benzo (k) fluoranthene	0.219	0.020	mg/kg	0.200	0.0009	109	70-130			
Chrysene	0.230	0.020	"	0.200	0.001	114	70-130			
Dibenz (a,h) anthracene	0.226	0.020	"	0.200	0.001	112	70-130			
Fluoranthene	0.217	0.020	"	0.200	0.0008	108	70-130			
Fluorene	0.212	0.020	"	0.200	0.0006	106	70-130			
Indeno (1,2,3-cd) pyrene	0.234	0.020	"	0.200	0.001	116	70-130			
Naphthalene	0.214	0.002	"	0.200	ND	107	70-130			
Phenanthrene	0.218	0.020	"	0.200	ND	109	70-130			
Pyrene	0.219	0.020	"	0.200	0.001	109	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		99.8	60-130			
Surrogate: Anthracene-d10	200		"	200		98.8	60-130			
Surrogate: Pyrene-d10	200		"	200		97.7	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			

**Matrix Spike Dup (B5A2827-MSD1)**

Source: E5A0581-48

Prepared: 01/28/2025 Analyzed: 01/28/2025

1-Methylnaphthalene	0.214	0.002	mg/kg	0.200	0.0006	107	70-130	2.20	20	
2-Methylnaphthalene	0.212	0.002	"	0.200	ND	106	70-130	1.58	20	
Acenaphthene	0.209	0.020	"	0.200	ND	104	70-130	3.10	20	
Anthracene	0.210	0.020	"	0.200	0.0006	105	70-130	2.45	20	
Benzo (a) anthracene	0.215	0.005	"	0.200	0.001	107	70-130	1.44	20	
Benzo (a) pyrene	0.245	0.020	"	0.200	0.002	122	70-130	7.95	20	
Benzo (b) fluoranthene	0.237	0.020	"	0.200	0.0008	118	70-130	2.03	20	
Benzo (g,h,i) perylene	0.252	0.020	"	0.200	0.002	125	70-130	28.7	20	QR-02
Benzo (k) fluoranthene	0.238	0.020	"	0.200	0.0009	118	70-130	8.26	20	
Chrysene	0.212	0.020	"	0.200	0.001	105	70-130	8.03	20	
Dibenz (a,h) anthracene	0.238	0.020	"	0.200	0.001	118	70-130	5.15	20	
Fluoranthene	0.212	0.020	"	0.200	0.0008	106	70-130	2.27	20	

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Jordan A. Bynon, Project Manager



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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 B5A2827 - EPA 3580

**Matrix Spike Dup (B5A2827-MSD1)**

Source: E5A0581-48

Prepared: 01/28/2025 Analyzed: 01/28/2025

Fluorene	0.202	0.020	mg/kg	0.200	0.0006	101	70-130	5.13	20	
Indeno (1,2,3-cd) pyrene	0.242	0.020	"	0.200	0.001	120	70-130	3.43	20	
Naphthalene	0.211	0.002	"	0.200	ND	106	70-130	1.59	20	
Phenanthrene	0.215	0.020	"	0.200	ND	108	70-130	1.18	20	
Pyrene	0.210	0.020	"	0.200	0.001	104	70-130	4.04	20	
Surrogate: Fluorene-d10	190		ug/kg	200		97.1	60-130			
Surrogate: Anthracene-d10	190		"	200		96.9	60-130			
Surrogate: Pyrene-d10	190		"	200		95.5	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		105	60-130			

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**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 B5A2846 - Saturated Paste Metals**

**Blank (B5A2846-BLK1)**

Prepared: 01/28/2025 Analyzed: 01/31/2025

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

**Duplicate (B5A2846-DUP1)**

**Source: E5A0598-05**

Prepared: 01/28/2025 Analyzed: 01/31/2025

SAR	ND	0.0100	SAR	0.198				200		
Calcium PPM	52.1	10.0	mg/L	56.2			7.59	50		
Magnesium PPM	11.3	10.0	"	12.2			7.74	50		
Sodium PPM	5.87	10.0	"	6.27			6.59	50		

**Batch B5A2847 - DTPA Sorbitol Preparation**

**Blank (B5A2847-BLK1)**

Prepared: 01/28/2025 Analyzed: 01/30/2025

Boron	ND	0.100	mg/L							
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**Duplicate (B5A2847-DUP1)**

**Source: E5A0597-01**

Prepared: 01/28/2025 Analyzed: 01/30/2025

Boron	0.265	0.0987	mg/L	0.226			16.1	50		
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 Project Number: [none]  
 Project: KMG - Aggregate State 24 22 25-9HZ O  
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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 B5A2909 - Saturated Paste pH/EC**

**Blank (B5A2909-BLK1)**

Prepared: 01/29/2025 Analyzed: 01/30/2025

Specific Conductance (EC) ND 0.00500 mmhos/cm

**Duplicate (B5A2909-DUP1)**

**Source: E5A0598-05**

Prepared: 01/29/2025 Analyzed: 01/30/2025

pH 8.34 pH Units 8.35 0.120 25

Specific Conductance (EC) 0.458 0.00500 mmhos/cm 0.509 10.7 25

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 Project Number: [none]  
 Project: KMG - Aggregate State 24 22 25-9HZ O  
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**Total Metals by SW7199 - Quality Control  
 Enthalpy Analytical**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BIB0666 - No Prep IC-WET</b>										
<b>Blank (BIB0666-BLK1)</b>										
					Prepared: 02/17/2025 Analyzed: 02/17/2025					
Chromium, Hexavalent	ND	0.005	mg/kg							
<b>LCS (BIB0666-BS1)</b>										
					Prepared: 02/17/2025 Analyzed: 02/17/2025					
Chromium, Hexavalent	0.06	0.005	mg/kg	0.0500		115	80-120			
<b>LCS (BIB0666-BS2)</b>										
					Prepared: 02/17/2025 Analyzed: 02/17/2025					
Chromium, Hexavalent	9.68	1.00	mg/kg	8.40		115	80-120			
<b>Matrix Spike (BIB0666-MS1)</b>										
					Source: 25A1664-02		Prepared: 02/17/2025 Analyzed: 02/17/2025			
Chromium, Hexavalent	2.26	0.20	mg/kg	1.99	ND	113	75-125			
<b>Matrix Spike Dup (BIB0666-MSD1)</b>										
					Source: 25A1664-02					
					Prepared: 02/17/2025 Analyzed: 02/17/2025					
Chromium, Hexavalent	2.27	0.20	mg/kg	2.00	ND	113	75-125	0.454	20	

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Dan Coloccia  
Project Number: [none]  
Project: KMG - Aggregate State 24 22 25-9HZ O  
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### Notes and Definitions

- U Sample is Non-Detect.
- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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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