



October 22, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 24-29**

**Project Number - 90419452**

Attached are your analytical results for KMG - Hauck 24-29 received by Origins Laboratory, Inc. October 12, 2021. This project is associated with Origins project number Y110271-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B01@7'	Y110271-01	Soil	October 12, 2021 14:25	10/12/2021 17:40
WH-BG01@3.5'	Y110271-02	Soil	October 12, 2021 14:52	10/12/2021 17:40
WH-BG01@7'	Y110271-03	Soil	October 12, 2021 14:55	10/12/2021 17:40
WH-BG02@3.5'	Y110271-04	Soil	October 12, 2021 14:58	10/12/2021 17:40
WH-BG02@7'	Y110271-05	Soil	October 12, 2021 15:01	10/12/2021 17:40
WH-BG03@3.5'	Y110271-06	Soil	October 12, 2021 15:04	10/12/2021 17:40
WH-BG03@7'	Y110271-07	Soil	October 12, 2021 15:07	10/12/2021 17:40

Origins Laboratory, Inc.



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Project: KMG - Hauck 24-29

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# Health

# ORIGINS

page 1 of 1

Client: Oxy/Tasman  
Address: 6815 W 11th Ave  
Brooklyn, CO 80020  
Telephone Number: 303-497-1229  
Project Manager/Send Report To: Mike John  
Email Address: mjoh@tasman-gc.com  
Project Name/Number: TRUCK 24-29 WO # - 901  
Samples Collected By: Brandon V. Sierra K.

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative						Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #	Other			
WH-8607	10-12-21	1425	1	X					X			GC ETVN ORP DO C R A DOC ***	1	
WH-8607-3.5'		1452	1									X X X X	2	
WH-8607		1455	1									X X X X	3	
WH-8607-3.5'		1458	1										4	
WH-8607		1501	1										5	
WH-8607-3.5'		1504	1										6	
WH-8607		1507	2										7	
													8	
													9	
													10	
Relinquished By: <i>Burke N.</i>	Date: 10-12-21	Time: 1740	Received By: <i>[Signature]</i>	Date: 10-12-21	Time: 17:40	Turnaround Time:	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> Standard <input type="checkbox"/>							
Relinquished By:	Date:	Time:	Received By:	Date:	Time:									

**Data Recalls Needed:**

Origins Laboratory, Inc.

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6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 1110271

Client: Tasman

Client Project ID: Hauck 24-29

Checklist Completed by: KH

Shipped Via: HD

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

Date/time completed: 10/11/21 <sup>KH</sup> 10/12/21

Airbill #: 123

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

(Describe)

Cooler Number/Temperature: 1 4.5 °C 1 °C 1 °C 1 °C

Thermometer ID: T003

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<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)

Date/Time Reviewed

Origins Laboratory, Inc.

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Tasman Geosciences  
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Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

WH-B01@7'

10/12/2021 2:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110271-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.360	0.200	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B1J1211	EPC	10/12/2021	10/12/2021	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	EPC	"	"	U

Surrogate: o-Terphenyl	66.3 %	50-150			"	"	"	
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**GBTEX+TMBs**

Naphthalene	ND	0.00380	mg/kg	1	B1J1210	KDK	10/12/2021	10/12/2021	U
Benzene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	83.0 %	70-130			"	"	"
Surrogate: Toluene-d8	85.0 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	83.3 %	70-130			"	"	"

**Metals by Saturated Paste**

Calcium	3.16	0.499	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
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WH-B01@7'

10/12/2021 2:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110271-01 (Soil)**

**Metals by Saturated Paste**

Magnesium	3.00	0.823	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
Sodium	5.02	0.435	"	"	"	KAP	"	"

**pH in Soil by 9045D**

pH	7.66		pH Units	1	B1J1225	AHK	10/12/2021	10/13/2021
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**SAR by 20B Saturated Paste**

SAR	2.86		SAR	1	B1J1219	KAP	10/12/2021	10/13/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.07	0.00500	mmhos/cm	1	B1J1228	AHK	10/12/2021	10/13/2021
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WH-BG01@3.5'

10/12/2021 2:52:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110271-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	2.18	0.200	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021
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**Metals by Saturated Paste**

Calcium	23.1	0.499	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
Magnesium	30.8	0.823	"	"	"	KAP	"	"
Sodium	37.2	0.435	"	"	"	KAP	"	"

**pH in Soil by 9045D**

pH	7.76		pH Units	1	B1J1225	AHK	10/12/2021	10/13/2021
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**SAR by 20B Saturated Paste**

SAR	7.17		SAR	1	B1J1219	KAP	10/12/2021	10/13/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	6.60	0.00500	mmhos/cm	1	B1J1228	AHK	10/12/2021	10/13/2021
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WH-BG01@7'

10/12/2021 2:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110271-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.827	0.202	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021
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**Metals by Saturated Paste**

Calcium	1.87	0.499	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
Magnesium	1.55	0.823	"	"	"	KAP	"	"
Sodium	3.60	0.435	"	"	"	KAP	"	"

**pH in Soil by 9045D**

pH	8.53		pH Units	1	B1J1225	AHK	10/12/2021	10/13/2021
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**SAR by 20B Saturated Paste**

SAR	2.75		SAR	1	B1J1219	KAP	10/12/2021	10/13/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.754	0.00500	mmhos/cm	1	B1J1228	AHK	10/12/2021	10/13/2021
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Project: KMG - Hauck 24-29

WH-BG02@3.5'

10/12/2021 2:58:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110271-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.811	0.203	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021
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**Metals by Saturated Paste**

Calcium	20.0	0.499	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
Magnesium	16.4	0.823	"	"	"	KAP	"	"
Sodium	13.6	0.435	"	"	"	KAP	"	"

**pH in Soil by 9045D**

pH	7.60		pH Units	1	B1J1225	AHK	10/12/2021	10/13/2021
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**SAR by 20B Saturated Paste**

SAR	3.18		SAR	1	B1J1219	KAP	10/12/2021	10/13/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	3.88	0.00500	mmhos/cm	1	B1J1228	AHK	10/12/2021	10/13/2021
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Project: KMG - Hauck 24-29

## WH-BG02@7'

10/12/2021 3:01:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y110271-05 (Soil)

### Boron (DTPA Sorbitol)

Boron	0.594	0.198	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021
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### Metals by Saturated Paste

Calcium	4.94	0.499	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
Magnesium	4.63	0.823	"	"	"	KAP	"	"
Sodium	5.99	0.435	"	"	"	KAP	"	"

### pH in Soil by 9045D

pH	7.74		pH Units	1	B1J1225	AHK	10/12/2021	10/13/2021
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### SAR by 20B Saturated Paste

SAR	2.74		SAR	1	B1J1219	KAP	10/12/2021	10/13/2021
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.40	0.00500	mmhos/cm	1	B1J1228	AHK	10/12/2021	10/13/2021
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Project: KMG - Hauck 24-29

WH-BG03@3.5'

10/12/2021 3:04:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110271-06 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	1.02	0.196	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021
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**Metals by Saturated Paste**

Calcium	24.2	0.499	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
Magnesium	14.0	0.823	"	"	"	KAP	"	"
Sodium	13.5	0.435	"	"	"	KAP	"	"

**pH in Soil by 9045D**

pH	7.62		pH Units	1	B1J1225	AHK	10/12/2021	10/13/2021
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**SAR by 20B Saturated Paste**

SAR	3.09		SAR	1	B1J1219	KAP	10/12/2021	10/13/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	3.96	0.00500	mmhos/cm	1	B1J1228	AHK	10/12/2021	10/13/2021
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Mike Jahn  
Project Number: 90419452  
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WH-BG03@7'

10/12/2021 3:07:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110271-07 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	1.40	0.201	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021
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**Metals by Saturated Paste**

Calcium	12.2	0.499	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
Magnesium	8.07	0.823	"	"	"	KAP	"	"
Sodium	10.9	0.435	"	"	"	KAP	"	"

**pH in Soil by 9045D**

pH	7.78		pH Units	1	B1J1225	AHK	10/12/2021	10/13/2021
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**SAR by 20B Saturated Paste**

SAR	3.42		SAR	1	B1J1219	KAP	10/12/2021	10/13/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.61	0.00500	mmhos/cm	1	B1J1228	AHK	10/12/2021	10/13/2021
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**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>Blank (B1J1210-BLK1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
Naphthalene	ND	0.00380	"							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Toluene	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Xylenes, total	ND	0.00200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.1	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>LCS (B1J1210-BS1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	0.0500	0.00200	mg/kg	0.0500		100	70-130			
Naphthalene	0.0493	0.0100	"	0.0500		98.6	70-130			
1,3,5-Trimethylbenzene	0.0494	0.00200	"	0.0500		98.7	70-130			
Benzene	0.0467	0.00200	"	0.0500		93.4	70-130			
Ethylbenzene	0.0481	0.00200	"	0.0500		96.2	70-130			
m,p-Xylene	0.0988	0.00400	"	0.100		98.8	70-130			
o-Xylene	0.0488	0.00200	"	0.0500		97.7	70-130			
Toluene	0.0496	0.00200	"	0.0500		99.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.2	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1J1210 - EPA 5030 (soil)**

Matrix Spike (B1J1210-MS1)		Source: Y110234-18			Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	0.0398	0.00200	mg/kg	0.0500	0.00118	77.2	70-130			
Naphthalene	0.0432	0.0100	"	0.0500	ND	86.3	70-130			
1,3,5-Trimethylbenzene	0.0387	0.00200	"	0.0500	0.000440	76.6	70-130			
Benzene	0.0386	0.00200	"	0.0500	ND	77.2	70-130			
Ethylbenzene	0.0380	0.00200	"	0.0500	ND	75.9	70-130			
m,p-Xylene	0.0780	0.00400	"	0.100	ND	78.0	70-130			
o-Xylene	0.0387	0.00200	"	0.0500	ND	77.3	70-130			
Toluene	0.0397	0.00200	"	0.0500	ND	79.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.7	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.1	70-130			

Origins Laboratory, Inc.

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Tasman Geosciences  
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Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B1J1210-MSD1)</b>					<b>Source: Y110234-18</b>					
										Prepared: 10/12/2021 Analyzed: 10/13/2021
1,2,4-Trimethylbenzene	0.0497	0.00200	mg/kg	0.0500	0.00118	97.0	70-130	22.1	20	QR-03
Naphthalene	0.0490	0.0100	"	0.0500	ND	98.0	70-130	12.7	20	
1,3,5-Trimethylbenzene	0.0487	0.00200	"	0.0500	0.000440	96.4	70-130	22.8	20	QR-03
Benzene	0.0483	0.00200	"	0.0500	ND	96.6	70-130	22.3	20	QR-03
Ethylbenzene	0.0471	0.00200	"	0.0500	ND	94.2	70-130	21.4	20	QR-03
m,p-Xylene	0.0977	0.00400	"	0.100	ND	97.7	70-130	22.4	20	QR-03
o-Xylene	0.0485	0.00200	"	0.0500	ND	97.0	70-130	22.5	20	QR-03
Toluene	0.0499	0.00200	"	0.0500	ND	99.8	70-130	22.9	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.4	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1211 - EPA 3550B</b>										
<b>Blank (B1J1211-BLK1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	17		"	25.0		67.0	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1211 - EPA 3550B</b>										
<b>LCS (B1J1211-BS1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	706	50.0	mg/kg	1000		70.6	70-130			
Residual Range Organics (C28-C40)	825	200	"	1000		82.5	70-130			
Surrogate: o-Terphenyl	36		"	50.0		71.0	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1J1211 - EPA 3550B

Matrix Spike (B1J1211-MS1)		Source: Y110253-01			Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	697	50.0	mg/kg	1000	ND	69.7	70-130			QM-07
Residual Range Organics (C28-C40)	812	200	"	1000	ND	81.2	70-130			
Surrogate: o-Terphenyl	35		"	50.0		70.2	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch B1J1211 - EPA 3550B

Matrix Spike Dup (B1J1211-MSD1)		Source: Y110253-01			Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	705	50.0	mg/kg	1000	ND	70.5	70-130	1.02	35	
Residual Range Organics (C28-C40)	822	200	"	1000	ND	82.2	70-130	1.25	35	
Surrogate: o-Terphenyl	35		"	50.0		70.7	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
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Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Saturated Paste - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B1J1225 - NO PREP

##### Duplicate (B1J1225-DUP1)

Source: Y110271-02

Prepared: 10/12/2021 Analyzed: 10/13/2021

pH	7.66		pH Units	7.76		1.30	25
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#### Batch B1J1228 - NO PREP

##### Blank (B1J1228-BLK1)

Prepared: 10/12/2021 Analyzed: 10/13/2021

Specific Conductance (EC)	0.00200	0.00500	mmhos/cm
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##### Duplicate (B1J1228-DUP1)

Source: Y110271-02

Prepared: 10/12/2021 Analyzed: 10/13/2021

Specific Conductance (EC)	6.73	0.00500	mmhos/cm	6.60		1.94	25
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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419452  
Project: KMG - Hauck 24-29

### Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

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 at a wet weight basis.

Origins Laboratory, Inc.



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October 22, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 7-29**

**Project Number - 90412767**

Attached are your analytical results for KMG - Hauck 7-29 received by Origins Laboratory, Inc. October 12, 2021. This project is associated with Origins project number Y110273-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Tasman Geosciences

6855 West 119th Avenue

Broomfield CO 80020

Mike Jahn

Project Number: 90412767

Project: KMG - Hauck 7-29

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B01@7'	Y110273-01	Soil	October 12, 2021 15:00	10/12/2021 17:40

Origins Laboratory, Inc.



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Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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Origins Laboratory, Inc.

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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

Origins Laboratory

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

Origins Work Order: Y110273

Sample Receipt Checklist

Client: Tasman  
Client Project ID: Hauck 7-29

Checklist Completed by: JG  
Date/time completed: 10/12/11

Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Airbill #: N/A

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

Cooler Number/Temperature: 1 4.5 °C 1 °C 1 °C (Describe) \_\_\_\_\_ °C

Thermometer ID: T003

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<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 HNO <sub>3</sub> , HCl, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with Na <sub>2</sub> CO <sub>3</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<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) [Signature] Date/Time Reviewed 10/12/11

Origins Laboratory, Inc.

*J. Merrill*

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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

WH-B01@7'

10/12/2021 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110273-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.978	0.200	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B1J1211	EPC	10/12/2021	10/12/2021	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	EPC	"	"	U

Surrogate: o-Terphenyl	55.1 %	50-150			"	"	"	
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**GBTEX+TMBs**

Naphthalene	ND	0.00380	mg/kg	1	B1J1210	KDK	10/12/2021	10/12/2021	U
Benzene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.7 %	70-130			"	"	"
Surrogate: Toluene-d8	102 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	93.4 %	70-130			"	"	"

**Metals by Saturated Paste**

Calcium	3.42	0.499	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
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Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

WH-B01@7'

10/12/2021 3:00:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit								

**Origins Laboratory, Inc.**  
**Y110273-01 (Soil)**

**Metals by Saturated Paste**

Magnesium	4.49	0.823	meq/L	10	[CALC]	KAP	10/12/2021	10/13/2021
Sodium	18.4	0.435	"	"	"	KAP	"	"

**pH in Soil by 9045D**

pH	7.82		pH Units	1	B1J1224	AHK	10/12/2021	10/13/2021
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**SAR by 20B Saturated Paste**

SAR	9.24		SAR	1	B1J1218	KAP	10/12/2021	10/13/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	2.44	0.00500	mmhos/cm	1	B1J1227	AHK	10/12/2021	10/13/2021
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Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>Blank (B1J1210-BLK1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
Naphthalene	ND	0.00380	"							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.1	70-130			

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Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>LCS (B1J1210-BS1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	0.0500	0.00200	mg/kg	0.0500		100	70-130			
Naphthalene	0.0493	0.0100	"	0.0500		98.6	70-130			
1,3,5-Trimethylbenzene	0.0494	0.00200	"	0.0500		98.7	70-130			
Benzene	0.0467	0.00200	"	0.0500		93.4	70-130			
Ethylbenzene	0.0481	0.00200	"	0.0500		96.2	70-130			
m,p-Xylene	0.0988	0.00400	"	0.100		98.8	70-130			
o-Xylene	0.0488	0.00200	"	0.0500		97.7	70-130			
Toluene	0.0496	0.00200	"	0.0500		99.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.2	70-130			

Origins Laboratory, Inc.



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Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>Matrix Spike (B1J1210-MS1)</b>		<b>Source: Y110234-18</b>			Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	0.0398	0.00200	mg/kg	0.0500	0.00118	77.2	70-130			
Naphthalene	0.0432	0.0100	"	0.0500	ND	86.3	70-130			
1,3,5-Trimethylbenzene	0.0387	0.00200	"	0.0500	0.000440	76.6	70-130			
Benzene	0.0386	0.00200	"	0.0500	ND	77.2	70-130			
Ethylbenzene	0.0380	0.00200	"	0.0500	ND	75.9	70-130			
m,p-Xylene	0.0780	0.00400	"	0.100	ND	78.0	70-130			
o-Xylene	0.0387	0.00200	"	0.0500	ND	77.3	70-130			
Toluene	0.0397	0.00200	"	0.0500	ND	79.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.7	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.1	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B1J1210-MSD1)</b>		<b>Source: Y110234-18</b>			Prepared: 10/12/2021 Analyzed: 10/13/2021					
1,2,4-Trimethylbenzene	0.0497	0.00200	mg/kg	0.0500	0.00118	97.0	70-130	22.1	20	QR-03
Naphthalene	0.0490	0.0100	"	0.0500	ND	98.0	70-130	12.7	20	
1,3,5-Trimethylbenzene	0.0487	0.00200	"	0.0500	0.000440	96.4	70-130	22.8	20	QR-03
Benzene	0.0483	0.00200	"	0.0500	ND	96.6	70-130	22.3	20	QR-03
Ethylbenzene	0.0471	0.00200	"	0.0500	ND	94.2	70-130	21.4	20	QR-03
m,p-Xylene	0.0977	0.00400	"	0.100	ND	97.7	70-130	22.4	20	QR-03
o-Xylene	0.0485	0.00200	"	0.0500	ND	97.0	70-130	22.5	20	QR-03
Toluene	0.0499	0.00200	"	0.0500	ND	99.8	70-130	22.9	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.4	70-130			

Origins Laboratory, Inc.

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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1211 - EPA 3550B</b>										
<b>Blank (B1J1211-BLK1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	17		"	25.0		67.0	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1J1211 - EPA 3550B**

**LCS (B1J1211-BS1)**

Prepared: 10/12/2021 Analyzed: 10/12/2021

Diesel (C10-C28)	706	50.0	mg/kg	1000		70.6	70-130			
Residual Range Organics (C28-C40)	825	200	"	1000		82.5	70-130			
Surrogate: o-Terphenyl	36		"	50.0		71.0	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch B1J1211 - EPA 3550B

Matrix Spike (B1J1211-MS1)		Source: Y110253-01			Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	697	50.0	mg/kg	1000	ND	69.7	70-130			QM-07
Residual Range Organics (C28-C40)	812	200	"	1000	ND	81.2	70-130			
Surrogate: o-Terphenyl	35		"	50.0		70.2	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1J1211 - EPA 3550B**

Matrix Spike Dup (B1J1211-MSD1)		Source: Y110253-01			Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	705	50.0	mg/kg	1000	ND	70.5	70-130	1.02	35	
Residual Range Organics (C28-C40)	822	200	"	1000	ND	82.2	70-130	1.25	35	
Surrogate: o-Terphenyl	35		"	50.0		70.7	50-150			

Origins Laboratory, Inc.



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Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Saturated Paste - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B1J1224 - NO PREP

<b>Duplicate (B1J1224-DUP1)</b>		<b>Source: Y110263-01</b>			Prepared: 10/12/2021 Analyzed: 10/13/2021					
pH	7.95		pH Units		8.07			1.50	25	

#### Batch B1J1227 - NO PREP

<b>Blank (B1J1227-BLK1)</b>		Prepared: 10/12/2021 Analyzed: 10/13/2021								
Specific Conductance (EC)	0.00180	0.00500	mmhos/cm							
<b>Duplicate (B1J1227-DUP1)</b>		<b>Source: Y110263-01</b>			Prepared: 10/12/2021 Analyzed: 10/13/2021					
Specific Conductance (EC)	0.289	0.00500	mmhos/cm		0.286			1.18	25	

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

### Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

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 at a wet weight basis.

Origins Laboratory, Inc.



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October 22, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 17-29**

**Project Number - 90419066**

Attached are your analytical results for KMG - Hauck 17-29 received by Origins Laboratory, Inc. October 12, 2021. This project is associated with Origins project number Y110274-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B01@7'	Y110274-01	Soil	October 12, 2021 15:26	10/12/2021 17:40

Origins Laboratory, Inc.



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

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

**ORIGINS**  
**LABORATORY, INC**  
 www.originslaboratory.com  
 4110374  
 Client: Oxy/Tesman  
 Address: 6855 W 119th Ave  
Brownsville, CO 81020  
 Telephone Number: 303-487-1228  
 Project Manager/Send Report To: Mike John  
 Email Address: mjohn@tesman-gen.com  
 Project Name/Number: Havck 17-29 9019066  
 Samples Collected by: Brandon V., Sierra K  
 page 1 of 1

[illegible]

Comments:

Origins Laboratory, Inc.

Imen

*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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

Origins Laboratory

## Sample Receipt Checklist

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

Origins Work Order: 4110274

Client: Tasman

Client Project ID: Hauck 17-29

Checklist Completed by: JKH

Shipped Via: HL

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

Date/time completed: 10/12/21

Airbill #: 10A

Matrix(s) Received: (Check all that apply):

☒ Soil/Solid

☐ Water

☐ Other:

(Describe)

Cooler Number/Temperature: 1 14.5 °C 1 °C 1 °C 1 °C

Thermometer ID: T003

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / ( pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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: Jordan A. Merrill (Project Manager)

Date/Time Reviewed: 10/12/21

Origins Laboratory, Inc.

*Jordan A. Merrill*

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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

WH-B01@7'

10/12/2021 3:26:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110274-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.820	0.200	mg/L	1	B1J1221	KAP	10/12/2021	10/14/2021	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B1J1211	EPC	10/12/2021	10/12/2021	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	EPC	"	"	U

Surrogate: o-Terphenyl	66.5 %	50-150			"	"	"	
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**GBTEX+TMBs**

Naphthalene	ND	0.00380	mg/kg	1	B1J1210	KDK	10/12/2021	10/12/2021	U
Benzene	ND	0.00200	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	U
Toluene	ND	0.00200	"	"	"	KDK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.3 %	70-130			"	"	"
Surrogate: Toluene-d8	101 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	92.9 %	70-130			"	"	"

**Metals by Saturated Paste**

Calcium	24.5	0.499	meq/L	10	[CALC]	KAP	10/13/2021	10/14/2021
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Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
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Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

WH-B01@7'

10/12/2021 3:26:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y110274-01 (Soil)**

**Metals by Saturated Paste**

Magnesium	ND	0.823	meq/L	10	[CALC]	KAP	10/13/2021	10/14/2021
Sodium	13.7	0.435	"	"	"	KAP	"	"

**pH in Soil by 9045D**

pH	12.8		pH Units	1	B1J1313	AHK	10/13/2021	10/14/2021
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**SAR by 20B Saturated Paste**

SAR	3.90		SAR	1	B1J1311	KAP	10/13/2021	10/14/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	9.89	0.00500	mmhos/cm	1	B1J1312	AHK	10/13/2021	10/14/2021
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Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>Blank (B1J1210-BLK1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
Naphthalene	ND	0.00380	"							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.1	70-130			

Origins Laboratory, Inc.



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Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>LCS (B1J1210-BS1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	0.0500	0.00200	mg/kg	0.0500		100	70-130			
Naphthalene	0.0493	0.0100	"	0.0500		98.6	70-130			
1,3,5-Trimethylbenzene	0.0494	0.00200	"	0.0500		98.7	70-130			
Benzene	0.0467	0.00200	"	0.0500		93.4	70-130			
Ethylbenzene	0.0481	0.00200	"	0.0500		96.2	70-130			
m,p-Xylene	0.0988	0.00400	"	0.100		98.8	70-130			
o-Xylene	0.0488	0.00200	"	0.0500		97.7	70-130			
Toluene	0.0496	0.00200	"	0.0500		99.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.2	70-130			

Origins Laboratory, Inc.



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Mike Jahn  
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**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1J1210 - EPA 5030 (soil)**

Matrix Spike (B1J1210-MS1)		Source: Y110234-18			Prepared: 10/12/2021 Analyzed: 10/12/2021					
1,2,4-Trimethylbenzene	0.0398	0.00200	mg/kg	0.0500	0.00118	77.2	70-130			
Naphthalene	0.0432	0.0100	"	0.0500	ND	86.3	70-130			
1,3,5-Trimethylbenzene	0.0387	0.00200	"	0.0500	0.000440	76.6	70-130			
Benzene	0.0386	0.00200	"	0.0500	ND	77.2	70-130			
Ethylbenzene	0.0380	0.00200	"	0.0500	ND	75.9	70-130			
m,p-Xylene	0.0780	0.00400	"	0.100	ND	78.0	70-130			
o-Xylene	0.0387	0.00200	"	0.0500	ND	77.3	70-130			
Toluene	0.0397	0.00200	"	0.0500	ND	79.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.7	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.1	70-130			

Origins Laboratory, Inc.



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Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1210 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B1J1210-MSD1)</b>		<b>Source: Y110234-18</b>			Prepared: 10/12/2021 Analyzed: 10/13/2021					
1,2,4-Trimethylbenzene	0.0497	0.00200	mg/kg	0.0500	0.00118	97.0	70-130	22.1	20	QR-03
Naphthalene	0.0490	0.0100	"	0.0500	ND	98.0	70-130	12.7	20	
1,3,5-Trimethylbenzene	0.0487	0.00200	"	0.0500	0.000440	96.4	70-130	22.8	20	QR-03
Benzene	0.0483	0.00200	"	0.0500	ND	96.6	70-130	22.3	20	QR-03
Ethylbenzene	0.0471	0.00200	"	0.0500	ND	94.2	70-130	21.4	20	QR-03
m,p-Xylene	0.0977	0.00400	"	0.100	ND	97.7	70-130	22.4	20	QR-03
o-Xylene	0.0485	0.00200	"	0.0500	ND	97.0	70-130	22.5	20	QR-03
Toluene	0.0499	0.00200	"	0.0500	ND	99.8	70-130	22.9	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.4	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1J1211 - EPA 3550B</b>										
<b>Blank (B1J1211-BLK1)</b>					Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	17		"	25.0		67.0	50-150			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B1J1211 - EPA 3550B**

**LCS (B1J1211-BS1)**

Prepared: 10/12/2021 Analyzed: 10/12/2021

Diesel (C10-C28)	706	50.0	mg/kg	1000		70.6	70-130			
Residual Range Organics (C28-C40)	825	200	"	1000		82.5	70-130			
Surrogate: o-Terphenyl	36		"	50.0		71.0	50-150			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

### Batch B1J1211 - EPA 3550B

Matrix Spike (B1J1211-MS1)		Source: Y110253-01			Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	697	50.0	mg/kg	1000	ND	69.7	70-130			QM-07
Residual Range Organics (C28-C40)	812	200	"	1000	ND	81.2	70-130			
Surrogate: o-Terphenyl	35		"	50.0		70.2	50-150			

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B1J1211 - EPA 3550B**

<b>Matrix Spike Dup (B1J1211-MSD1)</b>		<b>Source: Y110253-01</b>			Prepared: 10/12/2021 Analyzed: 10/12/2021					
Diesel (C10-C28)	705	50.0	mg/kg	1000	ND	70.5	70-130	1.02	35	
Residual Range Organics (C28-C40)	822	200	"	1000	ND	82.2	70-130	1.25	35	
Surrogate: o-Terphenyl	35		"	50.0		70.7	50-150			

Origins Laboratory, Inc.



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



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

## Extractable Petroleum Hydrocarbons by 8015D - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

## Saturated Paste - Quality Control

### Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

#### Batch B1J1312 - NO PREP

##### Blank (B1J1312-BLK1)

Prepared: 10/13/2021 Analyzed: 10/14/2021

Specific Conductance (EC) 0.00160 0.00500 mmhos/cm

##### Duplicate (B1J1312-DUP1)

Source: Y110272-06

Prepared: 10/13/2021 Analyzed: 10/14/2021

Specific Conductance (EC) 0.0937 0.00500 mmhos/cm 0.0881 6.16 25

#### Batch B1J1313 - NO PREP

##### Duplicate (B1J1313-DUP1)

Source: Y110272-06

Prepared: 10/13/2021 Analyzed: 10/14/2021

pH 7.28 pH Units 7.47 2.58 25

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90419066  
Project: KMG - Hauck 17-29

### Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

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 at a wet weight basis.

Origins Laboratory, Inc.



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



November 08, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 7-29**

**Project Number - 90412767**

Attached are your analytical results for KMG - Hauck 7-29 received by Origins Laboratory, Inc. November 03, 2021. This project is associated with Origins project number Y111083-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B02@9'	Y111083-01	Soil	November 3, 2021 14:50	11/03/2021 16:45
WH-N02@8'	Y111083-02	Soil	November 3, 2021 14:52	11/03/2021 16:45
WH-S02@8'	Y111083-03	Soil	November 3, 2021 14:54	11/03/2021 16:45
WH-E02@8'	Y111083-04	Soil	November 3, 2021 14:56	11/03/2021 16:45
WH-W02@8'	Y111083-05	Soil	November 3, 2021 14:58	11/03/2021 16:45

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

Y111083

page 1 of 1

Client: DXT Tasman  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Email Address: Mjahn@tasman-426.com  
Project Manager: Mike Jahn  
Project Name: Hauck 7-29 WH  
Project Number: 90412767  
Samples Collected By: M R'424

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #			Other
WH-60209	11/3/21	14:56	1	X				X					1
WH-N0208	11/3/21	14:52	1										2
WH-50208	11/3/21	14:54	1										3
WH-50208	11/3/21	14:56	1										4
WH-N0208	11/3/21	14:58	1										5
													6
													7
													8
													9
													10

  

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Relinquished By:	Date:	Time:	Received By:	Date:	Time:
<u>MJ</u>	11/03/2021		<u>[Signature]</u>	11/3/21	1645						

Background Time: ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard

Temp Received: 8.4 Date Results Needed

Origins Laboratory, Inc.

*Jordan A. Merrill*

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y111083

Client: Tasman

Client Project ID: Hauck 17-29 WH

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 11/3/21

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 8.4 °C 1 °C 1 °C 1 °C (Describe)

Thermometer ID: T003

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>Some Day</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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +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) [Signature]

Date/Time Reviewed 11/3/21

Origins Laboratory, Inc.

[Signature]

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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

WH-B02@9'  
11/3/2021 2:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

**Origins Laboratory, Inc.**  
Y111083-01 (Soil)

**Metals by Saturated Paste**

Calcium	2.87	0.499	meq/L	10	[CALC]	KAP	11/03/2021	11/04/2021
Magnesium	2.80	0.823	"	"	"	KAP	"	"
Sodium	4.25	0.435	"	"	"	KAP	"	"

**SAR by 20B Saturated Paste**

SAR	2.52		SAR	1	B1K0328	KAP	"	"
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Origins Laboratory, Inc.



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



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

WH-N02@8'  
11/3/2021 2:52:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc.  
Y111083-02 (Soil)

### Metals by Saturated Paste

Calcium	3.78	0.499	meq/L	10	[CALC]	KAP	11/03/2021	11/04/2021
Magnesium	4.95	0.823	"	"	"	KAP	"	"
Sodium	13.7	0.435	"	"	"	KAP	"	"

### SAR by 20B Saturated Paste

SAR	6.55		SAR	1	B1K0328	KAP	"	"
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Origins Laboratory, Inc.



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



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

WH-S02@8'

11/3/2021 2:54:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit								

Origins Laboratory, Inc.  
Y111083-03 (Soil)

### Metals by Saturated Paste

Calcium	4.46	0.499	meq/L	10	[CALC]	KAP	11/03/2021	11/04/2021
Magnesium	5.32	0.823	"	"	"	KAP	"	"
Sodium	15.3	0.435	"	"	"	KAP	"	"

### SAR by 20B Saturated Paste

SAR	6.92		SAR	1	B1K0328	KAP	"	"
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Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

WH-E02@8'

11/3/2021 2:56:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y111083-04 (Soil)**

**Metals by Saturated Paste**

Calcium	10.4	0.499	meq/L	10	[CALC]	KAP	11/04/2021	11/05/2021
Magnesium	9.94	0.823	"	"	"	KAP	"	"
Sodium	15.3	0.435	"	"	"	KAP	"	"

**SAR by 20B Saturated Paste**

SAR	4.81		SAR	1	B1K0404	KAP	"	"
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Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

WH-W02@8'  
11/3/2021 2:58:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc.  
Y111083-05 (Soil)

### Metals by Saturated Paste

Calcium	2.07	0.499	meq/L	10	[CALC]	KAP	11/04/2021	11/05/2021
Magnesium	3.75	0.823	"	"	"	KAP	"	"
Sodium	16.8	0.435	"	"	"	KAP	"	"

### SAR by 20B Saturated Paste

SAR	9.83		SAR	1	B1K0404	KAP	"	"
-----	------	--	-----	---	---------	-----	---	---

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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



November 05, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 17-29 WH**

**Project Number - 90412767**

Attached are your analytical results for KMG - Hauck 17-29 WH received by Origins Laboratory, Inc. November 03, 2021. This project is associated with Origins project number Y111084-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B02@9'	Y111084-01	Soil	November 3, 2021 15:10	11/03/2021 16:45
WH-N02@8'	Y111084-02	Soil	November 3, 2021 15:12	11/03/2021 16:45
WH-S02@8'	Y111084-03	Soil	November 3, 2021 15:14	11/03/2021 16:45
WH-E02@8'	Y111084-04	Soil	November 3, 2021 15:16	11/03/2021 16:45
WH-W02@8'	Y111084-05	Soil	November 3, 2021 15:18	11/03/2021 16:45

Origins Laboratory, Inc.



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

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

# ORIGINS

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Y111084

page 1 of 1

Client: Oxy Tasman  
 Address: \_\_\_\_\_  
 Telephone Number: \_\_\_\_\_  
 Email Address: mjohn@tasman-dco.com

Project Manager: Mike John  
 Project Name: Hauk 17-24 WH  
 Project Number: 90419066  
 Samples Collected By: M Brady

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis			Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #	Other			
WH-502091	11/3/21	15:10	1	X					X				FC	1
WH-N02081		15:12	1										FC	2
WH-502081		15:14	1											3
WH-ED2081		15:16	1											4
WH-N02081	V	15:18	V	V					V				VV	5
														6
														7
														8
														9
														10
Relinquished By: <u>[Signature]</u>	Date: <u>11/03/2021</u>	Time:		Received By: <u>[Signature]</u>				Date: <u>11/3/21</u>			Time: <u>1645</u>			Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard
Relinquished By: _____	Date: _____	Time: _____		Received By: _____				Date: _____			Time: _____			

Temp Received: 8.4

Date Results Needed

Origins Laboratory, Inc.

Imen

*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.*



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

Origins Laboratory

## Sample Receipt Checklist

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

Origins Work Order: 4111024

Client: Tasman

Client Project ID: Hauck 17-29 WH

Checklist Completed by: OH

Shipped Via: HD

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

Date/time completed: 11/2/21

Airbill #: N/A

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

(Describe)

Cooler Number/Temperature: 1 6.4 °C 1 °C 1 °C 1 °C

Thermometer ID: T003

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>Same Day</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 HNO <sub>3</sub> , HCl, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +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): Kenny H.

Date/Time Reviewed: 11/2/21

Origins Laboratory, Inc.

*Jordan A. Merrill*

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

WH-B02@9'

11/3/2021 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc.  
Y111084-01 (Soil)

## pH in Soil by 9045D

pH	7.86		pH Units	1	B1K0416	ACC	11/04/2021	11/05/2021	
----	------	--	----------	---	---------	-----	------------	------------	--

## Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.841	0.00500	mmhos/cm	"	B1K0420	ACC	11/04/2021	11/05/2021	
---------------------------	-------	---------	----------	---	---------	-----	------------	------------	--

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

WH-N02@8'

11/3/2021 3:12:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc.  
Y111084-02 (Soil)

## pH in Soil by 9045D

pH	7.89		pH Units	1	B1K0416	ACC	11/04/2021	11/05/2021	
----	------	--	----------	---	---------	-----	------------	------------	--

## Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.13	0.00500	mmhos/cm	"	B1K0420	ACC	11/04/2021	11/05/2021	
---------------------------	------	---------	----------	---	---------	-----	------------	------------	--

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

WH-S02@8'

11/3/2021 3:14:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc.  
Y111084-03 (Soil)

## pH in Soil by 9045D

pH	7.83		pH Units	1	B1K0416	ACC	11/04/2021	11/05/2021	
----	------	--	----------	---	---------	-----	------------	------------	--

## Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.47	0.00500	mmhos/cm	"	B1K0420	ACC	11/04/2021	11/05/2021	
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Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

WH-E02@8'

11/3/2021 3:16:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y111084-04 (Soil)

pH in Soil by 9045D

pH	8.05		pH Units	1	B1K0416	ACC	11/04/2021	11/05/2021	
----	------	--	----------	---	---------	-----	------------	------------	--

Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.03	0.00500	mmhos/cm	"	B1K0420	ACC	11/04/2021	11/05/2021	
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Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

WH-W02@8'  
11/3/2021 3:18:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	---------	----------	----------	-------

Origins Laboratory, Inc.  
Y111084-05 (Soil)

pH in Soil by 9045D

pH	7.71		pH Units	1	B1K0416	ACC	11/04/2021	11/05/2021	
----	------	--	----------	---	---------	-----	------------	------------	--

Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.855	0.00500	mmhos/cm	"	B1K0420	ACC	11/04/2021	11/05/2021	
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Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

## Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1K0416 - NO PREP</b>										
<b>Duplicate (B1K0416-DUP1)</b>		<b>Source: Y111084-01</b>			Prepared: 11/04/2021 Analyzed: 11/05/2021					
pH	7.98		pH Units		7.86			1.52	25	
<b>Batch B1K0420 - NO PREP</b>										
<b>Blank (B1K0420-BLK1)</b>		Prepared: 11/04/2021 Analyzed: 11/05/2021								
Specific Conductance (EC)	0.00140	0.00500	mmhos/cm							
<b>Duplicate (B1K0420-DUP1)</b>		<b>Source: Y111084-01</b>			Prepared: 11/04/2021 Analyzed: 11/05/2021					
Specific Conductance (EC)	0.806	0.00500	mmhos/cm		0.841			4.26	25	

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

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### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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





November 05, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 7-29**

**Project Number - 90412767**

Attached are your analytical results for KMG - Hauck 7-29 received by Origins Laboratory, Inc. November 04, 2021. This project is associated with Origins project number Y111100-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Tasman Geosciences

6855 West 119th Avenue

Broomfield CO 80020

Mike Jahn

Project Number: 90412767

Project: KMG - Hauck 7-29

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-GW01	Y111100-01	Water	November 4, 2021 12:30	11/04/2021 16:20

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

Y1111100

page 1 of 1

Client: Oxy Tasman  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Email Address: Mike Jahn  
Project Manager: Mike Jahn  
Project Name: Hauck 7-29 WH  
Project Number: 90412767  
Samples Collected By: M. Riancho

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix		Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil		
WH-GW01	11/4/21	12:30	3	X				X		BTEXN TMBs	1
											2
											3
											4
											5
											6
											7
											8
											9
											10

  

Relinquished By: <u>[Signature]</u>	Date: <u>11/4/21</u>	Time: <u>16:30</u>	Received By: <u>[Signature]</u>	Date: <u>11/4/21</u>	Time: <u>16:30</u>
Relinquished By: _____	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____

Turnaround Time: ☒ Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard

Temp Received: 11.7 Date Results Needed: \_\_\_\_\_

Origins Laboratory, Inc.

*Jen Pellegrini*

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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

Origins Laboratory

## Sample Receipt Checklist

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

Origins Work Order: y/111100

Client: Tasman

Client Project ID: Hauck 7-29

Checklist Completed by: JG

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

Date/time completed: 11/14/21

Airbill #: N/A

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

☒ Water Other:

Cooler Number/Temperature: 1 / 11.7 °C

1 °C 1 °C 1 °C (Describe)

Thermometer ID: T003

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"/>	<input checked="" type="checkbox"/>		<u>See Day</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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +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)

11/14/21  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jen Pellegrini*

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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

## WH-GW01

11/4/2021 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y111100-01 (Water)

### BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	1.00	ug/L	1	B1K0324	ZZZ	11/04/2021	11/04/2021	U
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Benzene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Naphthalene	ND	4.00	"	"	"	ZZZ	"	"	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130	"	"	"
Surrogate: Toluene-d8	99.4 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	100 %	70-130	"	"	"

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1K0324 - EPA 5030B (Water)</b>										
<b>Blank (B1K0324-BLK1)</b>					Prepared: 11/03/2021 Analyzed: 11/03/2021					
1,2,4-Trimethylbenzene	ND	1.00	ug/L							U
1,3,5-Trimethylbenzene	ND	1.00	"							U
Benzene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
m,p-Xylene	ND	2.00	"							U
Naphthalene	ND	4.00	"							U
o-Xylene	ND	1.00	"							U
Toluene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.4	70-130			
Surrogate: Toluene-d8	61		"	62.5		96.9	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		105	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1K0324 - EPA 5030B (Water)</b>										
<b>LCS (B1K0324-BS1)</b>					Prepared: 11/03/2021 Analyzed: 11/03/2021					
1,2,4-Trimethylbenzene	50.2	1.00	ug/L	50.0		100	70-130			
1,3,5-Trimethylbenzene	48.7	1.00	"	50.0		97.3	70-130			
Benzene	51.6	1.00	"	50.0		103	70-130			
Ethylbenzene	54.7	1.00	"	50.0		109	70-130			
m,p-Xylene	109	2.00	"	100		109	70-130			
Naphthalene	59.6	4.00	"	50.0		119	70-130			
o-Xylene	54.5	1.00	"	50.0		109	70-130			
Toluene	54.2	1.00	"	50.0		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B1K0324 - EPA 5030B (Water)**

Matrix Spike (B1K0324-MS1)		Source: Y111053-27			Prepared: 11/03/2021 Analyzed: 11/04/2021					
1,2,4-Trimethylbenzene	51.4	1.00	ug/L	50.0	ND	103	70-130			
1,3,5-Trimethylbenzene	48.8	1.00	"	50.0	ND	97.7	70-130			
Benzene	53.6	1.00	"	50.0	ND	107	70-130			
Ethylbenzene	53.6	1.00	"	50.0	ND	107	70-130			
m,p-Xylene	110	2.00	"	100	ND	110	70-130			
Naphthalene	55.9	4.00	"	50.0	2.32	107	70-130			
o-Xylene	55.1	1.00	"	50.0	ND	110	70-130			
Toluene	53.8	1.00	"	50.0	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		103	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1K0324 - EPA 5030B (Water)</b>										
<b>Matrix Spike Dup (B1K0324-MSD1)</b>	<b>Source: Y111053-27</b>				Prepared: 11/03/2021 Analyzed: 11/04/2021					
1,2,4-Trimethylbenzene	51.5	1.00	ug/L	50.0	ND	103	70-130	0.194	20	
1,3,5-Trimethylbenzene	49.4	1.00	"	50.0	ND	98.9	70-130	1.22	20	
Benzene	53.8	1.00	"	50.0	ND	108	70-130	0.466	20	
Ethylbenzene	55.2	1.00	"	50.0	ND	110	70-130	2.92	20	
m,p-Xylene	110	2.00	"	100	ND	110	70-130	0.473	20	
Naphthalene	58.6	4.00	"	50.0	2.32	113	70-130	4.68	20	
o-Xylene	55.6	1.00	"	50.0	ND	111	70-130	0.903	20	
Toluene	53.7	1.00	"	50.0	ND	107	70-130	0.205	20	
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.0	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.9	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		105	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

### Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager



November 05, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 17-29 WH**

**Project Number - 90412767**

Attached are your analytical results for KMG - Hauck 17-29 WH received by Origins Laboratory, Inc. November 04, 2021. This project is associated with Origins project number Y111099-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Tasman Geosciences

6855 West 119th Avenue

Broomfield CO 80020

Mike Jahn

Project Number: 90412767

Project: KMG - Hauck 17-29 WH

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-GW01	Y111099-01	Water	November 4, 2021 12:20	11/04/2021 16:20

Origins Laboratory, Inc.



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

Jen Pellegrini, Project Manager

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

# ORIGINS

LABORATORY, INC

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page 1 of 1

Client: DY Tashan  
 Address: \_\_\_\_\_  
 Telephone Number: \_\_\_\_\_  
 Email Address: mjohn @ Tashan-420.com

Project Manager: Mike John  
 Project Name: Hunk 17-29 WH  
 Project Number: 90419066  
 Samples Collected By: M Riand

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis			Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other	BTEXN	TMS		
NH-GW01	11/12/12	12:10	3	X				X				X			1
															2
															3
															4
															5
															6
															7
															8
															9
															10
Relinquished By: <u>[Signature]</u>	Date: <u>11/14/2012</u>	Time: <u>16:30</u>	Received By: <u>[Signature]</u>	Date: <u>11/14/12</u>	Time: <u>11:00</u>	Turnaround Time: <u>Same Day</u> <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard									
Relinquished By: _____	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____										

Date Results Needed

Temp Received- 117

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Origins Laboratory, Inc.

Jose Pellegrini

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Tasman Geosciences

6855 West 119th Avenue

Broomfield CO 80020

Mike Jahn

Project Number: 90412767

Project: KMG - Hauck 17-29 WH

Origins Laboratory

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

### Sample Receipt Checklist

Origins Work Order: Y111099

Client: Tasman

Client Project ID: Hauck 17-29

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 11/4/21

Airbill #: N/A

Matrix(s) Received: (Check all that apply):

Soil/Solid

☒ Water

Other:

(Describe)

Cooler Number/Temperature: 1, 55.11.7 °C

Thermometer ID: T003

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same Day
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (If so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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)

11/4/21  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jen Pellegrini*

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Jen Pellegrini, Project Manager

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

## WH-GW01

11/4/2021 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. Y111099-01 (Water)

### BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	1.00	ug/L	1	B1K0324	ZZZ	11/04/2021	11/04/2021	U
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Benzene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Naphthalene	ND	4.00	"	"	"	ZZZ	"	"	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130	"	"	"
Surrogate: Toluene-d8	99.2 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.6 %	70-130	"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1K0324 - EPA 5030B (Water)</b>										
<b>Blank (B1K0324-BLK1)</b>					Prepared: 11/03/2021 Analyzed: 11/03/2021					
1,2,4-Trimethylbenzene	ND	1.00	ug/L							U
1,3,5-Trimethylbenzene	ND	1.00	"							U
Benzene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
m,p-Xylene	ND	2.00	"							U
Naphthalene	ND	4.00	"							U
o-Xylene	ND	1.00	"							U
Toluene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.4	70-130			
Surrogate: Toluene-d8	61		"	62.5		96.9	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		105	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1K0324 - EPA 5030B (Water)</b>										
<b>LCS (B1K0324-BS1)</b>					Prepared: 11/03/2021 Analyzed: 11/03/2021					
1,2,4-Trimethylbenzene	50.2	1.00	ug/L	50.0		100	70-130			
1,3,5-Trimethylbenzene	48.7	1.00	"	50.0		97.3	70-130			
Benzene	51.6	1.00	"	50.0		103	70-130			
Ethylbenzene	54.7	1.00	"	50.0		109	70-130			
m,p-Xylene	109	2.00	"	100		109	70-130			
Naphthalene	59.6	4.00	"	50.0		119	70-130			
o-Xylene	54.5	1.00	"	50.0		109	70-130			
Toluene	54.2	1.00	"	50.0		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1K0324 - EPA 5030B (Water)</b>										
<b>Matrix Spike (B1K0324-MS1)</b>		<b>Source: Y111053-27</b>			Prepared: 11/03/2021 Analyzed: 11/04/2021					
1,2,4-Trimethylbenzene	51.4	1.00	ug/L	50.0	ND	103	70-130			
1,3,5-Trimethylbenzene	48.8	1.00	"	50.0	ND	97.7	70-130			
Benzene	53.6	1.00	"	50.0	ND	107	70-130			
Ethylbenzene	53.6	1.00	"	50.0	ND	107	70-130			
m,p-Xylene	110	2.00	"	100	ND	110	70-130			
Naphthalene	55.9	4.00	"	50.0	2.32	107	70-130			
o-Xylene	55.1	1.00	"	50.0	ND	110	70-130			
Toluene	53.8	1.00	"	50.0	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		103	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	70-130			

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Jen Pellegrini, Project Manager

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1K0324 - EPA 5030B (Water)</b>										
<b>Matrix Spike Dup (B1K0324-MSD1)</b>	<b>Source: Y111053-27</b>				Prepared: 11/03/2021 Analyzed: 11/04/2021					
1,2,4-Trimethylbenzene	51.5	1.00	ug/L	50.0	ND	103	70-130	0.194	20	
1,3,5-Trimethylbenzene	49.4	1.00	"	50.0	ND	98.9	70-130	1.22	20	
Benzene	53.8	1.00	"	50.0	ND	108	70-130	0.466	20	
Ethylbenzene	55.2	1.00	"	50.0	ND	110	70-130	2.92	20	
m,p-Xylene	110	2.00	"	100	ND	110	70-130	0.473	20	
Naphthalene	58.6	4.00	"	50.0	2.32	113	70-130	4.68	20	
o-Xylene	55.6	1.00	"	50.0	ND	111	70-130	0.903	20	
Toluene	53.7	1.00	"	50.0	ND	107	70-130	0.205	20	
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.0	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.9	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		105	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 17-29 WH

---

### Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

---

Jen Pellegrini, Project Manager



November 22, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 7-29**

**Project Number - 90412767**

Attached are your analytical results for KMG - Hauck 7-29 received by Origins Laboratory, Inc. November 15, 2021. This project is associated with Origins project number Y111278-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-W03@8'	Y111278-01	Soil	November 15, 2021 12:05	11/15/2021 15:44

Origins Laboratory, Inc.



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

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

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Origins Laboratory, Inc.

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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.*



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y111278

Client: Tasman  
Client Project ID: Hauck 7-29

Checklist Completed by: JG  
Date/time completed: 11/15/21

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 19.9 °C 1 °C 1 °C 1 °C

Thermometer ID: T003

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>Same Day</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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +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) [Signature] Date/Time Reviewed 11/15/21

Origins Laboratory, Inc.

[Signature]

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



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

WH-W03@8'

11/15/2021 12:05:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit								

**Origins Laboratory, Inc.**  
Y111278-01 (Soil)

**Metals by Saturated Paste**

Calcium	10.5	0.499	meq/L	10	[CALC]	KAP	11/16/2021	11/18/2021
Magnesium	16.2	0.823	"	"	"	KAP	"	"
Sodium	36.1	0.435	"	"	"	KAP	"	"

**SAR by 20B Saturated Paste**

SAR	9.88		SAR	1	B1K1613	KAP	"	"
-----	------	--	-----	---	---------	-----	---	---

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Origins Laboratory, Inc.



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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



December 03, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Hauck 7-29**

**Project Number - 90412767**

Attached are your analytical results for KMG - Hauck 7-29 received by Origins Laboratory, Inc. November 30, 2021. This project is associated with Origins project number Y111572-01.

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.

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303.433.1322  
o-squad@oelabinc.com



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-W04@8'	Y111572-01	Soil	November 30, 2021 12:05	11/30/2021 14:05

Origins Laboratory, Inc.



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

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

# ORIGINS

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Y111572

page 1 of 1

Client: Oxy/Tasman

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Email Address: Wynne@tasman-geo.com

Project Manager: Mike John

Project Name: PAVIL 7-29

Project Number: 92412767

Samples Collected By: HL

Fax: 303.265.9645

Phone: 303.433.1322

Denver, CO 80211

1725 Elk Place

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Canister #		
W4-W04081	11-30-21	1205	1	X					X		X	Saturated paste
												2
												3
												4
												5
												6
												7
												8
												9
												10
Relinquished By: <u>Steve Meyer</u>	Date: <u>11-30-21</u>	Time: <u>1405</u>	Received By: <u>HL</u>	Date: <u>11/30/21</u>	Time: <u>14:05</u>	Turnaround Time: <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard						
Relinquished By:	Date:	Time:	Received By:	Date:	Time:							

Temp Received: 5.3

Date Results Needed

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Imen

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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: 90412767  
Project: KMG - Hauck 7-29

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 411572

Client: Tasman  
Client Project ID: Hauck 7-29

Checklist Completed by: YH

Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Airbill #: LA

Date/time completed: 11/30/21

Matrix(s) Received: (Check all that apply): 1 Soil/Solid          Water          Other:         

Cooler Number/Temperature: 1 15.3 °C          °C          °C (Describe)          °C

Thermometer ID: T603

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> ?	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Is there ice present (document if blue ice is used)	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Were all samples received intact <sup>(1)</sup> ?	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Was adequate sample volume provided <sup>(1)</sup> ?	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<u>        </u>	<u>        </u>	<u>        </u>	<u>        </u>
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) Jordan A. Merrill

Date/Time Reviewed 11/30/21

Origins Laboratory, Inc.

*Jordan A. Merrill*

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Mike Jahn  
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Project: KMG - Hauck 7-29

WH-W04@8'

11/30/2021 12:05:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit								

**Origins Laboratory, Inc.**  
Y111572-01 (Soil)

**Metals by Saturated Paste**

Calcium	3.44	0.499	meq/L	10	[CALC]	KAP	11/30/2021	12/01/2021
Magnesium	3.60	0.823	"	"	"	KAP	"	"
Sodium	10.4	0.435	"	"	"	KAP	"	"

**SAR by 20B Saturated Paste**

SAR	5.54		SAR	1	B1K3010	KAP	"	"
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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