

May 14, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - HSR - Van Schaack 4-33

Project Number - GS-15687

Attached are your analytical results for KMG - HSR - Van Schaack 4-33 received by Origins Laboratory, Inc. May 07, 2021. This project is associated with Origins project number Y105127-01.

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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Broomfield CO 80020

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CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 050721	Y105127-01	Water	May 7, 2021 9:46	05/07/2021 13:18
BH02 - 050721	Y105127-02	Water	May 7, 2021 9:54	05/07/2021 13:18
BH03 - 050721	Y105127-03	Water	May 7, 2021 9:35	05/07/2021 13:18
BH04 - 050721	Y105127-04	Water	May 7, 2021 9:45	05/07/2021 13:18
BH05 - 050721	Y105127-05	Water	May 7, 2021 9:26	05/07/2021 13:18

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

Origins Work Order: Y105127 Sample Receipt Checklist Client: Tasman  
 Client Project ID: Van Schaack 4-33

Checklist Completed by: SKK Shipped Via: HS  
 Date/time completed: 05/10/21 (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 / 5.8 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °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 type="checkbox"/>	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 NaAcO <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: Jm Date/Time Reviewed: 5-10-21

Origins Laboratory, Inc.



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**BH01 - 050721**

**5/7/2021 9:46:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y105127-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B1E1003	KDK	05/10/2021	05/10/2021	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.2 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.3 %	70-130			"	"	"	"	

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**BH02 - 050721**

**5/7/2021 9:54:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y105127-02 (Water)**

**BTEX by EPA 8260D**

Benzene	23.5	1.00	ug/L	1	B1E1003	KDK	05/10/2021	05/10/2021	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	3.39	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	96.7 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.7 %	70-130			"	"	"	"	

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**BH03 - 050721**

**5/7/2021 9:35:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y105127-03 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B1E1003	KDK	05/10/2021	05/10/2021	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.3 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.4 %	70-130			"	"	"	"	

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**BH04 - 050721**

**5/7/2021 9:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y105127-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B1E1003	KDK	05/10/2021	05/10/2021	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	94.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %	70-130			"	"	"	"	

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**BH05 - 050721**

**5/7/2021 9:26:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y105127-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B1E1003	KDK	05/10/2021	05/10/2021	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	<b>2.48</b>	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.7 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.2 %	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
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**Batch B1E1003 - EPA 5030B (Water)**

**Blank (B1E1003-BLK1)**

Prepared: 05/10/2021 Analyzed: 05/10/2021

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5	94.6		70-130			
Surrogate: Toluene-d8	61		"	62.5	97.3		70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5	96.1		70-130			

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**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1E1003 - EPA 5030B (Water)**

**LCS (B1E1003-BS1)**

Prepared: 05/10/2021 Analyzed: 05/10/2021

Benzene	50.0	1.00	ug/L	50.0		100	70-130			
Toluene	50.5	1.00	"	50.0		101	70-130			
Ethylbenzene	49.9	1.00	"	50.0		99.7	70-130			
m,p-Xylene	100	2.00	"	100		100	70-130			
o-Xylene	50.0	1.00	"	50.0		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.7	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.6	70-130			

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**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1E1003 - EPA 5030B (Water)**

Matrix Spike (B1E1003-MS1)	Source: Y105118-02			Prepared: 05/10/2021 Analyzed: 05/10/2021						
Benzene	46.0	1.00	ug/L	50.0	92.0	70-130				
Toluene	48.1	1.00	"	50.0	96.1	70-130				
Ethylbenzene	48.7	1.00	"	50.0	97.4	70-130				
m,p-Xylene	96.1	2.00	"	100	96.1	70-130				
o-Xylene	46.7	1.00	"	50.0	93.4	70-130				
Surrogate: 1,2-Dichloroethane-d4	53		"	62.5	84.7	70-130				
Surrogate: Toluene-d8	61		"	62.5	96.9	70-130				
Surrogate: 4-Bromofluorobenzene	60		"	62.5	96.8	70-130				

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**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B1E1003 - EPA 5030B (Water)**

Matrix Spike Dup (B1E1003-MSD1)	Source: Y105118-02			Prepared: 05/10/2021 Analyzed: 05/10/2021						
Benzene	56.0	1.00	ug/L	50.0	112	70-130	19.6	20		
Toluene	57.0	1.00	"	50.0	114	70-130	17.0	20		
Ethylbenzene	60.0	1.00	"	50.0	120	70-130	20.8	20	QR-03	
m,p-Xylene	120	2.00	"	100	120	70-130	21.8	20	QR-03	
o-Xylene	57.8	1.00	"	50.0	116	70-130	21.3	20	QR-03	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5	93.7	70-130				
Surrogate: Toluene-d8	61		"	62.5	97.8	70-130				
Surrogate: 4-Bromofluorobenzene	61		"	62.5	97.6	70-130				

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### 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.

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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