

February 13, 2018

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - HSR Hall 12-31****Project Number - 89069141**

Attached are your analytical results for KMG - HSR Hall 12-31 received by Origins Laboratory, Inc. February 06, 2018. This project is associated with Origins project number Y802093-01.

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



Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89069141

Project: KMG - HSR Hall 12-31

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 2/6/18	Y802093-01	Water	February 6, 2018 12:40	02/06/2018 17:07
BH02 - 2/6/18	Y802093-02	Water	February 6, 2018 12:30	02/06/2018 17:07
BH03 - 2/6/18	Y802093-03	Water	February 6, 2018 12:45	02/06/2018 17:07
BH04 - 2/6/18	Y802093-04	Water	February 6, 2018 12:20	02/06/2018 17:07
BH05 - 2/6/18	Y802093-05	Water	February 6, 2018 12:50	02/06/2018 17:07
BH06 - 2/6/18	Y802093-06	Water	February 6, 2018 13:00	02/06/2018 17:07
BH07 - 2/6/18	Y802093-07	Water	February 6, 2018 13:10	02/06/2018 17:07
BH08 - 2/6/18	Y802093-08	Water	February 6, 2018 12:55	02/06/2018 17:07
BH09 - 2/6/18	Y802093-09	Water	February 6, 2018 13:10	02/06/2018 17:07
BH10 - 2/6/18	Y802093-10	Water	February 6, 2018 12:25	02/06/2018 17:07
BH11 - 2/6/18	Y802093-11	Water	February 6, 2018 12:35	02/06/2018 17:07

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

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1802093

page 1 of 2

ORIGINS LABORATORY, INC

Client: APC/TASMAN Project Manager/Send Report To: Bob Cornez

Address: 6899 N Pecos St Email Address: rcornez@tasman-geo.com

Denver, CO 80221 Project Name/Number: HSR Hall 12-31 / 89069141

Telephone Number: 970 486 6969 Samples Collected By: Alex Garza

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		
B401 -2/6/18	2/6/18	1240	3	X				X				8TEX	1
B402 -2/6/18		1230											2
B403 -2/6/18		1245											3
B404 -2/6/18		1220											4
B405 -2/6/18		1250											5
B406 -2/6/18		1300											6
B407 -2/6/18		1310											7
B408 -2/6/18		1255											8
B409 -2/6/18		1310											9
B410 -2/6/18		1225											10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>[Signature]</u>	2/6/18	1707	<u>[Signature]</u>	2/6/18	1707	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

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

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

ORIGINS LABORATORY, INC

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page 2 of 2

Y802093

Client: APC Project Manager/Send Report To: \_\_\_\_\_

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

Project Name/Number: HSR Hall 12-31 / 89069141

Telephone Number: \_\_\_\_\_ Samples Collected By: \_\_\_\_\_

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/Method	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summ #		
BH11-2/6/18	2/6/18	1235	3	X				X			BTEX	1
												2
												3
												4
												5
												6
												7
												8
												9
												10

Reinquisitioned By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
Mark [Signature]	2/6/18	1707	[Signature]	2/6/18	1707	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

Origins Laboratory

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

### Sample Receipt Checklist

Origins Work Order: Y802093

Client: Tasman

Client Project ID: KMG-HSR Hall 12-31

Checklist Completed by: SG

Shipped Via: HD

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

Date/time completed: 2/7/18

Airbill #: W/A

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

Soil/Solid ☒

Water ☐

Other: ☐

(Describe)

Cooler Number/Temperature: 1 13.6 °C

1 °C

1 °C

1 °C

Thermometer ID: 1003

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 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) JP

Date/Time Reviewed 2/8/18

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH01 - 2/6/18  
2/6/2018 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y802093-01 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8B0906	02/09/2018	02/09/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.5 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH02 - 2/6/18  
2/6/2018 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y802093-02 (Water)

## BTEX by EPA 8260C

Benzene	ND	4.00	ug/L	4	B8B0906	02/09/2018	02/09/2018	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	197	4.00	"	"	"	"	"	
Xylenes, total	1890	4.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	95.4 %	84-121			"	"	"	
Surrogate: Toluene-d8	105 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.0 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH03 - 2/6/18  
2/6/2018 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y802093-03 (Water)

**BTEX by EPA 8260C**

Benzene	ND	4.00	ug/L	4	B8B0906	02/09/2018	02/10/2018	U
Toluene	5690	50.0	"	50	"	"	02/09/2018	
Ethylbenzene	296	4.00	"	4	"	"	02/10/2018	
Xylenes, total	4310	50.0	"	50	"	"	02/09/2018	

Surrogate: 1,2-Dichloroethane-d4	92.1 %	84-121	"	"	"
Surrogate: Toluene-d8	103 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	99.1 %	84-114	"	"	"

Origins Laboratory, Inc.



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Denver CO 80211

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Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH04 - 2/6/18  
2/6/2018 12:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y802093-04 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8B0906	02/09/2018	02/09/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.5 %	84-121			"	"	"	
Surrogate: Toluene-d8	104 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.2 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH05 - 2/6/18  
2/6/2018 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y802093-05 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8B0906	02/09/2018	02/09/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.2 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.7 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH06 - 2/6/18  
2/6/2018 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y802093-06 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8B0906	02/09/2018	02/10/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.1 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.0 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Project: KMG - HSR Hall 12-31

BH07 - 2/6/18  
2/6/2018 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y802093-07 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8B0906	02/09/2018	02/10/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.8 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.3 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH08 - 2/6/18  
2/6/2018 12:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y802093-08 (Water)

**BTEX by EPA 8260C**

Benzene	ND	4.00	ug/L	4	B8B0906	02/09/2018	02/10/2018	U
Toluene	9.88	4.00	"	"	"	"	"	
Ethylbenzene	58.8	4.00	"	"	"	"	"	
Xylenes, total	812	4.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	95.6 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH09 - 2/6/18  
2/6/2018 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y802093-09 (Water)

### BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B8B0906	02/09/2018	02/10/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.2 %	84-121	"	"	"
Surrogate: Toluene-d8	103 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	99.2 %	84-114	"	"	"

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH10 - 2/6/18  
2/6/2018 12:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y802093-10 (Water)

**BTEX by EPA 8260C**

Benzene	7.68	4.00	ug/L	4	B8B0906	02/09/2018	02/10/2018	
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	199	4.00	"	"	"	"	"	
Xylenes, total	2010	4.00	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	96.4 %	84-121			"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH11 - 2/6/18  
2/6/2018 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
Y802093-11 (Water)

## BTEX by EPA 8260C

Benzene	ND	4.00	ug/L	4	B8B0906	02/09/2018	02/10/2018	U
Toluene	1050	50.0	"	50	"	"	02/10/2018	
Ethylbenzene	58.2	4.00	"	4	"	"	02/10/2018	
Xylenes, total	1050	50.0	"	50	"	"	02/10/2018	

Surrogate: 1,2-Dichloroethane-d4	96.1 %	84-121			"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.8 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8B0906 - EPA 5030B (Water)**

**Blank (B8B0906-BLK1)**

Prepared: 02/09/2018 Analyzed: 02/09/2018

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	67		"	62.5	107		84-121			
Surrogate: Toluene-d8	62		"	62.5	98.6		85-115			
Surrogate: 4-Bromofluorobenzene	65		"	62.5	104		84-114			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8B0906 - EPA 5030B (Water)**

**LCS (B8B0906-BS1)**

Prepared: 02/09/2018 Analyzed: 02/09/2018

Benzene	52.9	1.00	ug/L	50.0	106	73.3-129
Toluene	50.6	1.00	"	50.0	101	76.2-123
Ethylbenzene	49.4	1.00	"	50.0	98.7	73.6-130
m,p-Xylene	99.1	2.00	"	100	99.1	76.1-126
o-Xylene	51.8	1.00	"	50.0	104	76.6-124
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5	90.8	84-121
Surrogate: Toluene-d8	62		"	62.5	98.9	85-115
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.5	84-114

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  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

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

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

**Batch B8B0906 - EPA 5030B (Water)**

Matrix Spike (B8B0906-MS1)		Source: Y802076-01			Prepared: 02/09/2018 Analyzed: 02/09/2018					
Benzene	48.6	1.00	ug/L	50.0	ND	97.1	74-130			
Toluene	45.6	1.00	"	50.0	0.110	90.9	73-131			
Ethylbenzene	45.3	1.00	"	50.0	0.060	90.4	76-132			
m,p-Xylene	92.2	2.00	"	100	ND	92.2	69-139			
o-Xylene	48.7	1.00	"	50.0	ND	97.5	74-131			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.4	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.3	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.6	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

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

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

**Batch B8B0906 - EPA 5030B (Water)**

Matrix Spike Dup (B8B0906-MSD1)		Source: Y802076-01			Prepared: 02/09/2018 Analyzed: 02/10/2018					
Benzene	47.6	1.00	ug/L	50.0	ND	95.3	74-130	1.91	20	
Toluene	44.9	1.00	"	50.0	0.110	89.6	73-131	1.41	20	
Ethylbenzene	43.7	1.00	"	50.0	0.060	87.3	76-132	3.53	20	
m,p-Xylene	89.5	2.00	"	100	ND	89.5	69-139	2.98	20	
o-Xylene	46.8	1.00	"	50.0	ND	93.6	74-131	4.04	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.3	84-121			
Surrogate: Toluene-d8	61		"	62.5		97.8	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.7	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89069141

Project: KMG - HSR Hall 12-31

### 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 For Noelle Doyle Mathis, President



April 16, 2018

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - HSR Hall 12-31**

**Project Number - 89069141**

Attached are your analytical results for KMG - HSR Hall 12-31 received by Origins Laboratory, Inc. April 09, 2018. This project is associated with Origins project number Y804163-01.

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  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 4/9/18	Y804163-01	Water	April 9, 2018 14:07	04/09/2018 17:09
BH02 - 4/9/18	Y804163-02	Water	April 9, 2018 13:41	04/09/2018 17:09
BH03 - 4/9/18	Y804163-03	Water	April 9, 2018 12:53	04/09/2018 17:09
BH04 - 4/9/18	Y804163-04	Water	April 9, 2018 13:25	04/09/2018 17:09
BH05 - 4/9/18	Y804163-05	Water	April 9, 2018 14:26	04/09/2018 17:09
BH06 - 4/9/18	Y804163-06	Water	April 9, 2018 14:41	04/09/2018 17:09
BH07 - 4/9/18	Y804163-07	Water	April 9, 2018 13:10	04/09/2018 17:09
BH08 - 4/9/18	Y804163-08	Water	April 9, 2018 12:39	04/09/2018 17:09
BH09 - 4/9/18	Y804163-09	Water	April 9, 2018 12:22	04/09/2018 17:09
BH10 - 4/9/18	Y804163-10	Water	April 9, 2018 12:02	04/09/2018 17:09
BH11 - 4/9/18	Y804163-11	Water	April 9, 2018 11:48	04/09/2018 17:09
BH12 - 4/9/18	Y804163-12	Water	April 9, 2018 10:44	04/09/2018 17:09
BH13 - 4/9/18	Y804163-13	Water	April 9, 2018 11:15	04/09/2018 17:09
BH14 - 4/9/18	Y804163-14	Water	April 9, 2018 11:31	04/09/2018 17:09

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

**ORIGINS** LABORATORY, INC

www.originslaboratory.com

page 1 of 2




48041163

Client: Anadarko/Tasman Project Manager/Send Report To: Bob Cornez

Address: 6899 Pecos St. Email Address: rcornez@tasman-geo.com

Denver CO 80221 Project Name/Number: HSR Hall 12-31/89069141

Telephone Number: 970.481.6909 Samples Collected By: Ty Lichtenberg

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 Canister #	Other		
BH01 - 4/9/18	4/9/2018	1407	3	X				X				BTEX	1
BH02 - 4/9/18		1341	1										2
BH03 - 4/9/18		1253	1										3
BH04 - 4/9/18		1325	1										4
BH05 - 4/9/18		1420	1										5
BH06 - 4/9/18		1441	1										6
BH07 - 4/9/18		1310	1										7
BH08 - 4/9/18		1239	1										8
BH09 - 4/9/18		1222	1										9
BH10 - 4/9/18		1202	1										10
Relinquished By: 	Date: 4/9/18	Time: 1701		Received By: 	Date: 4/9/18	Time: 1701		Received By: 	Date: 4/9/18	Time: 1701		Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input checked="" type="checkbox"/> Standard	
Relinquished By:	Date:	Time:		Received By:	Date:	Time:		Received By:	Date:	Time:			

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

Comments:

Origins Laboratory, Inc.

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

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page 2 of 2

1404163

**ORIGINS**  
LABORATORY, INC

Client: Anadarko/Tasman  
Address: 6899 Pecos St.  
Denver CO 80221  
Telephone Number: 970.481.6909

Project Manager/Send Report To: Bob Cornez  
Email Address: rcornez@tasman-geo.com  
Project Name/Number: HSR Hall 12-31/89069141  
Samples Collected By: Ty Lichtenberg

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 Summ #		
BH11 - 4/9/18	4/9/2018	1146	3	X				X			BTEX	1
BH12 - 4/9/18		1044	1									2
BH13 - 4/9/18		1115	1									3
BH14 - 4/9/18		1131	1									4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
			1702	4-9-18	1709	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

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

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  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 1804163

Client: Tasman

Client Project ID: KMG-15K-1411 12-31

Checklist Completed by: SG

Shipped Via: Pick up

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

Date/time completed: 4/10/2018

Airbill #: N/A

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

Cooler Number/Temperature: 1 5.5 °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 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 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) Bob Cornez

Date/Time Reviewed 4/11/18

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH01 - 4/9/18

4/9/2018 2:07:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y804163-01 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.9 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH02 - 4/9/18

4/9/2018 1:41:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y804163-02 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	4.00	ug/L	4	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	131	4.00	"	"	"	"	"	
Xylenes, total	1740	4.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	99.6 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.9 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH03 - 4/9/18

4/9/2018 12:53:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y804163-03 (Water)

**BTEX by EPA 8260C**

Benzene	ND	4.00	ug/L	4	B8D1302	04/13/2018	04/13/2018	U
Toluene	3790	100	"	100	"	"	04/13/2018	
Ethylbenzene	198	100	"	"	"	"	"	
Xylenes, total	3680	100	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"	04/13/2018	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.4 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH04 - 4/9/18

4/9/2018 1:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y804163-04 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

101 % 84-121  
98.4 % 85-115  
101 % 84-114

" "  
" "  
" "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH05 - 4/9/18

4/9/2018 2:26:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y804163-05 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

101 % 84-121  
98.0 % 85-115  
101 % 84-114

" "  
" "  
" "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH06 - 4/9/18

4/9/2018 2:41:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y804163-06 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

103 % 84-121  
99.4 % 85-115  
100 % 84-114

" "  
" "  
" "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH07 - 4/9/18

4/9/2018 1:10:00PM

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

**Origins Laboratory, Inc.**  
**Y804163-07 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

101 % 84-121  
99.0 % 85-115  
99.0 % 84-114

" " "  
" " "  
" " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH08 - 4/9/18

4/9/2018 12:39:00PM

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

**Origins Laboratory, Inc.**  
Y804163-08 (Water)

**BTEX by EPA 8260C**

Benzene	ND	4.00	ug/L	4	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	22.3	4.00	"	"	"	"	"	
Xylenes, total	330	4.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	104 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.9 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH09 - 4/9/18

4/9/2018 12:22:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y804163-09 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

101 % 84-121  
98.6 % 85-115  
98.1 % 84-114

" " "  
" " "  
" " "

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

BH10 - 4/9/18

4/9/2018 12:02:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y804163-10 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	4.00	ug/L	4	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	79.0	4.00	"	"	"	"	"	
Xylenes, total	1600	4.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	101 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.3 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	84-114			"	"	"	

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Project: KMG - HSR Hall 12-31

BH11 - 4/9/18

4/9/2018 11:48:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y804163-11 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	4.00	ug/L	4	B8D1302	04/13/2018	04/13/2018	U
Toluene	3750	50.0	"	50	"	"	04/16/2018	
Ethylbenzene	182	4.00	"	4	"	"	04/13/2018	
Xylenes, total	4710	50.0	"	50	"	"	04/16/2018	

Surrogate: 1,2-Dichloroethane-d4	99.0 %	84-121			"	"	04/13/2018	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.4 %	84-114			"	"	"	

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Project: KMG - HSR Hall 12-31

BH12 - 4/9/18

4/9/2018 10:44:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y804163-12 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

103 % 84-121  
98.9 % 85-115  
99.4 % 84-114

" " "  
" " "  
" " "

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Project: KMG - HSR Hall 12-31

BH13 - 4/9/18

4/9/2018 11:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y804163-13 (Water)**

**BTEX by EPA 8260C**

Benzene	28.6	4.00	ug/L	4	B8D1302	04/13/2018	04/13/2018	
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	262	4.00	"	"	"	"	"	
Xylenes, total	3340	50.0	"	50	"	"	04/16/2018	

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	04/13/2018	
Surrogate: Toluene-d8	98.6 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	

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Project: KMG - HSR Hall 12-31

BH14 - 4/9/18

4/9/2018 11:31:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y804163-14 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B8D1302	04/13/2018	04/13/2018	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4  
Surrogate: Toluene-d8  
Surrogate: 4-Bromofluorobenzene

103 % 84-121  
98.9 % 85-115  
97.8 % 84-114

" " "  
" " "  
" " "

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8D1302 - EPA 5030B (Water)**

**Blank (B8D1302-BLK1)**

Prepared: 04/13/2018 Analyzed: 04/13/2018

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	64		"	62.5	103		84-121			
Surrogate: Toluene-d8	62		"	62.5	99.3		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	98.6		84-114			

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Tasman Geosciences  
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Denver CO 80211

Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8D1302 - EPA 5030B (Water)**

**LCS (B8D1302-BS1)**

Prepared: 04/13/2018 Analyzed: 04/13/2018

Benzene	45.1	1.00	ug/L	50.0		90.2	73.3-129			
Toluene	44.5	1.00	"	50.0		89.1	76.2-123			
Ethylbenzene	44.5	1.00	"	50.0		89.0	73.6-130			
m,p-Xylene	88.9	2.00	"	100		88.9	76.1-126			
o-Xylene	44.9	1.00	"	50.0		89.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.9	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		102	84-114			

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Bob Cornez  
Project Number: 89069141  
Project: KMG - HSR Hall 12-31

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8D1302 - EPA 5030B (Water)**

Matrix Spike (B8D1302-MS1)		Source: Y804163-01			Prepared: 04/13/2018 Analyzed: 04/13/2018					
Benzene	52.4	1.00	ug/L	50.0	ND	105	74-130			
Toluene	52.4	1.00	"	50.0	ND	105	73-131			
Ethylbenzene	55.0	1.00	"	50.0	0.080	110	76-132			
m,p-Xylene	107	2.00	"	100	ND	107	69-139			
o-Xylene	51.3	1.00	"	50.0	ND	103	74-131			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		106	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.7	84-114			

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Denver CO 80211

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Project Number: 89069141  
Project: KMG - HSR Hall 12-31

**Volatile Organic Compounds by GC/MS SW846 8260C - 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 B8D1302 - EPA 5030B (Water)**

Matrix Spike Dup (B8D1302-MSD1)		Source: Y804163-01			Prepared: 04/13/2018 Analyzed: 04/13/2018					
Benzene	55.7	1.00	ug/L	50.0	ND	111	74-130	6.18	20	
Toluene	55.8	1.00	"	50.0	ND	112	73-131	6.30	20	
Ethylbenzene	58.6	1.00	"	50.0	0.080	117	76-132	6.44	20	
m,p-Xylene	115	2.00	"	100	ND	115	69-139	7.21	20	
o-Xylene	53.8	1.00	"	50.0	ND	108	74-131	4.63	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.4	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	84-114			

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## 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.

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