

July 07, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Howard 15-27A**

**Project Number - [none]**

Attached are your analytical results for KMG - Howard 15-27A received by Origins Laboratory, Inc. June 30, 2016. This project is associated with Origins project number X607011-01.

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: [none]

Project: KMG - Howard 15-27A

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 06/30/16	X607011-01	Water	June 30, 2016 10:33	06/30/2016 17:00
BH02 - 06/30/16	X607011-02	Water	June 30, 2016 10:23	06/30/2016 17:00
BH03 - 06/30/16	X607011-03	Water	June 30, 2016 10:40	06/30/2016 17:00
BH04 - 06/30/16	X607011-04	Water	June 30, 2016 10:49	06/30/2016 17:00
BH05 - 06/30/16	X607011-05	Water	June 30, 2016 10:58	06/30/2016 17:00
BH06 - 06/30/16	X607011-06	Water	June 30, 2016 11:08	06/30/2016 17:00
BH07 - 06/30/16	X607011-07	Water	June 30, 2016 10:07	06/30/2016 17:00
BH08 - 06/30/16	X607011-08	Water	June 30, 2016 11:18	06/30/2016 17:00

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

www.originslaboratory.com

1725 Eik Place

ORIGINS  
LABORATORY, INC

Client: Tasman Geosciences  
Address: [blank]  
Telephone Number: (352) 262-9910  
Email Address: bcornez@tasmangeo.com

Project Manager: Bob Cornez  
Project Name: Howard 15-27A  
Project Number: [blank]  
Samples Collected By: Kirk Fasmark

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 #			
BTH1-06/30/16	6/30/16	1033	3					X				BTEX8260	1
BTH2-06/30/16	6/30/16	1023	3					X					2
BTH3-06/30/16	6/30/16	1040	3					X					3
BTH4-06/30/16	6/30/16	1049	3					X					4
BTH5-06/30/16	6/30/16	1058	3					X					5
BTH6-06/30/16	6/30/16	1108	3					X					6
BTH7-06/30/16	6/30/16	1007	3					X					7
BTH8-06/30/16	6/30/16	1118	3					X					8
													9
													10

Relinquished By: [Signature] Date: 6/30/16  
Relinquished By: [Signature] Date: 6/30/16

Received By: [Signature] Date: 6/30/16  
Received By: [Signature] Date: 6/30/16

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

Date Results Needed

Origins Laboratory, Inc.

Jefe Pellegrini

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X607011

Client: Tasman

Client Project ID: KMG-Howard 15-27A

Checklist Completed by: Jeff Smith

Shipped Via: LD

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

Date/time completed: 7/6/12

Airbill #: NA

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

Cooler Number/Temperature: 1 / 5.1 °C 1 °C 1 °C (Describe) °C

Thermometer ID: TOU3

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7/6/12</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) Jeff Smith

Date/Time Reviewed 7/6/12

Origins Laboratory, Inc.

*Jeff Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

BH01 - 06/30/16

6/30/2016 10:33:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

**Origins Laboratory, Inc.**  
**X607011-01 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6G0606	07/06/2016	07/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.2 %	84-121	"	"	"
Surrogate: Toluene-d8	96.2 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	84-114	"	"	"

Origins Laboratory, Inc.



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Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

BH02 - 06/30/16

6/30/2016 10:23:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

**Origins Laboratory, Inc.**  
**X607011-02 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6G0606	07/06/2016	07/06/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.2 %	84-121	"	"	"
Surrogate: Toluene-d8	97.6 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	99.8 %	84-114	"	"	"

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

BH03 - 06/30/16

6/30/2016 10:40:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.  
X607011-03 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G0606	07/06/2016	07/07/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.6 %	84-121	"	"	"
Surrogate: Toluene-d8	97.1 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	104 %	84-114	"	"	"

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

BH04 - 06/30/16

6/30/2016 10:49:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

**Origins Laboratory, Inc.**  
**X607011-04 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6G0606	07/06/2016	07/07/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	93.7 %	84-121	"	"	"
Surrogate: Toluene-d8	96.4 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	100 %	84-114	"	"	"

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

BH05 - 06/30/16

6/30/2016 10:58:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.  
X607011-05 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G0606	07/06/2016	07/07/2016	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	96.1 %	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: [none]

Project: KMG - Howard 15-27A

BH06 - 06/30/16

6/30/2016 11:08:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

X607011-06 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6G0606	07/06/2016	07/07/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

94.8 % 84-121

"

"

"

Surrogate: Toluene-d8

96.3 % 85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

103 % 84-114

"

"

"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

BH07 - 06/30/16

6/30/2016 10:07:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X607011-07 (Water)**

**BTEX by EPA 8260C**

Benzene	38.2	1.00	ug/L	1	B6G0606	07/06/2016	07/07/2016	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	74.4	1.00	"	"	"	"	"	
Xylenes, total	232	1.00	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"	"	
Surrogate: Toluene-d8	136 %	85-115			"	"	"	S-04
Surrogate: 4-Bromofluorobenzene	117 %	84-114			"	"	"	S-04

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

BH08 - 06/30/16

6/30/2016 11:18:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X607011-08 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6G0606	07/06/2016	07/07/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.6 %	84-121			"	"	"	
Surrogate: Toluene-d8	97.6 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

**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 B6G0606 - EPA 5030B (Water)**

**Blank (B6G0606-BLK1)**

Prepared: 07/06/2016 Analyzed: 07/06/2016

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	63		"	62.5	101		84-121			
Surrogate: Toluene-d8	61		"	62.5	96.9		85-115			
Surrogate: 4-Bromofluorobenzene	65		"	62.5	103		84-114			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

**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 B6G0606 - EPA 5030B (Water)

**LCS (B6G0606-BS1)**

Prepared: 07/06/2016 Analyzed: 07/06/2016

Benzene	50.8	1.00	ug/L	50.0		102	73.3-129			
Toluene	48.8	1.00	"	50.0		97.7	76.2-123			
Ethylbenzene	47.6	1.00	"	50.0		95.2	73.6-130			
m,p-Xylene	95.7	2.00	"	100		95.7	76.1-126			
o-Xylene	48.4	1.00	"	50.0		96.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

**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 B6G0606 - EPA 5030B (Water)**

Matrix Spike (B6G0606-MS1)		Source: X607006-03			Prepared: 07/06/2016 Analyzed: 07/06/2016					
Benzene	53.9	1.00	ug/L	50.0	ND	108	74-130			
Toluene	51.5	1.00	"	50.0	ND	103	73-131			
Ethylbenzene	49.9	1.00	"	50.0	ND	99.7	76-132			
m,p-Xylene	102	2.00	"	100	ND	102	69-139			
o-Xylene	50.3	1.00	"	50.0	ND	101	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.3	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.4	84-114			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

**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 B6G0606 - EPA 5030B (Water)**

Matrix Spike Dup (B6G0606-MSD1)		Source: X607006-03			Prepared: 07/06/2016 Analyzed: 07/06/2016					
Benzene	51.4	1.00	ug/L	50.0	ND	103	74-130	4.64	20	
Toluene	48.8	1.00	"	50.0	ND	97.7	73-131	5.26	20	
Ethylbenzene	47.7	1.00	"	50.0	ND	95.4	76-132	4.47	20	
m,p-Xylene	98.6	2.00	"	100	ND	98.6	69-139	3.29	20	
o-Xylene	49.0	1.00	"	50.0	ND	98.1	74-131	2.54	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.9	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	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: [none]

Project: KMG - Howard 15-27A

### Notes and Definitions

U Sample is Non-Detect.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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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September 13, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Howard 15-27A

Project Number - [none]

Attached are your analytical results for KMG - Howard 15-27A received by Origins Laboratory, Inc. September 06, 2016. This project is associated with Origins project number X609053-01.

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.

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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



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	X609053-01	Water	September 6, 2016 9:55	09/06/2016 14:33
BH02	X609053-02	Water	September 6, 2016 9:55	09/06/2016 14:33
BH03	X609053-03	Water	September 6, 2016 10:10	09/06/2016 14:33
BH04	X609053-04	Water	September 6, 2016 10:10	09/06/2016 14:33
BH05	X609053-05	Water	September 6, 2016 10:20	09/06/2016 14:33
BH06	X609053-06	Water	September 6, 2016 10:25	09/06/2016 14:33
BH07	X609053-07	Water	September 6, 2016 10:30	09/06/2016 14:33
BH08	X609053-08	Water	September 6, 2016 10:40	09/06/2016 14:33

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

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**ORIGINS** LABORATORY, INC

Client: Annular/KO / Tasman Geo Project Manager: Robert Cornez  
Address: \_\_\_\_\_ Project Name: Howard 15-27A  
Telephone Number: \_\_\_\_\_ Project Number: \_\_\_\_\_  
Email Address: r.cornez@tasman-geo.com Samples Collected By: GB & MP

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summation	Other	PT Ref	
BH01	9-6-16	0955	3	X				X					1
BH02	9-6-16	0955	3	X				X					2
BH03	9-6-16	1010	3	X				X					3
BH04	9-6-16	1010	3	X				X					4
BH05	9-6-16	1020	2	X				X					5
BH06	9-6-16	1025	3	X				X					6
BH07	9-6-16	1030	2	X				X					7
BH08	9-6-16	1040	3	X				X					8
													9
													10
Relinquished By: <u>[Signature]</u>	Date: <u>9-6-16</u>	Time: <u>1433</u>		Received By: <u>[Signature]</u>				Date: <u>9/6/16</u>	Time: <u>1433</u>	Turnaround Time: <input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input checked="" type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard			

Date Results Needed

Temp Received: 17

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X609053

Client: Tasman

Client Project ID: KMG - Howard 15-27A

Checklist Completed by: Jeff Smith

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

Date/time completed: 9/8/12

Airbill #: NA

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

Cooler Number/Temperature: 1 / 1.7 °C                      /                      °C                      /                      °C (Describe)

Thermometer ID: TOB

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? <b>If yes, contact client and note in narrative.</b>	<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.

Jeff Smith  
Reviewed by (Project Manager)

9/8/12  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jeff 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  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

BH01

9/6/2016 9:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X609053-01 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6I1001	09/10/2016	09/10/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	112 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	94.1 %	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: [none]  
Project: KMG - Howard 15-27A

BH02

9/6/2016 9:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X609053-02 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B6I1001	09/10/2016	09/10/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	113 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.2 %	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: [none]  
Project: KMG - Howard 15-27A

BH03

9/6/2016 10:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X609053-03 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6I1001	09/10/2016	09/10/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	114 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	94.6 %	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: [none]  
Project: KMG - Howard 15-27A

BH04  
9/6/2016 10:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X609053-04 (Water)

## BTEX by EPA 8260C

Benzene	ND	4.00	ug/L	4	B6I1001	09/10/2016	09/10/2016	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	ND	4.00	"	"	"	"	"	U
Xylenes, total	ND	4.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	112 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.4 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.6 %	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: [none]  
Project: KMG - Howard 15-27A

BH05

9/6/2016 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X609053-05 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6I1001	09/10/2016	09/10/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	115 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	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: [none]  
Project: KMG - Howard 15-27A

BH06  
9/6/2016 10:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X609053-06 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6I1001	09/10/2016	09/10/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	114 %	84-121			"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.1 %	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: [none]  
Project: KMG - Howard 15-27A

BH07

9/6/2016 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X609053-07 (Water)**

**BTEX by EPA 8260C**

Benzene	54.4	4.00	ug/L	4	B611001	09/10/2016	09/10/2016	
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	68.9	4.00	"	"	"	"	"	
Xylenes, total	186	4.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	113 %	84-121			"	"	"
Surrogate: Toluene-d8	100 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	94.0 %	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: [none]  
Project: KMG - Howard 15-27A

BH08  
9/6/2016 10:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X609053-08 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6I1001	09/10/2016	09/10/2016	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	114 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.7 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %	84-114			"	"	"	

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Howard 15-27A

**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
<b>Batch B6I1001 - EPA 5030B (Water)</b>										
<b>Blank (B6I1001-BLK1)</b>					Prepared: 09/10/2016 Analyzed: 09/10/2016					
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	72		"	62.5		115	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.2	85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.7	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: [none]  
Project: KMG - Howard 15-27A

**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 B6I1001 - EPA 5030B (Water)**

**LCS (B6I1001-BS1)**

Prepared: 09/10/2016 Analyzed: 09/10/2016

Benzene	45.9	1.00	ug/L	50.0		91.8	73.3-129			
Toluene	47.4	1.00	"	50.0		94.9	76.2-123			
Ethylbenzene	48.7	1.00	"	50.0		97.5	73.6-130			
m,p-Xylene	96.3	2.00	"	100		96.3	76.1-126			
o-Xylene	49.2	1.00	"	50.0		98.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.4	85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.3	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: [none]  
Project: KMG - Howard 15-27A

**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 B6I1001 - EPA 5030B (Water)**

Matrix Spike (B6I1001-MS1)		Source: X609054-03			Prepared: 09/10/2016 Analyzed: 09/10/2016					
Benzene	49.6	1.00	ug/L	50.0	ND	99.1	74-130			
Toluene	51.4	1.00	"	50.0	ND	103	73-131			
Ethylbenzene	54.1	1.00	"	50.0	ND	108	76-132			
m,p-Xylene	109	2.00	"	100	ND	109	69-139			
o-Xylene	53.6	1.00	"	50.0	ND	107	74-131			
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.9	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: [none]  
Project: KMG - Howard 15-27A

**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 B6I1001 - EPA 5030B (Water)**

Matrix Spike Dup (B6I1001-MSD1)		Source: X609054-03			Prepared: 09/10/2016 Analyzed: 09/10/2016					
Benzene	49.9	1.00	ug/L	50.0	ND	99.9	74-130	0.724	20	
Toluene	51.6	1.00	"	50.0	ND	103	73-131	0.311	20	
Ethylbenzene	54.0	1.00	"	50.0	ND	108	76-132	0.185	20	
m,p-Xylene	108	2.00	"	100	ND	108	69-139	1.03	20	
o-Xylene	54.2	1.00	"	50.0	ND	108	74-131	1.10	20	
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		106	84-121			
Surrogate: Toluene-d8	61		"	62.5		98.2	85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.8	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: [none]

Project: KMG - Howard 15-27A

### 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



December 28, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Howard 15-27A

Project Number - 88541237

Attached are your analytical results for KMG - Howard 15-27A received by Origins Laboratory, Inc. December 20, 2016. This project is associated with Origins project number X612240-01.

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: 88541237  
Project: KMG - Howard 15-27A

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 12/20/16	X612240-01	Water	December 20, 2016 9:07	12/20/2016 14:34
BH02 - 12/20/16	X612240-02	Water	December 20, 2016 9:12	12/20/2016 14:34
BH03 - 12/20/16	X612240-03	Water	December 20, 2016 9:20	12/20/2016 14:34
BH04 - 12/20/16	X612240-04	Water	December 20, 2016 9:25	12/20/2016 14:34
BH06 - 12/20/16	X612240-05	Water	December 20, 2016 9:35	12/20/2016 14:34
BH08 - 12/20/16	X612240-06	Water	December 20, 2016 9:46	12/20/2016 14:34

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

www.originslaboratory.com

X612240

ORIGINS  
LABORATORY, INC

page 1 of 1

Client: Tasman Geosciences for APC  
Address:  
Telephone Number: (352) 262-9910  
Email Address: rcorne@tasman-geo.com

Project Manager: Bob Cornez  
Project Name: Howard 15-27A  
Project Number: 88541237  
Samples Collected By: Kate F. Wood P.

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		
BH01-12/20/10	12/20/10	907	3	X				X				BTEX 8260	1
BH02-12/20/10	12/20/10	912	3	X				X					2
BH03-12/20/10	12/20/10	920	3	X				X					3
BH04-12/20/10	12/20/10	925	3	X				X					4
BH06-12/20/10	12/20/10	935	3	X				X					5
BH08-12/20/10	12/20/10	946	3	X				X					6
													7
													8
													9
													10

  

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<i>[Signature]</i>	12/20/10	1434	<i>[Signature]</i>	12-20-10	1434	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard

Date Results Needed

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: 88541237  
Project: KMG - Howard 15-27A

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X612240

Client: Tasman

Client Project ID: KMG - Howard 15-27A

Checklist Completed by: Jeff Smith

Shipped Via: 4D  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12-21-16

Airbill #: NA

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

Cooler Number/Temperature: 1 18.9 °C 1 °C 1 °C (Describe)

Thermometer ID: TC03

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>Sampled 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? <b>If yes, contact client and note in narrative.</b>		<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"/>			<u>H<sub>2</sub>O</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)

Date/Time Reviewed

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH01 - 12/20/16

12/20/2016 9:07:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X612240-01 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6L2703	12/27/2016	12/27/2016	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  
98.5 % 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: 88541237  
Project: KMG - Howard 15-27A

BH02 - 12/20/16

12/20/2016 9:12:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X612240-02 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6L2703	12/27/2016	12/27/2016	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

104 % 84-121  
98.2 % 85-115  
102 % 84-114

" " "  
" " "  
" " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH03 - 12/20/16

12/20/2016 9:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X612240-03 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6L2703	12/27/2016	12/28/2016	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  
99.9 % 85-115  
99.2 % 84-114

" " "  
" " "  
" " "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH04 - 12/20/16

12/20/2016 9:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X612240-04 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6L2703	12/27/2016	12/28/2016	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

102 % 84-121  
99.3 % 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: 88541237  
Project: KMG - Howard 15-27A

BH06 - 12/20/16

12/20/2016 9:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X612240-05 (Water)**

**BTEX by EPA 8260C**

Benzene	1.00	1.00	ug/L	1	B6L2703	12/27/2016	12/28/2016	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	96.8 %	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: 88541237  
Project: KMG - Howard 15-27A

BH08 - 12/20/16

12/20/2016 9:46:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X612240-06 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B6L2703	12/27/2016	12/28/2016	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  
100 % 85-115  
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: 88541237  
Project: KMG - Howard 15-27A

**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 B6L2703 - EPA 5030B (Water)**

**Blank (B6L2703-BLK1)**

Prepared: 12/27/2016 Analyzed: 12/27/2016

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	63		"	62.5		100	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		100	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B6L2703 - EPA 5030B (Water)**

**Blank (B6L2703-BLK2)**

Prepared: 12/27/2016 Analyzed: 12/27/2016

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	63		"	62.5	100		84-121			
Surrogate: Toluene-d8	62		"	62.5	98.9		85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5	102		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B6L2703 - EPA 5030B (Water)**

**LCS (B6L2703-BS1)**

Prepared: 12/27/2016 Analyzed: 12/27/2016

Benzene	43.8	1.00	ug/L	50.0		87.7	73.3-129			
Toluene	43.6	1.00	"	50.0		87.2	76.2-123			
Ethylbenzene	43.2	1.00	"	50.0		86.4	73.6-130			
m,p-Xylene	85.0	2.00	"	100		85.0	76.1-126			
o-Xylene	45.5	1.00	"	50.0		91.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.5	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.5	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: 88541237  
Project: KMG - Howard 15-27A

**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 B6L2703 - EPA 5030B (Water)**

**LCS (B6L2703-BS2)**

Prepared: 12/27/2016 Analyzed: 12/27/2016

Benzene	45.1	1.00	ug/L	50.0		90.3	73.3-129			
Toluene	45.4	1.00	"	50.0		90.8	76.2-123			
Ethylbenzene	44.5	1.00	"	50.0		89.0	73.6-130			
m,p-Xylene	88.8	2.00	"	100		88.8	76.1-126			
o-Xylene	47.0	1.00	"	50.0		94.1	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.6	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.8	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B6L2703 - EPA 5030B (Water)**

Matrix Spike (B6L2703-MS1)		Source: X612240-01			Prepared: 12/27/2016 Analyzed: 12/27/2016					
Benzene	40.4	1.00	ug/L	50.0	ND	80.7	74-130			
Toluene	40.1	1.00	"	50.0	ND	80.2	73-131			
Ethylbenzene	37.8	1.00	"	50.0	ND	75.6	76-132			QM-07
m,p-Xylene	76.5	2.00	"	100	ND	76.5	69-139			
o-Xylene	41.7	1.00	"	50.0	ND	83.5	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.4	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.2	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B6L2703 - EPA 5030B (Water)**

Matrix Spike (B6L2703-MS2)		Source: X612240-02			Prepared: 12/27/2016 Analyzed: 12/27/2016					
Benzene	41.1	1.00	ug/L	50.0	ND	82.2	74-130			
Toluene	40.4	1.00	"	50.0	ND	80.8	73-131			
Ethylbenzene	39.3	1.00	"	50.0	ND	78.6	76-132			
m,p-Xylene	78.4	2.00	"	100	ND	78.4	69-139			
o-Xylene	42.4	1.00	"	50.0	ND	84.9	74-131			
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B6L2703 - EPA 5030B (Water)**

Matrix Spike Dup (B6L2703-MSD1)		Source: X612240-01			Prepared: 12/27/2016 Analyzed: 12/27/2016					
Benzene	40.3	1.00	ug/L	50.0	ND	80.5	74-130	0.223	20	
Toluene	40.5	1.00	"	50.0	ND	81.0	73-131	1.07	20	
Ethylbenzene	39.4	1.00	"	50.0	ND	78.8	76-132	4.22	20	
m,p-Xylene	77.4	2.00	"	100	ND	77.4	69-139	1.21	20	
o-Xylene	41.4	1.00	"	50.0	ND	82.8	74-131	0.770	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.8	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.1	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B6L2703 - EPA 5030B (Water)**

Matrix Spike Dup (B6L2703-MSD2)		Source: X612240-02			Prepared: 12/27/2016 Analyzed: 12/27/2016					
Benzene	40.3	1.00	ug/L	50.0	ND	80.6	74-130	2.06	20	
Toluene	40.1	1.00	"	50.0	ND	80.3	73-131	0.621	20	
Ethylbenzene	39.0	1.00	"	50.0	ND	77.9	76-132	0.920	20	
m,p-Xylene	77.0	2.00	"	100	ND	77.0	69-139	1.79	20	
o-Xylene	40.8	1.00	"	50.0	ND	81.5	74-131	4.01	20	
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		102	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

## Notes and Definitions

U Sample is Non-Detect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported 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.*



March 08, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Howard 15-27A**

**Project Number - 88541237**

Attached are your analytical results for KMG - Howard 15-27A received by Origins Laboratory, Inc. March 01, 2017. This project is associated with Origins project number Y703013-01.

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: 88541237

Project: KMG - Howard 15-27A

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01-03/01/17	Y703013-01	Water	March 1, 2017 10:59	03/01/2017 13:05
BH02-03/01/17	Y703013-02	Water	March 1, 2017 11:08	03/01/2017 13:05
BH03-03/01/17	Y703013-03	Water	March 1, 2017 11:13	03/01/2017 13:05
BH04-03/01/17	Y703013-04	Water	March 1, 2017 11:19	03/01/2017 13:05
BH05-03/01/17	Y703013-05	Water	March 1, 2017 11:27	03/01/2017 13:05
BH06-03/01/17	Y703013-06	Water	March 1, 2017 11:32	03/01/2017 13:05
BH08-03/01/17	Y703013-07	Water	March 1, 2017 11:45	03/01/2017 13:05

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

www.originslaboratory.com

page 1 of 1

1703013

Client: APC

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

Telephone Number: 303 810 2414

Email Address: Cornez@tasman-geo.com

Project Manager: Bob Cornez

Project Name: Howard 15-27A

Project Number: 88541237

Samples Collected By: Matt P.

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summation			Other
B101-03/01/17	3/1/17	10:59	3	✓				✓				✓	1
B102-03/01/17		11:08	3	✓				✓				✓	2
B103-03/01/17		11:13	3	✓				✓				✓	3
B104-03/01/17		11:19	3	✓				✓				✓	4
B105-03/01/17		11:27	3	✓				✓				✓	5
B106-03/01/17		11:32	2	✓				✓				✓	6
B108-03/01/17		11:45	3	✓				✓				✓	7
													8
													9
													10

Relinquished By: [Signature] Date: 3/1/17 Time: 1305

Relinquished By: [Signature] Date: 3/1/17 Time: 1305

Received By: [Signature] Date: 3-1-17 Time: 1305

Received By: [Signature] Date: 3-1-17 Time: 1305

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

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: 88541237  
Project: KMG - Howard 15-27A

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 4703013

Client: Tasman

Client Project ID: KMG - Howard 15-27A

Checklist Completed by: Don W

Shipped Via: 140  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 3-1-12 1352

Airbill #: N/A

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

Cooler Number/Temperature: / / 59 °C / °C / °C / °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> ?	/			
Is there ice present (document if blue ice is used)	/			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		/		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		/		
Were all samples received intact <sup>(1)</sup> ?	/			
Was adequate sample volume provided <sup>(1)</sup> ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		/		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	/			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	/			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	/			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		/		
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with 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)		/		
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: [Signature] Project Manager)

3/2/12  
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH01-03/01/17  
3/1/2017 10:59:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y703013-01 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7C0603	03/06/2017	03/07/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.1 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.3 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH02-03/01/17  
3/1/2017 11:08:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y703013-02 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7C0603	03/06/2017	03/07/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.5 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH03-03/01/17  
3/1/2017 11:13:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y703013-03 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7C0603	03/06/2017	03/07/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.6 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.3 %	84-114			"	"	"	

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH04-03/01/17  
3/1/2017 11:19:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y703013-04 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7C0603	03/06/2017	03/07/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.5 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.9 %	84-114			"	"	"	

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Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH05-03/01/17  
3/1/2017 11:27:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y703013-05 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7C0603	03/06/2017	03/07/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.7 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH06-03/01/17  
3/1/2017 11:32:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y703013-06 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7C0603	03/06/2017	03/07/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.1 %	84-114			"	"	"	

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Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH08-03/01/17  
3/1/2017 11:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y703013-07 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7C0603	03/06/2017	03/07/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.9 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7C0603 - EPA 5030B (Water)**

**Blank (B7C0603-BLK1)**

Prepared: 03/06/2017 Analyzed: 03/07/2017

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	63		"	62.5	101		84-121			
Surrogate: Toluene-d8	62		"	62.5	99.0		85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5	95.4		84-114			

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Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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
<b>Batch B7C0603 - EPA 5030B (Water)</b>										
<b>Blank (B7C0603-BLK2)</b>					Prepared: 03/06/2017 Analyzed: 03/06/2017					
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	63		"	62.5	101		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5	95.1		84-114			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7C0603 - EPA 5030B (Water)**

**LCS (B7C0603-BS1)**

Prepared: 03/06/2017 Analyzed: 03/07/2017

Benzene	47.7	1.00	ug/L	50.0		95.4	73.3-129			
Toluene	47.0	1.00	"	50.0		94.0	76.2-123			
Ethylbenzene	48.8	1.00	"	50.0		97.6	73.6-130			
m,p-Xylene	95.1	2.00	"	100		95.1	76.1-126			
o-Xylene	48.6	1.00	"	50.0		97.2	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7C0603 - EPA 5030B (Water)**

**LCS (B7C0603-BS2)**

Prepared: 03/06/2017 Analyzed: 03/06/2017

Benzene	48.3	1.00	ug/L	50.0		96.6	73.3-129
Toluene	47.5	1.00	"	50.0		95.1	76.2-123
Ethylbenzene	51.4	1.00	"	50.0		103	73.6-130
m,p-Xylene	99.6	2.00	"	100		99.6	76.1-126
o-Xylene	48.7	1.00	"	50.0		97.5	76.6-124
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		100	84-121
Surrogate: Toluene-d8	62		"	62.5		99.6	85-115
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7C0603 - EPA 5030B (Water)**

Matrix Spike (B7C0603-MS1)		Source: Y703002-03			Prepared: 03/06/2017 Analyzed: 03/06/2017					
Benzene	52.2	1.00	ug/L	50.0	ND	104	74-130			
Toluene	54.2	1.00	"	50.0	ND	108	73-131			
Ethylbenzene	56.0	1.00	"	50.0	ND	112	76-132			
m,p-Xylene	108	2.00	"	100	ND	108	69-139			
o-Xylene	51.8	1.00	"	50.0	ND	104	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		96.9	84-121			
Surrogate: Toluene-d8	65		"	62.5		104	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.6	84-114			

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7C0603 - EPA 5030B (Water)**

Matrix Spike (B7C0603-MS2)		Source: Y703002-03			Prepared: 03/06/2017 Analyzed: 03/06/2017					
Benzene	52.4	1.00	ug/L	50.0	ND	105	74-130			
Toluene	53.8	1.00	"	50.0	ND	108	73-131			
Ethylbenzene	54.3	1.00	"	50.0	ND	109	76-132			
m,p-Xylene	107	2.00	"	100	ND	107	69-139			
o-Xylene	51.2	1.00	"	50.0	ND	102	74-131			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		100	84-121			
Surrogate: Toluene-d8	66		"	62.5		105	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.8	84-114			

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7C0603 - EPA 5030B (Water)**

Matrix Spike Dup (B7C0603-MSD1)		Source: Y703002-03			Prepared: 03/06/2017 Analyzed: 03/06/2017					
Benzene	50.7	1.00	ug/L	50.0	ND	101	74-130	2.86	20	
Toluene	50.7	1.00	"	50.0	ND	101	73-131	6.66	20	
Ethylbenzene	52.2	1.00	"	50.0	ND	104	76-132	6.95	20	
m,p-Xylene	104	2.00	"	100	ND	104	69-139	3.58	20	
o-Xylene	50.0	1.00	"	50.0	ND	100	74-131	3.44	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.8	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	84-114			

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Bob Cornez  
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**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
<b>Batch B7C0603 - EPA 5030B (Water)</b>										
<b>Matrix Spike Dup (B7C0603-MSD2)</b>		<b>Source: Y703002-03</b>			Prepared: 03/06/2017 Analyzed: 03/06/2017					
Benzene	48.7	1.00	ug/L	50.0	ND	97.4	74-130	7.20	20	
Toluene	47.9	1.00	"	50.0	ND	95.8	73-131	11.5	20	
Ethylbenzene	50.1	1.00	"	50.0	ND	100	76-132	7.93	20	
m,p-Xylene	100	2.00	"	100	ND	100	69-139	6.43	20	
o-Xylene	48.7	1.00	"	50.0	ND	97.4	74-131	4.95	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.3	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.6	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: 88541237

Project: KMG - Howard 15-27A

### 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



June 07, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Howard 15-27A**

**Project Number - 88541237**

Attached are your analytical results for KMG - Howard 15-27A received by Origins Laboratory, Inc. June 02, 2017. This project is associated with Origins project number Y706044-01.

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: 88541237

Project: KMG - Howard 15-27A

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 6/2/17	Y706044-01	Water	June 2, 2017 9:57	06/02/2017 15:35
BH02 - 6/2/17	Y706044-02	Water	June 2, 2017 9:55	06/02/2017 15:35
BH03 - 6/2/17	Y706044-03	Water	June 2, 2017 10:02	06/02/2017 15:35
BH04 - 6/2/17	Y706044-04	Water	June 2, 2017 10:07	06/02/2017 15:35
BH05 - 6/2/17	Y706044-05	Water	June 2, 2017 10:12	06/02/2017 15:35
BH06 - 6/2/17	Y706044-06	Water	June 2, 2017 10:21	06/02/2017 15:35
BH08 - 6/2/17	Y706044-07	Water	June 2, 2017 10:15	06/02/2017 15:35
BH09 - 6/2/17	Y706044-08	Water	June 2, 2017 10:30	06/02/2017 15:35

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: 88541237  
Project: KMG - Howard 15-27A

www.originslaboratory.com

page 1 of 1

**ORIGINS** LABORATORY, INC

Client: APL / Tasman

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

Telephone Number: 979-255-4235

Email Address: rcornez@tasman-geo.com

Project Manager: Bob Cornez

Project Name: Howard 15-27A

Project Number: 88541237

Samples Collected By: Max Garcia, Mitchell

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 #			
BH 01 - 6/2/17	6-2-17	0957	3	X				X				1	
BH 02 - 6/2/17		0955										2	
BH 03 - 6/2/17		1002										3	
BH 04 - 6/2/17		1007										4	
BH 05 - 6/2/17		1012										5	
BH 06 - 6/2/17		1021										6	
BH 08 - 6/2/17		1015										7	
BH 04 - 6/2/17		1030	2									8	
												9	
												10	

Relinquished By: Michael Miller Date: 6-2-17 Time: 1535

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received By: [Signature] Date: 6-2-17 Time: 1535

Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

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

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: 88541237  
Project: KMG - Howard 15-27A

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 4706044

Client: Tasman

Client Project ID: KMG - Howard 15-27A

Checklist Completed by: DL

Shipped Via: 4D  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 6-5-11 1101

Airbill #: NA

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

Cooler Number/Temperature: 1 / 4.0 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) / \_\_\_\_\_ °C

Thermometer ID: TOU3

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? <b>If yes, contact client and note in narrative.</b>	<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: [Signature] (Project Manager)

6-6-11 1101  
Date/Time Reviewed

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  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH01 - 6/2/17  
6/2/2017 9:57:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y706044-01 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7F0507	06/05/2017	06/05/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.7 %	84-121	"	"	"
Surrogate: Toluene-d8	99.1 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	96.4 %	84-114	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH02 - 6/2/17  
6/2/2017 9:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y706044-02 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7F0507	06/05/2017	06/05/2017	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	98.0 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.2 %	84-114			"	"	"	

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH03 - 6/2/17  
6/2/2017 10:02:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y706044-03 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7F0507	06/05/2017	06/05/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.3 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.7 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH04 - 6/2/17  
6/2/2017 10:07:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y706044-04 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7F0507	06/05/2017	06/05/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.9 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH05 - 6/2/17  
6/2/2017 10:12:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y706044-05 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7F0507	06/05/2017	06/05/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.5 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH06 - 6/2/17  
6/2/2017 10:21:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y706044-06 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7F0507	06/05/2017	06/05/2017	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	99.6 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.7 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH08 - 6/2/17  
6/2/2017 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y706044-07 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7F0507	06/05/2017	06/05/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	84-121			"	"	"	
Surrogate: Toluene-d8	101 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.5 %	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: 88541237  
Project: KMG - Howard 15-27A

BH09 - 6/2/17  
6/2/2017 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y706044-08 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7F0507	06/05/2017	06/05/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.5 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.5 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7F0507 - EPA 5030B (Water)**

**Blank (B7F0507-BLK1)**

Prepared: 06/05/2017 Analyzed: 06/05/2017

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	62		"	62.5	99.0		84-121			
Surrogate: Toluene-d8	63		"	62.5	101		85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5	95.6		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.*

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7F0507 - EPA 5030B (Water)**

**LCS (B7F0507-BS1)**

Prepared: 06/05/2017 Analyzed: 06/05/2017

Benzene	42.4	1.00	ug/L	50.0		84.8	73.3-129
Toluene	43.6	1.00	"	50.0		87.1	76.2-123
Ethylbenzene	40.2	1.00	"	50.0		80.4	73.6-130
m,p-Xylene	79.9	2.00	"	100		79.9	76.1-126
o-Xylene	41.7	1.00	"	50.0		83.3	76.6-124
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		96.8	84-121
Surrogate: Toluene-d8	63		"	62.5		100	85-115
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	84-114

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7F0507 - EPA 5030B (Water)**

Matrix Spike (B7F0507-MS1)		Source: Y706048-02			Prepared: 06/05/2017 Analyzed: 06/05/2017					
Benzene	46.2	1.00	ug/L	50.0	ND	92.4	74-130			
Toluene	48.0	1.00	"	50.0	ND	95.9	73-131			
Ethylbenzene	44.8	1.00	"	50.0	ND	89.6	76-132			
m,p-Xylene	89.1	2.00	"	100	ND	89.1	69-139			
o-Xylene	44.5	1.00	"	50.0	ND	89.0	74-131			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.9	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.7	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7F0507 - EPA 5030B (Water)**

Matrix Spike Dup (B7F0507-MSD1)		Source: Y706048-02			Prepared: 06/05/2017 Analyzed: 06/05/2017					
Benzene	43.8	1.00	ug/L	50.0	ND	87.5	74-130	5.38	20	
Toluene	45.4	1.00	"	50.0	ND	90.9	73-131	5.39	20	
Ethylbenzene	42.6	1.00	"	50.0	ND	85.2	76-132	5.04	20	
m,p-Xylene	83.5	2.00	"	100	ND	83.5	69-139	6.45	20	
o-Xylene	42.6	1.00	"	50.0	ND	85.2	74-131	4.36	20	
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		95.3	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.5	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: 88541237

Project: KMG - Howard 15-27A

### 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

September 12, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Howard 15-27A**

**Project Number - 88541237**

Attached are your analytical results for KMG - Howard 15-27A received by Origins Laboratory, Inc. September 06, 2017. This project is associated with Origins project number Y709068-01.

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: 88541237

Project: KMG - Howard 15-27A

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 9/6/17	Y709068-01	Water	September 6, 2017 13:20	09/06/2017 16:47
BH02 - 9/6/17	Y709068-02	Water	September 6, 2017 13:10	09/06/2017 16:47
BH03 - 9/6/17	Y709068-03	Water	September 6, 2017 13:15	09/06/2017 16:47
BH04 - 9/6/17	Y709068-04	Water	September 6, 2017 13:30	09/06/2017 16:47
BH05 - 9/6/17	Y709068-05	Water	September 6, 2017 13:11	09/06/2017 16:47
BH06 - 9/6/17	Y709068-06	Water	September 6, 2017 13:12	09/06/2017 16:47
BH07R - 9/6/17	Y709068-07	Water	September 6, 2017 13:22	09/06/2017 16:47
BH08 - 9/6/17	Y709068-08	Water	September 6, 2017 13:35	09/06/2017 16:47

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: 88541237  
Project: KMG - Howard 15-27A

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page 1 of 1

7090008

**ORIGINS**  
LABORATORY, INC

Client: Tasman Geosciences for APC  
Address: 6899 Pecos St, Unit C  
Denver, CO 80221  
Telephone Number: \_\_\_\_\_  
Email Address: rcornez@tasman-geo.com

Project Manager: Bob Cornez  
Project Name: Howard 15-27A  
Project Number: 88541237  
Samples Collected By: Mitch Weller, Max Garza

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 Canister #		
BH 01 - 9/6/17	9-6-17	1320	3	X				X				1
BH 03 - 9/6/17		1310	1									2
BH 03 - 9/6/17		1315										3
BH 04 - 9/6/17		1330										4
BH 05 - 9/6/17		1311										5
BH 06 - 9/6/17		1312										6
BH 07R - 9/6/17		1322										7
BH 08 - 9/6/17		1335										8
												9
												10
Relinquished By: <u>Mitch Weller</u>	Date: <u>9-6-17</u>	Time: <u>1617</u>		Received By: <u>[Signature]</u>				Date: <u>9/6/17</u>	Time: <u>1647</u>	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard		

Date Results Needed

3,2

Temp Received-

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 4709068

Client: Tasman

Client Project ID: KMG-Howard 15-27A

Checklist Completed by: Dan

Shipped Via: 480 Pick-up

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

Date/time completed: 9-2-13

Airbill #: MA

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

Cooler Number/Temperature: 1 / 3.2 °C 1 / 1 °C 1 / 1 °C (Describe)

Thermometer ID: TCB

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) [Signature]

Date/Time Reviewed 9-2-13 1013

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH01 - 9/6/17

9/6/2017 1:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y709068-01 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B710803	09/08/2017	09/08/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	114 %	84-121			"	"	"
Surrogate: Toluene-d8	100 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	88.1 %	84-114			"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH02 - 9/6/17

9/6/2017 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y709068-02 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B710803	09/08/2017	09/08/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	116 %	84-121			"	"	"	
Surrogate: Toluene-d8	100 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	86.8 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88541237

Project: KMG - Howard 15-27A

BH03 - 9/6/17

9/6/2017 1:15:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Y709068-03 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B710803	09/08/2017	09/08/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

112 %

84-121

"

"

"

Surrogate: Toluene-d8

98.9 %

85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

88.5 %

84-114

"

"

"

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88541237

Project: KMG - Howard 15-27A

BH04 - 9/6/17

9/6/2017 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y709068-04 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B710803	09/08/2017	09/08/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

115 %

84-121

"

"

"

Surrogate: Toluene-d8

99.5 %

85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

87.8 %

84-114

"

"

"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH05 - 9/6/17

9/6/2017 1:11:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y709068-05 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B710803	09/08/2017	09/09/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	116 %	84-121			"	"	"	
Surrogate: Toluene-d8	98.0 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	88.6 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH06 - 9/6/17

9/6/2017 1:12:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y709068-06 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B710803	09/08/2017	09/09/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	117 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.5 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	87.6 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH07R - 9/6/17

9/6/2017 1:22:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

**Origins Laboratory, Inc.**  
**Y709068-07 (Water)**

**BTEX by EPA 8260C**

Benzene	92.6	1.00	ug/L	1	B710803	09/08/2017	09/09/2017	
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	14.7	1.00	"	"	"	"	"	
Xylenes, total	20.8	1.00	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	117 %	84-121		"	"	"
Surrogate: Toluene-d8	98.8 %	85-115		"	"	"
Surrogate: 4-Bromofluorobenzene	88.6 %	84-114		"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH08 - 9/6/17

9/6/2017 1:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y709068-08 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B710803	09/08/2017	09/09/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	113 %	84-121			"	"	"	
Surrogate: Toluene-d8	99.3 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	87.7 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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
<b>Batch B7I0803 - EPA 5030B (Water)</b>										
<b>Blank (B7I0803-BLK1)</b>					Prepared: 09/08/2017 Analyzed: 09/08/2017					
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	69		"	62.5	110		84-121			
Surrogate: Toluene-d8	68		"	62.5	108		85-115			
Surrogate: 4-Bromofluorobenzene	57		"	62.5	90.5		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7I0803 - EPA 5030B (Water)**

**LCS (B7I0803-BS1)**

Prepared: 09/08/2017 Analyzed: 09/08/2017

Benzene	45.4	1.00	ug/L	50.0		90.7	73.3-129			
Toluene	48.4	1.00	"	50.0		96.7	76.2-123			
Ethylbenzene	46.1	1.00	"	50.0		92.3	73.6-130			
m,p-Xylene	94.2	2.00	"	100		94.2	76.1-126			
o-Xylene	46.4	1.00	"	50.0		92.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	73		"	62.5		117	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	54		"	62.5		85.8	84-114			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7I0803 - EPA 5030B (Water)**

Matrix Spike (B7I0803-MS1)		Source: Y709093-01			Prepared: 09/08/2017 Analyzed: 09/08/2017					
Benzene	44.6	1.00	ug/L	50.0	ND	89.3	74-130			
Toluene	48.1	1.00	"	50.0	ND	96.2	73-131			
Ethylbenzene	46.8	1.00	"	50.0	ND	93.7	76-132			
m,p-Xylene	96.2	2.00	"	100	ND	96.2	69-139			
o-Xylene	47.0	1.00	"	50.0	ND	93.9	74-131			
Surrogate: 1,2-Dichloroethane-d4	73		"	62.5		116	84-121			
Surrogate: Toluene-d8	62		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		90.6	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7I0803 - EPA 5030B (Water)**

Matrix Spike Dup (B7I0803-MSD1)		Source: Y709093-01			Prepared: 09/08/2017 Analyzed: 09/08/2017					
Benzene	45.5	1.00	ug/L	50.0	ND	91.0	74-130	1.86	20	
Toluene	48.4	1.00	"	50.0	ND	96.7	73-131	0.560	20	
Ethylbenzene	47.4	1.00	"	50.0	ND	94.7	76-132	1.15	20	
m,p-Xylene	98.0	2.00	"	100	ND	98.0	69-139	1.76	20	
o-Xylene	47.2	1.00	"	50.0	ND	94.5	74-131	0.594	20	
Surrogate: 1,2-Dichloroethane-d4	74		"	62.5		119	84-121			
Surrogate: Toluene-d8	62		"	62.5		99.6	85-115			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		90.4	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88541237

Project: KMG - Howard 15-27A

### 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

December 13, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - KMG - Howard 15-27A**

**Project Number - 88541237**

Attached are your analytical results for KMG - Howard 15-27A received by Origins Laboratory, Inc. December 06, 2017. This project is associated with Origins project number Y712092-01.

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: 88541237

Project: KMG - Howard 15-27A

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01-12/6/17	Y712092-01	Water	December 6, 2017 10:15	12/06/2017 17:00
BH02-12/6/17	Y712092-02	Water	December 6, 2017 9:55	12/06/2017 17:00
BH03-12/6/17	Y712092-03	Water	December 6, 2017 10:05	12/06/2017 17:00
BH04-12/6/17	Y712092-04	Water	December 6, 2017 10:25	12/06/2017 17:00
BH05-12/6/17	Y712092-05	Water	December 6, 2017 10:45	12/06/2017 17:00
BH06-12/6/17	Y712092-06	Water	December 6, 2017 10:55	12/06/2017 17:00
BH07R-12/6/17	Y712092-07	Water	December 6, 2017 11:05	12/06/2017 17:00
BH08-12/6/17	Y712092-08	Water	December 6, 2017 10:35	12/06/2017 17:00

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

www.originslaboratory.com

Y712092

ORIGINS LABORATORY, INC

Client: APL TCM Project Manager/Send Report To: Bob Cornez

Address: 6899 Pecos Street, Unit C Email Address: cornez@tasmangeo.com

Telephone Number: 779-255-4735 Project Name/Number: 88541237 Howard 15-27A

Samples Collected By: Max Gaton

page 1 of 1

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/Surface		
BH01-12/16/17	12/16/17	10:15	3	X				X			BTEX	1
BH02-12/16/17		09:55	1									2
BH03-12/16/17		10:05	1									3
BH04-12/16/17		10:25	4									4
BH05-12/16/17		10:45	3									5
BH06-12/16/17		10:55	3									6
BH07-12/16/17		11:05	4									7
BH07-12/16/17		10:35	3									8
												9
												10

  

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>Max Gaton</u>	12/16/17	17:00	<u>[Signature]</u>	12/16/17	17:00	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: 88541237  
Project: KMG - Howard 15-27A

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 4712092

Client: Tasman

Client Project ID: KMG - Howard 15-27A

Checklist Completed by: DLK

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

Date/time completed: 12-7-11

Airbill #: NA

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

Cooler Number/Temperature: 1 / 3.6 °C /        °C /        °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) DLK

Date/Time Reviewed 12-7-11

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH01-12/6/17

12/6/2017 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y712092-01 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7L0810	12/08/2017	12/11/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	112 %	84-121			"	"	"	
Surrogate: Toluene-d8	105 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH02-12/6/17  
12/6/2017 9:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y712092-02 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7L0810	12/08/2017	12/11/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"	"	
Surrogate: Toluene-d8	103 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88541237

Project: KMG - Howard 15-27A

BH03-12/6/17

12/6/2017 10:05:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

Y712092-03 (Water)

## BTEX by EPA 8260C

Benzene	ND	1.00	ug/L	1	B7L0810	12/08/2017	12/11/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4

110 % 84-121

"

"

"

Surrogate: Toluene-d8

104 % 85-115

"

"

"

Surrogate: 4-Bromofluorobenzene

108 % 84-114

"

"

"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH04-12/6/17

12/6/2017 10:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y712092-04 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	4.00	ug/L	4	B7L0810	12/08/2017	12/11/2017	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	ND	4.00	"	"	"	"	"	U
Xylenes, total	ND	4.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	108 %	84-121	"	"	"
Surrogate: Toluene-d8	102 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	108 %	84-114	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH05-12/6/17

12/6/2017 10:45:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

**Origins Laboratory, Inc.**  
**Y712092-05 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7L0810	12/08/2017	12/11/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	84-121	"	"	"
Surrogate: Toluene-d8	103 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	84-114	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH06-12/6/17

12/6/2017 10:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y712092-06 (Water)

**BTEX by EPA 8260C**

Benzene	4.90	1.00	ug/L	1	B7L0810	12/08/2017	12/11/2017	
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

112 % 84-121  
104 % 85-115  
107 % 84-114

" "  
" "  
" "

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH07R-12/6/17  
12/6/2017 11:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y712092-07 (Water)

**BTEX by EPA 8260C**

Benzene	88.8	4.00	ug/L	4	B7L0810	12/08/2017	12/11/2017	
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	ND	4.00	"	"	"	"	"	U
Xylenes, total	ND	4.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"	"
Surrogate: Toluene-d8	103 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	108 %	84-114			"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

BH08-12/6/17

12/6/2017 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y712092-08 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.00	ug/L	1	B7L0810	12/08/2017	12/11/2017	U
Toluene	ND	1.00	"	"	"	"	"	U
Ethylbenzene	ND	1.00	"	"	"	"	"	U
Xylenes, total	ND	1.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %	84-121			"	"	"	
Surrogate: Toluene-d8	104 %	85-115			"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	84-114			"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7L0810 - EPA 5030B (Water)**

**Blank (B7L0810-BLK1)**

Prepared: 12/08/2017 Analyzed: 12/11/2017

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	69		"	62.5	111		84-121			
Surrogate: Toluene-d8	64		"	62.5	102		85-115			
Surrogate: 4-Bromofluorobenzene	68		"	62.5	108		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: 88541237  
Project: KMG - Howard 15-27A

**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 B7L0810 - EPA 5030B (Water)**

**LCS (B7L0810-BS1)**

Prepared: 12/08/2017 Analyzed: 12/11/2017

Benzene	43.9	1.00	ug/L	50.0		87.9	73.3-129
Toluene	44.1	1.00	"	50.0		88.3	76.2-123
Ethylbenzene	46.9	1.00	"	50.0		93.8	73.6-130
m,p-Xylene	95.4	2.00	"	100		95.4	76.1-126
o-Xylene	49.5	1.00	"	50.0		99.0	76.6-124
Surrogate: 1,2-Dichloroethane-d4	71		"	62.5		114	84-121
Surrogate: Toluene-d8	64		"	62.5		103	85-115
Surrogate: 4-Bromofluorobenzene	68		"	62.5		109	84-114

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: 88541237  
Project: KMG - Howard 15-27A

**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 B7L0810 - EPA 5030B (Water)**

Matrix Spike (B7L0810-MS1)		Source: Y712083-02			Prepared: 12/08/2017 Analyzed: 12/11/2017					
Benzene	41.6	1.00	ug/L	50.0	ND	83.2	74-130			
Toluene	41.3	1.00	"	50.0	ND	82.6	73-131			
Ethylbenzene	43.6	1.00	"	50.0	ND	87.1	76-132			
m,p-Xylene	88.1	2.00	"	100	ND	88.1	69-139			
o-Xylene	47.7	1.00	"	50.0	ND	95.3	74-131			
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		108	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	67		"	62.5		107	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: 88541237  
Project: KMG - Howard 15-27A

**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 B7L0810 - EPA 5030B (Water)**

Matrix Spike Dup (B7L0810-MSD1)		Source: Y712083-02			Prepared: 12/08/2017 Analyzed: 12/11/2017					
Benzene	46.0	1.00	ug/L	50.0	ND	91.9	74-130	9.93	20	
Toluene	46.9	1.00	"	50.0	ND	93.8	73-131	12.8	20	
Ethylbenzene	50.3	1.00	"	50.0	ND	101	76-132	14.3	20	
m,p-Xylene	101	2.00	"	100	ND	101	69-139	13.9	20	
o-Xylene	52.2	1.00	"	50.0	ND	104	74-131	9.13	20	
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.8	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 88541237

Project: KMG - Howard 15-27A

### 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.



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Jen Pellegrini For Noelle Doyle Mathis, President