



April 19, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer State 16-16

Project Number - AFE# 2148175.PAB

Attached are your analytical results for KMG - Mayer State 16-16 received by Origins Laboratory, Inc. April 10, 2019. This project is associated with Origins project number Y904202-01.

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: AFE# 2148175.PAB

Project: KMG - Mayer State 16-16

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@7'	Y904202-01	Soil	April 10, 2019 10:25	04/10/2019 13:00
B02@7'	Y904202-02	Soil	April 10, 2019 10:28	04/10/2019 13:00
E01@6'	Y904202-03	Soil	April 10, 2019 10:35	04/10/2019 13:00
W01@6'	Y904202-04	Soil	April 10, 2019 10:38	04/10/2019 13:00

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

ORIGINS LABORATORY, INC.		www.originslaboratory.com	
1904202		page <input type="text"/> of <input type="text"/>	
APC/ Tasman Geosciences	Project Manager: Robert Cornez	Project Name: Mayer Stn 16-16	Project Number: AFE # 214875. PAB
Client: 6899 Pecos Street, Denver, CO	Samples Collected By: M. Rianza	Telephone Number: 970-927-0393	
Address:	Email Address: RCornez@tasman-geo.com		

Email Address:

NOA file 00-19-19

Sample ID Description	Date Sampled	Time Sampled	Preservative				Matrix				Analysis				Sample Instructions
			Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	As Summa Container #	Other	GBLX+N	GRD DRD	EC	PH	
B0207'	04/10/19	10:25	2	X					X			X	X	X	5
B0207'	↓	10:28	↓									X	X	X	A D
E0106'	↓	10:35	↓									X			M A
W0206'	↓	10:38	↓									X			E Y
B60106"	↓	10:50	↓												ON HOLD
															4
															7
															8
															9
															10
Relinquished By:	Date: 04/10/19	Time:	Received By: <i>[Signature]</i>	Date: 04/10/19	Time: 1300	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>									
Relinquished By:	Date:	Time:	Received By:	Date:	Time:										

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Tasman Geosciences
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Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y904202

Client: Tasman

Client Project ID: Mayer State 16-16

Checklist Completed by: JG

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

Date/time completed: 4/10/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.1 °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 ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄ / pH >10 for samples preserved with Na ₂ CO ₃ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ 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]

4/10/19
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B01@7'

4/10/2019 10:25:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904202-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1003	JTD	04/10/2019	04/11/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 76.5 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1002	JTD	04/10/2019	04/10/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.1 % 70-130 " " "
Surrogate: Toluene-d8 103 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 98.1 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	2.69	me/L	1	'[none]'	04/17/2019	04/17/2019
Magnesium	3.30	"	"	"	"	"
Sodium	28.55	"	"	"	"	"

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B01@7'

4/10/2019 10:25:00AM

Analyte	Result	Reporting	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.
Y904202-01 (Soil)

pH in Soil by EPA 9045D

pH	7.83	pH Units	1	B9D1005	KDK	04/10/2019	04/10/2019
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SAR by 20B Saturated Paste

SAR	16.50		1	'[none]'		04/17/2019	04/17/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.350	0.00504	mmhos/cm	1	B9D1006	KDK	04/10/2019	04/10/2019
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Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B02@7'

4/10/2019 10:28:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904202-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1003	JTD	04/10/2019	04/11/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 78.6 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1002	JTD	04/10/2019	04/10/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.2 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 95.7 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	2.84	me/L	1	'[none]'	04/17/2019	04/17/2019
Magnesium	3.47	"	"	"	"	"
Sodium	28.39	"	"	"	"	"

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B02@7'

4/10/2019 10:28:00AM

Analyte	Result	Reporting		Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit								

Origins Laboratory, Inc.
Y904202-02 (Soil)

pH in Soil by EPA 9045D

pH	8.80	pH Units	1	B9D1005	KDK	04/10/2019	04/10/2019
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SAR by 20B Saturated Paste

SAR	15.98		1	'[none]'		04/17/2019	04/17/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.317	0.00500	mmhos/cm	1	B9D1006	KDK	04/10/2019	04/10/2019
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6899 Pecos Street, Unit C
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Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

E01@6'

4/10/2019 10:35:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904202-03 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1003	JTD	04/10/2019	04/11/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 76.1 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	5.67	5.00	mg/kg	25	B9D1002	JTD	04/10/2019	04/10/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.5 % 70-130 " " "
Surrogate: Toluene-d8 101 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 97.2 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

W01@6'

4/10/2019 10:38:00AM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904202-04 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	49.3	25.0	mg/kg	1	B9D1003	JTD	04/10/2019	04/11/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 75.2 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	8.06	5.00	mg/kg	25	B9D1002	JTD	04/10/2019	04/10/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 100 % 70-130 " " "
Surrogate: Toluene-d8 103 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 97.3 % 70-130 " " "

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1002 - EPA 5030 (soil)										
Blank (B9D1002-BLK1)					Prepared: 04/10/2019 Analyzed: 04/10/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1002 - EPA 5030 (soil)										
LCS (B9D1002-BS1)					Prepared: 04/10/2019 Analyzed: 04/10/2019					
Benzene	0.105	0.002	mg/kg	0.100		105	70-130			
Toluene	0.099	0.002	"	0.100		99.1	70-130			
Ethylbenzene	0.098	0.002	"	0.100		97.6	70-130			
m,p-Xylene	0.199	0.004	"	0.200		99.6	70-130			
o-Xylene	0.099	0.002	"	0.100		98.8	70-130			
Naphthalene	0.092	0.008	"	0.100		92.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.5	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.2	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1002 - EPA 5030 (soil)

Matrix Spike (B9D1002-MS1)		Source: Y904191-01			Prepared: 04/10/2019 Analyzed: 04/10/2019					
Benzene	2.56	0.050	mg/kg	2.50	ND	102	70-130			
Toluene	2.38	0.050	"	2.50	ND	95.4	70-130			
Ethylbenzene	2.39	0.050	"	2.50	ND	95.5	70-130			
m,p-Xylene	4.88	0.100	"	5.00	ND	97.7	70-130			
o-Xylene	2.46	0.050	"	2.50	ND	98.2	70-130			
Naphthalene	2.42	0.200	"	2.50	ND	96.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.4	70-130			

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Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1002 - EPA 5030 (soil)

Matrix Spike Dup (B9D1002-MSD1)		Source: Y904191-01			Prepared: 04/10/2019 Analyzed: 04/10/2019					
Benzene	2.57	0.050	mg/kg	2.50	ND	103	70-130	0.390	20	
Toluene	2.43	0.050	"	2.50	ND	97.3	70-130	1.99	20	
Ethylbenzene	2.39	0.050	"	2.50	ND	95.5	70-130	0.0838	20	
m,p-Xylene	4.93	0.100	"	5.00	ND	98.7	70-130	1.01	20	
o-Xylene	2.44	0.050	"	2.50	ND	97.4	70-130	0.797	20	
Naphthalene	2.66	0.200	"	2.50	ND	106	70-130	9.50	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.7	70-130			

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Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1003 - EPA 3550B

Blank (B9D1003-BLK1)

Prepared: 04/10/2019 Analyzed: 04/10/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	38		"	50.0		76.0	50-150			

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Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1003 - EPA 3550B

LCS (B9D1003-BS1)

Prepared: 04/10/2019 Analyzed: 04/10/2019

Diesel (C10-C28)	912	50.0	mg/kg	1000		91.2	70-130			
Residual Range Organics (C28-C40)	903	200	"	1000		90.3	70-130			
Surrogate: o-Terphenyl	46		"	50.0		91.2	50-150			

Origins Laboratory, Inc.



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Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1003 - EPA 3550B

Matrix Spike (B9D1003-MS1)		Source: Y904191-01			Prepared: 04/10/2019 Analyzed: 04/10/2019					
Diesel (C10-C28)	827	50.0	mg/kg	1000	ND	82.7	70-130			
Residual Range Organics (C28-C40)	811	200	"	1000	ND	81.1	70-130			
Surrogate: o-Terphenyl	42		"	50.0		84.6	50-150			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1003 - EPA 3550B

Matrix Spike Dup (B9D1003-MSD1)		Source: Y904191-01			Prepared: 04/10/2019 Analyzed: 04/10/2019					
Diesel (C10-C28)	799	50.0	mg/kg	1000	ND	79.9	70-130	3.45	35	
Residual Range Organics (C28-C40)	800	200	"	1000	ND	80.0	70-130	1.33	35	
Surrogate: o-Terphenyl	41		"	50.0		82.0	50-150			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Classical Chemistry Parameters - 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 B9D1005 - NO PREP

Duplicate (B9D1005-DUP1)		Source: Y904201-01			Prepared: 04/10/2019 Analyzed: 04/10/2019					
pH	7.37		pH Units		7.39			0.271	25	

Batch B9D1006 - NO PREP

Blank (B9D1006-BLK1)		Prepared: 04/10/2019 Analyzed: 04/10/2019								
Specific Conductance (EC)	0.00280	0.00500	mmhos/cm							
Duplicate (B9D1006-DUP1)		Source: Y904201-01			Prepared: 04/10/2019 Analyzed: 04/10/2019					
Specific Conductance (EC)	0.0432	0.00500	mmhos/cm		0.0441			2.06	25	

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: AFE# 2148175.PAB

Project: KMG - Mayer State 16-16

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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Noelle Doyle Mathis, President



April 15, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer State 16-16

Project Number - AFE# 2148175.PAB

Attached are your analytical results for KMG - Mayer State 16-16 received by Origins Laboratory, Inc. April 12, 2019. This project is associated with Origins project number Y904243-01.

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: AFE# 2148175.PAB

Project: KMG - Mayer State 16-16

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@6'	Y904243-01	Soil	April 12, 2019 14:50	04/12/2019 16:36
N02@6'	Y904243-02	Soil	April 12, 2019 14:55	04/12/2019 16:36

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

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

ORIGINS

LABORATORY, INC

www.originslaboratory.com

1604243

page 1 of 1

Client: APC/TASMAN
Address: 6899 Pecos St
Telephone Number: 978-927-0343
Email Address: rcorne2@tasman-geo.com

Project Manager: Robert Gomez
Project Name: Mayer State 16-16
Project Number: AFF # 214875, PAB
Samples Collected By: M Rimala

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	At Surface	Other		
N0106'	04/12/14	14:50	2 X					X				GB TEX+N	1 SAME
N0206'	↑	14:55	2 X					X					2 DAY
													3
													4
													5
													6
													7
													8
													9
													10
Relinquished By: <i>MM</i>	Date: 04/12/14	Time:	Received By: <i>MM</i>	Date: 04/12/14	Time: 16:36	Same Day: <input checked="" type="checkbox"/>	24 Hr: <input type="checkbox"/>	48 Hr: <input type="checkbox"/>	72 Hr: <input type="checkbox"/>	Standard: <input checked="" type="checkbox"/>	Turnaround Time:		
Relinquished By:	Date:	Time:	Received By:	Date:	Time:								

Date Results Needed

4.6

Origins Laboratory, Inc.

Jeff Pellgrini

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: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1904243

Client: Tasman

Client Project ID: Mayer State 16-16

Checklist Completed by: JG

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

Date/time completed: 4/12/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.6 °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 ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – Is there headspace (> 1/4 inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ 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)

4/12/19
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe 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: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

N01@6'

4/12/2019 2:50:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904243-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	82.0	25.0	mg/kg	1	B9D1202	JTD	04/12/2019	04/13/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 84.1 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	7.61	5.00	mg/kg	25	B9D1201	JTD	04/12/2019	04/13/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 94.4 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.6 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

N02@6'

4/12/2019 2:55:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904243-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	87.8	25.0	mg/kg	1	B9D1202	JTD	04/12/2019	04/13/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 85.1 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1201	JTD	04/12/2019	04/13/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.7 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1201 - EPA 5030 (soil)										
Blank (B9D1201-BLK1)					Prepared: 04/12/2019 Analyzed: 04/12/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1201 - EPA 5030 (soil)										
Blank (B9D1201-BLK2)					Prepared: 04/12/2019 Analyzed: 04/12/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.1	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		105	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



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Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1201 - EPA 5030 (soil)										
LCS (B9D1201-BS1)					Prepared: 04/12/2019 Analyzed: 04/12/2019					
Benzene	0.089	0.002	mg/kg	0.100		89.4	70-130			
Toluene	0.092	0.002	"	0.100		91.7	70-130			
Ethylbenzene	0.091	0.002	"	0.100		91.3	70-130			
m,p-Xylene	0.185	0.004	"	0.200		92.5	70-130			
o-Xylene	0.091	0.002	"	0.100		90.7	70-130			
Naphthalene	0.085	0.008	"	0.100		84.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.7	70-130			

Origins Laboratory, Inc.



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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1201 - EPA 5030 (soil)										
LCS (B9D1201-BS2)					Prepared: 04/12/2019 Analyzed: 04/12/2019					
Benzene	0.102	0.002	mg/kg	0.100		102	70-130			
Toluene	0.104	0.002	"	0.100		104	70-130			
Ethylbenzene	0.104	0.002	"	0.100		104	70-130			
m,p-Xylene	0.210	0.004	"	0.200		105	70-130			
o-Xylene	0.102	0.002	"	0.100		102	70-130			
Naphthalene	0.095	0.008	"	0.100		94.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.1	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1201 - EPA 5030 (soil)

Matrix Spike (B9D1201-MS1)		Source: Y904233-01			Prepared: 04/12/2019 Analyzed: 04/12/2019					
Benzene	0.092	0.002	mg/kg	0.100	ND	92.3	70-130			
Toluene	0.092	0.002	"	0.100	ND	92.3	70-130			
Ethylbenzene	0.090	0.002	"	0.100	ND	89.9	70-130			
m,p-Xylene	0.182	0.004	"	0.200	ND	91.1	70-130			
o-Xylene	0.089	0.002	"	0.100	0.0003	89.3	70-130			
Naphthalene	0.082	0.008	"	0.100	0.007	74.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.5	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1201 - EPA 5030 (soil)

Matrix Spike (B9D1201-MS2)		Source: Y904231-02			Prepared: 04/12/2019 Analyzed: 04/12/2019					
Benzene	0.100	0.002	mg/kg	0.100	ND	99.7	70-130			
Toluene	0.101	0.002	"	0.100	ND	101	70-130			
Ethylbenzene	0.100	0.002	"	0.100	ND	99.5	70-130			
m,p-Xylene	0.203	0.004	"	0.200	ND	102	70-130			
o-Xylene	0.100	0.002	"	0.100	ND	100	70-130			
Naphthalene	0.095	0.008	"	0.100	ND	95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.7	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1201 - EPA 5030 (soil)										
Matrix Spike Dup (B9D1201-MSD1)		Source: Y904233-01			Prepared: 04/12/2019 Analyzed: 04/12/2019					
Benzene	0.090	0.002	mg/kg	0.100	ND	89.8	70-130	2.68	20	
Toluene	0.091	0.002	"	0.100	ND	90.6	70-130	1.79	20	
Ethylbenzene	0.088	0.002	"	0.100	ND	88.2	70-130	1.93	20	
m,p-Xylene	0.180	0.004	"	0.200	ND	90.0	70-130	1.15	20	
o-Xylene	0.089	0.002	"	0.100	0.0003	88.9	70-130	0.427	20	
Naphthalene	0.103	0.008	"	0.100	0.007	95.8	70-130	23.2	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.1	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.9	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1201 - EPA 5030 (soil)										
Matrix Spike Dup (B9D1201-MSD2)		Source: Y904231-02			Prepared: 04/12/2019 Analyzed: 04/12/2019					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	70-130	1.20	20	
Toluene	0.102	0.002	"	0.100	ND	102	70-130	1.00	20	
Ethylbenzene	0.100	0.002	"	0.100	ND	100	70-130	0.721	20	
m,p-Xylene	0.205	0.004	"	0.200	ND	103	70-130	0.998	20	
o-Xylene	0.102	0.002	"	0.100	ND	102	70-130	1.54	20	
Naphthalene	0.110	0.008	"	0.100	ND	110	70-130	14.9	20	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.8	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1202 - EPA 3550B										
Blank (B9D1202-BLK1)					Prepared: 04/12/2019 Analyzed: 04/12/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	43		"	50.0		86.2	50-150			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1202 - EPA 3550B										
Blank (B9D1202-BLK2)					Prepared: 04/12/2019 Analyzed: 04/12/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	44		"	50.0		88.8	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1202 - EPA 3550B										
LCS (B9D1202-BS1)					Prepared: 04/12/2019 Analyzed: 04/12/2019					
Diesel (C10-C28)	994	50.0	mg/kg	1000		99.4	70-130			
Residual Range Organics (C28-C40)	973	200	"	1000		97.3	70-130			
Surrogate: o-Terphenyl	51		"	50.0		102	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1202 - EPA 3550B										
LCS (B9D1202-BS2)					Prepared: 04/12/2019 Analyzed: 04/12/2019					
Diesel (C10-C28)	959	50.0	mg/kg	1000		95.9	70-130			
Residual Range Organics (C28-C40)	932	200	"	1000		93.2	70-130			
Surrogate: o-Terphenyl	49		"	50.0		98.9	50-150			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1202 - EPA 3550B

Matrix Spike (B9D1202-MS1)		Source: Y904233-01			Prepared: 04/12/2019 Analyzed: 04/12/2019					
Diesel (C10-C28)	975	50.0	mg/kg	1000	ND	97.5	70-130			
Residual Range Organics (C28-C40)	969	200	"	1000	11.8	95.7	70-130			
Surrogate: o-Terphenyl	50		"	50.0		100	50-150			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1202 - EPA 3550B

Matrix Spike (B9D1202-MS2)		Source: Y904231-02			Prepared: 04/12/2019 Analyzed: 04/12/2019					
Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	70-130			
Residual Range Organics (C28-C40)	1020	200	"	1000	7.99	102	70-130			
Surrogate: o-Terphenyl	46		"	50.0		93.0	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1202 - EPA 3550B

Matrix Spike Dup (B9D1202-MSD1)		Source: Y904233-01			Prepared: 04/12/2019 Analyzed: 04/12/2019					
Diesel (C10-C28)	961	50.0	mg/kg	1000	ND	96.1	70-130	1.48	35	
Residual Range Organics (C28-C40)	916	200	"	1000	11.8	90.4	70-130	5.74	35	
Surrogate: o-Terphenyl	38		"	50.0		75.7	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1202 - EPA 3550B										
Matrix Spike Dup (B9D1202-MSD2)		Source: Y904231-02			Prepared: 04/12/2019 Analyzed: 04/12/2019					
Diesel (C10-C28)	1050	50.0	mg/kg	1000	ND	105	70-130	0.284	35	
Residual Range Organics (C28-C40)	1060	200	"	1000	7.99	106	70-130	3.73	35	
Surrogate: o-Terphenyl	47		"	50.0		95.0	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: AFE# 2148175.PAB

Project: KMG - Mayer State 16-16

Notes and Definitions

U Sample is Non-Detect.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported 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.



April 22, 2019

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer State 16-16

Project Number - AFE# 2148175.PAB

Attached are your analytical results for KMG - Mayer State 16-16 received by Origins Laboratory, Inc. April 15, 2019. This project is associated with Origins project number Y904260-01.

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: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E02@6'	Y904260-01	Soil	April 15, 2019 15:05	04/15/2019 17:15
E03@6'	Y904260-02	Soil	April 15, 2019 15:08	04/15/2019 17:15
W02@6'	Y904260-03	Soil	April 15, 2019 15:11	04/15/2019 17:15
W03@6'	Y904260-04	Soil	April 15, 2019 15:15	04/15/2019 17:15
S01@6'	Y904260-05	Soil	April 15, 2019 15:17	04/15/2019 17:15
S02@6'	Y904260-06	Soil	April 15, 2019 15:20	04/15/2019 17:15
B03@7'	Y904260-07	Soil	April 15, 2019 15:22	04/15/2019 17:15
B04@7'	Y904260-08	Soil	April 15, 2019 15:25	04/15/2019 17:15
B05@7'	Y904260-09	Soil	April 15, 2019 15:29	04/15/2019 17:15
B06@7'	Y904260-10	Soil	April 15, 2019 15:36	04/15/2019 17:15
GW01	Y904260-11	Water	April 15, 2019 15:00	04/15/2019 17:15

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: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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page 1 of 2

ORIGINS
LABORATORY, INC

4904260

Project Manager: Robert Cornez
Project Name: Mayer State 16-16
Project Number: AFE# 2148175.PAB
Samples Collected By: BDL MK' 11mm

Client: APC/Tasman Geosciences
Address: 6899 Pecos Street, Denver, CO
Telephone Number: 970-927-0393
Email Address: RCornez@Tasman-geo.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix			Analysis			Sample Instructions
				HCl	HNO ₃	Other	Groundwater	Soil	As Contaminant	Other	PH	EC	
E0206'	4-15-19	1505	2	X				X		X	X	X	
E0306'		1508								X	X	X	
W0206'		1511								X	X	X	
W0306'		1515								X	X	X	
S0106'		1517								X	X	X	
S0206'		1520								X	X	X	
B0307'		1522								X	X	X	
B0407'		1525								X	X	X	
B0507'		1529								X	X	X	
B0607'		1536								X	X	X	
Relinquished By: <i>Wm BDL</i>	Date: 4-15-19	Time:	Time:	Received By: <i>PC</i>	Date: 04/15/19	Time: 1415	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>						

Date Results Needed

3.9

Origins Laboratory, Inc.

Jefe 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.

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

ORIGINS

LABORATORY, INC

1/904260

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page 2 of 2

Client: APC/ Tasman Geosciences

Address:

6899 Pecos Street, Denver, CO

Project Manager: Robert Gomez

Project Name:

Weyerhaeuser 16-16

Project Number:

APC #24871.5

Telephone Number: 970-927-0393

Email Address:

RGomez@Tasman-geo.com

Samples Collected by: BRL

Sample ID Description

Date Sampled

Time Sampled

of Containers

Preservative

HCl

Unpreserved

Other

HNO₃

Groundwater

Other

Soil

Other

Matrix

Analysis

Sample Instructions

1

2

3

4

5

6

7

8

9

10

Relinquished By:

Wm BRL

Date:

4-15-19

Time:

Received By:

[Signature]

Date:

24/5/19

Time:

17:15

Turnaround Time:

Same Day

24 Hr

48 Hr

72 Hr

Standard

Relinquished By:

Date:

Time:

Received By:

Date:

Time:

Date Results Needed

74

Origins Laboratory, Inc.

Jeff Pellipini

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: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y904260

Client: Tasman

Client Project ID: Mayer State 16-16

Checklist Completed by: JG

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

Date/time completed: 4/15/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 13.6 °C °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 ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄ / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ 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)

4/15/19
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe 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: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

E02@6'

4/15/2019 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 86.7 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.7 % 70-130 " " "
Surrogate: Toluene-d8 105 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.9 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

E03@6'

4/15/2019 3:08:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 78.0 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.2 % 70-130 " " "
Surrogate: Toluene-d8 103 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.5 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

W02@6'

4/15/2019 3:11:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	36.8	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 82.1 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.2 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

W03@6'

4/15/2019 3:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 81.6 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 100 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

S01@6'

4/15/2019 3:17:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	54.3	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 83.4 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	17.4	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.8 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

S02@6'

4/15/2019 3:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-06 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	46.9	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 84.6 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.9 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B03@7'

4/15/2019 3:22:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-07 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 85.0 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	7.56	me/L	1	'[none]'	04/17/2019	04/22/2019
Magnesium	8.83	"	"	"	"	"
Sodium	40.74	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B03@7'

4/15/2019 3:22:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-07 (Soil)

pH in Soil by EPA 9045D

pH	8.17		pH Units	1	B9D1510	OLAB	04/15/2019	04/15/2019
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SAR by 20B Saturated Paste

SAR	14.23			1	'[none]'		04/17/2019	04/22/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.362	0.00500	mmhos/cm	1	B9D1511	OLAB	04/15/2019	04/15/2019
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B04@7'

4/15/2019 3:25:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-08 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 82.6 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 100 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	28.28	me/L	1	'[none]'	04/17/2019	04/22/2019
Magnesium	25.76	"	"	"	"	"
Sodium	82.70	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B04@7'

4/15/2019 3:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-08 (Soil)

pH in Soil by EPA 9045D

pH	8.56	pH Units	1	B9D1510	OLAB	04/15/2019	04/15/2019
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SAR by 20B Saturated Paste

SAR	15.91		1	'[none]'		04/17/2019	04/22/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.317	0.00500	mmhos/cm	1	B9D1511	OLAB	04/15/2019	04/15/2019
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B05@7'

4/15/2019 3:29:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-09 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 86.4 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.6 % 70-130 " " "
Surrogate: Toluene-d8 104 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.5 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	7.74	me/L	1	'[none]'	04/17/2019	04/22/2019
Magnesium	8.20	"	"	"	"	"
Sodium	46.41	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B05@7'

4/15/2019 3:29:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-09 (Soil)

pH in Soil by EPA 9045D

pH	8.18		pH Units	1	B9D1510	OLAB	04/15/2019	04/15/2019
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SAR by 20B Saturated Paste

SAR	16.44			1	'[none]'		04/17/2019	04/22/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.246	0.00501	mmhos/cm	1	B9D1511	OLAB	04/15/2019	04/15/2019
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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B06@7'

4/15/2019 3:36:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-10 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9D1504	JTD	04/15/2019	04/16/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 90.3 % 59-131 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9D1503	JTD	"	04/15/2019	U
Benzene	ND	0.050	"	"	"	JTD	"	"	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.050	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.050	"	"	"	JTD	"	"	U
Naphthalene	ND	0.200	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4 99.4 % 70-130 " " "
Surrogate: Toluene-d8 105 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 98.2 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	4.53	me/L	1	'[none]'	04/17/2019	04/22/2019
Magnesium	4.80	"	"	"	"	"
Sodium	37.84	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

B06@7'

4/15/2019 3:36:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904260-10 (Soil)

pH in Soil by EPA 9045D

pH	8.67	pH Units	1	B9D1510	OLAB	04/15/2019	04/15/2019
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SAR by 20B Saturated Paste

SAR	17.52		1	'[none]'		04/17/2019	04/22/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.312	0.00500	mmhos/cm	1	B9D1511	OLAB	04/15/2019	04/15/2019
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

GW01

4/15/2019 3:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y904260-11 (Water)

BTEX by EPA 8260D

Benzene	ND	4.00	ug/L	4	B9D1501	JTD	04/15/2019	04/15/2019	U
Toluene	ND	4.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	4.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	4.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.9 %	70-130	"	"	"
Surrogate: Toluene-d8	105 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.7 %	70-130	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1501 - EPA 5030B (Water)

Blank (B9D1501-BLK1)

Prepared: 04/15/2019 Analyzed: 04/15/2019

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	65		"	62.5	104		70-130			
Surrogate: Toluene-d8	64		"	62.5	102		70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5	104		70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1501 - EPA 5030B (Water)										
Blank (B9D1501-BLK2)					Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5	102		70-130			
Surrogate: Toluene-d8	66		"	62.5	106		70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.5		70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1501 - EPA 5030B (Water)										
LCS (B9D1501-BS1)					Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	46.7	1.00	ug/L	50.0		93.5	70-130			
Toluene	45.4	1.00	"	50.0		90.9	70-130			
Ethylbenzene	43.8	1.00	"	50.0		87.6	70-130			
m,p-Xylene	89.7	2.00	"	100		89.7	70-130			
o-Xylene	44.9	1.00	"	50.0		89.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.9	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.4	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1501 - EPA 5030B (Water)

LCS (B9D1501-BS2)

Prepared: 04/15/2019 Analyzed: 04/15/2019

Benzene	55.6	1.00	ug/L	50.0	111	70-130
Toluene	56.0	1.00	"	50.0	112	70-130
Ethylbenzene	48.7	1.00	"	50.0	97.4	70-130
m,p-Xylene	100	2.00	"	100	100	70-130
o-Xylene	49.8	1.00	"	50.0	99.6	70-130
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5	94.3	70-130
Surrogate: Toluene-d8	66		"	62.5	105	70-130
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.6	70-130

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1501 - EPA 5030B (Water)

Matrix Spike (B9D1501-MS1)		Source: Y904227-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	58.8	1.00	ug/L	50.0	ND	118	70-130			
Toluene	58.0	1.00	"	50.0	ND	116	70-130			
Ethylbenzene	53.4	1.00	"	50.0	ND	107	70-130			
m,p-Xylene	108	2.00	"	100	ND	108	70-130			
o-Xylene	54.4	1.00	"	50.0	ND	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.9	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1501 - EPA 5030B (Water)

Matrix Spike (B9D1501-MS2)		Source: Y904227-02			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	53.5	1.00	ug/L	50.0	ND	107	70-130			
Toluene	51.8	1.00	"	50.0	ND	104	70-130			
Ethylbenzene	45.4	1.00	"	50.0	ND	90.7	70-130			
m,p-Xylene	93.1	2.00	"	100	ND	93.1	70-130			
o-Xylene	47.6	1.00	"	50.0	ND	95.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.3	70-130			
Surrogate: Toluene-d8	66		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1501 - EPA 5030B (Water)

Matrix Spike Dup (B9D1501-MSD1)		Source: Y904227-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	57.8	1.00	ug/L	50.0	ND	116	70-130	1.73	20	
Toluene	56.4	1.00	"	50.0	ND	113	70-130	2.90	20	
Ethylbenzene	49.6	1.00	"	50.0	ND	99.2	70-130	7.34	20	
m,p-Xylene	103	2.00	"	100	ND	103	70-130	4.93	20	
o-Xylene	51.4	1.00	"	50.0	ND	103	70-130	5.68	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.9	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.3	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1501 - EPA 5030B (Water)

Matrix Spike Dup (B9D1501-MSD2)		Source: Y904227-02			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	56.4	1.00	ug/L	50.0	ND	113	70-130	5.44	20	
Toluene	54.9	1.00	"	50.0	ND	110	70-130	5.98	20	
Ethylbenzene	47.4	1.00	"	50.0	ND	94.8	70-130	4.40	20	
m,p-Xylene	97.4	2.00	"	100	ND	97.4	70-130	4.50	20	
o-Xylene	49.6	1.00	"	50.0	ND	99.2	70-130	4.05	20	
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.2	70-130			
Surrogate: Toluene-d8	66		"	62.5		106	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.1	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1503 - EPA 5030 (soil)										
Blank (B9D1503-BLK1)					Prepared: 04/15/2019 Analyzed: 04/15/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1503 - EPA 5030 (soil)										
Blank (B9D1503-BLK2)					Prepared: 04/15/2019 Analyzed: 04/15/2019					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.9	70-130			

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Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1503 - EPA 5030 (soil)										
LCS (B9D1503-BS1)					Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	0.095	0.002	mg/kg	0.100		94.6	70-130			
Toluene	0.095	0.002	"	0.100		94.6	70-130			
Ethylbenzene	0.090	0.002	"	0.100		90.3	70-130			
m,p-Xylene	0.185	0.004	"	0.200		92.3	70-130			
o-Xylene	0.091	0.002	"	0.100		91.0	70-130			
Naphthalene	0.109	0.008	"	0.100		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.9	70-130			

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Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1503 - EPA 5030 (soil)										
LCS (B9D1503-BS2)					Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	0.099	0.002	mg/kg	0.100		99.1	70-130			
Toluene	0.097	0.002	"	0.100		97.2	70-130			
Ethylbenzene	0.090	0.002	"	0.100		90.4	70-130			
m,p-Xylene	0.185	0.004	"	0.200		92.3	70-130			
o-Xylene	0.092	0.002	"	0.100		92.3	70-130			
Naphthalene	0.109	0.008	"	0.100		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.6	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1503 - EPA 5030 (soil)										
Matrix Spike (B9D1503-MS1)		Source: Y904249-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	0.092	0.002	mg/kg	0.100	0.0005	91.3	70-130			
Toluene	0.090	0.002	"	0.100	0.003	86.3	70-130			
Ethylbenzene	0.084	0.002	"	0.100	0.002	81.7	70-130			
m,p-Xylene	0.172	0.004	"	0.200	0.004	84.2	70-130			
o-Xylene	0.087	0.002	"	0.100	0.002	84.2	70-130			
Naphthalene	0.072	0.008	"	0.100	0.005	67.1	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1503 - EPA 5030 (soil)

Matrix Spike (B9D1503-MS2)		Source: Y904256-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	0.102	0.002	mg/kg	0.100	ND	102	70-130			
Toluene	0.098	0.002	"	0.100	ND	97.8	70-130			
Ethylbenzene	0.093	0.002	"	0.100	0.0008	92.5	70-130			
m,p-Xylene	0.188	0.004	"	0.200	0.002	93.1	70-130			
o-Xylene	0.094	0.002	"	0.100	0.001	93.1	70-130			
Naphthalene	0.098	0.008	"	0.100	0.023	74.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.0	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1503 - EPA 5030 (soil)

Matrix Spike Dup (B9D1503-MSD1)		Source: Y904249-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	0.094	0.002	mg/kg	0.100	0.0005	93.9	70-130	2.81	20	
Toluene	0.093	0.002	"	0.100	0.003	89.4	70-130	3.36	20	
Ethylbenzene	0.086	0.002	"	0.100	0.002	83.6	70-130	2.30	20	
m,p-Xylene	0.175	0.004	"	0.200	0.004	85.7	70-130	1.70	20	
o-Xylene	0.088	0.002	"	0.100	0.002	85.7	70-130	1.69	20	
Naphthalene	0.081	0.008	"	0.100	0.005	76.4	70-130	12.1	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1503 - EPA 5030 (soil)										
Matrix Spike Dup (B9D1503-MSD2)		Source: Y904256-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	70-130	0.927	20	
Toluene	0.098	0.002	"	0.100	ND	97.9	70-130	0.143	20	
Ethylbenzene	0.094	0.002	"	0.100	0.0008	93.0	70-130	0.556	20	
m,p-Xylene	0.193	0.004	"	0.200	0.002	95.2	70-130	2.26	20	
o-Xylene	0.095	0.002	"	0.100	0.001	93.9	70-130	0.910	20	
Naphthalene	0.114	0.008	"	0.100	0.023	91.0	70-130	15.2	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.1	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Extractable Petroleum Hydrocarbons by 8015C - 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 B9D1504 - EPA 3550B

Blank (B9D1504-BLK1)

Prepared: 04/15/2019 Analyzed: 04/15/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	49		"	50.0		97.7	59-131			

Blank (B9D1504-BLK2)

Prepared: 04/15/2019 Analyzed: 04/15/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		81.4	59-131			

LCS (B9D1504-BS1)

Prepared: 04/15/2019 Analyzed: 04/15/2019

Diesel (C10-C28)	933	50.0	mg/kg	1000		93.3	64-121			
Residual Range Organics (C28-C40)	946	200	"	1000		94.6	58-124			
Surrogate: o-Terphenyl	49		"	50.0		98.3	59-131			

LCS (B9D1504-BS2)

Prepared: 04/15/2019 Analyzed: 04/16/2019

Diesel (C10-C28)	953	50.0	mg/kg	1000		95.3	64-121			
Residual Range Organics (C28-C40)	952	200	"	1000		95.2	58-124			
Surrogate: o-Terphenyl	49		"	50.0		98.4	59-131			

Matrix Spike (B9D1504-MS1)

Source: Y904249-01

Prepared: 04/15/2019 Analyzed: 04/15/2019

Diesel (C10-C28)	1050	50.0	mg/kg	1000	ND	105	53-125			
Residual Range Organics (C28-C40)	1180	200	"	1000	25.2	116	47-133			

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Bob Cornez
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Project: KMG - Mayer State 16-16

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1504 - EPA 3550B										
Matrix Spike (B9D1504-MS1)		Source: Y904249-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Surrogate: o-Terphenyl	55		mg/kg	50.0		109	59-131			
Matrix Spike (B9D1504-MS2)		Source: Y904256-01			Prepared: 04/15/2019 Analyzed: 04/16/2019					
Diesel (C10-C28)	1000	50.0	mg/kg	1000	ND	100	53-125			
Residual Range Organics (C28-C40)	1010	200	"	1000	ND	101	47-133			
Surrogate: o-Terphenyl	46		"	50.0		91.5	59-131			
Matrix Spike Dup (B9D1504-MSD1)		Source: Y904249-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Diesel (C10-C28)	976	50.0	mg/kg	1000	ND	97.6	53-125	7.71	20	
Residual Range Organics (C28-C40)	1030	200	"	1000	25.2	101	47-133	13.6	20	
Surrogate: o-Terphenyl	49		"	50.0		98.2	59-131			
Matrix Spike Dup (B9D1504-MSD2)		Source: Y904256-01			Prepared: 04/15/2019 Analyzed: 04/16/2019					
Diesel (C10-C28)	975	50.0	mg/kg	1000	ND	97.5	53-125	2.85	20	
Residual Range Organics (C28-C40)	980	200	"	1000	ND	98.0	47-133	2.75	20	
Surrogate: o-Terphenyl	44		"	50.0		88.9	59-131			

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Bob Cornez
Project Number: AFE# 2148175.PAB
Project: KMG - Mayer State 16-16

Classical Chemistry Parameters - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1510 - NO PREP										
Duplicate (B9D1510-DUP1)		Source: Y904256-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
pH	8.38		pH Units		8.31			0.839	25	
Batch B9D1511 - NO PREP										
Blank (B9D1511-BLK1)		Prepared: 04/15/2019 Analyzed: 04/15/2019								
Specific Conductance (EC)	0.00220	0.00500	mmhos/cm							
Duplicate (B9D1511-DUP1)		Source: Y904256-01			Prepared: 04/15/2019 Analyzed: 04/15/2019					
Specific Conductance (EC)	0.130	0.00500	mmhos/cm		0.125			4.08	25	

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: AFE# 2148175.PAB

Project: KMG - Mayer State 16-16

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.

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