

TABLE 1
MAYER Et Al - 62N65W33NESE
SOIL SAMPLE RESULTS SUMMARY TABLE
KERR-McGEE OIL AND GAS ONSHORE LP

Sample Location	Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH-GRO (mg/kg)	TEPH-DRO (mg/kg)	TEPH-ORO (mg/kg)	EC (mmhos/cm)	pH (units)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	500			4 mmhos/cm or 2x BG	6-9
B01@14	09/10/15	14	3.00	22.5	2.08	38.3	327	<50	<200	0.881	8.40
B01@19	09/11/15	19	<0.050	<0.050	<0.050	<0.050	<5.00	<50	<200	0.677	7.62
E01@17	09/14/15	17	<0.050	<0.050	<0.050	<0.050	6.33	<50	<200	0.365	8.40
B02@19	09/15/15	19	<0.050	<0.050	<0.050	<0.050	<5.00	<50	<200	0.284	7.94
W01@17	09/17/15	17	0.226	1.93	0.320	3.99	54.2	<50	<200	0.396	8.40
W02@17	09/17/15	17	0.304	2.48	0.413	5.37	86.9	<50	<200	0.915	8.68
N01@17	09/17/15	17	<0.002	<0.002	<0.002	<0.002	<0.200	<50	<200	0.106	9.14
N02@17	09/18/15	17	<0.002	<0.002	<0.002	<0.002	<0.200	<50	<200	0.307	9.10
B03@19	09/18/15	17	<0.050	<0.050	<0.050	<0.050	<5.00	<50	<200	0.789	8.05
N03@17	09/18/15	17	<0.002	<0.002	<0.002	<0.002	<0.200	<50	<200	0.459	8.30
W03@17	09/21/15	17	<0.050	<0.050	<0.050	<0.050	17.4	<50	<200	0.376	8.47
W04@17	09/21/15	17	<0.050	<0.050	<0.050	<0.050	0.660	<50	<200	0.501	8.61
E02@17	09/21/15	17	<0.050	<0.050	<0.050	<0.050	27.0	<50	410	0.424	8.83
S01@17	09/22/15	17	<0.050	<0.050	<0.050	0.114	6.19	<50	<200	0.511	8.69
B04@19	09/22/15	19	<0.002	<0.002	<0.002	<0.002	<0.200	<50	<200	0.530	8.36
S02@17	09/23/15	17	<0.050	<0.050	<0.050	<0.050	14.0	<50	<200	0.227	8.48
B05@19	09/24/15	19	<0.025	<0.025	<0.025	<0.025	<2.50	<50	<200	0.570	7.99
S03@17	09/24/15	17	<0.050	<0.050	<0.050	<0.050	6.12	<50	<200	0.391	8.42
Back Fill	09/24/15	NA	<0.002	<0.002	<0.002	<0.002	<0.200	<50	<200	0.0595	6.12

Notes:

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 1, 2015.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

TVPH - GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH - DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH - ORO = Total extractable petroleum hydrocarbons - oil range organics

EC = Electrical conductivity

BG = Background

mmhos/cm = Millimhos per centimeter

mg/kg = Milligrams per kilogram.

ft. bgs = Feet below ground surface.

NA = Not applicable

BOLD = Analytical result is in exceedance of COGCC Table 910-1 soil standards.

September 11, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI

Project Number - [none]

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 10, 2015. This project is associated with Origins project number X509133-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01 @ 14	X509133-01	Soil	September 10, 2015 14:45	09/10/2015 17:00

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

ORIGINS

LABORATORY, INC

XSO9133

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page 1 of 1

Client: APC

Address:

Project Manager/Send Report To: Jim Dene

Email Address:

Project Name/Number: May 87 X33-1535

Telephone Number: 303, 554 1235

Samples Collected By: JD

Analysis/Method

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix	Other	Analysis/Method	Sample Instructions
				Unpreserved	HNO ₃	Other	Ground - other	Soil	Air Summation Container #		
B01@14	6-10-15	14:45	1	X				X		X X V V X X X O O O O O O O O X O O O O O O O O X O O O O O O O O X O O O O O O O O X O O O O O O O O	1 Same day
											2 early L.M.
											3
											4
											5
											6
											7
											8
											9
											10
Relinquished By: <u>[Signature]</u>	Date: <u>6-10-15</u>	Time: <u>17:00</u>		Received By:				Date:	Time:	Turnaround Time:	
Relinquished By:	Date:	Time:		Received By: <u>[Signature]</u>				Date: <u>9/14/15</u>	Time: <u>1700</u>	Standard <u>7.8</u>	

Origins Laboratory, Inc.

Jose 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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X509133

Client: Tasman

Client Project ID: Mayer X33-15JI

Checklist Completed by: Joe Smith

Shipped Via: HRD

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

Date/time completed: 9/10/13

Airbill #: NA

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

(Describe)

Cooler Number/Temperature: 1 / 7.8 °C 1 / _____ °C 1 / _____ °C 1 / _____ °C

Thermometer ID: 1003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		X		Sampled Same Day
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	X			PH
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
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)			X	
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)

9/10/13

Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

B01 @ 14
9/10/2015 2:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509133-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5110006	09/10/2015	09/11/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 70.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	327	5.00	mg/kg	25	5110005	09/10/2015	09/10/2015
Benzene	3.00	0.050	"	"	"	"	"
Toluene	22.5	0.498	"	250	"	"	09/10/2015
Ethylbenzene	2.08	0.050	"	25	"	"	09/10/2015
Xylenes, total	38.3	0.498	"	250	"	"	09/10/2015

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 " " 09/10/2015
Surrogate: Toluene-d8 119 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.40		pH Units	1	5110015	09/10/2015	09/10/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.881		mmhos/cm	"	5110014	09/10/2015	09/10/2015
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I10005 - EPA 5030 (soil)

Blank (5I10005-BLK1)

Prepared: 09/10/2015 Analyzed: 09/10/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	64.1		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	61.3		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	65.9		"	62.5		105	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I10005 - EPA 5030 (soil)										
LCS (5I10005-BS1)					Prepared: 09/10/2015 Analyzed: 09/10/2015					
Benzene	0.090	0.002	mg/kg	0.100		90.0	77.1-124			
Toluene	0.088	0.002	"	0.100		87.9	74.5-128			
Ethylbenzene	0.095	0.002	"	0.100		94.5	66.4-127			
m,p-Xylene	0.188	0.004	"	0.200		94.1	76.6-124			
o-Xylene	0.094	0.002	"	0.100		94.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	60.9		ug/kg	62.5		97.4	70-130			
Surrogate: Toluene-d8	61.7		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	64.0		"	62.5		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I10005 - EPA 5030 (soil)										
Matrix Spike (5I10005-MS1)		Source: X509105-03			Prepared: 09/10/2015 Analyzed: 09/10/2015					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126			
Toluene	0.103	0.002	"	0.100	ND	103	65.1-130			
Ethylbenzene	0.137	0.002	"	0.100	ND	137	62.2-130			QM-07
m,p-Xylene	0.255	0.004	"	0.200	ND	127	46.5-137			
o-Xylene	0.122	0.002	"	0.100	ND	122	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63.8		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	66.9		"	62.5		107	70-130			
Surrogate: 4-Bromofluorobenzene	76.9		"	62.5		123	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I10005 - EPA 5030 (soil)										
Matrix Spike Dup (5I10005-MSD1)										
					Source: X509105-03					
										Prepared: 09/10/2015 Analyzed: 09/10/2015
Benzene	0.082	0.002	mg/kg	0.100	ND	82.1	71.8-126	20.7	11.3	QR-03
Toluene	0.072	0.002	"	0.100	ND	72.4	65.1-130	35.0	15.4	QR-03
Ethylbenzene	0.088	0.002	"	0.100	ND	87.8	62.2-130	43.9	19.6	QR-03
m,p-Xylene	0.154	0.004	"	0.200	ND	76.9	46.5-137	49.3	19.2	QR-03
o-Xylene	0.072	0.002	"	0.100	ND	71.7	54.2-134	52.2	17.9	QR-03
Surrogate: 1,2-Dichloroethane-d4	62.4		ug/kg	62.5		99.9	70-130			
Surrogate: Toluene-d8	65.0		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	78.0		"	62.5		125	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5I10006 - EPA 3580

Blank (5I10006-BLK1)

Prepared: 09/10/2015 Analyzed: 09/10/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	47		"	50.0		93.5	59-131			

LCS (5I10006-BS1)

Prepared: 09/10/2015 Analyzed: 09/10/2015

Diesel (C10-C28)	850	50	mg/kg				64-121			
Residual Range Organics (C28-C36)	880	200	"	1000		87.7	58-124			
Surrogate: o-Terphenyl	46		"	50.0		92.6	59-131			

Matrix Spike (5I10006-MS1)

Source: X509105-03

Prepared: 09/10/2015 Analyzed: 09/10/2015

Diesel (C10-C28)	930	50	mg/kg		ND		53-125			
Residual Range Organics (C28-C36)	990	200	"	1000	41	95.3	47-133			
Surrogate: o-Terphenyl	50		"	50.0		100	59-131			

Matrix Spike Dup (5I10006-MSD1)

Source: X509105-03

Prepared: 09/10/2015 Analyzed: 09/10/2015

Diesel (C10-C28)	840	50	mg/kg		ND		53-125	10.2	20	
Residual Range Organics (C28-C36)	900	200	"	1000	41	85.9	47-133	9.92	20	
Surrogate: o-Terphenyl	46		"	50.0		91.6	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I10014 - NO PREP										
Blank (5I10014-BLK1)					Prepared: 09/10/2015 Analyzed: 09/10/2015					
Specific Conductance (EC)	0.00470		mmhos/cm							
Duplicate (5I10014-DUP1)					Source: X509124-01 Prepared: 09/10/2015 Analyzed: 09/10/2015					
Specific Conductance (EC)	0.102		mmhos/cm		0.109			5.97	25	
Batch 5I10015 - NO PREP										
Duplicate (5I10015-DUP1)					Source: X509126-01 Prepared: 09/10/2015 Analyzed: 09/10/2015					
pH	8.01		pH Units		7.97			0.501	25	

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

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

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

September 14, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI

Project Number - [none]

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 11, 2015. This project is associated with Origins project number X509163-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@ 19'	X509163-01	Soil	September 11, 2015 15:25	09/11/2015 17:00

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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LABORATORY, INC

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page 1 of 1

Client: APC Project Manager/Send Report To: Jim Dave

Address: _____ Email Address: Jimdave@topman-geo.com

Telephone Number: 303 884 1287 Project Name/Number: Mayer X33-1531

Samples Collected By: Natt P.

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix				Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summary	Other			
B01@19'	9/11/15	15:25	1	X					X			GrEX POC Vold SAF	1	
													2	
													3	
													4	
													5	
													6	
													7	
													8	
													9	
													10	
Relinquished By: 	Date: 9/11/15	Time: 17:00							Received By: 	Date: 9/11/15	Time: 15:00	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> Standard <input type="checkbox"/>		
Relinquished By:	Date:	Time:							Received By:	Date:	Time:			

Comments:

Date Results Needed:

Jose 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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X509163

Client: Tasman

Client Project ID: KMG - Mayer X33-15JI

Checklist Completed by: J. Pellegrini

Shipped Via: Pick-up

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

Date/time completed: 9/11/15 1728

Airbill #: NA

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

Cooler Number/Temperature: 1 / 249 °C 3H / _____ °C / _____ °C / _____ °C

Thermometer ID: 5003

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"/>			
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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>PH</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽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 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) J. Pellegrini

Date/Time Reviewed 9.11.15

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

B01@ 19'
9/11/2015 3:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509163-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5111006	09/11/2015	09/11/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 87.8 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	5111005	09/11/2015	09/11/2015
Benzene	ND	0.050	"	"	"	"	"
Toluene	ND	0.050	"	"	"	"	"
Ethylbenzene	ND	0.050	"	"	"	"	"
Xylenes, total	ND	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "
Surrogate: Toluene-d8 96.0 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.62		pH Units	1	5111007	09/11/2015	09/14/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.677		mmhos/cm	"	5111008	"	09/14/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I11005 - EPA 5030 (soil)

Blank (5I11005-BLK1)

Prepared: 09/11/2015 Analyzed: 09/11/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	66.4		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	60.7		"	62.5		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	64.4		"	62.5		103	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5111005 - EPA 5030 (soil)										
LCS (5111005-BS1)					Prepared: 09/11/2015 Analyzed: 09/11/2015					
Benzene	0.102	0.002	mg/kg	0.100		102	77.1-124			
Toluene	0.100	0.002	"	0.100		99.6	74.5-128			
Ethylbenzene	0.106	0.002	"	0.100		106	66.4-127			
m,p-Xylene	0.212	0.004	"	0.200		106	76.6-124			
o-Xylene	0.105	0.002	"	0.100		105	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	61.4		ug/kg	62.5		98.3	70-130			
Surrogate: Toluene-d8	62.0		"	62.5		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	64.4		"	62.5		103	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I11005 - EPA 5030 (soil)

Matrix Spike (5I11005-MS1)		Source: X509132-03			Prepared: 09/11/2015 Analyzed: 09/11/2015					
Benzene	0.104	0.002	mg/kg	0.100	ND	104	71.8-126			
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130			
Ethylbenzene	0.108	0.002	"	0.100	ND	108	62.2-130			
m,p-Xylene	0.215	0.004	"	0.200	ND	107	46.5-137			
o-Xylene	0.106	0.002	"	0.100	ND	106	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	62.4		ug/kg	62.5		99.8	70-130			
Surrogate: Toluene-d8	61.7		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	63.7		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I11005 - EPA 5030 (soil)										
Matrix Spike Dup (5I11005-MSD1)	Source: X509132-03				Prepared: 09/11/2015 Analyzed: 09/11/2015					
Benzene	0.105	0.002	mg/kg	0.100	ND	105	71.8-126	0.823	11.3	
Toluene	0.103	0.002	"	0.100	ND	103	65.1-130	0.940	15.4	
Ethylbenzene	0.107	0.002	"	0.100	ND	107	62.2-130	0.651	19.6	
m,p-Xylene	0.214	0.004	"	0.200	ND	107	46.5-137	0.317	19.2	
o-Xylene	0.106	0.002	"	0.100	ND	106	54.2-134	0.245	17.9	
Surrogate: 1,2-Dichloroethane-d4	61.5		ug/kg	62.5		98.4	70-130			
Surrogate: Toluene-d8	61.8		"	62.5		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	64.0		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5111006 - EPA 3580

Blank (5111006-BLK1)

Prepared: 09/11/2015 Analyzed: 09/11/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	64		"	50.0		128	59-131			

LCS (5111006-BS1)

Prepared: 09/11/2015 Analyzed: 09/11/2015

Diesel (C10-C28)	940	50	mg/kg				64-121			
Residual Range Organics (C28-C36)	950	200	"	1000		95.2	58-124			
Surrogate: o-Terphenyl	52		"	50.0		105	59-131			

Matrix Spike (5111006-MS1)

Source: X509132-03

Prepared: 09/11/2015 Analyzed: 09/11/2015

Diesel (C10-C28)	760	50	mg/kg		ND		53-125			
Residual Range Organics (C28-C36)	750	200	"	1000	17	73.8	47-133			
Surrogate: o-Terphenyl	41		"	50.0		81.3	59-131			

Matrix Spike Dup (5111006-MSD1)

Source: X509132-03

Prepared: 09/11/2015 Analyzed: 09/11/2015

Diesel (C10-C28)	920	50	mg/kg		ND		53-125	18.8	20	
Residual Range Organics (C28-C36)	950	200	"	1000	17	93.4	47-133	23.0	20	QR-02
Surrogate: o-Terphenyl	49		"	50.0		97.0	59-131			

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I11007 - NO PREP										
Duplicate (5I11007-DUP1)		Source: X509132-03			Prepared: 09/11/2015 Analyzed: 09/11/2015					
pH	8.97		pH Units		8.99			0.223	25	
Batch 5I11008 - NO PREP										
Blank (5I11008-BLK1)		Prepared: 09/11/2015 Analyzed: 09/11/2015								
Specific Conductance (EC)	0.00240		mmhos/cm							
Duplicate (5I11008-DUP1)		Source: X509132-03			Prepared: 09/11/2015 Analyzed: 09/11/2015					
Specific Conductance (EC)	0.0248		mmhos/cm		0.0264			6.25	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

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.

Jen Pellegrini For Noelle Doyle Mathis, President

September 15, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI**Project Number - [none]**

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 14, 2015. This project is associated with Origins project number X509178-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E01 @ 17'	X509178-01	Soil	September 14, 2015 10:45	09/14/2015 16:48



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.

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

ORIGINS LABORATORY, INC		XS09178		www.originslaboratory.com	
Client:	APC	Project Manager:	Jim Dave	page	1 of 1
Address:		Project Name:	Maier X33-1531		
		Project Number:			
Telephone Number:	Jim D 303 884 1287	Samples Collected By:	Maier D		
Email Address:					

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix				Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summ #	Other			
E01E17'	9/14/15	10:45	1	X					X				X X X X X -	Same day early AM!
														2
														3
														4
														5
														6
														7
														8
														9
														10
Relinquished By: 	9/14/15		Time: 1648	Received By: 		Date: 9/14/15	Time: 1648	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr	Standard <input checked="" type="checkbox"/> g.					
Relinquished By:		Date:	Time:	Received By:		Date:	Time:							

Date Results Needed

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15J1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X509178

Client: Tasman

Client Project ID: Mayer X33-15J1

Checklist Completed by: Jeff Smith

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

Date/time completed: 9/14/15

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 9.1 °C 1 / _____ °C 1 / _____ °C 1 / _____ °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>PH</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽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 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.

Jeff Smith
Reviewed by (Project Manager)

9/14/15
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

E01 @ 17'

9/14/2015 10:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509178-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5114009	09/14/2015	09/15/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 77.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	6.33	5.00	mg/kg	25	5114005	09/14/2015	09/14/2015
Benzene	ND	0.050	"	"	"	"	"
Toluene	ND	0.050	"	"	"	"	"
Ethylbenzene	ND	0.050	"	"	"	"	"
Xylenes, total	ND	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 105 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.2 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.40		pH Units	1	5114011	09/14/2015	09/14/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.365		mmhos/cm	"	5114012	"	"
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5114005 - EPA 5030 (soil)

Blank (5114005-BLK1)

Prepared: 09/14/2015 Analyzed: 09/14/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	62.5		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	63.8		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	62.1		"	62.5		99.4	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5114005 - EPA 5030 (soil)										
LCS (5114005-BS1)					Prepared: 09/14/2015 Analyzed: 09/14/2015					
Benzene	0.089	0.002	mg/kg	0.100		89.2	77.1-124			
Toluene	0.086	0.002	"	0.100		85.6	74.5-128			
Ethylbenzene	0.090	0.002	"	0.100		90.2	66.4-127			
m,p-Xylene	0.181	0.004	"	0.200		90.6	76.6-124			
o-Xylene	0.089	0.002	"	0.100		89.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58.5		ug/kg	62.5		93.6	70-130			
Surrogate: Toluene-d8	63.1		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	64.4		"	62.5		103	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I14005 - EPA 5030 (soil)

Matrix Spike (5I14005-MS1)		Source: X509155-01			Prepared: 09/14/2015 Analyzed: 09/14/2015					
Benzene	0.090	0.002	mg/kg	0.100	ND	90.5	71.8-126			
Toluene	0.090	0.002	"	0.100	ND	90.4	65.1-130			
Ethylbenzene	0.090	0.002	"	0.100	ND	90.3	62.2-130			
m,p-Xylene	0.174	0.004	"	0.200	ND	86.9	46.5-137			
o-Xylene	0.088	0.002	"	0.100	ND	87.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	62.5		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	62.5		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	62.3		"	62.5		99.7	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5114005 - EPA 5030 (soil)										
Matrix Spike Dup (5114005-MSD1)										
					Source: X509155-01					
										Prepared: 09/14/2015 Analyzed: 09/14/2015
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126	11.3	11.3	
Toluene	0.098	0.002	"	0.100	ND	98.2	65.1-130	8.27	15.4	
Ethylbenzene	0.097	0.002	"	0.100	ND	97.4	62.2-130	7.65	19.6	
m,p-Xylene	0.195	0.004	"	0.200	ND	97.3	46.5-137	11.3	19.2	
o-Xylene	0.097	0.002	"	0.100	ND	97.3	54.2-134	10.3	17.9	
Surrogate: 1,2-Dichloroethane-d4	63.2		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	62.3		"	62.5		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	63.4		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5114009 - EPA 3580

Blank (5114009-BLK1)

Prepared: 09/14/2015 Analyzed: 09/14/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	44		"	50.0		87.2	59-131			

LCS (5114009-BS1)

Prepared: 09/14/2015 Analyzed: 09/14/2015

Diesel (C10-C28)	950	50	mg/kg	1000		95.4	64-121			
Residual Range Organics (C28-C36)	1000	200	"	1000		100	58-124			
Surrogate: o-Terphenyl	53		"	50.0		106	59-131			

LCS Dup (5114009-BSD1)

Prepared: 09/14/2015 Analyzed: 09/14/2015

Diesel (C10-C28)	880	50	mg/kg	1000		88.2	64-121	7.81	20	
Residual Range Organics (C28-C36)	1000	200	"	1000		101	58-124	0.566	20	
Surrogate: o-Terphenyl	43		"	50.0		86.8	59-131			

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I14011 - NO PREP										
Duplicate (5I14011-DUP1)		Source: X509172-01			Prepared: 09/14/2015 Analyzed: 09/14/2015					
pH	8.28		pH Units		8.69			4.83	25	
Batch 5I14012 - NO PREP										
Blank (5I14012-BLK1)		Prepared: 09/14/2015 Analyzed: 09/14/2015								
Specific Conductance (EC)	0.00330		mmhos/cm							
Duplicate (5I14012-DUP1)		Source: X509172-01			Prepared: 09/14/2015 Analyzed: 09/14/2015					
Specific Conductance (EC)	0.0755		mmhos/cm		0.0784			3.77	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

September 16, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI**Project Number - [none]**

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 15, 2015. This project is associated with Origins project number X509188-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B02 @ 19'	X509188-01	Soil	September 15, 2015 13:15	09/15/2015 16:35

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.

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

ORIGINS

LABORATORY, INC

X509188



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page 1 of 1

Client: APC
Address:

Project Manager: Jim Dawe
Project Name: Mayer X33-1531
Project Number:
Samples Collected By: Matt P

Telephone Number: 303-884-1287
Email Address: JimDawe@hssman-360.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #		
B02@19'	9/15/15	13:15	1	X					X		X + X x x x - Same day, Early AM!	2
												3
												4
												5
												6
												7
												8
												9
												10
Relinquished By: 	Date: 9/15/15										Time: 16:35	Turnaround Time: Same Day (X) 24 Hr () 48 Hr () 72 Hr () Standard () 9.5
Relinquished By: 	Date: 9/15/15										Time: 9:15:15	

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

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15J1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XSOA188

Client: Tasman

Client Project ID: Mayer X33-15J1

Checklist Completed by: Jeff Smith

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

Date/time completed: 9/15/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 9.8 °C 1 / _____ °C 1 / _____ °C 1 / _____ °C

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 ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<u>Simplified 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>PH</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽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 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.

Jeff Smith
Reviewed by (Project Manager)

9/15/15
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

B02 @ 19'
9/15/2015 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509188-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5115009	09/15/2015	09/15/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 92.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5115007	09/15/2015	09/15/2015
Benzene	ND	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 123 % 70-130 " " "
Surrogate: Toluene-d8 91.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.94		pH Units	1	5115012	09/15/2015	09/15/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.284		mmhos/cm	"	5115013	09/15/2015	09/15/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I15007 - EPA 5030 (soil)

Blank (5I15007-BLK1)

Prepared: 09/15/2015 Analyzed: 09/15/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	64.4		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	60.2		"	62.5		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	63.6		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I15007 - EPA 5030 (soil)										
LCS (5I15007-BS1)					Prepared: 09/15/2015 Analyzed: 09/15/2015					
Benzene	0.098	0.002	mg/kg	0.100		97.7	77.1-124			
Toluene	0.093	0.002	"	0.100		93.3	74.5-128			
Ethylbenzene	0.097	0.002	"	0.100		96.9	66.4-127			
m,p-Xylene	0.194	0.004	"	0.200		97.2	76.6-124			
o-Xylene	0.096	0.002	"	0.100		96.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	61.3		ug/kg	62.5		98.1	70-130			
Surrogate: Toluene-d8	61.4		"	62.5		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	63.8		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I15007 - EPA 5030 (soil)

Matrix Spike (5I15007-MS1)		Source: X509162-02			Prepared: 09/15/2015 Analyzed: 09/15/2015					
Benzene	0.123	0.002	mg/kg	0.100	0.0006	122	71.8-126			
Toluene	0.117	0.002	"	0.100	ND	117	65.1-130			
Ethylbenzene	0.122	0.002	"	0.100	ND	122	62.2-130			
m,p-Xylene	0.244	0.004	"	0.200	ND	122	46.5-137			
o-Xylene	0.120	0.002	"	0.100	ND	120	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	62.3		ug/kg	62.5		99.7	70-130			
Surrogate: Toluene-d8	61.3		"	62.5		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	63.8		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I15007 - EPA 5030 (soil)										
Matrix Spike Dup (5I15007-MSD1)		Source: X509162-02			Prepared: 09/15/2015 Analyzed: 09/15/2015					
Benzene	0.123	0.002	mg/kg	0.100	0.0006	123	71.8-126	0.455	11.3	
Toluene	0.115	0.002	"	0.100	ND	115	65.1-130	1.31	15.4	
Ethylbenzene	0.119	0.002	"	0.100	ND	119	62.2-130	2.50	19.6	
m,p-Xylene	0.240	0.004	"	0.200	ND	120	46.5-137	1.72	19.2	
o-Xylene	0.119	0.002	"	0.100	ND	119	54.2-134	0.968	17.9	
Surrogate: 1,2-Dichloroethane-d4	63.5		ug/kg	62.5		102	70-130			
Surrogate: Toluene-d8	59.7		"	62.5		95.6	70-130			
Surrogate: 4-Bromofluorobenzene	64.4		"	62.5		103	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5115009 - EPA 3580

Blank (5115009-BLK1)

Prepared: 09/15/2015 Analyzed: 09/15/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	38		"	50.0		76.6	59-131			

LCS (5115009-BS1)

Prepared: 09/15/2015 Analyzed: 09/15/2015

Diesel (C10-C28)	1000	50	mg/kg	1000		100	64-121			
Residual Range Organics (C28-C36)	970	200	"	1000		97.0	58-124			
Surrogate: o-Terphenyl	52		"	50.0		104	59-131			

Matrix Spike (5115009-MS1)

Source: X509166-01

Prepared: 09/15/2015 Analyzed: 09/15/2015

Diesel (C10-C28)	1300	50	mg/kg	1000	370	93.8	53-125			
Residual Range Organics (C28-C36)	1000	200	"	1000	120	90.4	47-133			
Surrogate: o-Terphenyl	54		"	50.0		109	59-131			

Matrix Spike Dup (5115009-MSD1)

Source: X509166-01

Prepared: 09/15/2015 Analyzed: 09/15/2015

Diesel (C10-C28)	1100	50	mg/kg	1000	370	73.9	53-125	16.4	20	
Residual Range Organics (C28-C36)	820	200	"	1000	120	69.7	47-133	22.4	20	QR-02
Surrogate: o-Terphenyl	45		"	50.0		89.1	59-131			

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I15012 - NO PREP										
Duplicate (5I15012-DUP1)		Source: X509188-01			Prepared: 09/15/2015 Analyzed: 09/15/2015					
pH	7.87		pH Units		7.94			0.886	25	
Batch 5I15013 - NO PREP										
Blank (5I15013-BLK1)		Prepared: 09/15/2015 Analyzed: 09/15/2015								
Specific Conductance (EC)	0.00450		mmhos/cm							
Duplicate (5I15013-DUP1)		Source: X509188-01			Prepared: 09/15/2015 Analyzed: 09/15/2015					
Specific Conductance (EC)	0.330		mmhos/cm		0.284			15.0	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

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.

Jen Pellegrini For Noelle Doyle Mathis, President

September 18, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI

Project Number - [none]

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 17, 2015. This project is associated with Origins project number X509223-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W01 @ 17'	X509223-01	Soil	September 17, 2015 15:10	09/17/2015 16:35
W02 @ 17'	X509223-02	Soil	September 17, 2015 15:10	09/17/2015 16:35
N01 @ 17'	X509223-03	Soil	September 17, 2015 10:00	09/17/2015 16:35

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.

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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X509223



page 1 of 1

Client: Andarke Tosman Project Manager/Send Report To: Jim Dawe

Address: _____ Email Address: jimdawe@tosman-gso.com

Telephone Number: 303 884 1287 Project Name/Number: Mayers 33-1551

Samples Collected By: Jim Dawe

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis/Method		Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Alt. Summ. #	Other			
W01Q17'	9-17-15	15:10	1	X					Y		X Y X Y Y Y	BT, EX 200g 200g 200g 200g 200g	Hold for SAR	
W02Q17'	9-17-15	15:10	1	Y					Y		Y Y Y Y Y Y		"	
N01Q17'	9-17-15	10:00	1	Y					X		X Y Y Y Y Y		"	
													Results	
													@ 7 am	
													9-18-15	
Relinquished By:	Date: 9-17-15	Time: 15:30	Received By:	Date:	Time:	Turnaround Time:								
			Received By: 	Date: 9/17/15	Time: 1635									
Relinquished By:														

Comments:

Date Results Needed:

Jose Pellegrini

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15J1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X509223

Client: Tasman

Client Project ID: Mayer 33-15J1

Checklist Completed by: Jeff Smith

Shipped Via: Pick up

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

Date/time completed: 9/17/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 5.9 °C / °C / °C / °C (Describe)

Thermometer ID: TD03

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	X			PH
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
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)			X	
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)

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

W01 @ 17'
9/17/2015 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509223-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5117010	09/17/2015	09/17/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 84.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	54.2	5.00	mg/kg	25	5117015	09/17/2015	09/17/2015
Benzene	0.226	0.050	"	"	"	"	"
Toluene	1.93	0.050	"	"	"	"	"
Ethylbenzene	0.320	0.050	"	"	"	"	"
Xylenes, total	3.99	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "

Surrogate: Toluene-d8 107 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.40		pH Units	1	5117012	09/17/2015	09/17/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.396		mmhos/cm	"	5117013	"	09/17/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

W02 @ 17'

9/17/2015 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X509223-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5117010	09/17/2015	09/17/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	79.5 %	59-131			"	"	"
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	86.9	5.00	mg/kg	25	5117015	09/17/2015	09/18/2015
Benzene	0.304	0.050	"	"	"	"	"
Toluene	2.48	0.050	"	"	"	"	"
Ethylbenzene	0.413	0.050	"	"	"	"	"
Xylenes, total	5.37	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	91.8 %	70-130			"	"	"
Surrogate: Toluene-d8	103 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	96.2 %	70-130			"	"	"

pH in Soil by EPA 9045D

pH	8.68		pH Units	1	5117012	09/17/2015	09/17/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.915		mmhos/cm	"	5117013	"	09/17/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

N01 @ 17'

9/17/2015 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509223-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5117010	09/17/2015	09/17/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 85.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5117015	09/17/2015	09/17/2015
Benzene	ND	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 116 % 70-130 " " "
Surrogate: Toluene-d8 93.7 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 105 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.14		pH Units	1	5117012	09/17/2015	09/17/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.106		mmhos/cm	"	5117013	"	09/17/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5117015 - EPA 5030 (soil)

Blank (5117015-BLK1)

Prepared: 09/17/2015 Analyzed: 09/17/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	70.6		ug/kg	62.5		113	70-130			
Surrogate: Toluene-d8	58.4		"	62.5		93.5	70-130			
Surrogate: 4-Bromofluorobenzene	64.8		"	62.5		104	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5117015 - EPA 5030 (soil)										
LCS (5117015-BS1)					Prepared: 09/17/2015 Analyzed: 09/17/2015					
Benzene	0.108	0.002	mg/kg	0.100		108	77.1-124			
Toluene	0.099	0.002	"	0.100		98.9	74.5-128			
Ethylbenzene	0.099	0.002	"	0.100		99.3	66.4-127			
m,p-Xylene	0.198	0.004	"	0.200		98.9	76.6-124			
o-Xylene	0.099	0.002	"	0.100		98.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	64.4		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	59.6		"	62.5		95.3	70-130			
Surrogate: 4-Bromofluorobenzene	64.2		"	62.5		103	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I17015 - EPA 5030 (soil)

Matrix Spike (5I17015-MS1)		Source: X509223-03			Prepared: 09/17/2015 Analyzed: 09/17/2015					
Benzene	0.100	0.002	mg/kg	0.100	ND	100	71.8-126			
Toluene	0.090	0.002	"	0.100	ND	90.5	65.1-130			
Ethylbenzene	0.091	0.002	"	0.100	ND	91.1	62.2-130			
m,p-Xylene	0.182	0.004	"	0.200	ND	90.8	46.5-137			
o-Xylene	0.090	0.002	"	0.100	ND	90.0	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	68.8		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	58.8		"	62.5		94.1	70-130			
Surrogate: 4-Bromofluorobenzene	63.9		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5117015 - EPA 5030 (soil)

Matrix Spike Dup (5117015-MSD1)		Source: X509223-03			Prepared: 09/17/2015 Analyzed: 09/17/2015					
Benzene	0.095	0.002	mg/kg	0.100	ND	95.1	71.8-126	5.24	11.3	
Toluene	0.084	0.002	"	0.100	ND	84.4	65.1-130	6.91	15.4	
Ethylbenzene	0.086	0.002	"	0.100	ND	86.1	62.2-130	5.64	19.6	
m,p-Xylene	0.171	0.004	"	0.200	ND	85.3	46.5-137	6.27	19.2	
o-Xylene	0.085	0.002	"	0.100	ND	84.7	54.2-134	6.09	17.9	
Surrogate: 1,2-Dichloroethane-d4	68.3		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	57.9		"	62.5		92.7	70-130			
Surrogate: 4-Bromofluorobenzene	63.8		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5117010 - EPA 3580

Blank (5117010-BLK1)

Prepared: 09/17/2015 Analyzed: 09/17/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	42		"	50.0		84.8	59-131			

LCS (5117010-BS1)

Prepared: 09/17/2015 Analyzed: 09/17/2015

Diesel (C10-C28)	920	50	mg/kg	1000		91.6	64-121			
Residual Range Organics (C28-C36)	940	200	"	1000		93.9	58-124			
Surrogate: o-Terphenyl	49		"	50.0		98.8	59-131			

Matrix Spike (5117010-MS1)

Source: X509208-01

Prepared: 09/17/2015 Analyzed: 09/17/2015

Diesel (C10-C28)	970	50	mg/kg	1000	ND	97.0	53-125			
Residual Range Organics (C28-C36)	1000	200	"	1000	28	98.6	47-133			
Surrogate: o-Terphenyl	50		"	50.0		99.6	59-131			

Matrix Spike Dup (5117010-MSD1)

Source: X509208-01

Prepared: 09/17/2015 Analyzed: 09/17/2015

Diesel (C10-C28)	1000	50	mg/kg	1000	ND	99.9	53-125	2.90	20	
Residual Range Organics (C28-C36)	940	200	"	1000	28	91.0	47-133	7.75	20	
Surrogate: o-Terphenyl	48		"	50.0		96.9	59-131			

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I17012 - NO PREP										
Duplicate (5I17012-DUP1)		Source: X509217-01			Prepared: 09/17/2015 Analyzed: 09/17/2015					
pH	8.66		pH Units		8.70			0.461	25	
Batch 5I17013 - NO PREP										
Blank (5I17013-BLK1)		Prepared: 09/17/2015 Analyzed: 09/17/2015								
Specific Conductance (EC)	0.00270		mmhos/cm							
Duplicate (5I17013-DUP1)		Source: X509217-01			Prepared: 09/17/2015 Analyzed: 09/17/2015					
Specific Conductance (EC)	0.0710		mmhos/cm		0.0692			2.57	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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



May 18, 2016

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI

Project Number - [none]

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 18, 2015. This project is associated with Origins project number X509245-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N02 @ 17'	X509245-01	Soil	September 18, 2015 14:57	09/18/2015 16:30
B03 @ 19'	X509245-02	Soil	September 18, 2015 15:05	09/18/2015 16:30
N03 @ 17'	X509245-03	Soil	September 18, 2015 15:30	09/18/2015 16:30

The following sample ID was changed per the email from Dan on 05/18/16 due to an incorrect depth noted in the field.

B03@17' to B03@19'

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.

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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X5092us

page 1 of 1

Client: Anadarko

Address: 6899 Pecos Street
Durham, CO 80221

Telephone Number: 303-884-1287

Project Manager/Send Report To: Jim Dawe

Email Address: jimdawe@tcinsm-glo.com

Project Name/Number: Maya X33-151L

Samples Collected By: Devin Arnold

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix				Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO ₃	Groundwater	Soil	Air Summation	Other				
N02 @ 17'	9/18/15	14:57	2	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					BTX, 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,148,149,150,151,152,153,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,348,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,372,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,421,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,488,489,490,491,492,493,494,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,510,511,512,513,514,515,516,517,518,519,520,521,522,523,524,525,526,527,528,529,530,531,532,533,534,535,536,537,538,539,540,541,542,543,544,545,546,547,548,549,550,551,552,553,554,555,556,557,558,559,560,561,562,563,564,565,566,567,568,569,570,571,572,573,574,575,576,577,578,579,580,581,582,583,584,585,586,587,588,589,590,591,592,593,594,595,596,597,598,599,600,601,602,603,604,605,606,607,608,609,610,611,612,613,614,615,616,617,618,619,620,621,622,623,624,625,626,627,628,629,630,631,632,633,634,635,636,637,638,639,640,641,642,643,644,645,646,647,648,649,650,651,652,653,654,655,656,657,658,659,660,661,662,663,664,665,666,667,668,669,670,671,672,673,674,675,676,677,678,679,680,681,682,683,684,685,686,687,688,689,690,691,692,693,694,695,696,697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,713,714,715,716,717,718,719,720,721,722,723,724,725,726,727,728,729,730,731,732,733,734,735,736,737,738,739,740,741,742,743,744,745,746,747,748,749,750,751,752,753,754,755,756,757,758,759,760,761,762,763,764,765,766,767,768,769,770,771,772,773,774,775,776,777,778,779,780,781,782,783,784,785,786,787,788,789,790,791,792,793,794,795,796,797,798,799,800,801,802,803,804,805,806,807,808,809,810,811,812,813,814,815,816,817,818,819,820,821,822,823,824,825,826,827,828,829,830,831,832,833,834,835,836,837,838,839,840,841,842,843,844,845,846,847,848,849,850,851,852,853,854,855,856,857,858,859,860,861,862,863,864,865,866,867,868,869,870,871,872,873,874,875,876,877,878,879,880,881,882,883,884,885,886,887,888,889,890,891,892,893,894,895,896,897,898,899,900,901,902,903,904,905,906,907,908,909,910,911,912,913,914,915,916,917,918,919,920,921,922,923,924,925,926,927,928,929,930,931,932,933,934,935,936,937,938,939,940,941,942,943,944,945,946,947,948,949,950,951,952,953,954,955,956,957,958,959,960,961,962,963,964,965,966,967,968,969,970,971,972,973,974,975,976,977,978,979,980,981,982,983,984,985,986,987,988,989,990,991,992,993,994,995,996,997,998,999,1000,1001,1002,1003,1004,1005,1006,1007,1008,1009,1010,1011,1012,1013,1014,1015,1016,1017,1018,1019,1020,1021,1022,1023,1024,1025,1026,1027,1028,1029,1030,1031,1032,1033,1034,1035,1036,1037,1038,1039,1040,1041,1042,1043,1044,1045,1046,1047,1048,1049,1050,1051,1052,1053,1054,1055,1056,1057,1058,1059,1060,1061,1062,1063,1064,1065,1066,1067,1068,1069,1070,1071,1072,1073,1074,1075,1076,1077,1078,1079,1080,1081,1082,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1109,1110,1111,1112,1113,1114,1115,1116,1117,1118,1119,1120,1121,1122,1123,1124,1125,1126,1127,1128,1129,1130,1131,1132,1133,1134,1135,1136,1137,1138,1139,1140,1141,1142,1143,1144,1145,1146,1147,1148,1149,1150,1151,1152,1153,1154,1155,1156,1157,1158,1159,1160,1161,1162,1163,1164,1165,1166,1167,1168,1169,1170,1171,1172,1173,1174,1175,1176,1177,1178,1179,1180,1181,1182,1183,1184,1185,1186,1187,1188,1189,1190,1191,1192,1193,1194,1195,1196,1197,1198,1199,1200,1201,1202,1203,1204,1205,1206,1207,1208,1209,1210,1211,1212,1213,1214,1215,1216,1217,1218,1219,1220,1221,1222,1223,1224,1225,1226,1227,1228,1229,1230,1231,1232,1233,1234,1235,1236,1237,1238,1239,1240,1241,1242,1243,1244,1245,1246,1247,1248,1249,1250,1251,1252,1253,1254,1255,1256,1257,1258,1259,1260,1261,1262,1263,1264,1265,1266,1267,1268,1269,1270,1271,1272,1273,1274,1275,1276,1277,1278,1279,1280,1281,1282,1283,1284,1285,1286,1287,1288,1289,1290,1291,1292,1293,1294,1295,1296,1297,1298,1299,1300,1301,1302,1303,1304,1305,1306,1307,1308,1309,1310,1311,1312,1313,1314,1315,1316,1317,1318,1319,1320,1321,1322,1323,1324,1325,1326,1327,1328,1329,1330,1331,1332,1333,1334,1335,1336,1337,1338,1339,1340,1341,1342,1343,1344,1345,1346,1347,1348,1349,1350,1351,1352,1353,1354,1355,1356,1357,1358,1359,1360,1361,1362,1363,1364,1365,1366,1367,1368,1369,1370,1371,1372,1373,1374,1375,1376,1377,1378,1379,1380,1381,1382,1383,1384,1385,1386,1387,1388,1389,1390,1391,1392,1393,1394,1395,1396,1397,1398,1399,1400,1401,1402,1403,1404,1405,1406,1407,1408,1409,1410,1411,1412,1413,1414,1415,1416,1417,1418,1419,1420,1421,1422,1423,1424,1425,1426,1427,1428,1429,1430,1431,1432,1433,1434,1435,1436,1437,1438,1439,1440,1441,1442,1443,1444,1445,1446,1447,1448,1449,1450,1451,1452,1453,1454,1455,1456,1457,1458,1459,1460,1461,1462,1463,1464,1465,1466,1467,1468,1469,1470,1471,1472,1473,1474,1475,1476,1477,1478,1479,1480,1481,1482,1483,1484,1485,1486,1487,1488,1489,1490,1491,1492,1493,1494,1495,1496,1497,1498,1499,1500,1501,1502,1503,1504,1505,1506,1507,1508,1509,1510,1511,1512,1513,1514,1515,1516,1517,1518,1519,1520,1521,1522,1523,1524,1525,1526,1527,1528,1529,1530,1531,1532,1533,1534,1535,1536,1537,1538,1539,1540,1541,1542,1543,1544,1545,1546,1547,1548,1549,1550,1551,1552,1553,1554,1555,1556,1557,1558,1559,1560,1561,1562,1563,1564,1565,1566,1567,1568,1569,1570,1571,1572,1573,1574,1575,1576,1577,1578,1579,1580,1581,1582,1583,1584,1585,1586,1587,1588,1589,1590,1591,1592,1593,1594,1595,1596,1597,1598,1599,1600,1601,1602,1603,1604,1605,1606,1607,1608,1609,1610,1611,1612,1613,1614,1615,1616,1617,1618,1619,1620,1621,1622,1623,1624,1625,1626,1627,1628,1629,1630,1631,1632,1633,1634,1635,1636,1637,1638,1639,1640,1641,1642,1643,1644,1645,1646,1647,1648,1649,1650,1651,1652,1653,1654,1655,1656,1657,1658,1659,1660,1661,1662,1663,1664,1665,1666,1667,1668,1669,1670,1671,1672,1673,1674,1675,1676,1677,1678,1679,1680,1681,1682,1683,1684,1685,1686,1687,1688,1689,1690,1691,1692,1693,1694,1695,1696,1697,1698,1699,1700,1701,1702,1703,1704,1705,1706,1707,1708,1709,1710,1711,1712,1713,1714,1715,1716,1717,1718,1719,1720,1721,1722,1723,1724,1725,1726,1727,1728,1729,1730,1731,1732,1733,1734,1735,1736,1737,1738,1739,1740,1741,1742,1743,1744,1745,1746,1747,1748,1749,1750,1751,1752,1753,1754,1755,1756,1757,1758,1759,1760,1761,1762,1763,1764,1765,1766,1767,1768,1769,1770,1771,1772,1773,1774,1775,1776,1777,1778,1779,1780,1781,1782,1783,1784,1785,1786,1787,1788,1789,1790,1791,1792,1793,1794,1795,1796,1797,1798,1799,1800,1801,1802,1803,1804,1805,1806,1807,1808,1809,1810,1811,1812,1813,1814,1815,1816,1817,1818,1819,1820,1821,1822,1823,1824,1825,1826,1827,1828,1829,1830,1831,1832,1833,1834,1835,1836,1837,1838,1839,1840,1841,1842,1843,1844,1845,1846,1847,1848,1849,1850,1851,1852,1853,1854,1855,1856,1857,1858,1859,1860,1861,1862,1863,1864,1865,1866,1867,1868,1869,1870,1871,1872,1873,1874,1875,1876,1877,1878,1879,1880,1881,1882,1883,1884,1885,1886,1887,1888,1889,1890,1891,1892,1893,1894,1895,1896,1897,1898,1899,1900,1901,1902,1903,1904,1905,1906,1907,1908,1909,1910,1911,1912,1913,1914,1915,1916,1917,1918,1919,1920,1921,1922,1923,1924,1925,1926,1927,1928,1929,1930,1931,1932,1933,1934,1935,1936,1937,1938,1939,1940,1941,1942,1943,1944,1945,1946,1947,1948,1949,1950,1951,1952,1953,1954,1955,1956,1957,1958,1959,1960,1961,1962,1963,1964,1965,1966,1967,1968,1969,1970,1971,1972,1973,1974,1975,1976,1977,1978,1979,1980,1981,1982,1983,1984,1985,1986,1987,1988,1989,1990,1991,1992,1993,1994,1995,1996,1997,1998,1999,2000,2001,2002,2003,2004,2005,2006,2007,2008,2009,2010,2011,2012,2013,2014,2015,2016,2017,2018,2019,2020,2021,2022,2023,2024,2025,2026,2027,2028,2029,2030,2031,2032,2033,2034,2035,2036,2037,2038,2039,2040,2041,2042,2043,2044,2045,2046,2047,2048,2049,2050,2051,2052,2053,2054,2055,2056,2057,2058,2059,2060,2061,2062,2063,2064,2065,2066,2067,2068,2069,2070,2071,2072,2073,2074,2075,2076,2077,2078,2079,2080,2081,2082,2083,2084,2085,2086,2087,2088,2089,2090,2091,2092,2093,2094,2095,2096,2097,2098,2099,2100,2101,2102,2103,2104,2105,2106,2107,2108,2109,2110,2111,2112,2113,2114,2115,2116,2117,2118,2119,2120,2121,2122,2123,2124,2125,2126,2127,2128,2129,2130,2131,2132,2133,2134,2135,2136,2137,2138,2139,2140,2141,2142,2143,2144,2145,2146,2147,2148,2149,2150,2151,2152,2153,2154,2155,2156,2157,2158,2159,2160,2161,2162,2163,2164,2165,2166,2167,2168,2169,2170,2171,2172,2173,2174,2175,2176,2177,2178,2179,2180,2181,2182,2183,2184,2185,2186,2187,2188,2189,2190,2191,2192,2193,2194,2195,2196,2197,2198,2199,2200,2201,2202,2203,2204,2205,2206,2207,2208,2209,2210,2211,2212,2213,2214,2215,2216,2217,2218,2219,2220,2221,22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Comments:

Date Results Needed:

Jose Pellegrini

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X50924S

Client: Tasman

Client Project ID: Mayer X33-15JI

Checklist Completed by: Jeff Smith

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

Date/time completed: 9/18/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 4.9 °C 1 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽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 checked="" type="checkbox"/>	<input 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.

Jeff Smith
Reviewed by (Project Manager)

9/18/15
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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

N02 @ 17'
9/18/2015 2:57:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509245-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5118008	09/18/2015	09/18/2015	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	"	"	U

Surrogate: o-Terphenyl 77.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.20	mg/kg	1	5118009	09/18/2015	09/18/2015	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 113 % 70-130 " " "
Surrogate: Toluene-d8 93.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

pH in Soil by EPA 9045D

pH	9.10		pH Units	1	5118015	09/18/2015	09/18/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.307		mmhos/cm	"	5118016	09/18/2015	"	
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

B03 @ 19'
9/18/2015 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509245-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5118008	09/18/2015	09/18/2015	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	"	"	U

Surrogate: o-Terphenyl 67.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.0	mg/kg	25	5118009	09/18/2015	09/18/2015	U
Benzene	ND	0.05	"	"	"	"	"	U
Toluene	ND	0.05	"	"	"	"	"	U
Ethylbenzene	ND	0.05	"	"	"	"	"	U
Xylenes, total	ND	0.05	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "
Surrogate: Toluene-d8 95.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.05		pH Units	1	5118015	09/18/2015	09/18/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.789		mmhos/cm	"	5118016	09/18/2015	"	
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

N03 @ 17'
9/18/2015 3:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509245-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5118008	09/18/2015	09/18/2015	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	"	"	U

Surrogate: o-Terphenyl 88.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.20	mg/kg	1	5118009	09/18/2015	09/18/2015	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 119 % 70-130 " " "
Surrogate: Toluene-d8 92.6 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.30		pH Units	1	5118015	09/18/2015	09/18/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.459		mmhos/cm	"	5118016	09/18/2015	"	
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5118009 - EPA 5030 (soil)										
Blank (5118009-BLK1)					Prepared: 09/18/2015 Analyzed: 09/18/2015					
Gasoline Range Hydrocarbons	ND	0.20	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.7	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5118009 - EPA 5030 (soil)										
LCS (5118009-BS1)					Prepared: 09/18/2015 Analyzed: 09/18/2015					
Benzene	0.10	0.002	mg/kg	0.100		97.6	77.1-124			
Toluene	0.09	0.002	"	0.100		90.7	74.5-128			
Ethylbenzene	0.09	0.002	"	0.100		93.0	66.4-127			
m,p-Xylene	0.19	0.004	"	0.200		93.6	76.6-124			
o-Xylene	0.09	0.002	"	0.100		92.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.3	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I18009 - EPA 5030 (soil)

Matrix Spike (5I18009-MS1)		Source: X509241-01			Prepared: 09/18/2015 Analyzed: 09/18/2015					
Benzene	0.11	0.002	mg/kg	0.100	0.02	90.9	71.8-126			
Toluene	0.10	0.002	"	0.100	0.002	94.0	65.1-130			
Ethylbenzene	0.10	0.002	"	0.100	0.002	98.4	62.2-130			
m,p-Xylene	0.20	0.004	"	0.200	0.01	96.0	46.5-137			
o-Xylene	0.10	0.002	"	0.100	0.006	94.3	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.1	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5118009 - EPA 5030 (soil)										
Matrix Spike Dup (5118009-MSD1)		Source: X509241-01			Prepared: 09/18/2015 Analyzed: 09/18/2015					
Benzene	0.11	0.002	mg/kg	0.100	0.02	87.2	71.8-126	3.42	11.3	
Toluene	0.09	0.002	"	0.100	0.002	86.1	65.1-130	8.64	15.4	
Ethylbenzene	0.09	0.002	"	0.100	0.002	92.1	62.2-130	6.45	19.6	
m,p-Xylene	0.19	0.004	"	0.200	0.01	90.6	46.5-137	5.44	19.2	
o-Xylene	0.09	0.002	"	0.100	0.006	88.9	54.2-134	5.57	17.9	
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	61		"	62.5		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5118008 - EPA 3580

Blank (5118008-BLK1)

Prepared: 09/18/2015 Analyzed: 09/18/2015

Diesel (C10-C28)	ND	50	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	36		"	50.0		71.8	59-131			

LCS (5118008-BS1)

Prepared: 09/18/2015 Analyzed: 09/18/2015

Diesel (C10-C28)	1000	50	mg/kg	1000		105	64-121			
Residual Range Organics (C28-C40)	1100	200	"	1000		113	58-124			
Surrogate: o-Terphenyl	55		"	50.0		110	59-131			

Matrix Spike (5118008-MS1)

Source: X509241-01

Prepared: 09/18/2015 Analyzed: 09/18/2015

Diesel (C10-C28)	870	50	mg/kg	1000	ND	87.3	53-125			
Residual Range Organics (C28-C40)	940	200	"	1000	24	92.0	47-133			
Surrogate: o-Terphenyl	48		"	50.0		96.8	59-131			

Matrix Spike Dup (5118008-MSD1)

Source: X509241-01

Prepared: 09/18/2015 Analyzed: 09/18/2015

Diesel (C10-C28)	870	50	mg/kg	1000	ND	86.5	53-125	0.903	20	
Residual Range Organics (C28-C40)	890	200	"	1000	24	87.0	47-133	5.51	20	
Surrogate: o-Terphenyl	46		"	50.0		92.7	59-131			

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I18015 - NO PREP										
Duplicate (5I18015-DUP1)		Source: X509245-01			Prepared: 09/18/2015 Analyzed: 09/18/2015					
pH	9.05		pH Units		9.10			0.551	25	
Batch 5I18016 - NO PREP										
Blank (5I18016-BLK1)		Prepared: 09/18/2015 Analyzed: 09/18/2015								
Specific Conductance (EC)	0.00240		mmhos/cm							
Duplicate (5I18016-DUP1)		Source: X509245-01			Prepared: 09/18/2015 Analyzed: 09/18/2015					
Specific Conductance (EC)	0.295		mmhos/cm		0.307			3.99	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

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



May 17, 2016

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI

Project Number - [none]

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 21, 2015. This project is associated with Origins project number X509273-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W03 @ 17'	X509273-01	Soil	September 21, 2015 11:53	09/21/2015 16:45
W04 @ 17'	X509273-02	Soil	September 21, 2015 13:04	09/21/2015 16:45
E02 @ 17'	X509273-03	Soil	September 21, 2015 14:48	09/21/2015 16:45

The following sample IDs were changed per the email from Dan Wade on 05/17/16 due to duplicate numbering in the field.

W01@17' to W03@17'

W02@17' to W04@17'

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

www.originslaboratory.com

X509273

ORIGINS
LABORATORY, INC

Client: APC
Address:
Telephone Number:
Email Address: JimDawe@Tasman-geo.com

Project Manager: Jim Dawe
Project Name: Mayer X33-15JI
Project Number:
Samples Collected By: M.H.P

page 1 of 1

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #		
W01@17	9/21/15	11:53	1	X				X			X X X X X - Same day Early AM	
W02@17		13:04	1	X				X			X X X X X -	2
E02@17		14:48	1	X				X			X X X X X -	3
												4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
[Signature]	9/21/15	16:00	[Signature]	9.21.15	1645	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"/> L.O.
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Date Results Needed

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

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15J1

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X509273

Client: Tasman

Client Project ID: Mayer X33-15J1

Checklist Completed by: Jeff Smith

Shipped Via: Pick up

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

Date/time completed: 9/21/12

Airbill #: N/A

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

Cooler Number/Temperature: 1 12.0 °C 1 °C 1 °C 1 °C (Describe)

Thermometer ID: 1003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽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 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)

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

W03 @ 17'

9/21/2015 11:53:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509273-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5121008	09/21/2015	09/21/2015	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	"	"	U

Surrogate: o-Terphenyl 75.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	17	5.0	mg/kg	25	5121007	09/21/2015	09/22/2015	
Benzene	ND	0.05	"	"	"	"	"	U
Toluene	ND	0.05	"	"	"	"	"	U
Ethylbenzene	ND	0.05	"	"	"	"	"	U
Xylenes, total	ND	0.05	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 97.1 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 97.7 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.47		pH Units	1	5121016	09/21/2015	09/21/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.376		mmhos/cm	"	5121017	"	"	
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

W04 @ 17'

9/21/2015 1:04:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509273-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5121008	09/21/2015	09/21/2015	U
Residual Range Organics (C28-C40)	ND	200	"	"	"	"	"	U

Surrogate: o-Terphenyl 76.1 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.66	0.20	mg/kg	1	5121007	09/21/2015	09/22/2015	
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	"	U
Ethylbenzene	ND	0.002	"	"	"	"	"	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 113 % 70-130 " " "
Surrogate: Toluene-d8 96.6 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.61		pH Units	1	5121016	09/21/2015	09/21/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.501		mmhos/cm	"	5121017	"	"	
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

E02 @ 17'
9/21/2015 2:48:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509273-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	410	50	mg/kg	1	5121008	09/21/2015	09/21/2015	
Residual Range Organics (C28-C40)	ND	200	"	"	"	"	"	U

Surrogate: o-Terphenyl	94.4 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	27	5.0	mg/kg	25	5121007	09/21/2015	09/22/2015	
Benzene	ND	0.05	"	"	"	"	"	U
Toluene	ND	0.05	"	"	"	"	"	U
Ethylbenzene	ND	0.05	"	"	"	"	"	U
Xylenes, total	ND	0.05	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	
Surrogate: Toluene-d8	97.4 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.1 %	70-130			"	"	"	

pH in Soil by EPA 9045D

pH	8.83		pH Units	1	5121016	09/21/2015	09/21/2015	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.424		mmhos/cm	"	5121017	"	"	
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5121007 - EPA 5030 (soil)										
Blank (5121007-BLK1)					Prepared: 09/21/2015 Analyzed: 09/21/2015					
Gasoline Range Hydrocarbons	ND	0.20	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.9	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I21007 - EPA 5030 (soil)										
LCS (5I21007-BS1)					Prepared: 09/21/2015 Analyzed: 09/21/2015					
Benzene	0.09	0.002	mg/kg	0.100		90.1	77.1-124			
Toluene	0.09	0.002	"	0.100		90.4	74.5-128			
Ethylbenzene	0.10	0.002	"	0.100		99.3	66.4-127			
m,p-Xylene	0.20	0.004	"	0.200		97.8	76.6-124			
o-Xylene	0.10	0.002	"	0.100		98.4	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I21007 - EPA 5030 (soil)

Matrix Spike (5I21007-MS1)		Source: X509221-02			Prepared: 09/21/2015 Analyzed: 09/21/2015					
Benzene	0.11	0.002	mg/kg	0.100	ND	108	71.8-126			
Toluene	0.11	0.002	"	0.100	ND	107	65.1-130			
Ethylbenzene	0.11	0.002	"	0.100	ND	115	62.2-130			
m,p-Xylene	0.23	0.004	"	0.200	ND	114	46.5-137			
o-Xylene	0.11	0.002	"	0.100	ND	113	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I21007 - EPA 5030 (soil)

Matrix Spike Dup (5I21007-MSD1)		Source: X509221-02			Prepared: 09/21/2015 Analyzed: 09/21/2015					
Benzene	0.11	0.002	mg/kg	0.100	ND	106	71.8-126	1.87	11.3	
Toluene	0.10	0.002	"	0.100	ND	101	65.1-130	5.21	15.4	
Ethylbenzene	0.11	0.002	"	0.100	ND	110	62.2-130	4.58	19.6	
m,p-Xylene	0.22	0.004	"	0.200	ND	109	46.5-137	4.68	19.2	
o-Xylene	0.11	0.002	"	0.100	ND	111	54.2-134	2.00	17.9	
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5I21008 - EPA 3580

Blank (5I21008-BLK1)

Prepared: 09/21/2015 Analyzed: 09/21/2015

Diesel (C10-C28)	ND	50	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	37		"	50.0		73.7	59-131			

LCS (5I21008-BS1)

Prepared: 09/21/2015 Analyzed: 09/21/2015

Diesel (C10-C28)	730	50	mg/kg	1000		73.2	64-121			
Residual Range Organics (C28-C40)	740	200	"	1000		73.9	58-124			
Surrogate: o-Terphenyl	39		"	50.0		78.6	59-131			

Matrix Spike (5I21008-MS1)

Source: X509221-01

Prepared: 09/21/2015 Analyzed: 09/21/2015

Diesel (C10-C28)	930	50	mg/kg	1000	ND	93.2	53-125			
Residual Range Organics (C28-C40)	990	200	"	1000	12	97.8	47-133			
Surrogate: o-Terphenyl	47		"	50.0		94.9	59-131			

Matrix Spike Dup (5I21008-MSD1)

Source: X509221-01

Prepared: 09/21/2015 Analyzed: 09/21/2015

Diesel (C10-C28)	790	50	mg/kg	1000	ND	78.7	53-125	16.9	20	
Residual Range Organics (C28-C40)	740	200	"	1000	12	72.5	47-133	29.7	20	QR-02
Surrogate: o-Terphenyl	39		"	50.0		79.0	59-131			

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I21016 - NO PREP										
Duplicate (5I21016-DUP1)		Source: X509273-01			Prepared: 09/21/2015 Analyzed: 09/21/2015					
pH	8.49		pH Units		8.47			0.236	25	
Batch 5I21017 - NO PREP										
Blank (5I21017-BLK1)		Prepared: 09/21/2015 Analyzed: 09/21/2015								
Specific Conductance (EC)	0.00270		mmhos/cm							
Duplicate (5I21017-DUP1)		Source: X509273-01			Prepared: 09/21/2015 Analyzed: 09/21/2015					
Specific Conductance (EC)	0.375		mmhos/cm		0.376			0.266	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

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.

September 23, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI

Project Number - [none]

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 22, 2015. This project is associated with Origins project number X509298-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01 @ 17'	X509298-01	Soil	September 22, 2015 11:24	09/22/2015 17:03
B04 @ 19'	X509298-02	Soil	September 22, 2015 14:56	09/22/2015 17:03

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

www.originslaboratory.com
page 1 of 1

ORIGINS LABORATORY, INC X50A298

Client: APC
Project Manager/Send Report To: Jim Dawe
Address: _____
Email Address: jimdawe@tasman-geo.com
Project Name/Number: Mayer X33-15JI
Telephone Number: 303 824 1287
Samples Collected By: M.H.P.

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Ground - other	Soil	Air Summa Canister		
Soil@17	9/22/15	11:24	1	X					X		X x x x x -	Same day Early AM 1
Soil@19	9/22/15	14:56	1	X					X		X x x x x -	2
												3
												4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
[Signature]	9/22/15	16:30	[Signature]	9/22/15	17:03	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"/> 14.1
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Comments: _____
Date Results Needed: _____

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

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS09298

Client: Tasman

Client Project ID: Mayer X33-15JI

Checklist Completed by: Jeff Smith

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

Date/time completed: 9/22/15

Airbill #: _____

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

Cooler Number/Temperature: 1 4.1 °C _____ °C _____ °C _____ °C

Thermometer ID: 1203

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<u>X</u>			
Is there ice present (document if blue ice is used)	<u>X</u>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<u>X</u>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<u>X</u>		
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<u>X</u>			<u>PH</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<u>X</u>	
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)			<u>X</u>	
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.

Jeff Smith
Reviewed by (Project Manager)

9/22/15
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

S01 @ 17'

9/22/2015 11:24:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509298-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5122010	09/22/2015	09/23/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 70.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	6.19	5.00	mg/kg	25	5122009	09/22/2015	09/22/2015
Benzene	ND	0.050	"	"	"	"	"
Toluene	ND	0.050	"	"	"	"	"
Ethylbenzene	ND	0.050	"	"	"	"	"
Xylenes, total	0.114	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " 09/22/2015
Surrogate: Toluene-d8 116 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 130 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.69		pH Units	1	5122008	09/22/2015	09/22/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.511		mmhos/cm	"	5122007	09/22/2015	09/22/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

B04 @ 19'
9/22/2015 2:56:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509298-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5122010	09/22/2015	09/22/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	83.2 %	59-131			"	"	"
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5122009	09/22/2015	09/22/2015
Benzene	ND	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	110 %	70-130			"	"	"
Surrogate: Toluene-d8	102 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	85.4 %	70-130			"	"	"

pH in Soil by EPA 9045D

pH	8.36		pH Units	1	5122008	09/22/2015	09/22/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.530		mmhos/cm	"	5122007	09/22/2015	09/22/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5122009 - EPA 5030 (soil)

Blank (5122009-BLK1)

Prepared: 09/22/2015 Analyzed: 09/22/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	64.9		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	61.3		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	62.2		"	62.5		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.

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5122009 - EPA 5030 (soil)										
LCS (5122009-BS1)					Prepared: 09/22/2015 Analyzed: 09/22/2015					
Benzene	0.097	0.002	mg/kg	0.100		96.9	77.1-124			
Toluene	0.098	0.002	"	0.100		97.5	74.5-128			
Ethylbenzene	0.099	0.002	"	0.100		99.1	66.4-127			
m,p-Xylene	0.200	0.004	"	0.200		100	76.6-124			
o-Xylene	0.101	0.002	"	0.100		101	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	61.2		ug/kg	62.5		97.9	70-130			
Surrogate: Toluene-d8	62.4		"	62.5		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	62.0		"	62.5		99.2	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5122009 - EPA 5030 (soil)

Matrix Spike (5122009-MS1)		Source: X509257-03			Prepared: 09/22/2015 Analyzed: 09/22/2015					
Benzene	0.104	0.002	mg/kg	0.100	ND	104	71.8-126			
Toluene	0.104	0.002	"	0.100	ND	104	65.1-130			
Ethylbenzene	0.114	0.002	"	0.100	0.0006	113	62.2-130			
m,p-Xylene	0.227	0.004	"	0.200	0.002	113	46.5-137			
o-Xylene	0.111	0.002	"	0.100	ND	111	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	58.3		ug/kg	62.5		93.3	70-130			
Surrogate: Toluene-d8	63.6		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	66.9		"	62.5		107	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5122009 - EPA 5030 (soil)										
Matrix Spike Dup (5122009-MSD1)										
					Source: X509257-03					
										Prepared: 09/22/2015 Analyzed: 09/22/2015
Benzene	0.108	0.002	mg/kg	0.100	ND	108	71.8-126	3.81	11.3	
Toluene	0.108	0.002	"	0.100	ND	108	65.1-130	3.36	15.4	
Ethylbenzene	0.111	0.002	"	0.100	0.0006	111	62.2-130	2.20	19.6	
m,p-Xylene	0.223	0.004	"	0.200	0.002	111	46.5-137	1.97	19.2	
o-Xylene	0.111	0.002	"	0.100	ND	111	54.2-134	0.0542	17.9	
Surrogate: 1,2-Dichloroethane-d4	59.6		ug/kg	62.5		95.3	70-130			
Surrogate: Toluene-d8	63.7		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	66.9		"	62.5		107	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5I22010 - EPA 3580

Blank (5I22010-BLK1)

Prepared: 09/22/2015 Analyzed: 09/22/2015

Diesel (C10-C28) ND 50 mg/kg

Residual Range Organics (C28-C36) ND 200 "

Surrogate: o-Terphenyl 40 " 50.0 80.2 59-131

LCS (5I22010-BS1)

Prepared: 09/22/2015 Analyzed: 09/22/2015

Diesel (C10-C28) 780 50 mg/kg 1000 78.0 64-121

Residual Range Organics (C28-C36) 790 200 " 1000 79.5 58-124

Surrogate: o-Terphenyl 39 " 50.0 77.6 59-131

Matrix Spike (5I22010-MS1)

Source: X509257-01

Prepared: 09/22/2015 Analyzed: 09/22/2015

Diesel (C10-C28) 2200 50 mg/kg 1000 930 130 53-125 QM-07

Residual Range Organics (C28-C36) 1800 200 " 1000 550 121 47-133

Surrogate: o-Terphenyl 48 " 50.0 95.9 59-131

Matrix Spike Dup (5I22010-MSD1)

Source: X509257-01

Prepared: 09/22/2015 Analyzed: 09/22/2015

Diesel (C10-C28) 2200 50 mg/kg 1000 930 126 53-125 1.95 20 QM-07

Residual Range Organics (C28-C36) 1700 200 " 1000 550 116 47-133 3.18 20

Surrogate: o-Terphenyl 51 " 50.0 103 59-131

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I22007 - NO PREP										
Blank (5I22007-BLK1)					Prepared: 09/22/2015 Analyzed: 09/22/2015					
Specific Conductance (EC)	0.00340		mmhos/cm							
Duplicate (5I22007-DUP1)					Source: X509261-01 Prepared: 09/22/2015 Analyzed: 09/22/2015					
Specific Conductance (EC)	0.0190		mmhos/cm		0.0230			19.0	25	
Batch 5I22008 - NO PREP										
Duplicate (5I22008-DUP1)					Source: X509261-01 Prepared: 09/22/2015 Analyzed: 09/22/2015					
pH	7.19		pH Units		7.30			1.52	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

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.

Jen Pellegrini For Noelle Doyle Mathis, President



September 24, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI

Project Number - [none]

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 23, 2015. This project is associated with Origins project number X509310-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S02 @ 17'	X509310-01	Soil	September 23, 2015 14:02	09/23/2015 16:30

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XSOA310

Client: Tasman

Client Project ID: Mayer X33-15JI

Checklist Completed by: Jeff Smith

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

Date/time completed: 9/23/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 3.1 °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 ⁽¹⁾ ?	<u>X</u>			
Is there ice present (document if blue ice is used)	<u>X</u>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<u>✓</u>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<u>X</u>		
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<u>X</u>			
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<u>X</u>	
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)			<u>X</u>	
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.

Jeff Smith
Reviewed by (Project Manager)

9/23/15
Date/Time Reviewed

Origins Laboratory, Inc.

Jefi 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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

S02 @ 17'
9/23/2015 2:02:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509310-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5123008	09/23/2015	09/23/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 80.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	14.0	5.00	mg/kg	25	5123007	09/23/2015	09/24/2015
Benzene	ND	0.050	"	"	"	"	"
Toluene	ND	0.050	"	"	"	"	"
Ethylbenzene	ND	0.050	"	"	"	"	"
Xylenes, total	ND	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 96.9 % 70-130 " " "
Surrogate: Toluene-d8 96.8 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 98.0 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.48		pH Units	1	5123014	09/23/2015	09/23/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.227		mmhos/cm	"	5123015	"	"
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5123007 - EPA 5030 (soil)

Blank (5123007-BLK1)

Prepared: 09/23/2015 Analyzed: 09/23/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	64.5		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	59.8		"	62.5		95.6	70-130			
Surrogate: 4-Bromofluorobenzene	60.7		"	62.5		97.1	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5123007 - EPA 5030 (soil)										
LCS (5123007-BS1)					Prepared: 09/23/2015 Analyzed: 09/23/2015					
Benzene	0.098	0.002	mg/kg	0.100		97.8	77.1-124			
Toluene	0.097	0.002	"	0.100		96.7	74.5-128			
Ethylbenzene	0.108	0.002	"	0.100		108	66.4-127			
m,p-Xylene	0.210	0.004	"	0.200		105	76.6-124			
o-Xylene	0.108	0.002	"	0.100		108	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	64.5		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	60.2		"	62.5		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	63.6		"	62.5		102	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I23007 - EPA 5030 (soil)

Matrix Spike (5I23007-MS1)		Source: X509303-01			Prepared: 09/23/2015 Analyzed: 09/23/2015					
Benzene	0.109	0.002	mg/kg	0.100	ND	109	71.8-126			
Toluene	0.108	0.002	"	0.100	ND	108	65.1-130			
Ethylbenzene	0.113	0.002	"	0.100	ND	113	62.2-130			
m,p-Xylene	0.230	0.004	"	0.200	ND	115	46.5-137			
o-Xylene	0.115	0.002	"	0.100	ND	115	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66.6		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	61.2		"	62.5		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	64.6		"	62.5		103	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5123007 - EPA 5030 (soil)										
Matrix Spike Dup (5123007-MSD1)		Source: X509303-01			Prepared: 09/23/2015 Analyzed: 09/23/2015					
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126	2.67	11.3	
Toluene	0.103	0.002	"	0.100	ND	103	65.1-130	4.28	15.4	
Ethylbenzene	0.106	0.002	"	0.100	ND	106	62.2-130	6.83	19.6	
m,p-Xylene	0.215	0.004	"	0.200	ND	107	46.5-137	6.77	19.2	
o-Xylene	0.109	0.002	"	0.100	ND	109	54.2-134	5.13	17.9	
Surrogate: 1,2-Dichloroethane-d4	68.2		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	60.4		"	62.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	65.3		"	62.5		105	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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5123008 - EPA 3580

Blank (5123008-BLK1)

Prepared: 09/23/2015 Analyzed: 09/23/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	48		"	50.0		96.7	59-131			

LCS (5123008-BS1)

Prepared: 09/23/2015 Analyzed: 09/23/2015

Diesel (C10-C28)	900	50	mg/kg	1000		90.1	64-121			
Residual Range Organics (C28-C36)	990	200	"	1000		99.0	58-124			
Surrogate: o-Terphenyl	52		"	50.0		103	59-131			

Matrix Spike (5123008-MS1)

Source: X509303-01

Prepared: 09/23/2015 Analyzed: 09/23/2015

Diesel (C10-C28)	1000	50	mg/kg	1000	130	88.9	53-125			
Residual Range Organics (C28-C36)	790	200	"	1000	70	72.0	47-133			
Surrogate: o-Terphenyl	46		"	50.0		91.2	59-131			

Matrix Spike Dup (5123008-MSD1)

Source: X509303-01

Prepared: 09/23/2015 Analyzed: 09/23/2015

Diesel (C10-C28)	1000	50	mg/kg	1000	130	91.7	53-125	2.72	20	
Residual Range Organics (C28-C36)	950	200	"	1000	70	87.7	47-133	18.0	20	
Surrogate: o-Terphenyl	49		"	50.0		97.3	59-131			

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I23014 - NO PREP										
Duplicate (5I23014-DUP1)		Source: X509308-01			Prepared: 09/23/2015 Analyzed: 09/23/2015					
pH	7.59		pH Units		7.67			1.05	25	
Batch 5I23015 - NO PREP										
Blank (5I23015-BLK1)		Prepared: 09/23/2015 Analyzed: 09/23/2015								
Specific Conductance (EC)	0.00390		mmhos/cm							
Duplicate (5I23015-DUP1)		Source: X509308-01			Prepared: 09/23/2015 Analyzed: 09/23/2015					
Specific Conductance (EC)	0.0352		mmhos/cm		0.0312			12.0	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President



September 25, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI

Project Number - [none]

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 24, 2015. This project is associated with Origins project number X509325-01.

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.
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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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B05@19'	X509325-01	Soil	September 24, 2015 14:12	09/24/2015 16:40
S03@17'	X509325-02	Soil	September 24, 2015 14:26	09/24/2015 16:40

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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LABORATORY, INC

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page 1

Client: ARC Project Manager/and Report To: Jim Dawe
Address: Jim Dawe@tasman-geo.com
Project Name/Number: Mayer X33-15JI
Telephone Number: Mat P.

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Submitted	Preparation			Analysis/Method			Sample Instructions
			Grinding	Crushing	Grinding	Crushing	Grinding	Crushing	
B05019	9/24/15	14:12	1	X		X	X	X	Same Day, Early AM
S03017	9/24/15	14:26	1	X		X	X	X	

Submitted by:	Date:	Time:	Received by:	Date:	Time:
<i>[Signature]</i>	9/24/15	16:00	<i>[Signature]</i>	9/24/15	16:10

Turnaround Time:	Some Day	48 hr	72 hr
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Date Results Needed:

Comments:

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X509325

Client: Tasman/APC

Client Project ID: KMG-Mayer X33-15JI

Checklist Completed by: Joe Henderson

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

Date/time completed: 9/24/15 1725

Airbill #: _____

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

Cooler Number/Temperature: 1 / 58 °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 ⁽¹⁾ ?	<u>X</u>			
Is there ice present (document if blue ice is used)	<u>X</u>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<u>X</u>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<u>X</u>		
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<u>X</u>			<u>PH</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<u>X</u>	
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)			<u>X</u>	
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]

9/24/15 1725
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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

B05@19'

9/24/2015 2:12:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509325-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5124008	09/24/2015	09/24/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

<i>Surrogate: o-Terphenyl</i>	71.9 %	59-131			"	"	"
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	2.50	mg/kg	12.5	5124009	09/24/2015	09/24/2015
Benzene	ND	0.025	"	"	"	"	"
Toluene	ND	0.025	"	"	"	"	"
Ethylbenzene	ND	0.025	"	"	"	"	"
Xylenes, total	ND	0.025	"	"	"	"	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	70-130			"	"	"
<i>Surrogate: Toluene-d8</i>	96.8 %	70-130			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %	70-130			"	"	"

pH in Soil by EPA 9045D

pH	7.99		pH Units	1	5124012	09/24/2015	09/24/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.570		mmhos/cm	"	5124013	09/24/2015	09/24/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

S03@17'

9/24/2015 2:26:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509325-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	5124008	09/24/2015	09/24/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 70.1 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	6.12	5.00	mg/kg	25	5124009	09/24/2015	09/24/2015
Benzene	ND	0.050	"	"	"	"	"
Toluene	ND	0.050	"	"	"	"	"
Ethylbenzene	ND	0.050	"	"	"	"	"
Xylenes, total	ND	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
Surrogate: Toluene-d8 93.9 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.42		pH Units	1	5124012	09/24/2015	09/24/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.391		mmhos/cm	"	5124013	09/24/2015	09/24/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5124009 - EPA 5030 (soil)

Blank (5124009-BLK1)

Prepared: 09/24/2015 Analyzed: 09/24/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	59.9		ug/kg	62.5		95.9	70-130			
Surrogate: Toluene-d8	61.2		"	62.5		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	61.4		"	62.5		98.3	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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5124009 - EPA 5030 (soil)

LCS (5124009-BS1)

Prepared: 09/24/2015 Analyzed: 09/24/2015

Benzene	0.090	0.002	mg/kg	0.100		90.4	77.1-124			
Toluene	0.093	0.002	"	0.100		93.4	74.5-128			
Ethylbenzene	0.090	0.002	"	0.100		90.1	66.4-127			
m,p-Xylene	0.183	0.004	"	0.200		91.6	76.6-124			
o-Xylene	0.094	0.002	"	0.100		94.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58.1		ug/kg	62.5		93.0	70-130			
Surrogate: Toluene-d8	60.5		"	62.5		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	52.8		"	62.5		84.4	70-130			

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I24009 - EPA 5030 (soil)

Matrix Spike (5I24009-MS1)		Source: X509299-01			Prepared: 09/24/2015 Analyzed: 09/24/2015					
Benzene	0.095	0.002	mg/kg	0.100	ND	95.2	71.8-126			
Toluene	0.085	0.002	"	0.100	ND	84.6	65.1-130			
Ethylbenzene	0.091	0.002	"	0.100	ND	91.4	62.2-130			
m,p-Xylene	0.179	0.004	"	0.200	ND	89.4	46.5-137			
o-Xylene	0.091	0.002	"	0.100	ND	90.7	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	60.1		ug/kg	62.5		96.2	70-130			
Surrogate: Toluene-d8	58.6		"	62.5		93.7	70-130			
Surrogate: 4-Bromofluorobenzene	60.0		"	62.5		96.1	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.

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5124009 - EPA 5030 (soil)

Matrix Spike Dup (5124009-MSD1)		Source: X509299-01			Prepared: 09/24/2015 Analyzed: 09/24/2015					
Benzene	0.090	0.002	mg/kg	0.100	ND	89.6	71.8-126	6.04	11.3	
Toluene	0.089	0.002	"	0.100	ND	88.9	65.1-130	4.93	15.4	
Ethylbenzene	0.090	0.002	"	0.100	ND	90.3	62.2-130	1.30	19.6	
m,p-Xylene	0.183	0.004	"	0.200	ND	91.6	46.5-137	2.34	19.2	
o-Xylene	0.091	0.002	"	0.100	ND	91.2	54.2-134	0.506	17.9	
Surrogate: 1,2-Dichloroethane-d4	61.9		ug/kg	62.5		99.0	70-130			
Surrogate: Toluene-d8	60.4		"	62.5		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	59.5		"	62.5		95.2	70-130			

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5124008 - EPA 3580

Blank (5124008-BLK1)

Prepared: 09/24/2015 Analyzed: 09/24/2015

Diesel (C10-C28) ND 50 mg/kg

Residual Range Organics (C28-C36) ND 200 "

Surrogate: o-Terphenyl 41 " 50.0 81.2 59-131

LCS (5124008-BS1)

Prepared: 09/24/2015 Analyzed: 09/24/2015

Diesel (C10-C28) 910 50 mg/kg 1000 90.7 64-121

Residual Range Organics (C28-C36) 970 200 " 1000 96.9 58-124

Surrogate: o-Terphenyl 49 " 50.0 98.3 59-131

Matrix Spike (5124008-MS1)

Source: X509320-01

Prepared: 09/24/2015 Analyzed: 09/24/2015

Diesel (C10-C28) 840 50 mg/kg 1000 ND 84.3 53-125

Residual Range Organics (C28-C36) 900 200 " 1000 22 88.3 47-133

Surrogate: o-Terphenyl 47 " 50.0 94.6 59-131

Matrix Spike Dup (5124008-MSD1)

Source: X509320-01

Prepared: 09/24/2015 Analyzed: 09/24/2015

Diesel (C10-C28) 770 50 mg/kg 1000 ND 77.3 53-125 8.61 20

Residual Range Organics (C28-C36) 790 200 " 1000 22 76.7 47-133 13.8 20

Surrogate: o-Terphenyl 43 " 50.0 86.0 59-131

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I24012 - NO PREP										
Duplicate (5I24012-DUP1)		Source: X509318-01			Prepared: 09/24/2015 Analyzed: 09/24/2015					
pH	8.63		pH Units		8.64			0.116	25	
Batch 5I24013 - NO PREP										
Blank (5I24013-BLK1)		Prepared: 09/24/2015 Analyzed: 09/24/2015								
Specific Conductance (EC)	0.00460		mmhos/cm							
Duplicate (5I24013-DUP1)		Source: X509318-01			Prepared: 09/24/2015 Analyzed: 09/24/2015					
Specific Conductance (EC)	0.0791		mmhos/cm		0.0735			7.34	25	

Origins Laboratory, Inc.



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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

Noelle Doyle Mathis, President

September 28, 2015

Tasman Geosciences

Jim Dawe

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Mayer X33-15JI**Project Number - [none]**

Attached are your analytical results for KMG - Mayer X33-15JI received by Origins Laboratory, Inc. September 24, 2015. This project is associated with Origins project number X509328-01.

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

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Back Fill	X509328-01	Soil	September 24, 2015 13:05	09/24/2015 16:40

Origins Laboratory, Inc.



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

Jen Pellegrini For Noelle Doyle Mathis, President

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

ORIGINS

LABORATORY, INC.

X509328

www.originslaboratory.com

page 1 of 1

Client: APC
Address:

Telephone Number:
Email Address: jimdaw@tashmurkco.com

Project Manager: Jim Dawl
Project Name: May 25 X33-15JI
Project Number:
Samples Collected By: Matt P

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				HCl	HNO ₃	Other	Groundwater	Soil	Air Summary & Other			
Bach Fill	9/24/15	13:05	1	X				X		X x x x x	(see attached)	1
												2
												3
												4
												5
												6
												7
												8
												9
												10
Relinquished By:	Date: 9/24/15	Time: 16:00								Date:	Time:	Turnaround Time:
Relinquished By:	Date:	Time:								Date:	Time:	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/>
										Date: 9/24/15	Time: 16:00	48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>
												Standard <input checked="" type="radio"/>

Date Results Needed

7.8

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X309328

Client: Tasman

Client Project ID: Mayer X33-15JI

Checklist Completed by: Jeff Smith

Shipped Via: Dickel

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

Date/time completed: 9/25/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 5.8 °C 1 / _____ °C 1 / _____ °C 1 / _____ °C

Thermometer ID: TR03

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"/>			
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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			PH
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽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, 2NaAc+NaOH)			<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)

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

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

Back Fill**9/24/2015 1:05:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X509328-01 (Soil)**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	50	mg/kg	1	5125012	09/25/2015	09/25/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	80.4 %	59-131			"	"	"
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	5125013	09/25/2015	09/25/2015
Benzene	ND	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	110 %	70-130			"	"	"
Surrogate: Toluene-d8	96.6 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"

pH in Soil by EPA 9045D

pH	6.12		pH Units	1	5125014	"	09/25/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0595		mmhos/cm	"	5125015	09/25/2015	09/25/2015
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Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5125013 - EPA 5030 (soil)

Blank (5125013-BLK1)

Prepared: 09/25/2015 Analyzed: 09/25/2015

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	66.2		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	58.6		"	62.5		93.7	70-130			
Surrogate: 4-Bromofluorobenzene	63.7		"	62.5		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I25013 - EPA 5030 (soil)										
LCS (5I25013-BS1)					Prepared: 09/25/2015 Analyzed: 09/25/2015					
Benzene	0.097	0.002	mg/kg	0.100		96.6	77.1-124			
Toluene	0.097	0.002	"	0.100		96.6	74.5-128			
Ethylbenzene	0.104	0.002	"	0.100		104	66.4-127			
m,p-Xylene	0.208	0.004	"	0.200		104	76.6-124			
o-Xylene	0.106	0.002	"	0.100		106	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65.5		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	59.0		"	62.5		94.4	70-130			
Surrogate: 4-Bromofluorobenzene	62.7		"	62.5		100	70-130			

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Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I25013 - EPA 5030 (soil)

Matrix Spike (5I25013-MS1)		Source: X509328-01			Prepared: 09/25/2015 Analyzed: 09/25/2015					
Benzene	0.100	0.002	mg/kg	0.100	ND	100	71.8-126			
Toluene	0.100	0.002	"	0.100	ND	99.7	65.1-130			
Ethylbenzene	0.109	0.002	"	0.100	ND	109	62.2-130			
m,p-Xylene	0.214	0.004	"	0.200	ND	107	46.5-137			
o-Xylene	0.108	0.002	"	0.100	ND	108	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66.1		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	60.2		"	62.5		96.3	70-130			
Surrogate: 4-Bromofluorobenzene	63.4		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I25013 - EPA 5030 (soil)										
Matrix Spike Dup (5I25013-MSD1)										
					Source: X509328-01					
										Prepared: 09/25/2015 Analyzed: 09/25/2015
Benzene	0.100	0.002	mg/kg	0.100	ND	99.8	71.8-126	0.679	11.3	
Toluene	0.098	0.002	"	0.100	ND	98.4	65.1-130	1.27	15.4	
Ethylbenzene	0.110	0.002	"	0.100	ND	110	62.2-130	0.110	19.6	
m,p-Xylene	0.216	0.004	"	0.200	ND	108	46.5-137	0.817	19.2	
o-Xylene	0.108	0.002	"	0.100	ND	108	54.2-134	0.704	17.9	
Surrogate: 1,2-Dichloroethane-d4	66.6		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	58.2		"	62.5		93.1	70-130			
Surrogate: 4-Bromofluorobenzene	62.9		"	62.5		101	70-130			

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Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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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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 5I25012 - EPA 3580

Blank (5I25012-BLK1)

Prepared: 09/25/2015 Analyzed: 09/25/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	38		"	50.0		75.9	59-131			

LCS (5I25012-BS1)

Prepared: 09/25/2015 Analyzed: 09/25/2015

Diesel (C10-C28)	830	50	mg/kg	1000		83.3	64-121			
Residual Range Organics (C28-C36)	950	200	"	1000		94.8	58-124			
Surrogate: o-Terphenyl	47		"	50.0		93.2	59-131			

Matrix Spike (5I25012-MS1)

Source: X509328-01

Prepared: 09/25/2015 Analyzed: 09/25/2015

Diesel (C10-C28)	870	50	mg/kg	1000	ND	87.2	53-125			
Residual Range Organics (C28-C36)	950	200	"	1000	16	93.1	47-133			
Surrogate: o-Terphenyl	44		"	50.0		88.9	59-131			

Matrix Spike Dup (5I25012-MSD1)

Source: X509328-01

Prepared: 09/25/2015 Analyzed: 09/25/2015

Diesel (C10-C28)	860	50	mg/kg	1000	ND	85.6	53-125	1.91	20	
Residual Range Organics (C28-C36)	920	200	"	1000	16	90.8	47-133	2.54	20	
Surrogate: o-Terphenyl	44		"	50.0		88.7	59-131			

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Jim Dawe
Project Number: [none]
Project: KMG - Mayer X33-15JI

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 5I25014 - NO PREP										
Duplicate (5I25014-DUP1)		Source: X509328-01			Prepared: 09/25/2015 Analyzed: 09/25/2015					
pH	6.26		pH Units		6.12			2.26	25	
Batch 5I25015 - NO PREP										
Blank (5I25015-BLK1)		Prepared: 09/25/2015 Analyzed: 09/25/2015								
Specific Conductance (EC)	0.00370		mmhos/cm							
Duplicate (5I25015-DUP1)		Source: X509328-01			Prepared: 09/25/2015 Analyzed: 09/25/2015					
Specific Conductance (EC)	0.0548		mmhos/cm		0.0595			8.22	25	

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Jim Dawe

Project Number: [none]

Project: KMG - Mayer X33-15JI

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President