

ANALYTICAL TABLE

TABLE 1
THOMASON 6-16
SOIL SAMPLE RESULTS SUMMARY TABLE
KERR-McGEE OIL AND GAS ONSHORE LP

Sample ID	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 or 2x BG	6-9
W01@16'	11/25/15	16.0	<0.002	<0.002	<0.002	<0.002	<0.200	<50	<200	0.0909	7.53
B01@19'	11/25/15	19.0	0.278	0.116	<0.050	0.187	14.3	<50	<200	0.0906	7.38
N01@16'	11/30/15	16.0	0.003	<0.002	<0.002	<0.002	<0.200	<50	<200	0.107	8.66
S01@16'	11/30/15	16.0	<0.050	<0.050	<0.050	<0.050	<5.00	<50	<200	0.0564	7.83
W02@16'	11/30/15	16.0	0.002	<0.002	<0.002	<0.002	<0.200	<50	<200	0.0807	7.75
E01@16'	12/01/15	16.0	0.048	<0.002	<0.002	<0.002	<0.200	<50	<200	0.0584	8.37
E02@16'	12/01/15	16.0	0.003	<0.002	<0.002	<0.002	<0.200	<50	<200	0.0527	8.37
N02@16'	12/01/15	16.0	0.002	<0.002	<0.002	<0.002	3.40	260	<200	0.161	8.03
B02@20'	12/02/15	20.0	0.016	<0.002	<0.002	<0.002	<0.200	<50	<200	0.0635	8.41
B03@20'	12/02/15	20.0	0.011	<0.002	<0.002	<0.002	<0.200	<50	<200	0.0765	8.84
B04@20'	12/02/15	20.0	0.016	<0.002	<0.002	<0.002	<0.200	<50	<200	0.0561	8.33

Notes:

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective February 1, 2014.

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.

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

LABORATORY ANALYTICAL REPORTS

December 03, 2015

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Thomason 6 -16

Project Number - [none]

Attached are your analytical results for KMG - Thomason 6 -16 received by Origins Laboratory, Inc. November 25, 2015. This project is associated with Origins project number X511301-01.

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

Christine Wasko

Project Number: [none]

Project: KMG - Thomason 6 -16

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W01 @ 16'	X511301-01	Soil	November 25, 2015 10:07	11/25/2015 14:00
B01 @ 19'	X511301-02	Soil	November 25, 2015 10:05	11/25/2015 14:00

Brock changed the sample ID on -02 from B01 @ 20' to B01 @ 19' on 12/3/15.

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

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page 1 of 1

ORIGINS LABORATORY, INC

Client: Tasman Geosciences

Address:

Telephone Number: 352 262 9910

Email Address: cwasko@tasman-geo.com

Project Manager: Christine Wasko

Project Name: Thomason 6-16

Project Number:

Samples Collected By: Kate Pasmak

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summ. #		
W01 Q116'	11/25/15	1007	2 X						X		GIBTEX 8220 TPH: DQDQ60 8005 EC: pH, SAR (54.0)	1
B01 Q120'	↓	1005	2 X						X			2
												3
												4
												5
												6
												7
												8
												9
												10

Relinquished By: [Signature]

Relinquished By: [Signature]

Date: 11/25/15

Date: 11/25/15

Time: 1400

Time: 1400

Received By: [Signature]

Received By: [Signature]

Date: 11/25/15

Date: 11/25/15

Time: 1400

Time: 1400

Turnaround Time: Same Day ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☐ 11, 9

Date Results Needed: []

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS11301

Client: Tasman

Client Project ID: Thomason 6-16

Checklist Completed by: Jeff Smith

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

Date/time completed: 11/25/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 11.9 °C 1 / _____ °C 1 / _____ °C (Describe)

Thermometer ID: T053

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"/>		Sample Same Day
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"/>			PH
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) Jeff Smith

Date/Time Reviewed 11/25/15

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

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

W01 @ 16'
11/25/2015 10:07:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X511301-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5K2506	11/25/2015	11/25/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 87.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B5K2507	11/25/2015	11/25/2015
Benzene	ND	0.002	"	"	"	"	11/30/2015
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 114 % 70-130 " " "
Surrogate: Toluene-d8 88.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.53		pH Units	1	B5K2504	11/25/2015	11/25/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0909		mmhos/cm	"	B5K2505	11/25/2015	11/25/2015
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

B01 @ 19'

11/25/2015 10:05:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X511301-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5K2506	11/25/2015	11/25/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 90.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	14.3	5.00	mg/kg	25	B5K2507	11/25/2015	11/25/2015
Benzene	0.278	0.050	"	"	"	"	"
Toluene	0.116	0.050	"	"	"	"	"
Ethylbenzene	ND	0.050	"	"	"	"	"
Xylenes, total	0.187	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "
Surrogate: Toluene-d8 93.0 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.38		pH Units	1	B5K2504	11/25/2015	11/25/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0906		mmhos/cm	"	B5K2505	11/25/2015	11/25/2015
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K2507 - EPA 5030 (soil)

Blank (B5K2507-BLK1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

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	68.5		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	57.6		"	62.5		92.2	70-130			
Surrogate: 4-Bromofluorobenzene	64.5		"	62.5		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K2507 - EPA 5030 (soil)										
LCS (B5K2507-BS1)					Prepared: 11/25/2015 Analyzed: 11/25/2015					
Benzene	0.105	0.002	mg/kg	0.100		105	77.1-124			
Toluene	0.089	0.002	"	0.100		88.7	74.5-128			
Ethylbenzene	0.096	0.002	"	0.100		95.7	66.4-127			
m,p-Xylene	0.197	0.004	"	0.200		98.7	76.6-124			
o-Xylene	0.095	0.002	"	0.100		95.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	66.7		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	57.5		"	62.5		92.0	70-130			
Surrogate: 4-Bromofluorobenzene	63.3		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K2507 - EPA 5030 (soil)

Matrix Spike (B5K2507-MS1)		Source: X511301-01			Prepared: 11/25/2015 Analyzed: 11/25/2015					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126			
Toluene	0.091	0.002	"	0.100	ND	90.9	65.1-130			
Ethylbenzene	0.093	0.002	"	0.100	ND	92.8	62.2-130			
m,p-Xylene	0.193	0.004	"	0.200	ND	96.5	46.5-137			
o-Xylene	0.092	0.002	"	0.100	ND	91.7	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66.4		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	57.5		"	62.5		92.0	70-130			
Surrogate: 4-Bromofluorobenzene	63.2		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K2507 - EPA 5030 (soil)

Matrix Spike Dup (B5K2507-MSD1)		Source: X511301-01			Prepared: 11/25/2015 Analyzed: 11/25/2015					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126	0.00	11.3	
Toluene	0.089	0.002	"	0.100	ND	89.0	65.1-130	2.13	15.4	
Ethylbenzene	0.092	0.002	"	0.100	ND	91.6	62.2-130	1.32	19.6	
m,p-Xylene	0.193	0.004	"	0.200	ND	96.3	46.5-137	0.218	19.2	
o-Xylene	0.091	0.002	"	0.100	ND	90.7	54.2-134	1.14	17.9	
Surrogate: 1,2-Dichloroethane-d4	67.2		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	57.3		"	62.5		91.7	70-130			
Surrogate: 4-Bromofluorobenzene	63.7		"	62.5		102	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K2506 - EPA 3580

Blank (B5K2506-BLK1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	42		"	50.0		84.6	59-131			

LCS (B5K2506-BS1)

Prepared: 11/25/2015 Analyzed: 11/25/2015

Diesel (C10-C28)	690	50	mg/kg				64-121			
Residual Range Organics (C28-C36)	750	200	"	1000		75.4	58-124			
Surrogate: o-Terphenyl	41		"	50.0		82.4	59-131			

Matrix Spike (B5K2506-MS1)

Source: X511301-01

Prepared: 11/25/2015 Analyzed: 11/25/2015

Diesel (C10-C28)	1100	50	mg/kg		ND		53-125			
Residual Range Organics (C28-C36)	1200	200	"	1000	18	114	47-133			
Surrogate: o-Terphenyl	52		"	50.0		104	59-131			

Matrix Spike Dup (B5K2506-MSD1)

Source: X511301-01

Prepared: 11/25/2015 Analyzed: 11/25/2015

Diesel (C10-C28)	690	50	mg/kg		ND		53-125	41.5	20	QM-07
Residual Range Organics (C28-C36)	730	200	"	1000	18	71.4	47-133	45.2	20	QM-07
Surrogate: o-Terphenyl	41		"	50.0		81.9	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Christine Wasko
Project Number: [none]
Project: KMG - Thomason 6 -16

Classical Chemistry Parameters - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B5K2504 - NO PREP										
Duplicate (B5K2504-DUP1)		Source: X511301-01			Prepared: 11/25/2015 Analyzed: 11/25/2015					
pH	7.26		pH Units		7.53			3.65	25	
Batch B5K2505 - NO PREP										
Blank (B5K2505-BLK1)		Prepared: 11/25/2015 Analyzed: 11/25/2015								
Specific Conductance (EC)	0.00360		mmhos/cm							
Duplicate (B5K2505-DUP1)		Source: X511301-01			Prepared: 11/25/2015 Analyzed: 11/25/2015					
Specific Conductance (EC)	0.0858		mmhos/cm		0.0909			5.77	25	

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: KMG - Thomason 6 -16

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



December 01, 2015

Tasman Geosciences

Dan Wade

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Thomason 6 -16

Project Number - [none]

Attached are your analytical results for KMG - Thomason 6 -16 received by Origins Laboratory, Inc. November 30, 2015. This project is associated with Origins project number X511318-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

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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

Dan Wade

Project Number: [none]

Project: KMG - Thomason 6 -16

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01 @ 16'	X511318-01	Soil	November 30, 2015 10:17	11/30/2015 15:59
S01 @ 16'	X511318-02	Soil	November 30, 2015 10:32	11/30/2015 15:59
W02 @ 16'	X511318-03	Soil	November 30, 2015 10:41	11/30/2015 15:59

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.

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

ORIGINS

XS1918

page 1 of 1

Client: 155000 616
Address: _____

Project Manager: Don Wicks
Project Name: 155000 6-16
Project Number: _____
Samples Collected By: Bob Wilson

Telephone Number: 912 230 8807
Email Address: dwicks@tesman-gcc.com

APC Invoice Sam Lake

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Other			
NW0116	11/3/15	1117	2	X									1
SW0116	11/3/15	1132	2	X									2
W020116	11/3/15	1141	2	X									3
													4
													5
													6
													7
													8
													9
													10
Relinquished By: <u>[Signature]</u>	Date: <u>11/3/15</u>	Time: <u>1557</u>	Received By: <u>[Signature]</u>				Date: <u>11/30/15</u>				Time: <u>1057</u>	Turnaround Time: <u>24 Hr</u>	
Relinquished By: <u>[Signature]</u>	Date: <u>11/3/15</u>	Time: <u>1557</u>	Received By: <u>[Signature]</u>				Date: <u>11/30/15</u>				Time: <u>1057</u>	Turnaround Time: <u>48 Hr</u>	

1725 EK Page 1 | Denver, CO 80211 | Phone: 303.433.1222 | 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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS11318

Client: Tasman

Client Project ID: Thomason 6-16

Checklist Completed by: J. C. Smith

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

Date/time completed: 11/30/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 1.3 °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"/>			
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"/>			PH
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. C. Smith

Date/Time Reviewed 11/30/15

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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

N01 @ 16'
11/30/2015 10:17:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X511318-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5K3007	11/30/2015	11/30/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 87.1 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B5K3008	11/30/2015	11/30/2015
Benzene	0.003	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "
Surrogate: Toluene-d8 88.3 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.66		pH Units	1	B5K3009	11/30/2015	11/30/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.107		mmhos/cm	"	B5K3010	11/30/2015	11/30/2015
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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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

S01 @ 16'
11/30/2015 10:32:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X511318-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5K3007	11/30/2015	11/30/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 84.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B5K3008	11/30/2015	11/30/2015
Benzene	ND	0.050	"	"	"	"	"
Toluene	ND	0.050	"	"	"	"	"
Ethylbenzene	ND	0.050	"	"	"	"	"
Xylenes, total	ND	0.050	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 90.3 % 70-130 " " "
Surrogate: Toluene-d8 105 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 95.8 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.83		pH Units	1	B5K3009	11/30/2015	11/30/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0564		mmhos/cm	"	B5K3010	11/30/2015	11/30/2015
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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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

W02 @ 16'

11/30/2015 10:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. X511318-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5K3007	11/30/2015	11/30/2015
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	B5K3008	11/30/2015	11/30/2015
Benzene	0.002	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 113 % 70-130 " " "
Surrogate: Toluene-d8 88.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.75		pH Units	1	B5K3009	11/30/2015	11/30/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0807		mmhos/cm	"	B5K3010	11/30/2015	11/30/2015
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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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K3008 - EPA 5030 (soil)

Blank (B5K3008-BLK1)

Prepared: 11/30/2015 Analyzed: 11/30/2015

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	70.2		ug/kg	62.5		112	70-130			
Surrogate: Toluene-d8	56.5		"	62.5		90.3	70-130			
Surrogate: 4-Bromofluorobenzene	62.8		"	62.5		100	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K3008 - EPA 5030 (soil)										
LCS (B5K3008-BS1)					Prepared: 11/30/2015 Analyzed: 11/30/2015					
Benzene	0.101	0.002	mg/kg	0.100		101	77.1-124			
Toluene	0.085	0.002	"	0.100		84.8	74.5-128			
Ethylbenzene	0.089	0.002	"	0.100		89.4	66.4-127			
m,p-Xylene	0.186	0.004	"	0.200		93.0	76.6-124			
o-Xylene	0.088	0.002	"	0.100		88.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65.2		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	56.7		"	62.5		90.7	70-130			
Surrogate: 4-Bromofluorobenzene	62.9		"	62.5		101	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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K3008 - EPA 5030 (soil)

Matrix Spike (B5K3008-MS1)		Source: X511289-02			Prepared: 11/30/2015 Analyzed: 11/30/2015					
Benzene	0.114	0.002	mg/kg	0.100	ND	114	71.8-126			
Toluene	0.100	0.002	"	0.100	ND	100	65.1-130			
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130			
m,p-Xylene	0.210	0.004	"	0.200	ND	105	46.5-137			
o-Xylene	0.099	0.002	"	0.100	ND	99.4	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	66.0		ug/kg	62.5		106	70-130			
Surrogate: Toluene-d8	56.5		"	62.5		90.4	70-130			
Surrogate: 4-Bromofluorobenzene	64.2		"	62.5		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K3008 - EPA 5030 (soil)

Matrix Spike Dup (B5K3008-MSD1)		Source: X511289-02			Prepared: 11/30/2015 Analyzed: 11/30/2015					
Benzene	0.112	0.002	mg/kg	0.100	ND	112	71.8-126	2.39	11.3	
Toluene	0.095	0.002	"	0.100	ND	95.1	65.1-130	5.22	15.4	
Ethylbenzene	0.098	0.002	"	0.100	ND	97.9	62.2-130	3.43	19.6	
m,p-Xylene	0.202	0.004	"	0.200	ND	101	46.5-137	3.61	19.2	
o-Xylene	0.096	0.002	"	0.100	ND	95.8	54.2-134	3.67	17.9	
Surrogate: 1,2-Dichloroethane-d4	66.8		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	55.9		"	62.5		89.5	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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5K3007 - EPA 3580

Blank (B5K3007-BLK1)

Prepared: 11/30/2015 Analyzed: 11/30/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	43		"	50.0		86.0	59-131			

LCS (B5K3007-BS1)

Prepared: 11/30/2015 Analyzed: 11/30/2015

Diesel (C10-C28)	760	50	mg/kg				64-121			
Residual Range Organics (C28-C36)	820	200	"				58-124			
Surrogate: o-Terphenyl	43		"	50.0		86.5	59-131			

Matrix Spike (B5K3007-MS1)

Source: X511284-01

Prepared: 11/30/2015 Analyzed: 11/30/2015

Diesel (C10-C28)	880	50	mg/kg		ND		53-125			
Residual Range Organics (C28-C36)	960	200	"		18		47-133			
Surrogate: o-Terphenyl	42		"	50.0		83.1	59-131			

Matrix Spike Dup (B5K3007-MSD1)

Source: X511284-01

Prepared: 11/30/2015 Analyzed: 11/30/2015

Diesel (C10-C28)	760	50	mg/kg		ND		53-125	15.0	20	
Residual Range Organics (C28-C36)	830	200	"		18		47-133	14.9	20	
Surrogate: o-Terphenyl	44		"	50.0		87.7	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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

Classical Chemistry Parameters - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B5K3009 - NO PREP										
Duplicate (B5K3009-DUP1)		Source: X511318-01			Prepared: 11/30/2015 Analyzed: 11/30/2015					
pH	8.69		pH Units		8.66			0.346	25	
Batch B5K3010 - NO PREP										
Blank (B5K3010-BLK1)		Prepared: 11/30/2015 Analyzed: 11/30/2015								
Specific Conductance (EC)	0.00401		mmhos/cm							
Duplicate (B5K3010-DUP1)		Source: X511318-01			Prepared: 11/30/2015 Analyzed: 11/30/2015					
Specific Conductance (EC)	0.106		mmhos/cm		0.107			0.564	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

Dan Wade

Project Number: [none]

Project: KMG - Thomason 6 -16

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



December 02, 2015

Tasman Geosciences

Dan Wade

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Thomason 6 -16

Project Number - [none]

Attached are your analytical results for KMG - Thomason 6 -16 received by Origins Laboratory, Inc. December 01, 2015. This project is associated with Origins project number X512014-01.

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

Dan Wade

Project Number: [none]

Project: KMG - Thomason 6 -16

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E01 @ 16'	X512014-01	Soil	December 1, 2015 10:24	12/01/2015 17:04
E02 @ 16'	X512014-02	Soil	December 1, 2015 10:31	12/01/2015 17:04
N02 @ 16'	X512014-03	Soil	December 1, 2015 10:38	12/01/2015 17:04

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.

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

ORIGINS

LABORATORY, INC

XS2014



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page 1 of 7

Client: Thomsen / ALC
Address: _____
Telephone Number: 312 694 5394
Email Address: ~~tht~~ thomsen@thomseneng.com

Project Manager: D Wade
Project Name: Thomsen 6-16
Project Number: _____
Samples Collected By: EDH

Invoice: Son La Rue

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix		Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil		
E41@16'	12/1/30	1024	1	1						GC/MS TPH ORG/DO EC, PH	1
E42@16'	↓	1031	↓	↓							2
N42@16'	↓	1038	↓	↓							3
											4
											5
											6
											7
											8
											9
											10
Relinquished By: 	Date: 12/01/15	Time: 1600		Received By: 				Date: 12.01.15	Time: 1114	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/>	
Relinquished By:	Date:	Time:		Received By:				Date:	Time:	Signature: <u>h2</u>	

Date Results Needed

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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS12014

Client: Tasman

Client Project ID: Thomason 6-16

Checklist Completed by: Jef Pellegrini

Shipped Via: Pick Up

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

Date/time completed: 12/1/15

Airbill #: NA

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

Cooler Number/Temperature: 1 / 4.2 °C 1 / _____ °C 1 / _____ °C 1 / _____ °C

Thermometer ID: 203

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.

Reviewed by (Project Manager) Jef Pellegrini

Date/Time Reviewed 12/1/15

Origins Laboratory, Inc.

Jef 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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

E01 @ 16'

12/1/2015 10:24:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X512014-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5L0102	12/01/2015	12/01/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 93.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B5L0106	12/01/2015	12/01/2015
Benzene	0.048	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 88.9 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 105 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.37		pH Units	1	B5L0107	12/01/2015	12/01/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0584		mmhos/cm	"	B5L0108	"	12/01/2015
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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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

E02 @ 16'

12/1/2015 10:31:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X512014-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5L0102	12/01/2015	12/01/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 86.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B5L0106	12/01/2015	12/01/2015
Benzene	0.003	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 118 % 70-130 " " "
Surrogate: Toluene-d8 86.9 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 104 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.37		pH Units	1	B5L0107	12/01/2015	12/01/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0527		mmhos/cm	"	B5L0108	"	12/01/2015
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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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

N02 @ 16'

12/1/2015 10:38:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X512014-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	260	50	mg/kg	1	B5L0102	12/01/2015	12/01/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

<i>Surrogate: o-Terphenyl</i>	91.4 %	59-131			"	"	"
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	3.40	0.200	mg/kg	1	B5L0106	12/01/2015	12/01/2015
Benzene	0.002	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	120 %	70-130			"	"	"
<i>Surrogate: Toluene-d8</i>	89.7 %	70-130			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	107 %	70-130			"	"	"

pH in Soil by EPA 9045D

pH	8.03		pH Units	1	B5L0107	12/01/2015	12/01/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.161		mmhos/cm	"	B5L0108	"	12/01/2015
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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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0106 - EPA 5030 (soil)										
Blank (B5L0106-BLK1)					Prepared: 12/01/2015 Analyzed: 12/01/2015					
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	56.9		ug/kg	62.5		91.0	70-130			
Surrogate: Toluene-d8	64.0		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	59.9		"	62.5		95.8	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0106 - EPA 5030 (soil)										
LCS (B5L0106-BS1)					Prepared: 12/01/2015 Analyzed: 12/01/2015					
Benzene	0.096	0.002	mg/kg	0.100		95.5	77.1-124			
Toluene	0.095	0.002	"	0.100		95.1	74.5-128			
Ethylbenzene	0.082	0.002	"	0.100		82.0	66.4-127			
m,p-Xylene	0.165	0.004	"	0.200		82.4	76.6-124			
o-Xylene	0.083	0.002	"	0.100		83.4	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	57.1		ug/kg	62.5		91.4	70-130			
Surrogate: Toluene-d8	64.7		"	62.5		104	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0106 - EPA 5030 (soil)										
Matrix Spike (B5L0106-MS1)		Source: X512013-01			Prepared: 12/01/2015 Analyzed: 12/01/2015					
Benzene	0.099	0.002	mg/kg	0.100	0.002	97.8	71.8-126			
Toluene	0.092	0.002	"	0.100	ND	91.8	65.1-130			
Ethylbenzene	0.111	0.002	"	0.100	0.012	99.2	62.2-130			
m,p-Xylene	0.477	0.004	"	0.200	0.174	151	46.5-137			QM-07, QR-02
o-Xylene	0.081	0.002	"	0.100	ND	81.1	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	59.4		ug/kg	62.5		95.0	70-130			
Surrogate: Toluene-d8	64.6		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	60.1		"	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0106 - EPA 5030 (soil)										
Matrix Spike Dup (B5L0106-MSD1)										
					Source: X512013-01					
										Prepared: 12/01/2015 Analyzed: 12/01/2015
Benzene	0.104	0.002	mg/kg	0.100	0.002	102	71.8-126	4.50	11.3	
Toluene	0.101	0.002	"	0.100	ND	101	65.1-130	9.98	15.4	
Ethylbenzene	0.107	0.002	"	0.100	0.012	94.9	62.2-130	3.91	19.6	
m,p-Xylene	0.390	0.004	"	0.200	0.174	108	46.5-137	20.1	19.2	QR-02, QR-03
o-Xylene	0.088	0.002	"	0.100	ND	88.0	54.2-134	8.14	17.9	
Surrogate: 1,2-Dichloroethane-d4	54.0		ug/kg	62.5		86.4	70-130			
Surrogate: Toluene-d8	65.1		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	58.3		"	62.5		93.3	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.

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0102 - EPA 3580

Blank (B5L0102-BLK1)

Prepared: 12/01/2015 Analyzed: 12/01/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	77		"	50.0		155	59-131			

LCS (B5L0102-BS1)

Prepared: 12/01/2015 Analyzed: 12/01/2015

Diesel (C10-C28)	890	50	mg/kg	1000		88.6	64-121			
Residual Range Organics (C28-C36)	890	200	"	1000		89.5	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.4	59-131			

Matrix Spike (B5L0102-MS1)

Source: X512005-01

Prepared: 12/01/2015 Analyzed: 12/01/2015

Diesel (C10-C28)	870	50	mg/kg	1000	ND	87.0	53-125			
Residual Range Organics (C28-C36)	940	200	"	1000	26	91.7	47-133			
Surrogate: o-Terphenyl	51		"	50.0		101	59-131			

Matrix Spike Dup (B5L0102-MSD1)

Source: X512005-01

Prepared: 12/01/2015 Analyzed: 12/01/2015

Diesel (C10-C28)	880	50	mg/kg	1000	ND	87.9	53-125	1.07	20	
Residual Range Organics (C28-C36)	930	200	"	1000	26	90.1	47-133	1.76	20	
Surrogate: o-Terphenyl	50		"	50.0		101	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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

Classical Chemistry Parameters - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B5L0107 - NO PREP										
Duplicate (B5L0107-DUP1)		Source: X512013-01			Prepared: 12/01/2015 Analyzed: 12/01/2015					
pH	8.38		pH Units		8.36			0.239	25	
Batch B5L0108 - NO PREP										
Blank (B5L0108-BLK1)		Prepared: 12/01/2015 Analyzed: 12/01/2015								
Specific Conductance (EC)	0.00290		mmhos/cm							
Duplicate (B5L0108-DUP1)		Source: X512013-01			Prepared: 12/01/2015 Analyzed: 12/01/2015					
Specific Conductance (EC)	0.0783		mmhos/cm		0.0893			13.1	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

Dan Wade

Project Number: [none]

Project: KMG - Thomason 6 -16

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.
- 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.
- 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.



December 03, 2015

Tasman Geosciences

Dan Wade

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Thomason 6 -16

Project Number - [none]

Attached are your analytical results for KMG - Thomason 6 -16 received by Origins Laboratory, Inc. December 02, 2015. This project is associated with Origins project number X512030-01.

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

Dan Wade

Project Number: [none]

Project: KMG - Thomason 6 -16

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B02 @ 20'	X512030-01	Soil	December 2, 2015 10:22	12/02/2015 16:57
B03 @ 20'	X512030-02	Soil	December 2, 2015 10:24	12/02/2015 16:57
B04 @ 20'	X512030-03	Soil	December 2, 2015 10:26	12/02/2015 16:57

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.

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

ORIGINS

XS12030

page 1 of 1

Client: Thyssen
 Address:
 Telephone Number: 612 730 2807
 Email Address: thysse@tsmco-gb.com

Project Manager: Dan Jabe
 Project Name: Thomson 6-16
 Project Number:
 Samples Collected By: Elliot DA

APC Inside Sam La Rue

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample instructions
				Unpreserved	HCl	HNO ₃	Other	Growth Media	Soil	Air Sampling Container #	Other		
B02020	12/11/15	10:22	1	X					X			63151 8700 TAP 12/11/15	1
B03020	↓	10:24	1	X					X			↓	2
B04020	↓	10:26	1	X					X			↓	3
													4
													5
													6
													7
													8
													9
													10
Relinquished By: <u> </u>	Date: <u>12/11/15</u>	Time: <u> </u>	Received By: <u> </u>	Date: <u>12-2-15</u>	Time: <u>16:57</u>	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/> 2-3							
Relinquished By: <u> </u>	Date: <u> </u>	Time: <u> </u>	Received By: <u> </u>	Date: <u> </u>	Time: <u> </u>								

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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: XS12030

Client: Tasman

Client Project ID: Thomason 6-16

Checklist Completed by: Jeff Smith

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

Date/time completed: 12/2/15

Airbill #: NA

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

Cooler Number/Temperature: L 12.3 °C 1 °C 1 °C 1 °C (Describe)

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⁾ ?	<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) Jeff Smith

Date/Time Reviewed 12/2/15

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

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

B02 @ 20'

12/2/2015 10:22:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X512030-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5L0205	12/02/2015	12/02/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 93.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B5L0204	12/02/2015	12/02/2015
Benzene	0.016	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 122 % 70-130 " " "
Surrogate: Toluene-d8 86.1 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.41		pH Units	1	B5L0208	12/02/2015	12/02/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0635		mmhos/cm	"	B5L0209	12/02/2015	12/02/2015
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

B03 @ 20'

12/2/2015 10:24:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X512030-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5L0205	12/02/2015	12/02/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 88.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B5L0204	12/02/2015	12/02/2015
Benzene	0.011	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 124 % 70-130 " " "
Surrogate: Toluene-d8 85.8 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.84		pH Units	1	B5L0208	12/02/2015	12/02/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0765		mmhos/cm	"	B5L0209	12/02/2015	12/02/2015
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

B04 @ 20'

12/2/2015 10:26:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X512030-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	B5L0205	12/02/2015	12/02/2015
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl 87.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B5L0204	12/02/2015	12/02/2015
Benzene	0.016	0.002	"	"	"	"	"
Toluene	ND	0.002	"	"	"	"	"
Ethylbenzene	ND	0.002	"	"	"	"	"
Xylenes, total	ND	0.002	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4 128 % 70-130 " " "
Surrogate: Toluene-d8 85.1 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.33		pH Units	1	B5L0208	12/02/2015	12/02/2015
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0561		mmhos/cm	"	B5L0209	12/02/2015	12/02/2015
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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0204 - EPA 5030 (soil)

Blank (B5L0204-BLK1)

Prepared: 12/02/2015 Analyzed: 12/02/2015

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	72.2		ug/kg	62.5		115	70-130			
Surrogate: Toluene-d8	54.9		"	62.5		87.9	70-130			
Surrogate: 4-Bromofluorobenzene	62.9		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0204 - EPA 5030 (soil)										
LCS (B5L0204-BS1)					Prepared: 12/02/2015 Analyzed: 12/02/2015					
Benzene	0.100	0.002	mg/kg	0.100		100	77.1-124			
Toluene	0.086	0.002	"	0.100		86.4	74.5-128			
Ethylbenzene	0.087	0.002	"	0.100		86.7	66.4-127			
m,p-Xylene	0.181	0.004	"	0.200		90.7	76.6-124			
o-Xylene	0.087	0.002	"	0.100		86.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	67.7		ug/kg	62.5		108	70-130			
Surrogate: Toluene-d8	56.2		"	62.5		89.9	70-130			
Surrogate: 4-Bromofluorobenzene	64.8		"	62.5		104	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0204 - EPA 5030 (soil)

Matrix Spike (B5L0204-MS1)		Source: X512021-02			Prepared: 12/02/2015 Analyzed: 12/02/2015					
Benzene	0.212	0.002	mg/kg	0.200	ND	106	71.8-126			
Toluene	0.182	0.002	"	0.200	ND	90.9	65.1-130			
Ethylbenzene	0.182	0.002	"	0.200	ND	91.2	62.2-130			
m,p-Xylene	0.378	0.004	"	0.400	0.002	93.9	46.5-137			
o-Xylene	0.181	0.002	"	0.200	0.001	89.9	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	68.3		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	54.8		"	62.5		87.7	70-130			
Surrogate: 4-Bromofluorobenzene	64.7		"	62.5		104	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0204 - EPA 5030 (soil)

Matrix Spike Dup (B5L0204-MSD1)		Source: X512021-02			Prepared: 12/02/2015 Analyzed: 12/02/2015					
Benzene	0.220	0.002	mg/kg	0.200	ND	110	71.8-126	3.78	11.3	
Toluene	0.186	0.002	"	0.200	ND	93.1	65.1-130	2.37	15.4	
Ethylbenzene	0.188	0.002	"	0.200	ND	94.1	62.2-130	3.14	19.6	
m,p-Xylene	0.388	0.004	"	0.400	0.002	96.5	46.5-137	2.68	19.2	
o-Xylene	0.187	0.002	"	0.200	0.001	92.8	54.2-134	3.11	17.9	
Surrogate: 1,2-Dichloroethane-d4	68.2		ug/kg	62.5		109	70-130			
Surrogate: Toluene-d8	55.5		"	62.5		88.7	70-130			
Surrogate: 4-Bromofluorobenzene	65.6		"	62.5		105	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

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 B5L0205 - EPA 3580

Blank (B5L0205-BLK1)

Prepared: 12/02/2015 Analyzed: 12/02/2015

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	45		"	50.0		90.9	59-131			

LCS (B5L0205-BS1)

Prepared: 12/02/2015 Analyzed: 12/02/2015

Diesel (C10-C28)	860	50	mg/kg	1000		85.6	64-121			
Residual Range Organics (C28-C36)	930	200	"	1000		92.8	58-124			
Surrogate: o-Terphenyl	43		"	50.0		85.0	59-131			

Matrix Spike (B5L0205-MS1)

Source: X512021-02

Prepared: 12/02/2015 Analyzed: 12/02/2015

Diesel (C10-C28)	890	50	mg/kg	1000	ND	88.9	53-125			
Residual Range Organics (C28-C36)	900	200	"	1000	22	87.6	47-133			
Surrogate: o-Terphenyl	39		"	50.0		78.1	59-131			


Matrix Spike Dup (B5L0205-MSD1)

Source: X512021-02

Prepared: 12/02/2015 Analyzed: 12/02/2015

Diesel (C10-C28)	910	50	mg/kg	1000	ND	91.2	53-125	2.50	20	
Residual Range Organics (C28-C36)	890	200	"	1000	22	87.1	47-133	0.553	20	
Surrogate: o-Terphenyl	45		"	50.0		90.7	59-131			

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Jen Pellegrini For Noelle Doyle Mathis, President

Page 12 of 14

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Dan Wade
Project Number: [none]
Project: KMG - Thomason 6 -16

Classical Chemistry Parameters - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B5L0208 - NO PREP										
Duplicate (B5L0208-DUP1)		Source: X512026-01			Prepared: 12/02/2015 Analyzed: 12/02/2015					
pH	8.07		pH Units		8.03			0.497	25	
Batch B5L0209 - NO PREP										
Blank (B5L0209-BLK1)		Prepared: 12/02/2015 Analyzed: 12/02/2015								
Specific Conductance (EC)	0.00370		mmhos/cm							
Duplicate (B5L0209-DUP1)		Source: X512026-01			Prepared: 12/02/2015 Analyzed: 12/02/2015					
Specific Conductance (EC)	0.497		mmhos/cm		0.489			1.62	25	

Origins Laboratory, Inc.



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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Dan Wade

Project Number: [none]

Project: KMG - Thomason 6 -16

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