



October 16, 2017

Apex Companies, LLC

Chandler Cole

4150 Darley Avenue, Suite 1

Boulder CO 80305

Project Name - KMG - Troutd 44-7 FP

Project Number - 89374932

Attached are your analytical results for KMG - Troutd 44-7 FP received by Origins Laboratory, Inc. October 13, 2017. This project is associated with Origins project number Y710210-01.

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

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troudt 44-7 FP

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	Y710210-01	Water	October 13, 2017 14:57	10/13/2017 18:17
E01@6'	Y710210-02	Soil	October 13, 2017 15:10	10/13/2017 18:17
NE01@7'	Y710210-03	Soil	October 13, 2017 15:12	10/13/2017 18:17
NW01@8'	Y710210-04	Soil	October 13, 2017 15:16	10/13/2017 18:17
WS01@8'	Y710210-05	Soil	October 13, 2017 15:28	10/13/2017 18:17
S01@6'	Y710210-06	Soil	October 13, 2017 15:31	10/13/2017 18:17

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutd 44-7 FP

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page 1 of 1

4710210

ORIGINS LABORATORY, INC

Client: Apex Companies
Address: 1746 Cole Blvd, Lakewood, CO 80401
Telephone Number: 970-903-1260
Email Address: Chandler.Cole@apexcos.com

Project Manager: Chandler Cole
Project Name: Troutd 44-7 FP
Project Number: WO#89374932
Samples Collected By: Erik Mickelson
Kennedy Whalen

Bill to Anadarko

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis					Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other	GRTEX	DRO/RRO	EC, pH	HOLD SAR	
QUAD1	10/13/2017	1457	3	X				X						X	BTEX	
EM1001		1510	1	X				X				X	X			
NE01071		1512	1	X				X								
NW01081		1510	1	X				X								
WS01081		1528	1	X				X								
SO1001		1531	1	X				X								
Relinquished By: Quincy W.	Date: 10/13/2017	Time: 1457	Time: 1457	Received By: [Signature]	Date: 10-13-17	Time: 15:17	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard									
Relinquished By:	Date:	Time:	Time:	Received By:	Date:	Time:										

Date Results Needed 7am 10/16/2017

Origins Laboratory, Inc.

Jefe Pellegrini

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Trout 44-7 FP

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4710210

Client: Apex

Client Project ID: Trout 44-7 FP

Checklist Completed by: Jen Pellegrini

Shipped Via: HD

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

Date/time completed: 10/16/17

Airbill #: NA

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

Cooler Number/Temperature: 1 5.4 °C / _____ °C / _____ °C / _____ °C

Thermometer ID: TOB

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

Date/Time Reviewed 10/16/17

Origins Laboratory, Inc.

Jen Pellegrini

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutt 44-7 FP

GW01

10/13/2017 2:57:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710210-01 (Water)

BTEX by EPA 8260C

Benzene	214	4.00	ug/L	4	B7J1607	10/16/2017	10/16/2017
Toluene	254	4.00	"	"	"	"	"
Ethylbenzene	261	4.00	"	"	"	"	"
Xylenes, total	2090	50.0	"	50	"	"	10/16/2017
Surrogate: 1,2-Dichloroethane-d4	88.7 %	84-121			"	"	10/16/2017
Surrogate: Toluene-d8	87.2 %	85-115			"	"	"
Surrogate: 4-Bromofluorobenzene	112 %	84-114			"	"	"

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutd 44-7 FP

E01@6'

10/13/2017 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710210-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J1604	10/16/2017	10/16/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 76.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7J1603	10/16/2017	10/16/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
Surrogate: Toluene-d8 101 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.6 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.02		pH Units	1	B7J1605	10/16/2017	10/16/2017	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.146		mmhos/cm	"	B7J1606	10/16/2017	"	
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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutd 44-7 FP

NE01@7'

10/13/2017 3:12:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710210-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J1604	10/16/2017	10/16/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 76.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7J1603	10/16/2017	10/16/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.12		pH Units	1	B7J1605	10/16/2017	10/16/2017	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.294		mmhos/cm	"	B7J1606	10/16/2017	"	
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4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutd 44-7 FP

NW01@8'

10/13/2017 3:16:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710210-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J1604	10/16/2017	10/16/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 65.1 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B7J1603	10/16/2017	10/16/2017	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "
Surrogate: Toluene-d8 101 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.02		pH Units	1	B7J1605	10/16/2017	10/16/2017	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.480		mmhos/cm	"	B7J1606	10/16/2017	"	
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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutd 44-7 FP

WS01@8'

10/13/2017 3:28:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710210-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J1604	10/16/2017	10/16/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 67.8 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	34.5	5.00	mg/kg	25	B7J1603	10/16/2017	10/16/2017	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	0.817	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
Surrogate: Toluene-d8 103 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.12		pH Units	1	B7J1605	10/16/2017	10/16/2017	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.594		mmhos/cm	"	B7J1606	10/16/2017	"	
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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Trout 44-7 FP

S01@6'

10/13/2017 3:31:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y710210-06 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J1604	10/16/2017	10/16/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 88.6 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	6.63	5.00	mg/kg	25	B7J1603	10/16/2017	10/16/2017	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 104 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.3 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.18		pH Units	1	B7J1605	10/16/2017	10/16/2017	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.154		mmhos/cm	"	B7J1606	10/16/2017	"	
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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutd 44-7 FP

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 B7J1603 - EPA 5030 (soil)										
Blank (B7J1603-BLK1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		102	70-130			

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4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutdt 44-7 FP

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 B7J1603 - EPA 5030 (soil)										
LCS (B7J1603-BS1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	0.099	0.002	mg/kg	0.100		99.4	77.1-124			
Toluene	0.096	0.002	"	0.100		96.0	74.5-128			
Ethylbenzene	0.094	0.002	"	0.100		93.9	66.4-127			
m,p-Xylene	0.191	0.004	"	0.200		95.5	76.6-124			
o-Xylene	0.095	0.002	"	0.100		95.4	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7J1603 - EPA 5030 (soil)

Matrix Spike (B7J1603-MS1)		Source: Y710210-02			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	2.45	0.050	mg/kg	2.50	ND	97.9	71.8-126			
Toluene	2.40	0.050	"	2.50	ND	95.8	65.1-130			
Ethylbenzene	2.36	0.050	"	2.50	ND	94.4	62.2-130			
m,p-Xylene	4.72	0.100	"	5.00	ND	94.3	46.5-137			
o-Xylene	2.38	0.050	"	2.50	ND	95.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	59		ug/kg	62.5		94.4	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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Project: KMG - Troutdt 44-7 FP

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 B7J1603 - EPA 5030 (soil)										
Matrix Spike Dup (B7J1603-MSD1)	Source: Y710210-02				Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	2.56	0.050	mg/kg	2.50	ND	102	71.8-126	4.53	11.3	
Toluene	2.47	0.050	"	2.50	ND	98.7	65.1-130	3.00	15.4	
Ethylbenzene	2.45	0.050	"	2.50	ND	98.1	62.2-130	3.80	19.6	
m,p-Xylene	4.95	0.100	"	5.00	ND	99.0	46.5-137	4.83	19.2	
o-Xylene	2.49	0.050	"	2.50	ND	99.5	54.2-134	4.42	17.9	
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	70-130			

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Chandler Cole
Project Number: 89374932
Project: KMG - Troudt 44-7 FP

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 B7J1607 - EPA 5030B (Water)										
Blank (B7J1607-BLK1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5	106		84-121			
Surrogate: Toluene-d8	62		"	62.5	100		85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	99.8		84-114			

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Chandler Cole
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Project: KMG - Troutd 44-7 FP

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 B7J1607 - EPA 5030B (Water)										
LCS (B7J1607-BS1)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	49.6	1.00	ug/L	50.0		99.2	73.3-129			
Toluene	48.1	1.00	"	50.0		96.2	76.2-123			
Ethylbenzene	48.2	1.00	"	50.0		96.5	73.6-130			
m,p-Xylene	96.6	2.00	"	100		96.6	76.1-126			
o-Xylene	47.6	1.00	"	50.0		95.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

Origins Laboratory, Inc.



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

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Chandler Cole
Project Number: 89374932
Project: KMG - Troutd 44-7 FP

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 B7J1607 - EPA 5030B (Water)

Matrix Spike (B7J1607-MS1)		Source: Y710156-01			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	54.3	1.00	ug/L	50.0	ND	109	74-130			
Toluene	84.9	1.00	"	50.0	1.21	167	73-131			QM-07
Ethylbenzene	53.6	1.00	"	50.0	ND	107	76-132			
m,p-Xylene	109	2.00	"	100	ND	109	69-139			
o-Xylene	53.0	1.00	"	50.0	ND	106	74-131			
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5		107	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	84-114			

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B7J1607 - EPA 5030B (Water)

Matrix Spike Dup (B7J1607-MSD1)		Source: Y710156-01			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	55.9	1.00	ug/L	50.0	ND	112	74-130	2.80	20	QM-07
Toluene	97.2	1.00	"	50.0	1.21	192	73-131	13.6	20	
Ethylbenzene	55.1	1.00	"	50.0	ND	110	76-132	2.74	20	
m,p-Xylene	111	2.00	"	100	ND	111	69-139	2.51	20	
o-Xylene	54.5	1.00	"	50.0	ND	109	74-131	2.85	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.0	84-121			
Surrogate: Toluene-d8	63		"	62.5		100	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.4	84-114			

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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 B7J1604 - EPA 3550B

Blank (B7J1604-BLK1)

Prepared: 10/16/2017 Analyzed: 10/16/2017

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	39		"	50.0		77.9	59-131			

LCS (B7J1604-BS1)

Prepared: 10/16/2017 Analyzed: 10/16/2017

Diesel (C10-C28)	1080	50.0	mg/kg	1000		108	64-121			
Residual Range Organics (C28-C40)	1110	200	"	1000		111	58-124			
Surrogate: o-Terphenyl	56		"	50.0		111	59-131			

Matrix Spike (B7J1604-MS1)

Source: Y710210-02

Prepared: 10/16/2017 Analyzed: 10/16/2017

Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	53-125			
Residual Range Organics (C28-C40)	1010	200	"	1000	ND	101	47-133			
Surrogate: o-Terphenyl	55		"	50.0		109	59-131			

Matrix Spike Dup (B7J1604-MSD1)

Source: Y710210-02

Prepared: 10/16/2017 Analyzed: 10/16/2017

Diesel (C10-C28)	801	50.0	mg/kg	1000	ND	80.1	53-125	26.2	20	QR-02
Residual Range Organics (C28-C40)	597	200	"	1000	ND	59.7	47-133	51.4	20	QR-02
Surrogate: o-Terphenyl	41		"	50.0		81.2	59-131			

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Chandler Cole
Project Number: 89374932
Project: KMG - Troutd 44-7 FP

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 B7J1605 - NO PREP										
Duplicate (B7J1605-DUP1)		Source: Y710210-02			Prepared: 10/16/2017 Analyzed: 10/16/2017					
pH	7.73		pH Units		8.02			3.68	25	
Batch B7J1606 - NO PREP										
Blank (B7J1606-BLK1)		Prepared: 10/16/2017 Analyzed: 10/16/2017								
Specific Conductance (EC)	0.00420		mmhos/cm							
Duplicate (B7J1606-DUP1)		Source: Y710210-02			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Specific Conductance (EC)	0.149		mmhos/cm		0.146			2.10	25	

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Chandler Cole
Project Number: 89374932
Project: KMG - Troudt 44-7 FP

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.

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.



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