



March 8, 2019

Mr. Gregory Hamilton
Senior Staff HSE Representative
Kerr-McGee Oil & Gas Onshore LP
1099 18th Street, Suite 1800
Denver, Colorado 80202

**Re: Sump Closure Summary Letter Report
Bell L 12-05 Production Facility
API: 05-123-15707
Facility ID: 332637
Legal: SWNW Sec 12-T3N-R66W
Remediation Project # 12507**

Dear Mr. Hamilton:

On behalf of Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee), Tasman Geosciences, Inc. (Tasman) has prepared this Sump Closure Summary Letter Report (Report) to document sampling activities and the results of environmental testing at the above-referenced site (Site). This Report is being submitted under Form 27 Site Investigation and Remediation Workplan Remediation # 12507. Tasman provided environmental services at the site that included collection of confirmation samples from the excavation, documentation of field activities, and review of analytical data as described below.

Site Assessment Activities

The field activities described herein were performed with the purpose of assessing potential hydrocarbon impacts at the Site related to the closure of the produced water sump. Soil sampling activities, laboratory analytical results, and conclusions are presented below.

Excavation activities were initiated on October 16, 2017 following removal of the produced water sump. The final extent of the excavation measured approximately 15 feet by 15 feet with an approximate depth of 9 feet below ground surface (bgs). Approximately 10 cubic yards of impacted material were removed from the excavation and taken to the Kerr-McGee land treatment facility in Weld County, Colorado. A liner was not present at the location. Groundwater was not encountered in the excavation area.

Five (5) soil samples were collected from the base and sidewalls of the final extent of the sump excavation area at approximately 9 and 8 feet bgs, respectively. The soil samples were field screened for volatile organic compound (VOC) concentrations using a photoionization detector (PID). Based on the field screening results, the excavation base soil sample (B01@9') and sidewalls soil samples (N01@8', S01@8', E01@8', and W01@8') were submitted to Origins Laboratory in Denver, Colorado, for analysis of benzene, toluene, ethylbenzene, total xylenes

(BTEX), total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) by United States Environmental Protection Agency (USEPA) Method 8260C, TPH – diesel range and oil range organics (DRO and ORO) by USEPA Method 8015, electrical conductivity (EC), and pH.

The general Site layout, sample locations and approximate final extent of the excavation are illustrated on Figure 1.

Results

Soil analytical results from the samples collected from the base (B01@9') and sidewalls (N01@8', S01@8', E01@8', and W01@8') of the final extent of the excavation area indicated that constituent concentrations were in full compliance with State standards. Soil analytical data are provided in Table 1. The laboratory analytical report is provided as Attachment A.

Conclusions

Analytical results described herein confirm that BTEX and TPH impacts are not present at concentrations above applicable regulatory standards at the former produced water sump location. Therefore, no further site assessment or remedial activity is recommended at this time. Following Site assessment activities, the produced water sump was removed and the excavation area was backfilled and contoured to match pre-existing conditions.

Please contact me at (303) 487-1228 if you have any questions regarding this report or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'MJahn', is positioned above the printed name.

Mike Jahn, PG
Senior Geologist

Attachments:

Table 1 – Soil Sample Results Summary Table
Figure 1 – Sample Location Map
Attachment A – Laboratory Analytical Report

Table

TABLE 1
BELL L 12-05 PRODUCTION FACILITY
SOIL SAMPLE RESULTS SUMMARY TABLE
KERR-McGEE OIL AND GAS ONSHORE LP

Sample Location	Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH-GRO (mg/kg)	TEPH-DRO (mg/kg)	TEPH-ORO (mg/kg)	EC (mmhos/cm)	pH (units)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	500			4 mmhos/cm or 2x BG	6-9
N01@8'	10/16/2017	8	<0.002	<0.002	<0.002	<0.002	<0.200	<25.0	<100	0.0964	8.54
S01@8'	10/16/2017	8	<0.002	<0.002	<0.002	<0.002	<0.200	<25.0	<100	0.0519	8.42
E01@8'	10/16/2017	8	<0.002	<0.002	<0.002	<0.002	<0.200	25.9	<100	0.0782	8.28
W01@8'	10/16/2017	8	<0.002	<0.002	<0.002	<0.002	<0.200	<25.0	<100	0.0763	8.59
B01@9'	10/16/2017	9	<0.002	<0.002	<0.002	<0.002	30.8	380	<100	0.103	8.65

Notes:

(1) Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

COGCC = Colorado Oil and Gas Conservation Commission

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

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

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

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

EC = Electrical conductivity

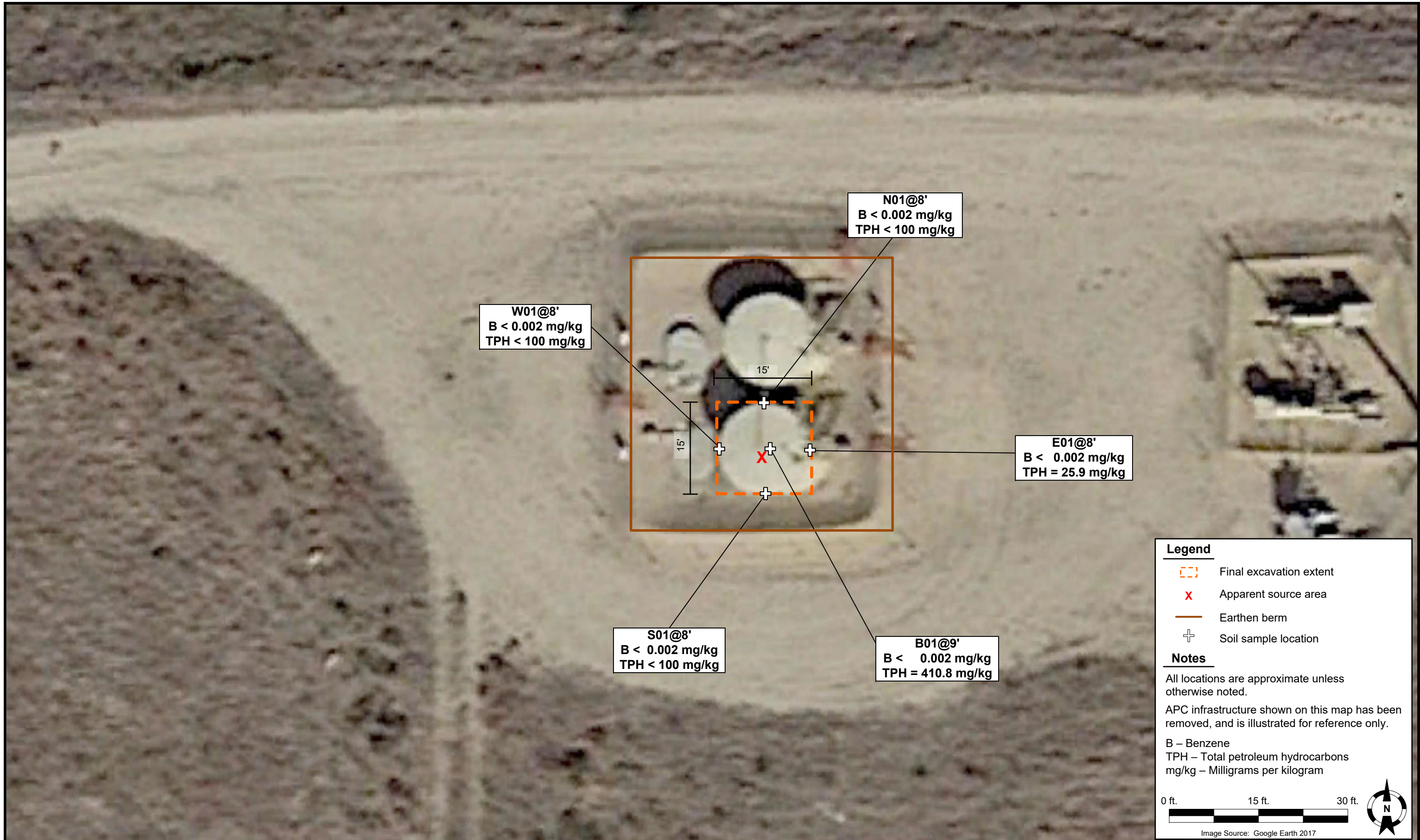
mmhos/cm = Millimhos per centimeter

mg/kg = Milligrams per kilogram.

ft. bgs = Feet below ground surface.

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

Figure



DATE: August 7, 2018		Kerr-McGee Oil and Gas Onshore LP BELL L 12-05 – PRODUCTION FACILITY SWNW Sec. 12-T3N-R66W Weld County, Colorado	Sample Location Map	FIGURE 1
DESIGNED BY: M. Rianda				
DRAWN BY: M. Petersen				

Attachment A



October 19, 2017

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Bell L 12-05

Project Number - 89401334

Attached are your analytical results for KMG - Bell L 12-05 received by Origins Laboratory, Inc. October 16, 2017. This project is associated with Origins project number Y710234-01.

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

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



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

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: 89401334

Project: KMG - Bell L 12-05

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@8'	Y710234-01	Soil	October 16, 2017 11:30	10/16/2017 16:54
S01@8'	Y710234-02	Soil	October 16, 2017 11:32	10/16/2017 16:54
E01@8'	Y710234-03	Soil	October 16, 2017 11:34	10/16/2017 16:54
W01@8'	Y710234-04	Soil	October 16, 2017 11:36	10/16/2017 16:54
B01@9'	Y710234-05	Soil	October 16, 2017 11:38	10/16/2017 16:54

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

ORIGINS
LABORATORY, INC

www.originslaboratory.com

1710234

page 1 of 1

Client: APL
Address: _____
Telephone Number: _____
Email Address: YCornez@tasman-geo.com
Project Manager: Bob Cornez
Project Name: Bell L 12-05
Project Number: 89401334
Samples Collected By: APL

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix		Analysis		Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other	
Nole 4'	10/16/17	1130	2									1
Soile 8'		1132	2									2
Boile 8'		1134	2									3
Boile 8'		1136	2									4
Boile 7'		1138	2									5
												6
												7
												8
												9
												10
Relinquished By: <u>APL</u>	Date: <u>10/16/17</u>	Time: <u>1654</u>		Received By: <u>[Signature]</u>	Date: <u>10/16/17</u>	Time: <u>1654</u>		Turnaround Time: <u>Same Day</u>	24 Hr <input type="checkbox"/>	48 Hr <input type="checkbox"/>	72 Hr <input type="checkbox"/>	
Relinquished By: _____	Date: _____	Time: _____		Received By: _____	Date: _____	Time: _____		Standard <input type="checkbox"/>				

Date Results Needed

Temp Received- 4.2

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1710234 Client: Tasman
Client Project ID: KMG - Bell L 12-05
Checklist Completed by: DA Shipped Via: Pickup
Date/time completed: 10-16-17 1747 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
Airbill #: W
Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____
Cooler Number/Temperature: ☒ 14.2 °C ☐ _____ °C ☐ _____ °C (Describe)
Thermometer ID: 1003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<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"/>	<u>p2</u>
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 checked="" type="checkbox"/>	<input 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)

10-16-17 1748
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

N01@8'

10/16/2017 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y710234-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J1604	10/16/2017	10/17/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 82.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J1603	10/16/2017	10/16/2017	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	10/19/2017	U
Ethylbenzene	ND	0.002	"	"	"	"	10/16/2017	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "
Surrogate: Toluene-d8 98.9 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.54		pH Units	1	B7J1605	10/16/2017	10/16/2017	
----	------	--	----------	---	---------	------------	------------	--

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0964		mmhos/cm	"	B7J1606	10/16/2017	"	
---------------------------	--------	--	----------	---	---------	------------	---	--

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

S01@8'

10/16/2017 11:32:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y710234-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J1604	10/16/2017	10/17/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 59.0 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J1603	10/16/2017	10/16/2017	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	10/19/2017	U
Ethylbenzene	ND	0.002	"	"	"	"	10/16/2017	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.1 % 70-130 " " "
Surrogate: Toluene-d8 98.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 85.2 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.42		pH Units	1	B7J1605	10/16/2017	10/16/2017	
----	------	--	----------	---	---------	------------	------------	--

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0519		mmhos/cm	"	B7J1606	10/16/2017	"	
---------------------------	--------	--	----------	---	---------	------------	---	--

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

E01@8'
10/16/2017 11:34:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y710234-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	25.9	25.0	mg/kg	1	B7J1604	10/16/2017	10/17/2017	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	79.3 %	59-131			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J1603	10/16/2017	10/17/2017	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	10/19/2017	U
Ethylbenzene	ND	0.002	"	"	"	"	10/17/2017	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	
Surrogate: Toluene-d8	92.7 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.3 %	70-130			"	"	"	

pH in Soil by EPA 9045D

pH	8.28		pH Units	1	B7J1605	10/16/2017	10/16/2017	
----	------	--	----------	---	---------	------------	------------	--

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0782		mmhos/cm	"	B7J1606	10/16/2017	"	
---------------------------	--------	--	----------	---	---------	------------	---	--

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

W01@8'
10/16/2017 11:36:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y710234-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B7J1604	10/16/2017	10/17/2017	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 111 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B7J1603	10/16/2017	10/17/2017	U
Benzene	ND	0.002	"	"	"	"	"	U
Toluene	ND	0.002	"	"	"	"	10/19/2017	U
Ethylbenzene	ND	0.002	"	"	"	"	10/17/2017	U
Xylenes, total	ND	0.002	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4 101 % 70-130 " " "
Surrogate: Toluene-d8 93.7 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 98.1 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.59		pH Units	1	B7J1605	10/16/2017	10/16/2017	
----	------	--	----------	---	---------	------------	------------	--

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0763		mmhos/cm	"	B7J1606	10/16/2017	"	
---------------------------	--------	--	----------	---	---------	------------	---	--

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

B01@9'

10/16/2017 11:38:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	-------

Origins Laboratory, Inc.
Y710234-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	380	25.0	mg/kg	1	B7J1604	10/16/2017	10/17/2017	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	78.4 %	59-131			"	"	"	
------------------------	--------	--------	--	--	---	---	---	--

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	30.8	5.00	mg/kg	25	B7J1603	10/16/2017	10/16/2017	
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	10/18/2017	U
Ethylbenzene	ND	0.050	"	"	"	"	10/16/2017	U
Xylenes, total	0.114	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	97.2 %	70-130			"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.5 %	70-130			"	"	"	

pH in Soil by EPA 9045D

pH	8.65		pH Units	1	B7J1605	10/16/2017	10/16/2017	
----	------	--	----------	---	---------	------------	------------	--

Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.103		mmhos/cm	"	B7J1606	10/16/2017	"	
---------------------------	-------	--	----------	---	---------	------------	---	--

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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-BLK2)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	0.008	0.002	"							O-01
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	56		ug/kg	62.5		89.0	70-130			
Surrogate: Toluene-d8	58		"	62.5		93.6	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.2	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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-BS2)					Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	0.091	0.002	mg/kg	0.100		91.0	77.1-124			
Toluene	0.096	0.002	"	0.100		96.2	74.5-128			
Ethylbenzene	0.096	0.002	"	0.100		95.5	66.4-127			
m,p-Xylene	0.191	0.004	"	0.200		95.5	76.6-124			
o-Xylene	0.091	0.002	"	0.100		91.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	54		ug/kg	62.5		85.7	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		95.0	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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 (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			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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 (B7J1603-MS2)		Source: Y710227-01			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	0.095	0.002	mg/kg	0.100	ND	94.9	71.8-126			
Toluene	0.105	0.002	"	0.100	ND	105	65.1-130			
Ethylbenzene	0.100	0.002	"	0.100	ND	99.9	62.2-130			
m,p-Xylene	0.191	0.004	"	0.200	ND	95.7	46.5-137			
o-Xylene	0.088	0.002	"	0.100	ND	87.7	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	56		ug/kg	62.5		89.2	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	51		"	62.5		82.0	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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-MSD2)		Source: Y710227-01			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Benzene	0.089	0.002	mg/kg	0.100	ND	89.0	71.8-126	6.39	11.3	
Toluene	0.103	0.002	"	0.100	ND	103	65.1-130	2.21	15.4	
Ethylbenzene	0.094	0.002	"	0.100	ND	93.5	62.2-130	6.62	19.6	
m,p-Xylene	0.187	0.004	"	0.200	ND	93.6	46.5-137	2.24	19.2	
o-Xylene	0.090	0.002	"	0.100	ND	90.2	54.2-134	2.86	17.9	
Surrogate: 1,2-Dichloroethane-d4	54		ug/kg	62.5		87.2	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.5	70-130			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 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			

Blank (B7J1604-BLK2)

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	44		"	50.0		87.2	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			

LCS (B7J1604-BS2)

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

Diesel (C10-C28)	897	50.0	mg/kg	1000		89.7	64-121			
Residual Range Organics (C28-C40)	1030	200	"	1000		103	58-124			
Surrogate: o-Terphenyl	48		"	50.0		95.5	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			

Origins Laboratory, Inc.



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

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B7J1604 - EPA 3550B										
Matrix Spike (B7J1604-MS1)		Source: Y710210-02			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Surrogate: o-Terphenyl	55		mg/kg	50.0		109	59-131			
Matrix Spike (B7J1604-MS2)		Source: Y710134-01			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Diesel (C10-C28)	945	50.0	mg/kg	1000	19.8	92.6	53-125			
Residual Range Organics (C28-C40)	887	200	"	1000	ND	88.7	47-133			
Surrogate: o-Terphenyl	45		"	50.0		90.1	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			
Matrix Spike Dup (B7J1604-MSD2)		Source: Y710134-01			Prepared: 10/16/2017 Analyzed: 10/16/2017					
Diesel (C10-C28)	881	50.0	mg/kg	1000	19.8	86.1	53-125	7.17	20	
Residual Range Organics (C28-C40)	928	200	"	1000	ND	92.8	47-133	4.54	20	
Surrogate: o-Terphenyl	46		"	50.0		92.5	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

Bob Cornez
Project Number: 89401334
Project: KMG - Bell L 12-05

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	
Duplicate (B7J1605-DUP2)	Source: Y710227-01				Prepared: 10/16/2017 Analyzed: 10/16/2017					
pH	7.36		pH Units		7.47			1.48	25	
Batch B7J1606 - NO PREP										
Blank (B7J1606-BLK1)	Prepared: 10/16/2017 Analyzed: 10/16/2017									
Specific Conductance (EC)	0.00420		mmhos/cm							
Blank (B7J1606-BLK2)	Prepared: 10/16/2017 Analyzed: 10/16/2017									
Specific Conductance (EC)	0.00230		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	
Duplicate (B7J1606-DUP2)	Source: Y710227-01				Prepared: 10/16/2017 Analyzed: 10/16/2017					
Specific Conductance (EC)	0.398		mmhos/cm		0.393			1.29	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

Bob Cornez

Project Number: 89401334

Project: KMG - Bell L 12-05

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.

O-01 This compound is a common laboratory contaminant.

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.