



May 27, 2014

A.G. Wassenaar

Joe Pieterick

2180 South Ivanhoe Street - Suite 5

Denver CO 80222

Project Name - UPRR-Ricketson SAL

Project Number - E14266.E2

Attached are your analytical results for UPRR-Ricketson SAL received by Origins Laboratory, Inc. May 20, 2014. This project is associated with Origins project number X405205-01.

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  
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Joe Pieterick  
Project Number: E14266.E2  
Project: UPRR-Ricketson SAL

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
266-1	X405205-01	Soil	May 20, 2014 9:51	05/20/2014 16:15
266-7	X405205-02	Soil	May 20, 2014 11:02	05/20/2014 16:15
266-9	X405205-03	Soil	May 20, 2014 12:40	05/20/2014 16:15
266-12	X405205-04	Soil	May 20, 2014 13:27	05/20/2014 16:15
266-15	X405205-05	Soil	May 20, 2014 14:12	05/20/2014 16:15
266-17	X405205-06	Soil	May 20, 2014 14:40	05/20/2014 16:15

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President



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Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X405205 Client: A.G. Wassenaar  
 Client Project ID: UPRR-Ricketson SAL  
 Checklist Completed by: Joe Smith Shipped Via: H/D  
 Date/time completed: 5/20/14 16:22 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1 12.6 °C \_\_\_\_\_ °C \_\_\_\_\_ °C \_\_\_\_\_ °C (Describe)  
 Thermometer ID: T002

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		X		Sampled Same Day
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact <sup>(1)</sup> ?	X			
Was adequate sample volume provided <sup>(1)</sup> ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		X		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	X			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	X			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	Soil
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			X	Soil
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

Date/Time Reviewed

Origins Laboratory, Inc.



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 Project Number: E14266.E2  
 Project: UPRR-Ricketson SAL

266-1

5/20/2014 9:51:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X405205-01 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	1280	50.0	mg/kg	1	4E21009	05/21/2014	05/22/2014	
Diesel (C10-C28)	959	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>85.9 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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 Project Number: E14266.E2  
 Project: UPRR-Ricketson SAL

266-7

5/20/2014 11:02:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X405205-02 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	13300	500	mg/kg	10	4E21009	05/21/2014	05/23/2014	
Diesel (C10-C28)	3080	50.0	"	1	"	"	05/22/2014	
<i>Surrogate: o-Terphenyl</i>	<i>85.9 %</i>	<i>59-131</i>			"	"	"	

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 Project Number: E14266.E2  
 Project: UPRR-Ricketson SAL

266-9

5/20/2014 12:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X405205-03 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	1410	50.0	mg/kg	1	4E21009	05/21/2014	05/22/2014	
Diesel (C10-C28)	528	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>80.8 %</i>	<i>59-131</i>			"	"	"	

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Joe Pieterick  
Project Number: E14266.E2  
Project: UPRR-Ricketson SAL

266-12  
5/20/2014 1:27:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X405205-04 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E21009	05/21/2014	05/22/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>85.1 %</i>	<i>59-131</i>			"	"	"	

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Joe Pieterick  
Project Number: E14266.E2  
Project: UPRR-Ricketson SAL

266-15

5/20/2014 2:12:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X405205-05 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E21009	05/21/2014	05/22/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>78.3 %</i>	<i>59-131</i>			"	"	"	

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266-17

5/20/2014 2:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X405205-06 (Soil)

**GRO (TVPH)/DRO (TEPH)by EPA 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E21009	05/21/2014	05/22/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>79.8 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4E21009 - EPA 3580</b>										
<b>Blank (4E21009-BLK1)</b>										
					Prepared: 05/21/2014 Analyzed: 05/21/2014					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
<i>Surrogate: o-Terphenyl</i>	38		g	50.0		75.9	59-131			
<b>LCS (4E21009-BS1)</b>										
					Prepared: 05/21/2014 Analyzed: 05/21/2014					
Gasoline (C6-C10)	908	50.0	mg/kg	1000		90.8	59-133			
Diesel (C10-C28)	745	50.0	"	1000		74.5	64-121			
<i>Surrogate: o-Terphenyl</i>	70		g	50.0		140	59-131			S-GC
<b>Matrix Spike (4E21009-MS1)</b>										
		Source: X405205-05			Prepared: 05/21/2014 Analyzed: 05/21/2014					
Gasoline (C6-C10)	909	50.0	mg/kg	1000	ND	90.9	57-139			
Diesel (C10-C28)	746	50.0	"	1000	15.6	73.1	53-125			
<i>Surrogate: o-Terphenyl</i>	36		g	50.0		71.6	59-131			
<b>Matrix Spike Dup (4E21009-MSD1)</b>										
		Source: X405205-05			Prepared: 05/21/2014 Analyzed: 05/21/2014					
Gasoline (C6-C10)	901	50.0	mg/kg	1000	ND	90.1	57-139	0.927	20	
Diesel (C10-C28)	753	50.0	"	1000	15.6	73.7	53-125	0.845	20	
<i>Surrogate: o-Terphenyl</i>	35		g	50.0		70.0	59-131			

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### Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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