



November 10, 2010

Noble Energy Inc.

Todd Cullum

804 Grand Avenue

Platteville

CO

80651

Project Name- Dillard AB 10-7

Project Number- [none]

Attached are your analytical results for Dillard AB 10-7 received by Origins Laboratory, Inc. November 8, 2010 10:30 am. This project is associated with Origins project number X011053-01 .

The analytical results in the following report were analyzed under the guidelines of EPA Methods specified in SW-846. The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody.

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



Noble Energy Inc.
804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
SS-1	X011053-01	Soil	11/4/2010 4:30:00PM	11/08/2010 10:30
SS-2	X011053-02	Soil	11/4/2010 4:40:00PM	11/08/2010 10:30
SS-3	X011053-03	Soil	11/4/2010 4:55:00PM	11/08/2010 10:30
SS-4	X011053-04	Soil	11/4/2010 5:15:00PM	11/08/2010 10:30
SS-5	X011053-05	Soil	11/4/2010 5:20:00PM	11/08/2010 10:30
SS-6	X011053-06	Soil	11/4/2010 5:30:00PM	11/08/2010 10:30

Origins Laboratory, Inc.



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Noelle E Doyle,

Noble Energy Inc.
804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

X011053

page 1 of 1

originslaboratory.com



Client: Noble Energy Inc.
Address: 804 Grand Ave.
Platteville CO 80651
Telephone Number: 970-785-5000
E-Mail Address: tcullum@nobleenergyinc.com

Project Manager: Todd Cullum
Project Name: Dillard AB 10-7
Project Number:
Samples Collected by: Todd C.

Sample ID - Description	Date Sampled	Time Sampled	Preservative				Matrix			Analysis		Sample Instructions
			Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air - Summa Canister #	Other		
55-1	11-4-10	4:30 PM					X					1
55-2	11-4-10	4:40 PM					X					2
55-3	11-4-10	4:55 PM					X					3
55-4	11-4-10	5:15 PM					X					4
55-5	11-4-10	5:20 PM					X					5
55-6	11-4-10	5:30 PM					X					6
												7
												8
												9
												10
Relinquished by: Todd Cullum	Date: 11-8-10	Time: 10:30 A	Received by: [Signature]	Date: 11-8-10	Time: 10:30							Temperature Upon Receipt:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:							Turn Around Time:
												Same Day
												24 hr
												48 hr
												72 hr
												Standard

4640 North Pecos Street | Unit C | Denver, Colorado 80211 | Laboratory - 303.433.1322 | Fax - 303.265.9645

Origins Laboratory, Inc.

Noelle E Doyle

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Noble Energy Inc.
804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

SS-1

11/4/2010 4:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X011053-01 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OK09001	11/09/2010	11/09/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
m,p-Xylene	ND	0.00800	"	"	"	"	"	
o-Xylene	ND	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	99.2 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.00	mg/kg	1	OK09005	11/09/2010	11/09/2010	
Diesel (C10-C28)	132.40	50.00	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200.00	"	"	"	"	"	
TPH - Carbon Chain Total	132.40	50.00	"	"	"	"	"	

Surrogate: o-Terphenyl	104 %	65-140			"	"	"	
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Origins Laboratory, Inc.



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Noelle E Doyle,

Noble Energy Inc.
804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

SS-2

11/4/2010 4:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X011053-02 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OK09001	11/09/2010	11/10/2010	
Toluene	0.00956	0.00400	"	"	"	"	"	
Ethylbenzene	0.0151	0.00400	"	"	"	"	"	
m,p-Xylene	0.124	0.00800	"	"	"	"	"	
o-Xylene	0.0404	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	104 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	102 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	315.81	50.00	mg/kg	1	OK09005	11/09/2010	11/09/2010	
Diesel (C10-C28)	2130.94	50.00	"	"	"	"	"	
Residual Range Organics (C28-C36)	401.31	200.00	"	"	"	"	"	
TPH - Carbon Chain Total	2848.06	50.00	"	"	"	"	"	

Surrogate: o-Terphenyl	125 %	65-140			"	"	"	
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Noble Energy Inc.
804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

SS-3

11/4/2010 4:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X011053-03 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OK09001	11/09/2010	11/10/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
m,p-Xylene	ND	0.00800	"	"	"	"	"	
o-Xylene	ND	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	101 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	99.0 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.00	mg/kg	1	OK09005	11/09/2010	11/09/2010	
Diesel (C10-C28)	52.80	50.00	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200.00	"	"	"	"	"	
TPH - Carbon Chain Total	52.80	50.00	"	"	"	"	"	

Surrogate: o-Terphenyl	102 %	65-140			"	"	"	
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Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

SS-4

11/4/2010 5:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X011053-04 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OK09001	11/09/2010	11/10/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
m,p-Xylene	0.0282	0.00800	"	"	"	"	"	
o-Xylene	0.0113	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	99.2 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.00	mg/kg	1	OK09005	11/09/2010	11/09/2010	
Diesel (C10-C28)	508.65	50.00	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200.00	"	"	"	"	"	
TPH - Carbon Chain Total	562.30	50.00	"	"	"	"	"	

Surrogate: o-Terphenyl	106 %	65-140			"	"	"	
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804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

SS-5

11/4/2010 5:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X011053-05 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OK09001	11/09/2010	11/10/2010	
Toluene	ND	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00400	"	"	"	"	"	
m,p-Xylene	ND	0.00800	"	"	"	"	"	
o-Xylene	ND	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	77.6-134			"	"	"	
Surrogate: Toluene-d8	98.2 %	81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	74.7-123			"	"	"	

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.00	mg/kg	1	OK09005	11/09/2010	11/09/2010	
Diesel (C10-C28)	184.65	50.00	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200.00	"	"	"	"	"	
TPH - Carbon Chain Total	184.65	50.00	"	"	"	"	"	

Surrogate: o-Terphenyl	101 %	65-140			"	"	"	
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804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

SS-6

11/4/2010 5:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X011053-06 (Soil)

BTEX by EPA 8260B

Benzene	ND	0.00400	mg/kg	1	OK09001	11/09/2010	11/10/2010
Toluene	ND	0.00400	"	"	"	"	"
Ethylbenzene	ND	0.00400	"	"	"	"	"
m,p-Xylene	ND	0.00800	"	"	"	"	"
o-Xylene	ND	0.00400	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	104 %	77.6-134			"	"	"
Surrogate: Toluene-d8	101 %	81.4-121			"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	74.7-123			"	"	"

TPH-Carbon Chain by EPA Method 8015M

Gasoline (C6-C10)	ND	50.00	mg/kg	1	OK09005	11/09/2010	11/09/2010
Diesel (C10-C28)	128.44	50.00	"	"	"	"	"
Residual Range Organics (C28-C36)	ND	200.00	"	"	"	"	"
TPH - Carbon Chain Total	128.44	50.00	"	"	"	"	"

Surrogate: o-Terphenyl	102 %	65-140			"	"	"
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Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

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
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Batch OK09005 - Default Prep GC-Semi

Blank (OK09005-BLK1)

Prepared: 11/09/2010 Analyzed: 11/09/2010

Gasoline (C6-C10)	ND	50.00	mg/kg
Diesel (C10-C28)	ND	50.00	"
Residual Range Organics (C28-C36)	ND	200.00	"
TPH - Carbon Chain Total	ND	50.00	"

Surrogate: o-Terphenyl 48.5 g 50.0 97.0 65-140

LCS (OK09005-BS1)

Prepared: 11/09/2010 Analyzed: 11/09/2010

Gasoline (C6-C10)	60.33	50.00	mg/kg				65-140
Diesel (C10-C28)	447.14	50.00	"	500	89.4		60-140

Surrogate: o-Terphenyl 51.2 g 50.0 102 65-140

Matrix Spike (OK09005-MS1)

Source: X011053-01

Prepared: 11/09/2010 Analyzed: 11/09/2010

Gasoline (C6-C10)	61.43	50.00	mg/kg		ND		65-130
Diesel (C10-C28)	556.45	50.00	"	500	132.40	84.8	60-140

Surrogate: o-Terphenyl 51.3 g 50.0 103 65-140

Matrix Spike Dup (OK09005-MSD1)

Source: X011053-01

Prepared: 11/09/2010 Analyzed: 11/09/2010

Gasoline (C6-C10)	66.36	50.00	mg/kg		ND		65-130	7.72	20
Diesel (C10-C28)	603.72	50.00	"	500	132.40	94.3	60-140	8.15	25

Surrogate: o-Terphenyl 52.1 g 50.0 104 65-140

Origins Laboratory, Inc.



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Noble Energy Inc.
804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

Volatile Organic Compounds by EPA Method 8260B - 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 OK09001 - EPA 5030B

Blank (OK09001-BLK1)

Prepared: 11/09/2010 Analyzed: 11/09/2010

Benzene	ND	0.004	mg/kg
Toluene	ND	0.004	"
Ethylbenzene	ND	0.004	"
m,p-Xylene	ND	0.008	"
o-Xylene	ND	0.004	"

Surrogate: 1,2-Dichloroethane-d4	60.4	ug/L	62.5	96.7	77.6-134
Surrogate: Toluene-d8	61.6	"	62.5	98.6	81.4-121
Surrogate: 4-Bromofluorobenzene	62.2	"	62.5	99.5	74.7-123

Blank (OK09001-BLK2)

Prepared: 11/09/2010 Analyzed: 11/09/2010

Benzene	ND	0.004	mg/kg
Toluene	ND	0.004	"
Ethylbenzene	ND	0.004	"
m,p-Xylene	ND	0.008	"
o-Xylene	ND	0.004	"

Surrogate: 1,2-Dichloroethane-d4	57.6	ug/L	62.5	92.2	77.6-134
Surrogate: Toluene-d8	60.9	"	62.5	97.4	81.4-121
Surrogate: 4-Bromofluorobenzene	64.0	"	62.5	102	74.7-123

LCS (OK09001-BS1)

Prepared: 11/09/2010 Analyzed: 11/09/2010

Benzene	0.18	0.004	mg/kg	0.200	91.1	75.2-128
Toluene	0.18	0.004	"	0.200	91.4	76.3-130

Surrogate: 1,2-Dichloroethane-d4	58.2	ug/L	62.5	93.1	77.6-134
Surrogate: Toluene-d8	61.2	"	62.5	97.9	81.4-121
Surrogate: 4-Bromofluorobenzene	65.4	"	62.5	105	74.7-123

LCS (OK09001-BS2)

Prepared: 11/09/2010 Analyzed: 11/09/2010

Benzene	0.21	0.004	mg/kg	0.200	104	75.2-128
Toluene	0.20	0.004	"	0.200	101	76.3-130

Origins Laboratory, Inc.



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804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

Volatile Organic Compounds by EPA Method 8260B - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch OK09001 - EPA 5030B										
LCS (OK09001-BS2)					Prepared: 11/09/2010 Analyzed: 11/09/2010					
Surrogate: 1,2-Dichloroethane-d4	60.4		ug/L	62.5		96.6	77.6-134			
Surrogate: Toluene-d8	60.9		"	62.5		97.5	81.4-121			
Surrogate: 4-Bromofluorobenzene	65.7		"	62.5		105	74.7-123			
Matrix Spike (OK09001-MS1)					Source: X011053-01 Prepared: 11/09/2010 Analyzed: 11/09/2010					
Benzene	0.18	0.004	mg/kg	0.200	ND	91.9	77.6-132			
Toluene	0.18	0.004	"	0.200	ND	91.4	74-136			
Surrogate: 1,2-Dichloroethane-d4	62.4		ug/L	62.5		99.8	77.6-134			
Surrogate: Toluene-d8	59.8		"	62.5		95.7	81.4-121			
Surrogate: 4-Bromofluorobenzene	63.4		"	62.5		101	74.7-123			
Matrix Spike (OK09001-MS2)					Source: X011054-01 Prepared: 11/09/2010 Analyzed: 11/09/2010					
Benzene	0.19	0.004	mg/kg	0.200	ND	95.2	77.6-132			
Toluene	0.19	0.004	"	0.200	ND	94.6	74-136			
Surrogate: 1,2-Dichloroethane-d4	65.9		ug/L	62.5		105	77.6-134			
Surrogate: Toluene-d8	60.8		"	62.5		97.4	81.4-121			
Surrogate: 4-Bromofluorobenzene	67.0		"	62.5		107	74.7-123			
Matrix Spike Dup (OK09001-MSD1)					Source: X011053-01 Prepared: 11/09/2010 Analyzed: 11/09/2010					
Benzene	0.19	0.004	mg/kg	0.200	ND	95.0	77.6-132	3.36	13.1	
Toluene	0.19	0.004	"	0.200	ND	93.9	74-136	2.70	20.9	
Surrogate: 1,2-Dichloroethane-d4	61.4		ug/L	62.5		98.2	77.6-134			
Surrogate: Toluene-d8	60.8		"	62.5		97.2	81.4-121			
Surrogate: 4-Bromofluorobenzene	67.3		"	62.5		108	74.7-123			
Matrix Spike Dup (OK09001-MSD2)					Source: X011054-01 Prepared: 11/09/2010 Analyzed: 11/09/2010					
Benzene	0.19	0.004	mg/kg	0.200	ND	94.5	77.6-132	0.738	13.1	
Toluene	0.18	0.004	"	0.200	ND	90.3	74-136	4.74	20.9	
Surrogate: 1,2-Dichloroethane-d4	60.2		ug/L	62.5		96.3	77.6-134			
Surrogate: Toluene-d8	59.9		"	62.5		95.8	81.4-121			
Surrogate: 4-Bromofluorobenzene	65.3		"	62.5		105	74.7-123			

Origins Laboratory, Inc.



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Noelle E Doyle,

Noble Energy Inc.
804 Grand Avenue
Platteville CO 80651

Todd Cullum
Project Number: [none]
Project: Dillard AB 10-7

Volatile Organic Compounds by EPA Method 8260B - 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 OK09001 - EPA 5030B

Origins Laboratory, Inc.



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Platteville CO 80651

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Project Number: [none]
Project: Dillard AB 10-7

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference

Origins Laboratory, Inc.



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