

800 Airport Road  
Suite 3  
Rifle, CO 81650



Tel: 970.625.1494  
Fax: 970.625.1654  
www.nobleenergyinc.com

July 7, 2010

Chris Canfield  
Environmental Protection Specialist, Northwest Region  
Colorado Oil & Gas Conservation Commission  
707 Wapiti Court, Suite 204  
Rifle, CO 81650

RE: SGV 3B Pad  
Landfarm Closure Sundry  
Sec.3 T8S R96W  
Garfield County, Colorado

Dear Mr. Canfield:

Noble Energy Inc. (NEI) is submitting the attached sundry Form 4 as a notification to the COGCC of the closure of the landfarm on our SGV 3B well pad. The attached sundry provides details about the physical closure of the landfarm as well as confirmation soil sample results.

Also enclosed is a site map showing the location of the closed landfarm, a topographical map of the pad and surrounding area, and laboratory results for both the confirmation sample as well as background levels.

Based on the removal of the landfarm contents, remedial measures taken, and the results of the confirmation soil sampling, NEI would like to request COGCC closure of the facility, requiring no further action.

Please do not hesitate to contact me at (970) 420-5184 if you have any questions or require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Brandon Danforth'.

Brandon Danforth  
Environmental Specialist

Attachments



**SUNDRY NOTICE**

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

DE	ET	OE	ES

1. OGCC Operator Number: <u>100322</u>	4. Contact Name <u>Brandon Danforth</u>	Complete the Attachment Checklist  OP OGCC
2. Name of Operator: <u>Noble Energy Inc.</u>	Phone: <u>970-420-5184</u>	
3. Address: <u>800 Airport Road, Suite 3</u> City: <u>Rifle</u> State: <u>CO</u> Zip: <u>81650</u>	Fax: <u>970-625-1654</u>	
5. API Number <u>05- see attached</u>	OGCC Facility ID Number	Survey Plat
6. Well/Facility Name: <u>SGV 3B Pad</u>	7. Well/Facility Number	Directional Survey
8. Location (Qtr/Qtr, Sec, Twp, Rng, Meridian): <u>NWNE 3 8S 96W 6 PM</u>		Surface Eqpmt Diagram
9. County: <u>Garfield</u>	10. Field Name:	Technical Info Page
11. Federal, Indian or State Lease Number:		Other

**General Notice**

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)			
Change of <b>Surface</b> Footage from Exterior Section Lines:	<input type="checkbox"/>	FNL/FSL <input type="checkbox"/>	FEL/FWL <input type="checkbox"/>
Change of <b>Surface</b> Footage to Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of <b>Bottomhole</b> Footage from Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of <b>Bottomhole</b> Footage to Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> attach directional survey
Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer			
Latitude	Distance to nearest property line	Distance to nearest bldg, public rd, utility or RR	
Longitude	Distance to nearest lease line	Is location in a High Density Area (rule 603b)? Yes/No <input type="checkbox"/>	
Ground Elevation	Distance to nearest well same formation	Surface owner consultation date: _____	
GPS DATA:			
Date of Measurement	PDOP Reading	Instrument Operator's Name	
<input type="checkbox"/> CHANGE SPACING UNIT Formation      Formation Code      Spacing order number      Unit Acreage      Unit configuration			<input type="checkbox"/> Remove from surface bond Signed surface use agreement attached
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling): Effective Date: _____ Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual		<input type="checkbox"/> CHANGE WELL NAME      NUMBER From: _____ To: _____ Effective Date: _____	
<input type="checkbox"/> ABANDONED LOCATION: Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No Date Ready for Inspection: _____		<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS Date well shut in or temporarily abandoned: _____ Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No MIT required if shut in longer than two years. Date of last MIT _____	
<input type="checkbox"/> SPUD DATE: _____		<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)	
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK      *submit cbl and cement job summaries			
Method used	Cementing tool setting/perf depth	Cement volume	Cement top      Cement bottom      Date
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004. Final reclamation will commence on approximately _____ <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.			

**Technical Engineering/Environmental Notice**

<input type="checkbox"/> Notice of Intent Approximate Start Date: _____		<input type="checkbox"/> Report of Work Done Date Work Completed: _____	
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)			
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Disposal	
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste	
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans	
<input type="checkbox"/> Casing/Cementing Program Change	<input checked="" type="checkbox"/> Other: <u>E&amp;P Waste Treatment</u>	for Spills and Releases	

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed:       Date: 7-7-2010      Email: bdanforth@nobleenergyinc.com  
 Print Name: Brandon Danforth      Title: Environmental Specialist

COGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: <u>100322</u> API Number: <u>see below</u>
2. Name of Operator: <u>Noble Energy Inc.</u> OGCC Facility ID # _____
3. Well/Facility Name: <u>SGV 3B Pad</u> Well/Facility Number: _____
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): <u>NWNE 3 8S 96W 6 PM</u>

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

Noble Energy Inc (NEI) constructed a small landfarm (20' W x 30' L x 3' D) on the SGV 3B well pad to treat filtered flowback sand from wells on location. The landfarm was completed in May 2010 (see prior Sundry). The The API numbers for the wells on location that contributed to the landfarm are listed below:

API Number	Well Name
05-045-15480	MANESS 3-31B
05-045-15478	PRATHER LATHAM 3-31A
05-045-15480	MANESS 3-21D
05-045-15479	MANESS 3-31D
05-045-15483	MANESS 3-21C
05-045-15482	PRATHER LATHAM 3-21B
05-045-15485	PRATHER LATHAM 3-21A
05-045-15481	MANESS 3-31C

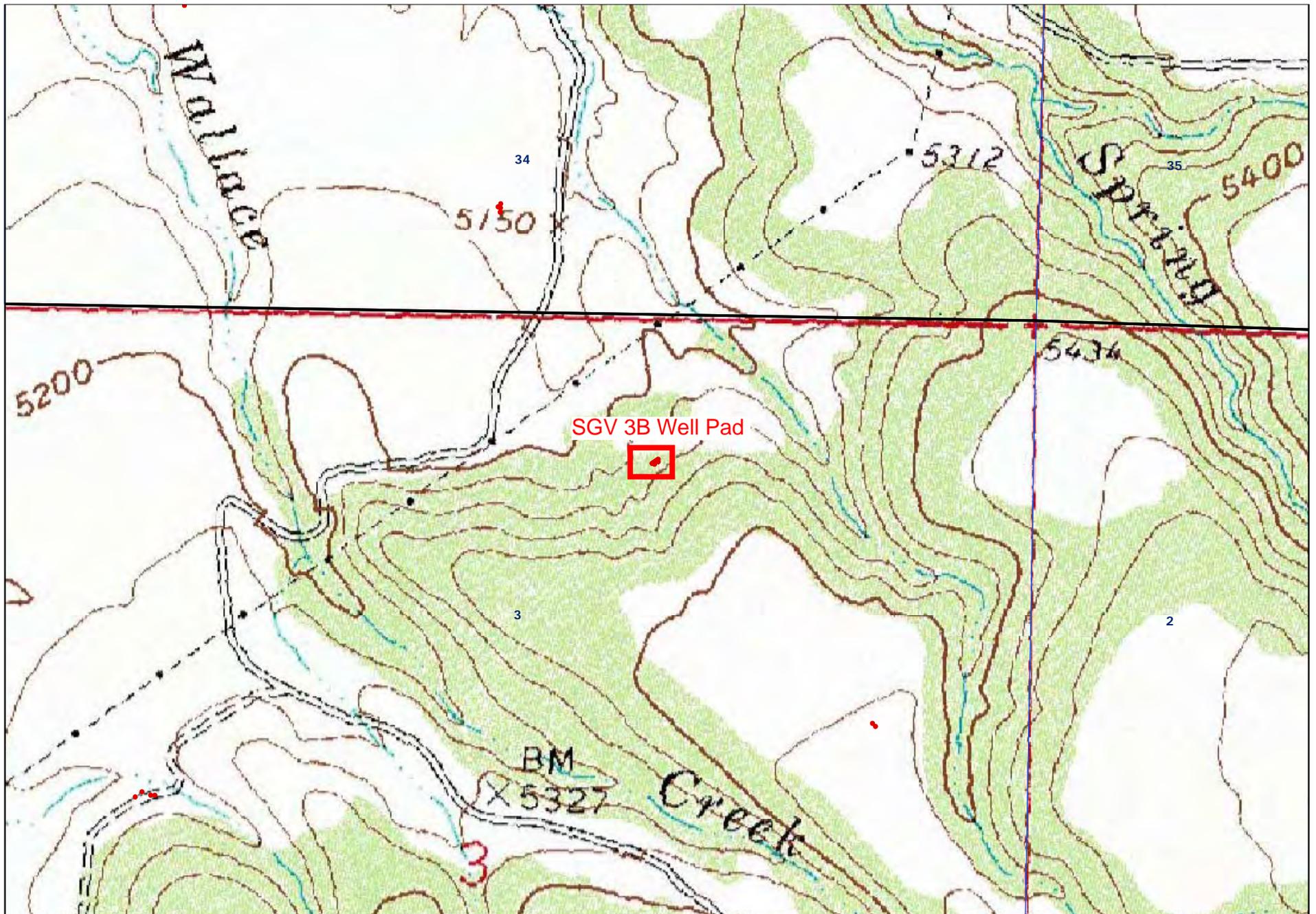
The initial plans were to turn the landfarm until its contents met Table 910-1 standards; however, it was later determined to dispose of the landfarm material at a local landfill (South Canyon Landfill). The contents of the landfarm were removed and brought to the landfill in early June 2010. The containment earthen berms were graded flat.

After the material was removed, confirmation soil samples were collected from the area beneath the landfarm and analyzed for all Table 910-1 soil analytes. Approximately four grab samples were collected at or near the surface, composited and analyzed. All results from the confirmation soil sample met Table 910-1 standards except for Arsenic (2.42 mg/kg), which was below the background level (10.9 mg/kg), and EC (5.36 mmhos/cm). Both the confirmation and background soil sample laboratory reports are attached.

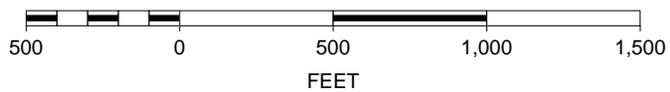
NEI requests the application of T910-1 footnote 1 to this case in consideration of the naturally high background As value at this location. Also, because the tested soils have been reclaimed below 3 feet from the surface when the pad was interim reclaimed, elevated EC concentrations will not impact plant growth. Due to the disposal and remedial measures taken, NEI requests written COGCC closure of this landfarm.

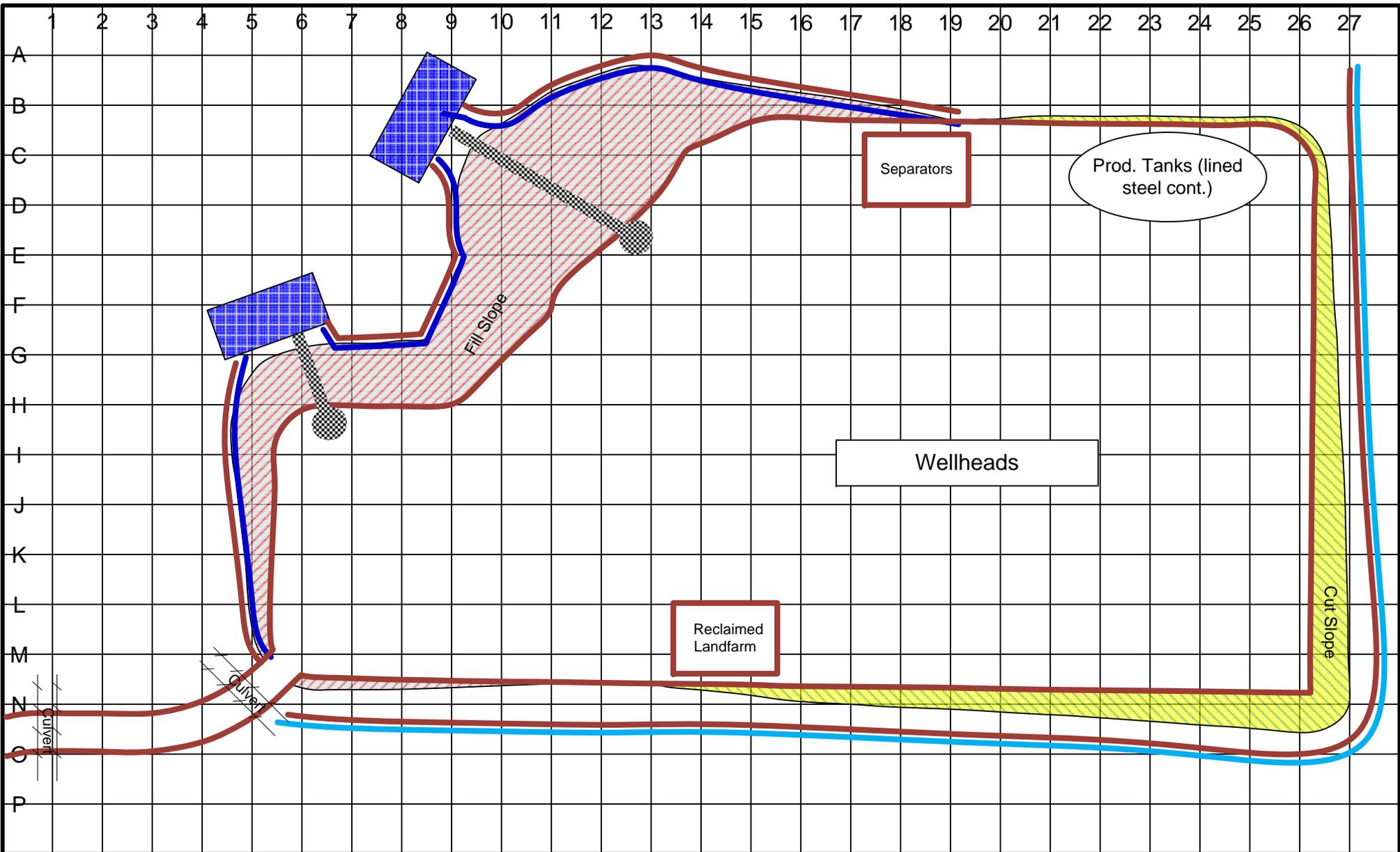
- Attachments:  
Site Map  
Topo Map  
Confirmation Laboratory Report  
Background Laboratory Report

# SGV 3B Pad

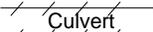


SCALE 1 : 7,474





**LEGEND**

-  Earthen Berm
-  Diversion Ditch
-  Culvert
-  Slope Drain
-  Armored Sediment Trap
-  Collection Ditch with straw wattle checks

**SITE MAP**  
**ND-00054**  
**SGVW 3B Pad**  
**Noble Energy, Inc.**  
**GARFIELD COUNTY, COLORADO**

SITE LEGAL LOCATION:  
 NENW SECTION 3, TOWNSHIP 8S, RANGE 96W



Not to Scale

7/1/2010

Olsson Associates

Tim Dobransky

826 21 1/2 Road

Grand Junction CO 81505

Project Name- 3B Frac Sand Landfarm

Project Number- N/A

Attached are your analytical results for 3B Frac Sand Landfarm received by Origins Laboratory, Inc. June 14, 2010 1:00 pm. This project is associated with Origins project number X006095-01 .

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



Olsson Associates  
826 21 1/2 Road  
Grand Junction CO 81505

Tim Dobransky  
Project Number: N/A  
Project: 3B Frac Sand Landfarm

**CROSS REFERENCE REPORT**

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
3B FSLF Confirm	X006095-01	Soil	6/11/2010 11:45:00AM	06/14/2010 13:00

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager



Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

**3B FSLF Confirm**  
**6/11/2010 11:45:00AM**

Analyte	Result	Minimum Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X006095-01 (Soil)**

**BTEX by EPA 8260B**

Benzene	ND	0.00041	0.00400	mg/kg	1	OF16002	06/16/2010	06/17/2010	
Toluene	ND	0.00043	0.00400	"	"	"	"	"	
Ethylbenzene	ND	0.00033	0.00400	"	"	"	"	"	
Xylenes, total	ND	0.00050	0.00400	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %		77.6-134			"	"	"	
Surrogate: Toluene-d8	101 %		81.4-121			"	"	"	
Surrogate: 4-Bromofluorobenzene	110 %		74.7-123			"	"	"	

**Conductivity by E120.1**

Conductivity	5360	1	2	US/CM	1	811173	06/17/2010	06/17/2010	
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**Metals by SW6010B**

Cadmium	0.162	0.15	0.5	mg/kg	1	811241	06/17/2010	06/18/2010	1
Sodium	953	8.8	25	"	"	"	"	"	
Silver	ND	0.15	2	"	"	"	"	"	
Selenium	ND	0.58	2	"	"	"	"	"	
Nickel	4.36	0.31	1	"	"	"	"	"	
Magnesium	5060	2.6	20	"	"	"	"	"	
Lead	2.57	0.79	1	"	"	"	"	"	

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

**3B FSLF Confirm**  
**6/11/2010 11:45:00AM**

Analyte	Result	Minimum Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**XENCO**  
**X006095-01 (Soil)**

**Metals by SW6010B**

Copper	4.8	0.28	3	mg/kg	1	811241	06/17/2010	06/18/2010	
Calcium	23100	8.5	20	"	"	"	"	"	
Zinc	18.6	1.8	5	"	"	"	"	"	
Barium	257	0.29	3	"	"	"	"	"	
Chromium	6.13	0.31	0.5	"	"	"	"	"	

**Metals by SW6020**

Arsenic	2.42	0.092	0.511	mg/kg	1	811301	"	06/18/2010	
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**Metals by SW7196**

Chromium, Hexavalent	ND	0.005	0.4	mg/kg	1	810962	06/16/2010	06/16/2010	
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**Metals by SW7471A**

Mercury	0.0073	0.0038	0.0087	mg/kg	1	811234	06/17/2010	06/18/2010	1
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**Percent Moisture by AD2216A**

Percent Moisture	2.12			%	1	811105	06/17/2010	06/17/2010	
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**pH by SW9045C**

pH	7.75	0.001		SU	1	810967	06/16/2010	06/16/2010	
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Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

**3B FSLF Confirm**  
**6/11/2010 11:45:00AM**

Analyte	Result	Minimum Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**XENCO**  
**X006095-01 (Soil)**

**Polyaromatic Hydrocarbons (PaHs) by SW8270C**

Benzo(k)fluoranthene	ND	0.034	0.102	mg/kg	1	811202	06/17/2010	06/17/2010	
Pyrene	ND	0.034	0.102	"	"	"	"	"	
Phenanthrene	ND	0.033	0.102	"	"	"	"	"	
Naphthalene	ND	0.022	0.102	"	"	"	"	"	
Indeno(1,2,3-c,d)Pyrene	ND	0.035	0.102	"	"	"	"	"	
Fluorene	ND	0.024	0.102	"	"	"	"	"	
Fluoranthene	ND	0.039	0.102	"	"	"	"	"	
Chrysene	ND	0.024	0.102	"	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.028	0.102	"	"	"	"	"	
Benzo(b)fluoranthene	ND	0.02	0.102	"	"	"	"	"	
Benzo(a)pyrene	ND	0.026	0.067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.029	0.102	"	"	"	"	"	
1-Methylnaphthalene	ND	0.028	0.102	"	"	"	"	"	
2-Methylnaphthalene	0.064	0.029	0.204	"	"	"	"	"	I
Dibenz(a,h)Anthracene	ND	0.028	0.067	"	"	"	"	"	
Anthracene	ND	0.036	0.102	"	"	"	"	"	
Acenaphthylene	ND	0.031	0.102	"	"	"	"	"	
Acenaphthene	0.049	0.023	0.102	"	"	"	"	"	I

Surrogate: Terphenyl-D14	89 %	43-124	"	"	"
Surrogate: Nitrobenzene-d5	96 %	46-137	"	"	"

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

**3B FSLF Confirm**  
**6/11/2010 11:45:00AM**

Analyte	Result	Minimum Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**XENCO**  
**X006095-01 (Soil)**

**Polyaromatic Hydrocarbons (PaHs) by SW8270C**

<i>Surrogate: 2-Fluorobiphenyl</i>	97 %		59-123			811202	06/17/2010	06/17/2010	
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**Sodium Absorption Ratio (SAR) by S29B08**

Sodium absorption ratio	1.48	0.001			1	811252	06/18/2010	06/18/2010	
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**TPH-Carbon Chain by EPA Method 8015M**

Gasoline (C6-C10)	ND	25.0	50.0	mg/kg	1	OF15001	06/15/2010	06/16/2010	
Diesel (C10-C28)	144	25.0	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	100	200	"	"	"	"	"	
TPH - Carbon Chain Total	144	25.0	50.0	"	"	"	"	"	

<i>Surrogate: o-Terphenyl</i>	97.3 %		65-140			"	"	"	
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Noelle E Doyle, Laboratory Manager

Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

**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 OF15001 - Default Prep GC-Semi</b>										
<b>Blank (OF15001-BLK1)</b>				Prepared: 06/15/2010 Analyzed: 06/15/2010						
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Residual Range Organics (C28-C36)	ND	200	"							
TPH - Carbon Chain Total	ND	50.0	"							
<i>Surrogate: o-Terphenyl</i>	44.7		g	50.0		89.3	65-140			
<b>Blank (OF15001-BLK2)</b>				Prepared: 06/15/2010 Analyzed: 06/15/2010						
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Residual Range Organics (C28-C36)	ND	200	"							
TPH - Carbon Chain Total	ND	50.0	"							
<i>Surrogate: o-Terphenyl</i>	44.4		g	50.0		88.8	65-140			
<b>LCS (OF15001-BS1)</b>				Prepared: 06/15/2010 Analyzed: 06/15/2010						
Gasoline (C6-C10)	134	50.0	mg/kg				65-140			
Diesel (C10-C28)	498	50.0	"	500		99.6	60-140			
<i>Surrogate: o-Terphenyl</i>	47.8		g	50.0		95.6	65-140			
<b>LCS (OF15001-BS2)</b>				Prepared: 06/15/2010 Analyzed: 06/15/2010						
Gasoline (C6-C10)	128	50.0	mg/kg				65-140			
Diesel (C10-C28)	485	50.0	"	500		97.0	60-140			
<i>Surrogate: o-Terphenyl</i>	49.2		g	50.0		98.5	65-140			
<b>Matrix Spike (OF15001-MS1)</b>				Source: X006074-02		Prepared: 06/15/2010 Analyzed: 06/16/2010				
Gasoline (C6-C10)	270	50.0	mg/kg		209		65-130			
Diesel (C10-C28)	505	50.0	"	500	77.2	85.6	60-140			
<i>Surrogate: o-Terphenyl</i>	47.8		g	50.0		95.6	65-140			

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 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## 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 OF15001 - Default Prep GC-Semi

<b>Matrix Spike (OF15001-MS2)</b>		Source: X006076-01			Prepared: 06/15/2010 Analyzed: 06/16/2010					
Gasoline (C6-C10)	134	50.0	mg/kg		ND		65-130			
Diesel (C10-C28)	504	50.0	"	500	40.2	92.8	60-140			
<i>Surrogate: o-Terphenyl</i>	<i>49.1</i>		<i>g</i>	<i>50.0</i>		<i>98.2</i>	<i>65-140</i>			
<b>Matrix Spike Dup (OF15001-MSD1)</b>		Source: X006074-02			Prepared: 06/15/2010 Analyzed: 06/16/2010					
Gasoline (C6-C10)	284	50.0	mg/kg		209		65-130	5.21	20	
Diesel (C10-C28)	516	50.0	"	500	77.2	87.8	60-140	2.12	25	
<i>Surrogate: o-Terphenyl</i>	<i>48.9</i>		<i>g</i>	<i>50.0</i>		<i>97.9</i>	<i>65-140</i>			
<b>Matrix Spike Dup (OF15001-MSD2)</b>		Source: X006076-01			Prepared: 06/15/2010 Analyzed: 06/16/2010					
Gasoline (C6-C10)	136	50.0	mg/kg		ND		65-130	1.72	20	
Diesel (C10-C28)	509	50.0	"	500	40.2	93.7	60-140	0.912	25	
<i>Surrogate: o-Terphenyl</i>	<i>48.7</i>		<i>g</i>	<i>50.0</i>		<i>97.3</i>	<i>65-140</i>			

Origins Laboratory, Inc.



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Noelle E Doyle, Laboratory Manager

Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

**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 OF16002 - EPA 5030B**

**Blank (OF16002-BLK1)**

Prepared: 06/16/2010 Analyzed: 06/16/2010

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

Surrogate: 1,2-Dichloroethane-d4	63.3		ug/L	62.5		101	77.6-134			
Surrogate: Toluene-d8	64.1		"	62.5		103	81.4-121			
Surrogate: 4-Bromofluorobenzene	68.5		"	62.5		110	74.7-123			

**LCS (OF16002-BS1)**

Prepared: 06/16/2010 Analyzed: 06/16/2010

Benzene	0.21	0.004	mg/kg	0.200		104	75.2-128			
Toluene	0.20	0.004	"	0.200		101	76.3-130			
Surrogate: 1,2-Dichloroethane-d4	64.1		ug/L	62.5		103	77.6-134			
Surrogate: Toluene-d8	64.3		"	62.5		103	81.4-121			
Surrogate: 4-Bromofluorobenzene	69.5		"	62.5		111	74.7-123			

**Matrix Spike (OF16002-MS1)**

Source: X006089-02

Prepared: 06/16/2010 Analyzed: 06/16/2010

Benzene	0.19	0.004	mg/kg	0.200	ND	95.7	77.6-132			
Toluene	0.18	0.004	"	0.200	0.002	91.0	74-136			
Surrogate: 1,2-Dichloroethane-d4	65.7		ug/L	62.5		105	77.6-134			
Surrogate: Toluene-d8	62.8		"	62.5		101	81.4-121			
Surrogate: 4-Bromofluorobenzene	68.9		"	62.5		110	74.7-123			

**Matrix Spike Dup (OF16002-MSD1)**

Source: X006089-02

Prepared: 06/16/2010 Analyzed: 06/16/2010

Benzene	0.20	0.004	mg/kg	0.200	ND	99.8	77.6-132	4.26	13.1	
Toluene	0.19	0.004	"	0.200	0.002	93.5	74-136	2.73	20.9	
Surrogate: 1,2-Dichloroethane-d4	64.2		ug/L	62.5		103	77.6-134			
Surrogate: Toluene-d8	64.8		"	62.5		104	81.4-121			
Surrogate: 4-Bromofluorobenzene	69.6		"	62.5		111	74.7-123			

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Noelle E Doyle, Laboratory Manager

Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## Conductivity by E120.1 - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 811173 - NONE</b>										
<b>LCS (811173-1-BKS)</b>		Source: 811173-1-BKS			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Conductivity	1410	2	US/CM	1410	±1.00	100	80-120	0	20	
<b>BLANK (811173-1-BLK)</b>		Source: 811173-1-BLK			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Conductivity	ND	2	US/CM	0.00			-	0	20	

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Olsson Associates  
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Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## Metals by SW6010B - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 811241 - SW3050B

MS (376566-005 S)		Source: 376566-005 S			Prepared: 06/17/2010 Analyzed: 06/18/2010					
Copper	543	17.3	mg/kg	405	195	86	75-125	0	20	
Chromium	381	2.89	"	405	15.6	90	75-125	0	20	
Silver	201	11.6	"	202	6.12	96	75-125	0	20	
Selenium	380	11.6	"	405	11.6	94	75-125	0	20	
Nickel	376	5.78	"	405	9.71	90	75-125	0	20	
Lead	395	5.78	"	405	22.8	92	75-125	0	20	
Barium	520	17.3	"	405	167	87	75-125	0	20	
Zinc	986	28.9	"	405	716	67	75-125	0	20	
Cadmium	369	2.89	"	405	0.965	91	75-125	0	20	

MSD (376566-005 SD)		Source: 376566-005 SD			Prepared: 06/17/2010 Analyzed: 06/18/2010					
Chromium	428	2.89	mg/kg	405	15.6	102	75-125	12	20	
Barium	595	17.3	"	405	167	106	75-125	13	20	
Cadmium	412	2.89	"	405	0.965	101	75-125	11	20	
Nickel	420	5.78	"	405	9.71	101	75-125	11	20	
Selenium	428	11.6	"	405	11.6	106	75-125	12	20	
Zinc	1130	28.9	"	405	716	102	75-125	14	20	
Lead	444	5.78	"	405	22.8	104	75-125	12	20	
Copper	610	17.3	"	405	195	102	75-125	12	20	
Silver	225	11.6	"	202	6.12	108	75-125	11	20	

LCS (565902-1-BKS)		Source: 565902-1-BKS			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Barium	91.5	3	mg/kg	100	0.290	92	75-125	0	20	
Cadmium	90.9	0.5	"	100	0.150	91	75-125	0	20	
Chromium	100	0.5	"	100	0.310	100	75-125	0	20	
Lead	91.3	1	"	100	0.790	91	75-125	0	20	

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Noelle E Doyle, Laboratory Manager

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 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## Metals by SW6010B - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 811241 - SW3050B

LCS (565902-1-BKS)		Source: 565902-1-BKS			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Nickel	93.3	1	mg/kg	100	↕0.310	93	75-125	0	20	
Selenium	94.2	2	"	100	↕0.580	94	75-125	0	20	
Silver	45.7	2	"	50.0	↕0.150	91	75-125	0	20	
Zinc	93.2	5	"	100	↕1.80	93	75-125	0	20	
Copper	92.1	3	"	100	↕0.280	92	75-125	0	20	

BLANK (565902-1-BLK)		Source: 565902-1-BLK			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Nickel	ND	1	mg/kg	100			-	0	20	
Lead	ND	1	"	100			-	0	20	
Selenium	ND	2	"	100			-	0	20	
Zinc	ND	5	"	100			-	0	20	
Barium	ND	3	"	100			-	0	20	
Cadmium	ND	0.5	"	100			-	0	20	
Chromium	ND	0.5	"	100			-	0	20	
Copper	ND	3	"	100			-	0	20	
Silver	ND	2	"	50.0			-	0	20	

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Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## Metals by SW6020 - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 811301 - SW3050B</b>										
<b>MS (377029-001 S)</b>										
				Source: 377029-001 S		Prepared: 06/17/2010 Analyzed: 06/18/2010				
Arsenic	48	1.69	mg/kg	67.8	4.2	65	75-125	0	30	J7
<b>MSD (377029-001 SD)</b>										
				Source: 377029-001 SD		Prepared: 06/17/2010 Analyzed: 06/18/2010				
Arsenic	57.9	1.69	mg/kg	67.8	4.2	79	75-125	19	30	
<b>LCS (565903-1-BKS)</b>										
				Source: 565903-1-BKS		Prepared: 06/17/2010 Analyzed: 06/18/2010				
Arsenic	16.9	0.5	mg/kg	20.0	←0.090	85	75-125	0	30	
<b>BLANK (565903-1-BLK)</b>										
				Source: 565903-1-BLK		Prepared: 06/17/2010 Analyzed: 06/18/2010				
Arsenic	ND	0.5	mg/kg	20.0			-	0	30	

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Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## Metals by SW7196 - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 810962 - SW3060A</b>										
<b>MS (377345-001 S)</b>										
		Source: 377345-001 S			Prepared: 06/16/2010 Analyzed: 06/16/2010					
Chromium, Hexavalent	0.262	0.42	mg/kg	0.263	←0.400	100	80-120	0	20	I
<b>MSD (377345-001 SD)</b>										
		Source: 377345-001 SD			Prepared: 06/16/2010 Analyzed: 06/16/2010					
Chromium, Hexavalent	0.254	0.42	mg/kg	0.263	←0.400	97	80-120	3	20	I
<b>LCS (810962-1-BKS)</b>										
		Source: 810962-1-BKS			Prepared: 06/16/2010 Analyzed: 06/16/2010					
Chromium, Hexavalent	0.244	0.4	mg/kg	0.250	←0.005	98	80-120	0	20	I
<b>BLANK (810962-1-BLK)</b>										
		Source: 810962-1-BLK			Prepared: 06/16/2010 Analyzed: 06/16/2010					
Chromium, Hexavalent	ND	0.4	mg/kg	0.400			-	0	20	

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 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## Metals by SW7471A - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 811234 - SW7471P</b>										
<b>MS (377621-001 S)</b>										
		Source: 377621-001 S		Prepared: 06/17/2010 Analyzed: 06/18/2010						
Mercury	0.1353	0.0087	mg/kg	0.133	0.0085	95	75-125	0	20	
<b>MSD (377621-001 SD)</b>										
		Source: 377621-001 SD		Prepared: 06/17/2010 Analyzed: 06/18/2010						
Mercury	0.138	0.0087	mg/kg	0.133	0.0085	97	75-125	2	20	
<b>LCS (566020-1-BKS)</b>										
		Source: 566020-1-BKS		Prepared: 06/17/2010 Analyzed: 06/18/2010						
Mercury	0.1413	0.0087	mg/kg	0.133	0.0038	106	75-125	0	20	
<b>BLANK (566020-1-BLK)</b>										
		Source: 566020-1-BLK		Prepared: 06/17/2010 Analyzed: 06/18/2010						
Mercury	ND	0.0087	mg/kg	0.133			-	0	20	

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Grand Junction CO 81505

Tim Dobransky  
Project Number: N/A  
Project: 3B Frac Sand Landfarm

**Percent Moisture by AD2216A - Quality Control  
XENCO**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 811105 - NONE

BLANK (811105-1-BLK)

Source: 811105-1-BLK

Prepared: 06/17/2010 Analyzed: 06/17/2010

Percent Moisture	ND	1	%	0.00			-	0	20	
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Noelle E Doyle, Laboratory Manager

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Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

**Polyaromatic Hydrocarbons (PAHs) by SW8270C - Quality Control  
 XENCO**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 811202 - SW3550**

<b>MS (377345-001 S)</b>		Source: 377345-001 S			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Indeno(1,2,3-c,d)Pyrene	1.53	0.1	mg/kg	1.67	✦0.100	92	70-130	0	30	
Naphthalene	1.27	0.1	"	1.67	✦0.100	76	50-105	0	20	
Fluoranthene	1.29	0.1	"	1.67	✦0.100	77	59-106	0	20	
Fluorene	1.26	0.1	"	1.67	✦0.100	75	54-115	0	20	
Dibenz(a,h)Anthracene	1.61	0.066	"	1.67	✦0.066	96	47-120	0	20	
Anthracene	1.34	0.1	"	1.67	✦0.100	80	59-104	0	20	
Pyrene	1.32	0.1	"	1.67	✦0.100	79	49-125	0	20	
Acenaphthene	1.27	0.1	"	1.67	0.031	74	48-119	0	20	
Chrysene	1.35	0.1	"	1.67	0.024	79	61-106	0	20	
Benzo(a)anthracene	1.28	0.1	"	1.67	✦0.100	77	51-119	0	20	
Benzo(a)pyrene	1.4	0.066	"	1.67	✦0.066	84	62-104	0	20	
Benzo(b)fluoranthene	1.51	0.1	"	1.67	✦0.100	90	61-108	0	20	
Benzo(k)fluoranthene	1.36	0.1	"	1.67	✦0.100	81	60-112	0	20	
Surrogate: 2-Fluorobiphenyl	1.54		PERCENT	1.67		92	59-123			
Surrogate: Terphenyl-D14	1.43		"	1.67		86	43-124			
Surrogate: Nitrobenzene-d5	1.48		"	1.67		89	46-137			

<b>MSD (377345-001 SD)</b>		Source: 377345-001 SD			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Fluoranthene	1.36	0.1	mg/kg	1.66	✦0.100	82	59-106	5	20	
Benzo(a)pyrene	1.39	0.066	"	1.66	✦0.066	84	62-104	1	20	
Pyrene	1.47	0.1	"	1.66	✦0.100	89	49-125	11	20	
Naphthalene	1.37	0.1	"	1.66	✦0.100	83	50-105	8	20	
Indeno(1,2,3-c,d)Pyrene	1.59	0.1	"	1.66	✦0.100	96	70-130	4	30	
Fluorene	1.42	0.1	"	1.66	✦0.100	86	54-115	12	20	
Acenaphthene	1.39	0.1	"	1.66	0.031	82	48-119	9	20	
Benzo(k)fluoranthene	1.27	0.1	"	1.66	✦0.100	77	60-112	7	20	
Dibenz(a,h)Anthracene	1.66	0.066	"	1.66	✦0.066	100	47-120	3	20	

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Noelle E Doyle, Laboratory Manager

Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## Polyaromatic Hydrocarbons (PAHs) by SW8270C - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 811202 - SW3550

MSD (377345-001 SD)		Source: 377345-001 SD			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Anthracene	1.33	0.1	mg/kg	1.66	0.100	80	59-104	1	20	
Benzo(a)anthracene	1.42	0.1	"	1.66	0.100	86	51-119	10	20	
Benzo(b)fluoranthene	1.65	0.1	"	1.66	0.100	99	61-108	9	20	
Chrysene	1.45	0.1	"	1.66	0.024	86	61-106	7	20	
Surrogate: Nitrobenzene-d5	1.59		PERCENT	1.66		96	46-137			
Surrogate: Terphenyl-D14	1.55		"	1.66		93	43-124			
Surrogate: 2-Fluorobiphenyl	1.72		"	1.66		104	59-123			

LCS (565898-1-BKS)		Source: 565898-1-BKS			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Fluoranthene	1.31	0.1	mg/kg	1.67	0.038	78	59-106	0	20	
Pyrene	1.4	0.1	"	1.67	0.033	84	49-125	0	20	
Naphthalene	1.35	0.1	"	1.67	0.021	81	50-105	0	20	
Indeno(1,2,3-c,d)Pyrene	1.58	0.1	"	1.67	0.034	95	70-130	0	30	
Fluorene	1.39	0.1	"	1.67	0.023	83	54-115	0	20	
Chrysene	1.32	0.1	"	1.67	0.023	79	61-106	0	20	
Benzo(k)fluoranthene	1.65	0.1	"	1.67	0.033	99	60-112	0	20	
Benzo(b)fluoranthene	1.39	0.1	"	1.67	0.020	83	61-108	0	20	
Benzo(a)pyrene	1.45	0.066	"	1.67	0.025	87	62-104	0	20	
Benzo(a)anthracene	1.46	0.1	"	1.67	0.028	87	51-119	0	20	
Acenaphthene	1.31	0.1	"	1.67	0.022	78	48-119	0	20	
Anthracene	1.27	0.1	"	1.67	0.035	76	59-104	0	20	
Dibenz(a,h)Anthracene	1.6	0.066	"	1.67	0.027	96	47-120	0	20	
Surrogate: 2-Fluorobiphenyl	1.56		PERCENT	1.67		93	59-123			
Surrogate: Nitrobenzene-d5	1.59		"	1.67		95	46-137			
Surrogate: Terphenyl-D14	1.59		"	1.67		95	43-124			

BLANK (565898-1-BLK)		Source: 565898-1-BLK			Prepared: 06/17/2010 Analyzed: 06/17/2010					
Fluorene	ND	0.1	mg/kg	1.67				0	20	

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Noelle E Doyle, Laboratory Manager

Olsson Associates  
 826 21 1/2 Road  
 Grand Junction CO 81505

Tim Dobransky  
 Project Number: N/A  
 Project: 3B Frac Sand Landfarm

## Polyaromatic Hydrocarbons (PAHs) by SW8270C - Quality Control XENCO

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 811202 - SW3550**

<b>BLANK (565898-1-BLK)</b>		<b>Source: 565898-1-BLK</b>			<b>Prepared: 06/17/2010 Analyzed: 06/17/2010</b>					
Indeno(1,2,3-c,d)Pyrene	ND	0.1	mg/kg	1.67	-	0	30			
Naphthalene	ND	0.1	"	1.67	-	0	20			
Fluoranthene	ND	0.1	"	1.67	-	0	20			
Pyrene	ND	0.1	"	1.67	-	0	20			
Benzo(a)pyrene	ND	0.066	"	1.67	-	0	20			
Dibenz(a,h)Anthracene	ND	0.066	"	1.67	-	0	20			
Chrysene	ND	0.1	"	1.67	-	0	20			
Benzo(b)fluoranthene	ND	0.1	"	1.67	-	0	20			
Benzo(a)anthracene	ND	0.1	"	1.67	-	0	20			
Anthracene	ND	0.1	"	1.67	-	0	20			
Acenaphthene	ND	0.1	"	1.67	-	0	20			
Benzo(k)fluoranthene	ND	0.1	"	1.67	-	0	20			
<i>Surrogate: Terphenyl-D14</i>	<i>1.57</i>		<i>PERCENT</i>	<i>1.67</i>	<i>94</i>	<i>43-124</i>				
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.75</i>		<i>"</i>	<i>1.67</i>	<i>105</i>	<i>46-137</i>				
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.55</i>		<i>"</i>	<i>1.67</i>	<i>93</i>	<i>59-123</i>				

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Noelle E Doyle, Laboratory Manager

Olsson Associates  
826 21 1/2 Road  
Grand Junction CO 81505

Tim Dobransky  
Project Number: N/A  
Project: 3B Frac Sand Landfarm

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**Notes and Definitions**

J7 [Undefined]

I Sample result was found between MDL and RL

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

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Noelle E Doyle, Laboratory Manager



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February 16, 2010

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Noble Energy Inc.  
804 Grand Avenue  
Platteville CO 80651

Brandon Danforth  
Project Number: N/A  
Project: 3B Preclosure

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Attached are the analytical results for 3B Preclosure received by Origins Laboratory, Inc. 12/15/2009 11:00:00AM. Please let us know if you have any questions, or if we can help with anything at all.

A handwritten signature in black ink, appearing to read "Noelle E Doyle".

Laboratory Manager  
Noelle E Doyle

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. This laboratory report is intended solely for the above addressee and it is only to be used and or reproduced in its entirety.

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Noble Energy Inc.  
804 Grand Avenue  
Platteville CO 80651

Brandon Danforth  
Project Number: N/A  
Project: 3B Preclosure

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
3B-1	X912052-01	Soil	12/14/2009 1:30:00PM	12/15/2009 11:00
3B-BG	X912052-02	Soil	12/14/2009 1:50:00PM	12/15/2009 11:00

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.*

Noelle E Doyle, Laboratory Manager





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 804 Grand Avenue  
 Platteville CO 80651

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**3B-BG**  
**X912052-02 (Soil)**

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
			Limit							

**GENAPURE**

**Conductivity by E120.1**

Conductivity	<b>1540</b>	1	2	US/CM	1	786469	12/17/2009	12/29/2009
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**Metals by SW6010B**

Barium	<b>346</b>	0.351	3.63	mg/kg	1	787178	"	12/29/2009
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**Metals by SW6020**

Arsenic	<b>10.9</b>	0.109	0.605	mg/kg	1	787314	"	12/29/2009
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**Percent Moisture by D2216**

Percent Moisture	<b>17.3</b>	1	1	mg/kg	1	786055	"	12/29/2009
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**pH by SW9045C**

pH	<b>8.32</b>	0.001		SU	1	786049	"	12/29/2009
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**Sodium Absorption Ration by S29B08**

Sodium absorption ratio	<b>1.08</b>	0.001			1	787707	"	12/29/2009
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### 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.
- I Sample result was found between MDL and RL
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager