



GROUNDWATER MONITORING REPORT

MAY 2009

STRONG 21-15JI

On May 13, 2009, LT Environmental, Inc. (LTE) conducted groundwater sampling on behalf of Noble Energy, Inc. (Noble) at the Strong 21-15JI Tank Battery (Site). This sampling event constitutes the second post remediation monitoring event at the Site. Site history, remediation activities, and groundwater monitoring results have been described in preceding reports.

Groundwater level measurements were collected from the monitoring wells and are summarized in Table 1. Monitoring wells (MW01, MW02, and MW03) were installed on January 30, 2009. A Site Map is presented on Figure 1.

Depth to groundwater, which ranged from 9.91 feet below top of casing (btoc) in MW03 to 10.33 feet btoc in MW01, was used to calculate well-specific purge volumes. Following purging, groundwater samples were collected and preserved on ice. Samples were then submitted under strict chain of custody protocol to Origins Laboratory, Inc. of Denver, Colorado for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency Method 8260B.

Groundwater analytical results indicate BTEX concentrations at monitoring wells MW01, MW02, and MW03 were below laboratory detection limits and in compliance with the Colorado Department of Public Health and Environment Water Quality Control Commission Regulation 41 (WQCC Reg 41). Analytical results are summarized in Table 1. The laboratory analytical report is attached as an Appendix.

LTE will continue to conduct quarterly groundwater monitoring events with the goal of observing four consecutive quarters of analytical results in compliance with WQCC Reg 41. The next quarterly groundwater sampling event is scheduled for August 2009.



TABLE

TABLE 1

**GROUNDWATER ANALYTICAL DATA
STRONG 21-15JI TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

MONITORING		DEPTH TO				
WELL	DATE	WATER (feet btoc)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	XYLENES (ug/L)
MW01	2/6/2009	9.84	<1.0	<1.0	<1.0	<3.0
	5/13/2009	10.33	<1.0	<1.0	<1.0	<3.0
MW02	2/6/2009	9.40	<1.0	<1.0	<1.0	<3.0
	5/13/2009	9.92	<1.0	<1.0	<1.0	<3.0
MW03	2/6/2009	9.39	<1.0	<1.0	<1.0	<3.0
	5/13/2009	9.91	<1.0	<1.0	<1.0	<3.0
CDPHE WQCC Reg 41			5.0	560	700	1,400

NOTES:

btoc - below top of casing

ug/L - micrograms per liter

< indicates result is less than the stated laboratory method detection limit

CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environment - Water Quality Control

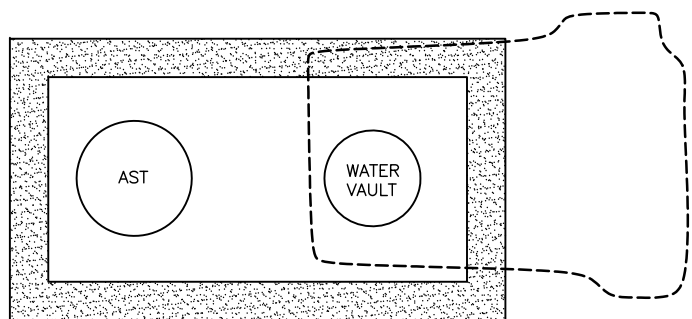
Commission Regulation 41 covering Basic Standards for Groundwater

Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8260B

FIGURE



MW01



MW03

SEPARATOR

MW02



FLARE

LEGEND

MW01



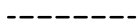
MONITORING WELL LOCATION



METER HOUSE



BERM



EXTENT OF EXCAVATION



ESTIMATED GROUNDWATER FLOW DIRECTION

AST

ABOVEGROUND STORAGE TANK

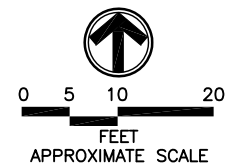


FIGURE 1
SITE MAP
STRONG 21-15 JI
WELD COUNTY, CO
NOBLE ENERGY, INC.



NEP083302

APPENDIX
ANALYTICAL REPORT



4640 Pecos Street | Unit C | Denver, Colorado 80211
303.433.1322 Phone 303.265.9645 Fax

May 19, 2009

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Brian Dodek
Project Number: NEP0833.01
Project: Noble – Strong P-21-15Jl, 23

Attached are the analytical results for Noble – Strong P-21-15Jl, 23 received by Origins Laboratory, Inc. 5/13/2009 1:34:00PM. Please let us know if you have any questions, or if we can help with anything at all.

Noelle E Doyle
Laboratory Manager

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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Project Number: NEP0833.01
Project: Noble – Strong P-21-15JI,
23

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
MW01	X905049-01	Water	5/13/2009 11:10:00AM	05/13/2009 13:34
MW02	X905049-02	Water	5/13/2009 11:15:00AM	05/13/2009 13:34
MW03	X905049-03	Water	5/13/2009 11:20:00AM	05/13/2009 13:34

Origins Laboratory, Inc.

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105049
page 1 of 1



originslaboratory.com

Client: LTE
Address: _____
Telephone Number: _____
E-Mail Address: _____
Project Manager: BDD
Project Name: Strong 21-15JF
Project Number: NEP0833
Samples Collected by: TEG

Sample ID - Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analysis	Sample Instructions												
				Unpreserved	HCl	HNO ₃	Other -	Groundwater	Soil	Air - Summa Canister #														
MW01	5/13/09	1110	3																					
MW02	5/13/09	1115	1																					
MW03	5/13/09	1120	1																					
Relinquished by: <u>SED</u>	Date: <u>5/13/09</u>	Time: <u>1334</u>	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____	Temperature Upon Receipt: _____																
Relinquished by: _____	Date: _____	Time: _____	Date: <u>5/13/09</u>	Time: <u>1334</u>	Received by: <u>[Signature]</u>	Date: <u>5/13/09</u>	Time: <u>1334</u>	Turn Around Time: <u>24-hr</u>																

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MW01

X905049-01 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	0.00100	mg/L	1	9E15003	05/15/2009	05/18/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	ND	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	103 %	70.3-128	"	"	"
Surrogate: Toluene-d8	104 %	78.8-125	"	"	"
Surrogate: 4-Bromofluorobenzene	93.9 %	75.5-131	"	"	"

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MW02

X905049-02 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	0.00100	mg/L	1	9E15003	05/15/2009	05/18/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	ND	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	70.3-128	"	"	"
Surrogate: Toluene-d8	103 %	78.8-125	"	"	"
Surrogate: 4-Bromofluorobenzene	99.8 %	75.5-131	"	"	"

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MW03

X905049-03 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

Origins Laboratory, Inc.

BTEX by EPA 8260B

Benzene	ND	0.00100	mg/L	1	9E15003	05/15/2009	05/19/2009
Toluene	ND	0.00100	"	"	"	"	"
Ethylbenzene	ND	0.00100	"	"	"	"	"
o-Xylene	ND	0.00100	"	"	"	"	"
m,p-Xylene	ND	0.00200	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	70.3-128	"	"	"
Surrogate: Toluene-d8	103 %	78.8-125	"	"	"
Surrogate: 4-Bromofluorobenzene	97.2 %	75.5-131	"	"	"

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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 9E15003 – EPA 5030B

Blank (9E15003-BLK1)

Prepared: 05/15/2009 Analyzed: 05/18/2009

Benzene	ND	0.001	mg/L
Toluene	ND	0.001	"
Ethylbenzene	ND	0.001	"
o-Xylene	ND	0.001	"
m,p-Xylene	ND	0.002	"

Surrogate: 1,2-Dichloroethane-d4	63.8	ug/L	62.5	102	70.3-128
Surrogate: Toluene-d8	62.4	"	62.5	99.8	78.8-125
Surrogate: 4-Bromofluorobenzene	65.0	"	62.5	104	75.5-131

LCS (9E15003-BS1)

Prepared: 05/15/2009 Analyzed: 05/18/2009

Benzene	0.06	0.001	mg/L	0.0500	110	64.2-124
Toluene	0.05	0.001	"	0.0500	108	63.9-119
Surrogate: 1,2-Dichloroethane-d4	64.6		ug/L	62.5	103	70.3-128
Surrogate: Toluene-d8	64.2		"	62.5	103	78.8-125
Surrogate: 4-Bromofluorobenzene	60.4		"	62.5	96.7	75.5-131

Matrix Spike (9E15003-MS1)

Source: X905049-02

Prepared: 05/15/2009 Analyzed: 05/18/2009

Benzene	0.06	0.001	mg/L	0.0500	ND	112	64.2–124
Toluene	0.05	0.001	"	0.0500	ND	110	63.9–119
Surrogate: 1,2-Dichloroethane-d4	64.2		ug/L	62.5		103	70.3–128
Surrogate: Toluene-d8	64.1		"	62.5		103	78.8–125
Surrogate: 4-Bromofluorobenzene	61.4		"	62.5		98.3	75.5–131

Matrix Spike Dup (9E15003-MSD1)

Source: X905049-02

Prepared: 05/15/2009 Analyzed: 05/18/2009

Benzene	0.05	0.001	mg/L	0.0500	ND	106	64.2-124	5.47	25
Toluene	0.05	0.001	"	0.0500	ND	98.8	63.9-119	10.6	25
Surrogate: 1,2-Dichloroethane-d4	60.1		ug/L	62.5		96.2	70.3-128		
Surrogate: Toluene-d8	63.6		"	62.5		102	78.8-125		
Surrogate: 4-Bromofluorobenzene	59.5		"	62.5		95.1	75.5-131		

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Notes and Definitions

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

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