

GROUNDWATER MONITORING REPORT MARCH 2010

UPRC 9, 9K, 10K

On February 16, 2010, LT Environmental, Inc. (LTE) conducted groundwater sampling on behalf of Noble Energy, Inc., at the UPRC 9, 9K, 10K Tank Battery (Site). This sampling event constitutes the fourth post remediation monitoring event at this Site. Site history, remediation activities, well installation, and performance monitoring have been described in the preceding reports.

Groundwater level measurements were collected from the monitoring wells and are summarized in Table 1. The monitoring wells (MW01, MW02, and MW03) were installed on April 14, 2009. A Site Map is presented in Figure 1.

Depth to groundwater ranged from 4.89 feet below top of casing (btoc) in MW01 to 5.15 feet btoc in MW03 and was used to calculate well-specific purge volumes. Following purging, groundwater samples were collected and preserved on ice. Samples were 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.

Analytical results from the monitoring wells, presented in Table 1, indicate BTEX concentrations for MW01 and MW03 are in compliance with Colorado Department of Public Health and Environment-Water Quality Control Commission Regulation 41 (WQCC Reg 41). MW02 exhibited a benzene concentration of 65.2 micrograms per liter ($\mu\text{g/L}$), which is above the WQCC Reg 41 standard of 5.0 $\mu\text{g/L}$. The laboratory analytical report is included in the Appendix.

LTE will continue to conduct quarterly groundwater monitoring events with the goal of observing four consecutive quarters with analytical results in compliance with applicable regulatory standards. The next quarterly groundwater sampling event is scheduled for May 2010.

TABLE

TABLE 1

**GROUNDWATER ANALYTICAL DATA
UPRC 9, 9k, 10k TANK BATTERY
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

MONITORING WELL	DATE	DEPTH TO WATER (feet btoc)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYLBENZENE (ug/L)	TOTAL XYLENES (ug/L)
MW01	4/28/2009	6.12	<1.0	<1.0	<1.0	<3.0
	8/25/2009	2.21	<1.0	<1.0	<1.0	<3.0
	11/19/2009	7.50	<1.0	<1.0	<1.0	<3.0
	2/16/2010	4.89	<1.0	<1.0	<1.0	<3.0
MW02	4/28/2009	6.52	<1.0	<1.0	<1.0	<3.0
	8/25/2009	2.16	<1.0	<1.0	<1.0	<3.0
	11/19/2009	7.74	29.1	<1.0	<1.0	<3.0
	2/16/2010	5.06	65.2	<1.0	<1.0	<3.0
MW03	4/28/2009	6.69	2.70	<1.0	108	519.19
	8/25/2009	2.01	<1.0	<1.0	<1.0	<3.0
	11/19/2009	8.03	1.12	<1.0	24.3	23.5
	2/16/2010	5.15	<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 reporting limit

BOLD - indicates result exceeds the regulatory standard.

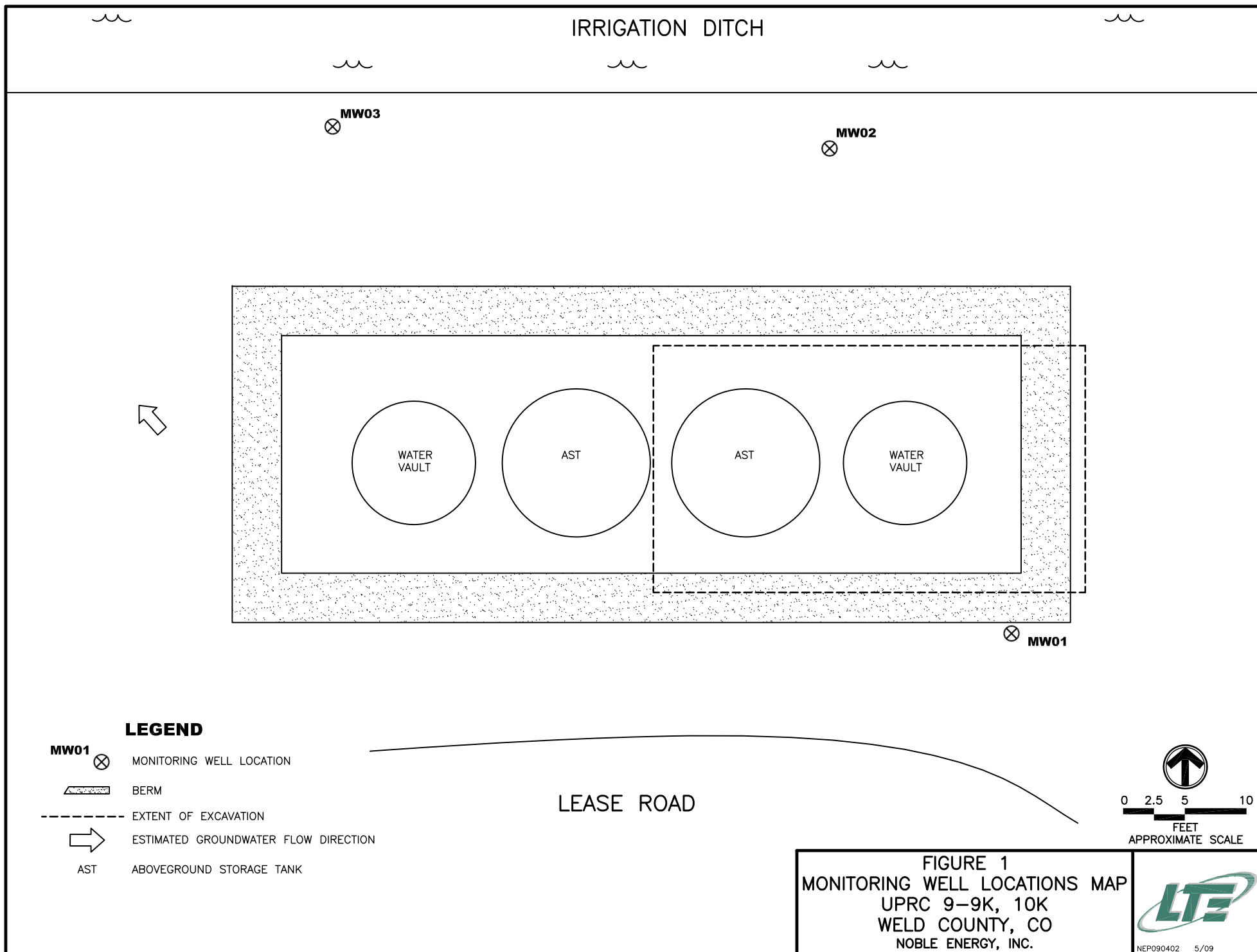
Benzene, toluene, ethylbenzene, and xylenes analyzed by EPA Method 8260B

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

Commission Regulation 41 covering Basic Standards for Groundwater



FIGURE



APPENDIX
ANALYTICAL REPORT

2/18/2010

LT Environmental, Inc.

Matthew Harrison

4600 West 60th Avenue

Arvada

CO

80003

Project Name- Noble - UPRC 9, 9k- 10k

Project Number- NEP0904

Attached are your analytical results for Noble - UPRC 9, 9k- 10k received by Origins Laboratory, Inc. February 16, 2010 4:00 pm. This project is associated with Origins project number X002057-01 .

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



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

Matthew Harrison
Project Number: NEP0904
Project: Noble - UPRC 9, 9k- 10k

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Sampled	Date Received
MW01	X002057-01	Water	2/16/2010 2:45:00PM	02/16/2010 16:00
MW02	X002057-02	Water	2/16/2010 2:50:00PM	02/16/2010 16:00
MW03	X002057-03	Water	2/16/2010 2:55:00PM	02/16/2010 16:00

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

1000

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

Matthew Harrison
Project Number: NEP0904
Project: Noble - UPRC 9, 9k- 10k

MW01**2/16/2010 2:45:00PM**

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

Origins Laboratory, Inc.
X002057-01 (Water)

BTEX by EPA 8260B

Benzene	ND	0.00100	mg/L	1	OB17001	02/17/2010	02/17/2010	
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 %	73.5-130			"	"	"	
Surrogate: Toluene-d8	92.1 %	79.3-113			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.7 %	81.5-117			"	"	"	

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

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

Matthew Harrison
Project Number: NEP0904
Project: Noble - UPRC 9, 9k- 10k

MW02

2/16/2010 2:50:00PM

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

Origins Laboratory, Inc.
X002057-02 (Water)

BTEX by EPA 8260B

Benzene	0.0652	0.00100	mg/L	1	OB17001	02/17/2010	02/17/2010
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 %	73.5-130	"	"	"
Surrogate: Toluene-d8	92.4 %	79.3-113	"	"	"
Surrogate: 4-Bromofluorobenzene	99.1 %	81.5-117	"	"	"

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

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

Matthew Harrison
Project Number: NEP0904
Project: Noble - UPRC 9, 9k- 10k

MW03

2/16/2010 2:55:00PM

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

Origins Laboratory, Inc.
X002057-03 (Water)

BTEX by EPA 8260B

Benzene	ND	0.00100	mg/L	1	OB17001	02/17/2010	02/17/2010
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 %	73.5-130	"	"	"
Surrogate: Toluene-d8	90.8 %	79.3-113	"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	81.5-117	"	"	"

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

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

Matthew Harrison
Project Number: NEP0904
Project: Noble - UPRC 9, 9k- 10k

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 OB17001 - EPA 5030B

Blank (OB17001-BLK1)

Prepared: 02/17/2010 Analyzed: 02/17/2010

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	63.1	ug/L	62.5	101	73.5-130
Surrogate: Toluene-d8	57.5	"	62.5	92.0	79.3-113
Surrogate: 4-Bromofluorobenzene	60.1	"	62.5	96.1	81.5-117

Blank (OB17001-BLK2)

Prepared: 02/17/2010 Analyzed: 02/17/2010

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	65.6	ug/L	62.5	105	73.5-130
Surrogate: Toluene-d8	57.3	"	62.5	91.7	79.3-113
Surrogate: 4-Bromofluorobenzene	60.3	"	62.5	96.5	81.5-117

LCS (OB17001-BS1)

Prepared: 02/17/2010 Analyzed: 02/17/2010

Benzene	0.05	0.001	mg/L	0.0500	98.1	77.3-128
Toluene	0.05	0.001	"	0.0500	93.3	81.7-118

Surrogate: 1,2-Dichloroethane-d4	64.0	ug/L	62.5	102	73.5-130
Surrogate: Toluene-d8	58.2	"	62.5	93.0	79.3-113
Surrogate: 4-Bromofluorobenzene	62.1	"	62.5	99.3	81.5-117

LCS (OB17001-BS2)

Prepared: 02/17/2010 Analyzed: 02/17/2010

Benzene	0.05	0.001	mg/L	0.0500	103	77.3-128
Toluene	0.05	0.001	"	0.0500	95.8	81.7-118

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

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

Matthew Harrison
Project Number: NEP0904
Project: Noble - UPRC 9, 9k- 10k

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 OB17001 - EPA 5030B										
LCS (OB17001-BS2)					Prepared: 02/17/2010 Analyzed: 02/17/2010					
Surrogate: 1,2-Dichloroethane-d4	64.0		ug/L	62.5		102	73.5-130			
Surrogate: Toluene-d8	57.1		"	62.5		91.4	79.3-113			
Surrogate: 4-Bromofluorobenzene	61.8		"	62.5		98.8	81.5-117			
Matrix Spike (OB17001-MS1)					Source: X002057-01		Prepared: 02/17/2010 Analyzed: 02/17/2010			
Benzene	0.05	0.001	mg/L	0.0500	ND	101	74.5-132			
Toluene	0.05	0.001	"	0.0500	ND	94.3	74.2-116			
Surrogate: 1,2-Dichloroethane-d4	63.3		ug/L	62.5		101	73.5-130			
Surrogate: Toluene-d8	57.0		"	62.5		91.2	79.3-113			
Surrogate: 4-Bromofluorobenzene	62.6		"	62.5		100	81.5-117			
Matrix Spike (OB17001-MS2)					Source: X002057-02		Prepared: 02/17/2010 Analyzed: 02/17/2010			
Benzene	0.11	0.001	mg/L	0.0500	0.07	88.0	74.5-132			
Toluene	0.04	0.001	"	0.0500	ND	82.4	74.2-116			
Surrogate: 1,2-Dichloroethane-d4	65.2		ug/L	62.5		104	73.5-130			
Surrogate: Toluene-d8	56.1		"	62.5		89.7	79.3-113			
Surrogate: 4-Bromofluorobenzene	61.3		"	62.5		98.1	81.5-117			
Matrix Spike Dup (OB17001-MSD1)					Source: X002057-01		Prepared: 02/17/2010 Analyzed: 02/17/2010			
Benzene	0.05	0.001	mg/L	0.0500	ND	98.8	74.5-132	1.80	13.1	
Toluene	0.05	0.001	"	0.0500	ND	93.5	74.2-116	0.916	21.2	
Surrogate: 1,2-Dichloroethane-d4	64.1		ug/L	62.5		103	73.5-130			
Surrogate: Toluene-d8	57.3		"	62.5		91.7	79.3-113			
Surrogate: 4-Bromofluorobenzene	61.2		"	62.5		97.9	81.5-117			
Matrix Spike Dup (OB17001-MSD2)					Source: X002057-02		Prepared: 02/17/2010 Analyzed: 02/17/2010			
Benzene	0.11	0.001	mg/L	0.0500	0.07	89.6	74.5-132	0.730	13.1	
Toluene	0.04	0.001	"	0.0500	ND	82.7	74.2-116	0.339	21.2	
Surrogate: 1,2-Dichloroethane-d4	65.0		ug/L	62.5		104	73.5-130			
Surrogate: Toluene-d8	56.2		"	62.5		89.9	79.3-113			
Surrogate: 4-Bromofluorobenzene	60.7		"	62.5		97.2	81.5-117			

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

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

Matthew Harrison
Project Number: NEP0904
Project: Noble - UPRC 9, 9k- 10k

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 OB17001 - EPA 5030B

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

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

Matthew Harrison
Project Number: NEP0904
Project: Noble - UPRC 9, 9k- 10k

Notes and Definitions

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

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