



GROUNDWATER MONITORING REPORT AUGUST 2014

KARCH BLUE D 24-11 FLOW LINE COGCC TRACKING #2232915

LT Environmental, Inc. (LTE), under the direction of Noble Energy, Inc. (Noble), conducted groundwater monitoring activities at the Karch Blue D 24-11 Flow Line (Site). The Site is located 1.6 miles south and 3.4 miles east of the intersection of County Road 34 and County Road 53 in Weld County, Colorado. The legal site description is the northeast quarter of the southwest quarter of Section 24, Township 3 North, Range 64 West, 6th Principal Meridian. The Site Location Map is included as Figure 1. Site history was described in the *LTE Environmental Assessment Results* dated June 17, 2013.

Soil borings SB01 through SB12 were advanced on May 21, 2013. Soil borings SB01 through SB03, SB05 through SB08, SB10, and SB12 were completed as temporary groundwater monitoring wells to delineate the extent of dissolved-phase petroleum hydrocarbon impact. The current monitoring program includes one source monitoring well (SB01), one upgradient monitoring well (SB03), and two downgradient monitoring wells (SB06 and SB12).

Groundwater monitoring was conducted on August 29, 2014, in four monitoring wells (SB01, SB03, SB06, and SB12). Prior to purging, depth to groundwater was measured and recorded to calculate well-specific target purge volumes and relative groundwater elevations. During the August 2014 monitoring event, depth to groundwater ranged from 7.43 feet below top of casing (btoc) in monitoring well SB03 to 8.64 feet btoc in monitoring well SB12. Groundwater was calculated to flow north-northeast with an average hydraulic gradient of 0.008 feet per foot. Relative groundwater elevations are presented on Figure 2 and summarized in Table 1. Following purging, samples were collected, placed on ice, then submitted with a complete chain of custody form to Origins Laboratory, Inc. of Denver, Colorado, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency Method 8260C.

The Colorado Department of Public Health and Environment-Water Quality Control Commission has established Regulation 41-The Basic Standards for Ground Water (WQCC Reg 41) for BTEX at 5.0 micrograms per liter ($\mu\text{g/L}$), 560 $\mu\text{g/L}$, 700 $\mu\text{g/L}$, and 1,400 $\mu\text{g/L}$, respectively. Laboratory analytical results indicated SB01 exceeded the WQCC Reg 41 standard for benzene at a concentration of 154 $\mu\text{g/L}$. All other monitoring wells were in compliance with applicable WQCC Reg 41 standards. Laboratory groundwater analytical results are presented on Figure 3 and summarized in Table 1. The laboratory analytical report is attached.

LTE, under the direction of Noble, will continue to conduct quarterly groundwater monitoring with the goal of obtaining four consecutive quarters with analytical results in compliance with applicable WQCC Reg 41 standards. The next quarterly groundwater monitoring event is scheduled for November 2014.

FIGURES

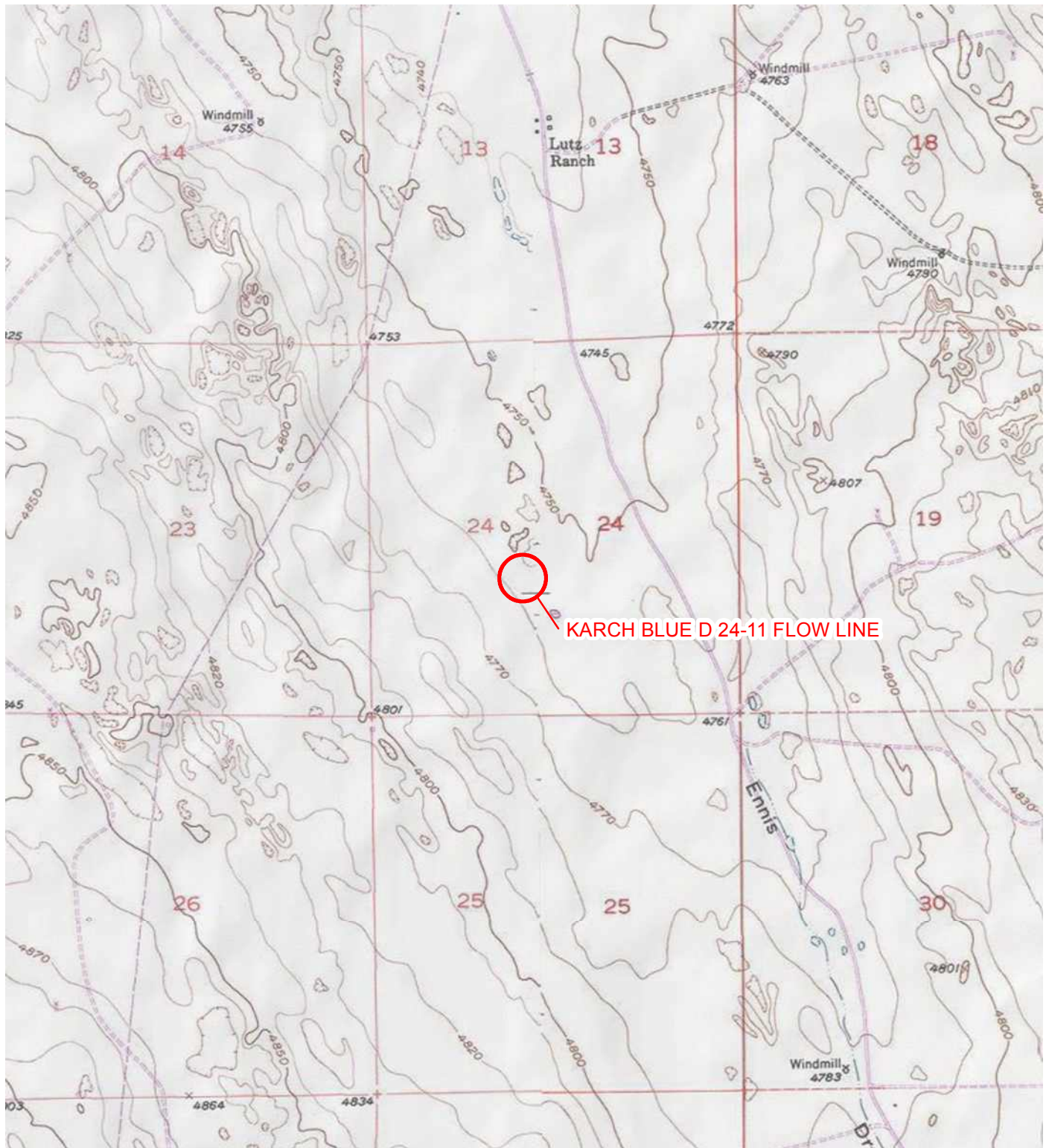
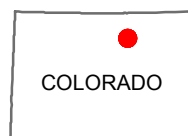
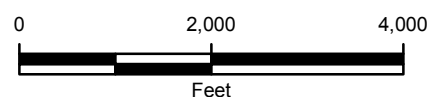


IMAGE COURTESY OF ESRI/USGS

LEGEND

○ SITE LOCATION

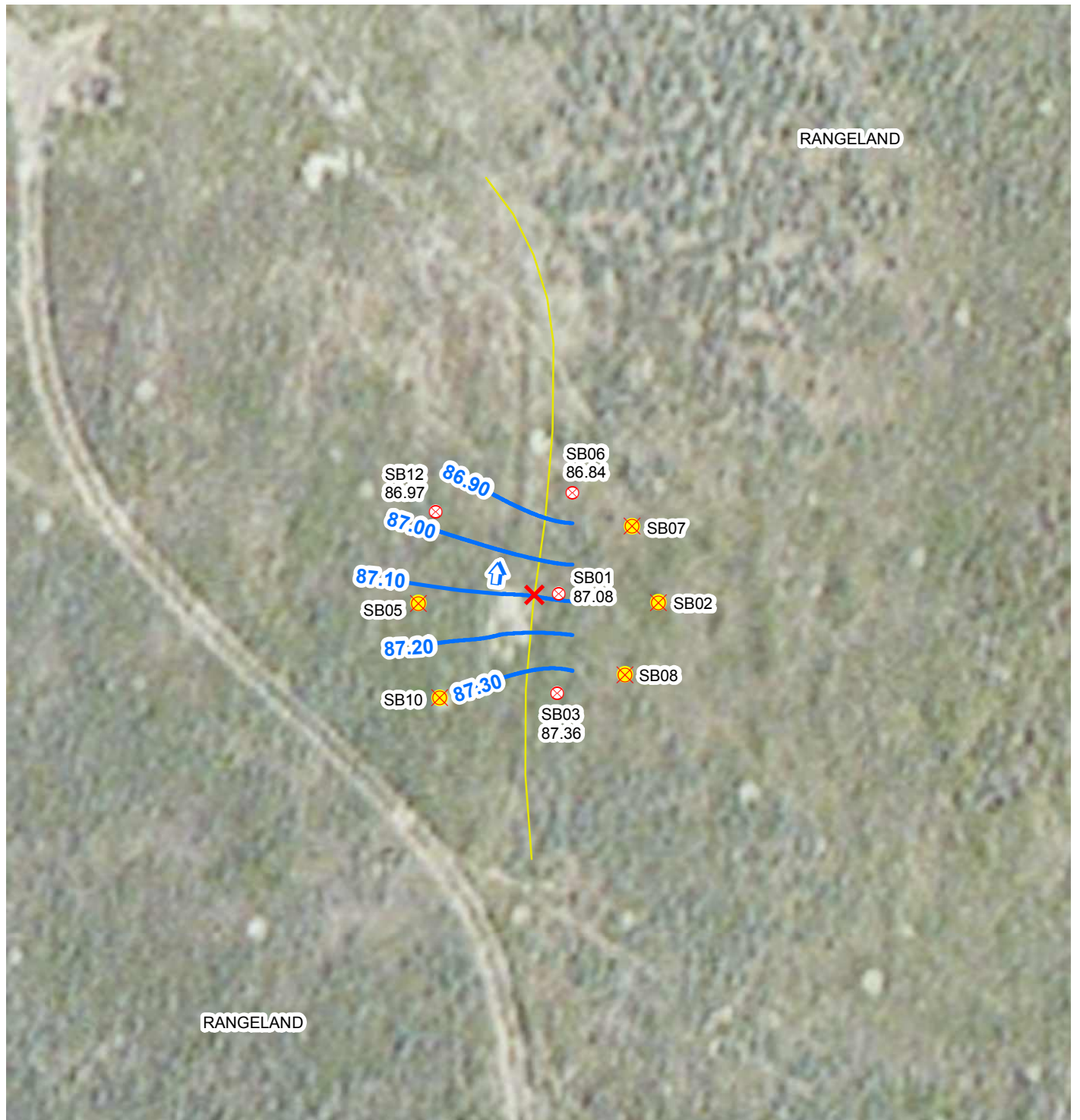


COLORADO

FIGURE 1
SITE LOCATION MAP
KARCH BLUE D 24-11 FLOW LINE
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





LEGEND

✕ MONITORING WELL REMOVED FROM MONITORING PROGRAM

⊗ MONITORING WELL

✕ RELEASE

↑ CALCULATED GROUNDWATER FLOW DIRECTION

— FLOW LINE

— RELATIVE GROUNDWATER ELEVATION CONTOUR
CONTOUR INTERVAL = 0.10 FEET
GRADIENT = 0.008 FEET/FOOT

FIGURE 2
RELATIVE GROUNDWATER ELEVATION MAP
AUGUST 29, 2014
KARCH BLUE D 24-11 FLOW LINE
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.



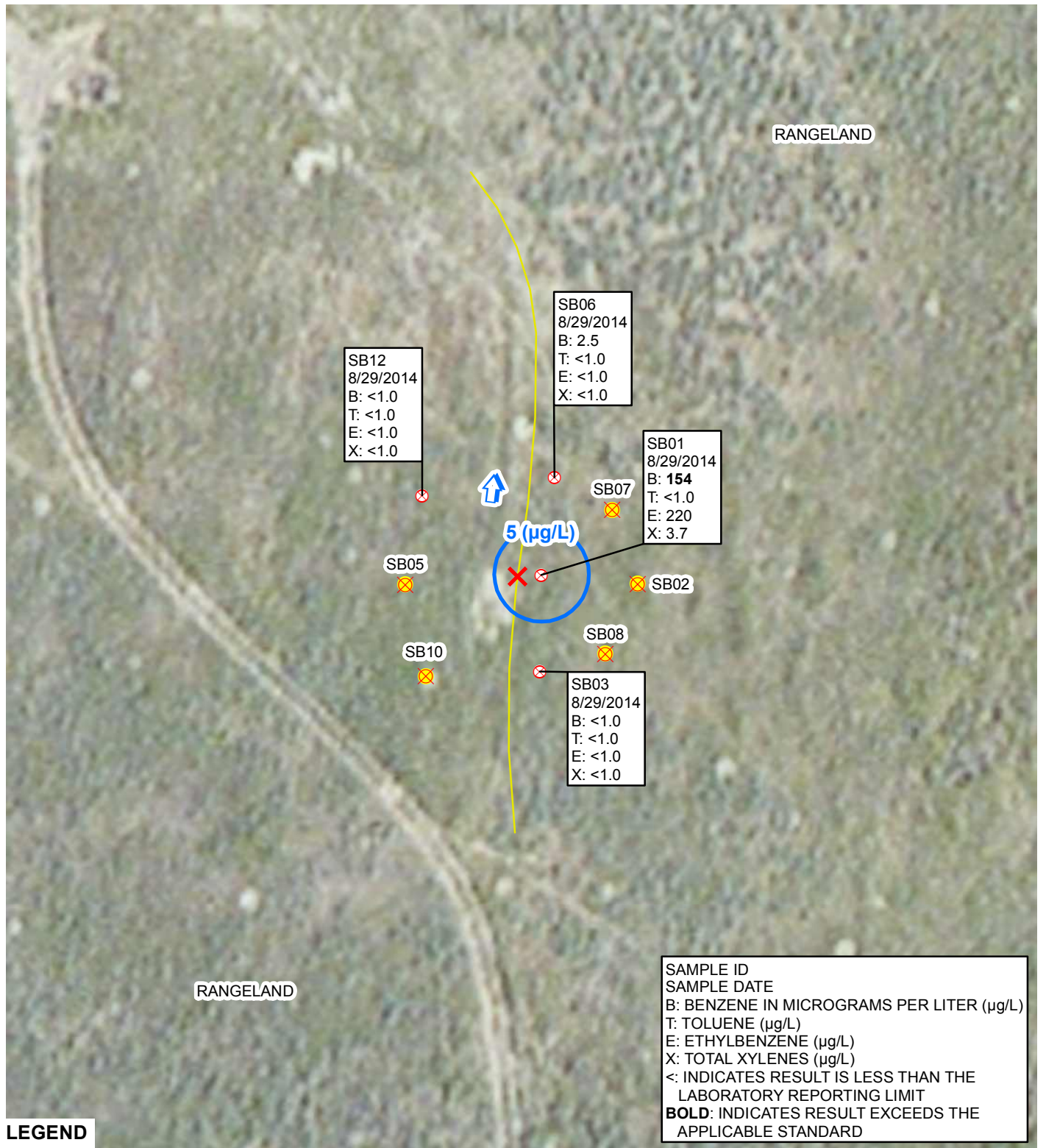


IMAGE COURTESY OF ESRI

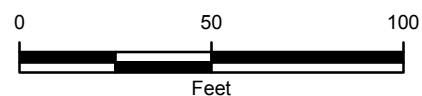


FIGURE 3
GROUNDWATER ANALYTICAL RESULTS
KARCH BLUE D 24-11 FLOW LINE
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.



TABLES

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
KARCH BLUE D 24-11 FLOW LINE
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Monitoring Well	Date	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB01	5/23/2013	7.62	87.32	205	23.3	275	192
	8/27/2013	8.54	86.40	37	<1.0	164	<1.0
	11/18/2013	8.32	86.62	54.4	<1.0	177	<1.0
	2/20/2014	8.75	86.19	14.0	<2.0	103	<2.0
	5/8/2014	8.35	86.59	<1.0	<1.0	<1.0	<1.0
	8/29/2014	7.86	87.08	154	<1.0	220	3.7
SB02	5/23/2013	6.98	87.41	<1.0	<1.0	<1.0	<1.0
	8/27/2013	7.96	86.43	<1.0	<1.0	<1.0	<1.0
	11/18/2013	7.73	86.66	<1.0	<1.0	<1.0	<1.0
	2/20/2014	8.22	86.17	<1.0	<1.0	<1.0	<1.0
Removed from monitoring program							
SB03	5/23/2013	7.15	87.64	<1.0	<1.0	<1.0	<1.0
	8/27/2013	8.15	86.64	<1.0	<1.0	<1.0	<1.0
	11/18/2013	7.87	86.92	<1.0	<1.0	<1.0	<1.0
	2/20/2014	8.42	86.37	<1.0	<1.0	<1.0	<1.0
	5/8/2014	7.95	86.84	<1.0	<1.0	<1.0	<1.0
	8/29/2014	7.43	87.36	<1.0	<1.0	<1.0	<1.0
SB05	5/23/2013	8.43	87.35	<1.0	1.23	<1.0	<1.0
	8/27/2013	9.43	86.35	<1.0	<1.0	<1.0	<1.0
	11/18/2013	9.25	86.53	<1.0	<1.0	<1.0	<1.0
	2/20/2014	9.65	86.13	<1.0	<1.0	<1.0	<1.0
Removed from monitoring program							
SB06	5/23/2013	7.91	87.07	<1.0	0.960	<1.0	4.43
	8/27/2013	8.84	86.14	<1.0	<1.0	<1.0	<1.0
	11/18/2013	8.62	86.36	<1.0	<1.0	<1.0	<1.0
	2/20/2014	9.05	85.93	<1.0	<1.0	<1.0	<1.0
	5/8/2014	8.60	86.38	<1.0	<1.0	<1.0	<1.0
	8/29/2014	8.14	86.84	2.5	<1.0	<1.0	<1.0
SB07	5/23/2013	7.33	87.23	<1.0	<1.0	<1.0	2.42
	8/27/2013	8.30	86.26	<1.0	<1.0	<1.0	<1.0
	11/18/2013	8.02	86.54	<1.0	<1.0	<1.0	<1.0
	2/20/2014	8.50	86.06	<1.0	<1.0	<1.0	<1.0
Removed from monitoring program							
SB08	5/23/2013	7.33	87.41	<1.0	<1.0	<1.0	<1.0
	8/27/2013	8.31	86.43	<1.0	<1.0	<1.0	<1.0
	11/18/2013	8.07	86.67	<1.0	<1.0	<1.0	<1.0
	2/20/2014	8.36	86.38	<1.0	<1.0	<1.0	<1.0
Removed from monitoring program							

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
KARCH BLUE D 24-11 FLOW LINE
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Monitoring Well	Date	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB10	5/23/2013	7.80	87.57	<1.0	<1.0	<1.0	<1.0
	8/27/2013	8.82	86.55	<1.0	<1.0	<1.0	<1.0
	11/18/2013	8.60	86.77	<1.0	<1.0	<1.0	<1.0
	2/20/2014	9.10	86.27	<1.0	<1.0	<1.0	<1.0
Removed from monitoring program							
SB12	5/23/2013	8.37	87.24	<1.0	1.24	<1.0	<1.0
	8/27/2013	9.56	86.05	<1.0	<1.0	<1.0	<1.0
	11/18/2013	9.20	86.41	<1.0	<1.0	<1.0	<1.0
	2/20/2014	9.71	85.90	<1.0	<1.0	<1.0	<1.0
	5/8/2014	9.31	86.30	<1.0	<1.0	<1.0	<1.0
	8/29/2014	8.64	86.97	<1.0	<1.0	<1.0	<1.0
CDPHE WQCC Reg 41				5.0	560	700	1,400

NOTES:

btoc - below top of casing

µg/L - micrograms per liter

< - indicates result is less than the stated laboratory method reporting limit

BOLD indicates result exceeds the applicable standard

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260C

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

Control Commission Regulation 41-The Basic Standards for Ground Water

ATTACHMENT
LABORATORY ANALYTICAL REPORT



September 04, 2014

LT Environmental, Inc.

Charles Greeson

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - Karch Blue D 24-11

Project Number - 008313023

Attached are your analytical results for Noble - Karch Blue D 24-11 received by Origins Laboratory, Inc. August 29, 2014. This project is associated with Origins project number X409006-01.

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
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

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

Charles Greeson
Project Number: 008313023
Project: Noble - Karch Blue D 24-11

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01	X409006-01	Water	August 29, 2014 14:00	08/29/2014 16:22
SB03	X409006-02	Water	August 29, 2014 13:45	08/29/2014 16:22
SB06	X409006-03	Water	August 29, 2014 14:15	08/29/2014 16:22
SB12	X409006-04	Water	August 29, 2014 14:30	08/29/2014 16:22

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 Doyle Mathis, President

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

Charles Greeson
Project Number: 008313023
Project: Noble - Karch Blue D 24-11

ORIGINS
LABORATORY, INC

www.originslaboratory.com

X409006

page 1 of 1

Client: LT Environmental
Address: 4600 W. 60th Ave.
Arvada, Colo. 80003
Telephone Number: 303-433-9788

Project Manager/Send Report To: Charles Greeson
Email Address: cgreeson@ltenv.com
Project Name/Number: Karch Blue D 24-11
Samples Collected By: Mike Ciger

1725 Elk Place Denver, CO 80211 Phone: 303.423.1322 FAX: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summary		
SB01	8/29/14	1400	3	X				X			X BTEX	1
SB03	8/29/14	1345	3	X				X			X	2
SB06	8/29/14	1405	3	X				X			X	3
SB12	8/29/14	1420	3	X				X			X	4
												5
												6
												7
												8
												9
												10
Relinquished By: <u>Mike Ciger</u>	Date: <u>8/29/14</u>	Time: <u>1822</u>	Received By: <u>[Signature]</u>	Date: <u>8/29/14</u>	Time: <u>1822</u>	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>						
Relinquished By:	Date:	Time:	Received By:	Date:	Time:							

Date Recalls Needed:

Comments:

Origins Laboratory, Inc.

[Signature]

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.

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

Charles Greeson
Project Number: 008313023
Project: Noble - Karch Blue D 24-11

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X49006

Client: LTE

Client Project ID: Karch Blue D24-1

Checklist Completed by: Jeff Smith

Shipped Via: HO

(UPS, FedEx, and Delivered, Pick-up, etc.)

Date/time completed: 9/2/14 8:31

Airbill #: 134

Matrix(s) Received: (Check all that apply): Soil/Solid X Water Other:

Cooler Number/Temperature: 1 11.7 °C 1 °C 1 °C (Describe)

Thermometer ID: 1008

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		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 ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		X		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace (> 1/4 inch bubble) present? If yes, contact client and note in narrative.		X		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		X		
Additional Comments (if any): One Sample Container for SBA1 has a sample time of 1415 which does not match the CUC - Charles G. was notified via email and requested that we set aside the Vial in question and exclude it from analysis.				
9/2/14 Jeff Smith				

⁽¹⁾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)

9-3-14 10:33
Date/Time Reviewed

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.

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Charles Greeson

Project Number: 008313023

Project: Noble - Karch Blue D 24-11

SB01

8/29/2014 2:00:00PM

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

Origins Laboratory, Inc.
X409006-01 (Water)

BTEX by EPA 8260C

Benzene	154	10.0	ug/L	10	4103007	09/03/2014	09/04/2014
Toluene	ND	1.0	"	1	"	"	09/03/2014
Ethylbenzene	220	10.0	"	10	"	"	09/04/2014
Xylenes, total	3.7	1.0	"	1	"	"	09/03/2014

Surrogate: 1,2-Dichloroethane-d4

99.2 % 87.3-113

"

"

"

Surrogate: Toluene-d8

101 % 90.9-108

"

"

"

Surrogate: 4-Bromofluorobenzene

98.4 % 88.6-111

"

"

"

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 Doyle Mathis, President

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

Charles Greeson
Project Number: 008313023
Project: Noble - Karch Blue D 24-11

SB03**8/29/2014 1:45:00PM**

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

Origins Laboratory, Inc.
X409006-02 (Water)**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4103007	09/03/2014	09/03/2014
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4
Surrogate: Toluene-d8
Surrogate: 4-Bromofluorobenzene

99.5 % 87.3-113
101 % 90.9-108
99.9 % 88.6-111

" " "
" " "
" " "

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.*

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

Charles Greeson
Project Number: 008313023
Project: Noble - Karch Blue D 24-11

SB06

8/29/2014 2:15:00PM

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

Origins Laboratory, Inc.
X409006-03 (Water)

BTEX by EPA 8260C

Benzene	2.5	1.0	ug/L	1	4103007	09/03/2014	09/03/2014
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	99.8 %	87.3-113	"	"	"
Surrogate: Toluene-d8	101 %	90.9-108	"	"	"
Surrogate: 4-Bromofluorobenzene	99.9 %	88.6-111	"	"	"

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 Doyle Mathis, President

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

Charles Greeson
Project Number: 008313023
Project: Noble - Karch Blue D 24-11

SB12**8/29/2014 2:30:00PM**

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

Origins Laboratory, Inc.
X409006-04 (Water)**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4103007	09/03/2014	09/03/2014
Toluene	ND	1.0	"	"	"	"	"
Ethylbenzene	ND	1.0	"	"	"	"	"
Xylenes, total	ND	1.0	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4
Surrogate: Toluene-d8
Surrogate: 4-Bromofluorobenzene

101 %
99.4 %
99.1 %

87.3-113
90.9-108
88.6-111

"
"
"

"
"
"

"
"
"

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.*

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Charles Greeson

Project Number: 008313023

Project: Noble - Karch Blue D 24-11

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4103007 - EPA 5030B (Water)

Blank (4103007-BLK1)

Prepared: 09/03/2014 Analyzed: 09/03/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5	102		87.3-113			
Surrogate: Toluene-d8	62		"	62.5	99.2		90.9-108			
Surrogate: 4-Bromofluorobenzene	63		"	62.5	101		88.6-111			

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 Doyle Mathis, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Charles Greeson

Project Number: 008313023

Project: Noble - Karch Blue D 24-11

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4103007 - EPA 5030B (Water)

LCS (4103007-BS1)

Prepared: 09/03/2014 Analyzed: 09/03/2014

Benzene	55.8	1.0	ug/L	50.0	112	75-126
Toluene	57.1	1.0	"	50.0	114	78.7-126
Ethylbenzene	59.0	1.0	"	50.0	118	81-130
m,p-Xylene	119	2.0	"	100	119	77.2-133
o-Xylene	58.0	1.0	"	50.0	116	77.9-126
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5	94.5	87.3-113
Surrogate: Toluene-d8	63		"	62.5	101	90.9-108
Surrogate: 4-Bromofluorobenzene	64		"	62.5	102	88.6-111

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 Doyle Mathis, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Charles Greeson

Project Number: 008313023

Project: Noble - Karch Blue D 24-11

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4103007 - EPA 5030B (Water)

Matrix Spike (4103007-MS1)		Source: X409003-01			Prepared: 09/03/2014 Analyzed: 09/03/2014					
Benzene	58.3	1.0	ug/L	50.0	ND	117	74-130			
Toluene	59.6	1.0	"	50.0	0.1	119	73-131			
Ethylbenzene	62.9	1.0	"	50.0	ND	126	76-132			
m,p-Xylene	125	2.0	"	100	ND	125	69-139			
o-Xylene	58.8	1.0	"	50.0	ND	118	74-131			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.0	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		100	90.9-108			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	88.6-111			

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 Doyle Mathis, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Charles Greeson

Project Number: 008313023

Project: Noble - Karch Blue D 24-11

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4103007 - EPA 5030B (Water)

Matrix Spike Dup (4103007-MSD1)		Source: X409003-01			Prepared: 09/03/2014 Analyzed: 09/03/2014					
Benzene	59.4	1.0	ug/L	50.0	ND	119	74-130	1.78	20	
Toluene	61.0	1.0	"	50.0	0.1	122	73-131	2.37	20	
Ethylbenzene	64.6	1.0	"	50.0	ND	129	76-132	2.64	20	
m,p-Xylene	128	2.0	"	100	ND	128	69-139	1.90	20	
o-Xylene	60.1	1.0	"	50.0	ND	120	74-131	2.22	20	
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.9	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		101	90.9-108			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	88.6-111			

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 Doyle Mathis, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Charles Greeson

Project Number: 008313023

Project: Noble - Karch Blue D 24-11

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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 Doyle Mathis, President