

GROUNDWATER MONITORING REPORT JANUARY 2010

PHILLIPS L30-6JI

On November 20, 2009, LT Environmental, Inc. (LTE) conducted groundwater sampling on behalf of Noble Energy, Inc., at the Phillips L30-6JI Tank Battery (Site). This sampling event constitutes the second post remediation monitoring event at this 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 SB06, SB08, SB10, SB12, and SB13 were installed on May 21, 2009. Monitoring wells SB18 and SB19 were installed on May 26, 2009. A Site Map is presented on Figure 1. Monitoring well SB06 was not located during this sampling event. It is assumed SB06 is destroyed.

Depth to groundwater, which ranged from 2.02 feet below top of casing (btoc) in SB19 to 3.47 feet btoc in SB12, 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.

Groundwater analytical results, presented in Table 1, indicate BTEX concentrations are in compliance with the Colorado Department of Public Health and Environment Water Quality Control Commission Regulation 41 (WQCC Reg 41). 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 of analytical results in compliance with applicable regulatory standards. The next quarterly groundwater sampling event is scheduled for February 2010.

TABLE

TABLE 1

GROUNDWATER ANALYTICAL DATA
 PHILLIPS L30-6JI
 WELD COUNTY, COLORADO
 NOBLE ENERGY, INC.

| MONITORING WELL | DATE | DEPTH TO WATER (feet btoc) | BENZENE (ug/L) | TOLUENE (ug/L) | ETHYLBENZENE (ug/L) | XYLENES (ug/L) |
|--------------------------|------------|----------------------------|----------------|----------------|---------------------|----------------|
| SB06 | 5/29/2009 | 3.53 | <1.0 | 9.71 | 20.5 | 30.81 |
| | 8/4/2009 | 2.03 | 33.7 | <1.00 | 33.4 | 231.6 |
| | 11/20/2009 | ----- Destroyed ----- | | | | |
| SB10 | 5/29/2009 | 2.77 | <1.0 | <1.0 | <1.0 | <3.0 |
| | 8/4/2009 | 2.37 | 2.35 | <1.00 | 9.88 | 89.5 |
| | 11/20/2009 | 2.79 | <1.00 | <1.0 | <1.0 | <3.0 |
| SB12 | 5/29/2009 | 3.46 | 103 | 281 | 69.2 | 861 |
| | 8/4/2009 | 2.75 | 130 | 31.4 | 15.3 | 174.6 |
| | 11/20/2009 | 3.47 | 3.71 | 62.3 | 12.8 | 115.4 |
| SB13 | 5/29/2009 | 3.1 | <1.0 | <1.0 | <1.0 | <3.0 |
| | 8/4/2009 | 2.39 | <1.00 | <1.00 | <1.00 | <3.00 |
| | 11/20/2009 | 3.11 | <1.00 | <1.00 | <1.00 | <3.00 |
| SB18 | 5/29/2009 | 3.06 | 2.52 | <1.0 | <1.0 | <3.0 |
| | 8/4/2009 | 2.4 | <1.00 | <1.00 | <1.00 | <3.00 |
| | 11/20/2009 | 3.10 | <1.00 | <1.00 | <1.00 | <3.00 |
| SB19 | 5/29/2009 | 2.97 | 17.1 | <1.0 | <1.0 | <3.0 |
| | 8/4/2009 | 2.34 | <1.00 | <1.00 | <1.00 | <3.00 |
| | 11/20/2009 | 2.02 | <1.00 | <1.00 | <1.00 | <3.00 |
| 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

Bold - indicates concentration exceeds the CDPHE WQCC Reg 41 standard

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, total xylenes analyzed by EPA Method 8260B



FIGURE

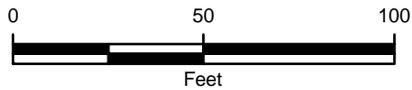


SAMPLE ID
 B - BENZENE IN MICROGRAMS PER LITER
 < - LESS THAN THE METHOD DETECTION LIMIT

IMAGE COURTESY OF GOOGLE EARTH, 2009

LEGEND

- PRODUCTION WELLHEAD
- ⊗ MONITORING WELL
- ⊗ DESTROYED MONITORING WELL
- PERMEABLE REACTIVE BARRIER (PRB)
- EXCAVATION EXTENT



GROUNDWATER SAMPLES WERE COLLECTED ON NOVEMBER 20, 2009

FIGURE 1
BENZENE CONCENTRATION IN GROUNDWATER
PHILLIPS L30-6JI
SEC30 - 3N - 66W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.



APPENDIX
ANALYTICAL REPORT



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

November 29, 2009

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

Brian Dodek
Project Number: NEP0909
Project: Noble - Phillips L30-6JI

Attached are the analytical results for Noble - Phillips L30-6JI received by Origins Laboratory, Inc. 11/20/2009 4:27:00PM. 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".

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

Brian Dodek
Project Number: NEP0909
Project: Noble - Phillips L30-6JI

CROSS REFERENCE REPORT

| Sample ID | Laboratory ID | Matrix | Sampled | Date Received |
|-----------|---------------|--------|-----------------------|------------------|
| SB12 | X911087-01 | Water | 11/20/2009 12:40:00PM | 11/20/2009 16:27 |
| SB13 | X911087-02 | Water | 11/20/2009 12:25:00PM | 11/20/2009 16:27 |
| SB18 | X911087-03 | Water | 11/20/2009 12:50:00PM | 11/20/2009 16:27 |
| SB19 | X911087-04 | Water | 11/20/2009 12:15:00PM | 11/20/2009 16:27 |
| SB10 | X911087-05 | Water | 11/20/2009 1:00:00PM | 11/20/2009 16:27 |

Origins Laboratory, Inc.

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Noelle E Doyle, Laboratory Manager



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

Brian Dodek
 Project Number: NEP0909
 Project: Noble – Phillips L30-6JI

SB12
X911087-01 (Water)

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

Origins Laboratory, Inc.

BTEX by EPA 8260B

| | | | | | | | |
|--------------|----------------|---------|------|---|---------|------------|------------|
| Benzene | 0.00371 | 0.00100 | mg/L | 1 | 9K23004 | 11/23/2009 | 11/23/2009 |
| Toluene | 0.0623 | 0.00100 | " | " | " | " | " |
| Ethylbenzene | 0.0128 | 0.00100 | " | " | " | " | " |
| o-Xylene | 0.0322 | 0.00100 | " | " | " | " | " |
| m,p-Xylene | 0.0832 | 0.00200 | " | " | " | " | " |

| | | | | | | | |
|---|---------------|-----------------|--|--|----------|----------|----------|
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>121 %</i> | <i>85.7-134</i> | | | <i>"</i> | <i>"</i> | <i>"</i> |
| <i>Surrogate: Toluene-d8</i> | <i>84.9 %</i> | <i>81.4-121</i> | | | <i>"</i> | <i>"</i> | <i>"</i> |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>108 %</i> | <i>74.7-127</i> | | | <i>"</i> | <i>"</i> | <i>"</i> |

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

Brian Dodek
 Project Number: NEP0909
 Project: Noble – Phillips L30-6JI

SB13
X911087-02 (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 | 9K23004 | 11/23/2009 | 11/23/2009 | |
| Toluene | ND | 0.00100 | " | " | " | " | " | |
| Ethylbenzene | ND | 0.00100 | " | " | " | " | " | |
| o-Xylene | ND | 0.00100 | " | " | " | " | " | |
| m,p-Xylene | ND | 0.00200 | " | " | " | " | " | |

| | | | | | | | | |
|---|---------------|-----------------|--|--|----------|----------|----------|--|
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>118 %</i> | <i>85.7-134</i> | | | <i>"</i> | <i>"</i> | <i>"</i> | |
| <i>Surrogate: Toluene-d8</i> | <i>85.6 %</i> | <i>81.4-121</i> | | | <i>"</i> | <i>"</i> | <i>"</i> | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>118 %</i> | <i>74.7-127</i> | | | <i>"</i> | <i>"</i> | <i>"</i> | |

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LT Environmental, Inc.
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Brian Dodek
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SB18
X911087-03 (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 | 9K23004 | 11/23/2009 | 11/23/2009 | |
| Toluene | ND | 0.00100 | " | " | " | " | " | |
| Ethylbenzene | ND | 0.00100 | " | " | " | " | " | |
| o-Xylene | ND | 0.00100 | " | " | " | " | " | |
| m,p-Xylene | ND | 0.00200 | " | " | " | " | " | |

| | | | | | | | | |
|---|---------------|-----------------|--|--|----------|----------|----------|--|
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>118 %</i> | <i>85.7-134</i> | | | <i>"</i> | <i>"</i> | <i>"</i> | |
| <i>Surrogate: Toluene-d8</i> | <i>83.8 %</i> | <i>81.4-121</i> | | | <i>"</i> | <i>"</i> | <i>"</i> | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>114 %</i> | <i>74.7-127</i> | | | <i>"</i> | <i>"</i> | <i>"</i> | |

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LT Environmental, Inc.
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Brian Dodek
 Project Number: NEP0909
 Project: Noble – Phillips L30-6JI

SB19
X911087-04 (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 | 9K23004 | 11/23/2009 | 11/23/2009 | |
| Toluene | ND | 0.00100 | " | " | " | " | " | |
| Ethylbenzene | ND | 0.00100 | " | " | " | " | " | |
| o-Xylene | ND | 0.00100 | " | " | " | " | " | |
| m,p-Xylene | ND | 0.00200 | " | " | " | " | " | |

| | | | | | | | |
|---|---------------|-----------------|--|--|---|---|---|
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>123 %</i> | <i>85.7-134</i> | | | " | " | " |
| <i>Surrogate: Toluene-d8</i> | <i>82.8 %</i> | <i>81.4-121</i> | | | " | " | " |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>114 %</i> | <i>74.7-127</i> | | | " | " | " |

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Brian Dodek
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SB10
X911087-05 (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 | 9K23004 | 11/23/2009 | 11/23/2009 | |
| Toluene | ND | 0.00100 | " | " | " | " | " | |
| Ethylbenzene | ND | 0.00100 | " | " | " | " | " | |
| o-Xylene | ND | 0.00100 | " | " | " | " | " | |
| m,p-Xylene | ND | 0.00200 | " | " | " | " | " | |

| | | | | | | | |
|---|--------|----------|--|--|---|---|---|
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | 117 % | 85.7-134 | | | " | " | " |
| <i>Surrogate: Toluene-d8</i> | 83.3 % | 81.4-121 | | | " | " | " |
| <i>Surrogate: 4-Bromofluorobenzene</i> | 115 % | 74.7-127 | | | " | " | " |

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

Brian Dodek
 Project Number: NEP0909
 Project: Noble – Phillips L30-6JI

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 9K23004 – EPA 5030B

Blank (9K23004-BLK1)

Prepared: 11/23/2009 Analyzed: 11/23/2009

| | | | | | | | | | | |
|---|------|-------|------|------|--|------|----------|--|--|--|
| 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 | " | | | | | | | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | 70.9 | | ug/L | 62.5 | | 113 | 85.7-134 | | | |
| <i>Surrogate: Toluene-d8</i> | 56.0 | | " | 62.5 | | 89.6 | 81.4-121 | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | 69.6 | | " | 62.5 | | 111 | 74.7-127 | | | |

LCS (9K23004-BS1)

Prepared: 11/23/2009 Analyzed: 11/23/2009

| | | | | | | | | | | |
|---|------|-------|------|--------|--|------|----------|--|--|--|
| Benzene | 0.04 | 0.001 | mg/L | 0.0500 | | 79.7 | 74.9-126 | | | |
| Toluene | 0.04 | 0.001 | " | 0.0500 | | 81.5 | 73.3-128 | | | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | 70.3 | | ug/L | 62.5 | | 113 | 85.7-134 | | | |
| <i>Surrogate: Toluene-d8</i> | 54.7 | | " | 62.5 | | 87.5 | 81.4-121 | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | 69.5 | | " | 62.5 | | 111 | 74.7-127 | | | |

Matrix Spike (9K23004-MS1)

Source: X911088-01

Prepared: 11/23/2009 Analyzed: 11/23/2009

| | | | | | | | | | | |
|---|------|-------|------|--------|----|------|----------|--|--|--|
| Benzene | 0.04 | 0.001 | mg/L | 0.0500 | ND | 78.8 | 78.1-132 | | | |
| Toluene | 0.04 | 0.001 | " | 0.0500 | ND | 79.8 | 71.7-124 | | | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | 74.0 | | ug/L | 62.5 | | 118 | 85.7-134 | | | |
| <i>Surrogate: Toluene-d8</i> | 54.1 | | " | 62.5 | | 86.6 | 81.4-121 | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | 70.4 | | " | 62.5 | | 113 | 74.7-127 | | | |

Matrix Spike Dup (9K23004-MSD1)

Source: X911088-01

Prepared: 11/23/2009 Analyzed: 11/23/2009

| | | | | | | | | | | |
|---|------|-------|------|--------|----|------|----------|------|------|-------|
| Benzene | 0.04 | 0.001 | mg/L | 0.0500 | ND | 77.9 | 78.1-132 | 1.10 | 24.8 | QM-07 |
| Toluene | 0.04 | 0.001 | " | 0.0500 | ND | 77.0 | 71.7-124 | 3.55 | 25 | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | 72.5 | | ug/L | 62.5 | | 116 | 85.7-134 | | | |
| <i>Surrogate: Toluene-d8</i> | 53.1 | | " | 62.5 | | 85.0 | 81.4-121 | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | 69.6 | | " | 62.5 | | 111 | 74.7-127 | | | |

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Brian Dodek
Project Number: NEP0909
Project: Noble – Phillips L30-6JI

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

Origins Laboratory, Inc.

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

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Noelle E Doyle, Laboratory Manager