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LABORATORIES

**Field Report
Summary of Field Operations**

Noble Energy
Dillard AB 10-06
Niobrara Formation
DJ Basin
Weld County, Colorado

Submitted to:
Marshall Deacon
Noble Energy
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Project No. 48032

July 22, 2010

Table 1-1 Well and Formation Summary

| Well Name: Dillard AB 10-06 | County: Weld | |
|--|---|----------|
| Operator: Noble Energy | State: Colorado | |
| API #: 0512331464 | Coordinates: 40.589350°N, 104.537180°W | |
| Basin: Denver-Julesburg | Location: Sec 10, 7N, 64W | |
| Formation Name: Niobrara Shale | Elevation, KB: 4,852.0 feet | |
| Reservoir Properties | Units | Value |
| Formation | | |
| Cored Interval Top | feet | 6,676.00 |
| Cored Interval Bottom | feet | 7,047.00 |
| Reservoir Temperature | °F | 160.00 |
| Reservoir Pressure Gradient | psi/ft | 0.433 |
| Reservoir Pressure (midpoint depth- 6,861.50 feet) | psia | 2,982.78 |

Figure 1-1 Well Location Map



(Google Earth™ mapping services)

2.0 FIELD OPERATIONS

Drilling and Coring Operations

Ensign Drilling (Rig # 128) conducted the drilling operations. The Noble Energy representative on location was Marshall Deacon. Core point (6,676.0 feet) was reached on July 12, 2010 and coring operations began on July 13, 2010. Quest Coring conducted the coring operations. Tools used for coring operations included a QQC-613-C coring bit, and a 90 foot wireline barrel with a solid aluminum liner. Coring fluid was composed of water-based polymer with an average mud weight of 8.7 ppg. A total of four wireline core runs were completed. The interval from 6,676.0 through 7,047.0 feet was continuously cored. Coring operations were completed on July 15, 2010.

All core runs are summarized in Table 2-1. See Appendices I and II (Core Operations and Daily Field Reports) for a more detailed account of coring operations.

Table 2-1 Summary of Core Runs

| Core Run | Cored Interval | Length Cored | Recovered Interval | Length Recovered | Core Recovery Success | Core Recovery Time | Circulating Fluid Temp. | Fluid Density | Number of Samples |
|--------------------|---------------------|--------------|---------------------|------------------|-----------------------|--------------------|-------------------------|---------------|-------------------|
| # | feet | feet | feet | | % | hh:mm:ss | °F | ppg | # |
| Niobrara Formation | | | | | | | | | |
| 1 | 6,676.00 – 6,768.00 | 92.0 | 6,676.00 – 6,766.70 | 90.70 | 98.60 | 2:54:10 | 130.0 | 8.70 | 12 |
| 2 | 6,768.00 – 6,860.00 | 92.0 | 6,768.00 – 6,861.55 | 93.55 | 101.70 | 1:54:00 | 130.0 | 8.70 | 10 |
| 3 ¹ | 6,862.00 – 6,954.00 | 92.0 | 6,862.00 – 6,954.65 | 92.65 | 101.30 | 1:42:50 | 130.0 | 8.70 | 12 |
| 4 ² | 6,955.00 – 7,047.00 | 92.0 | 6,955.00 – 7,047.60 | 92.60 | 101.30 | 1:23:00 | 130.0 | 8.70 | 8 |
| Total | 6,676.00 – 7,047.00 | 368 | 6,676.00 – 7,047.60 | 369.50 | - | - | - | - | 42 |

Notes:

¹ Core Run #3 had a depth correction of +2.0 feet.² Core run #4 had a depth correction of +3.0 feet.

3.0 SAMPLE COLLECTION

Gas Content Analysis Samples

Twenty-one (3.5-inch diameter) core samples, approximately one foot in length, were collected from the cored interval between 6,676.0 and 7,047.0 feet for gas content analysis as summarized in Tables 3-1 and 3-2. Ten of the gas content analysis samples were selected for gas composition analysis and isotope determination. All canisters were filled with inert silica sand in order to reduce headspace volume in the canisters. This increases the accuracy of the gas content analysis measurements, maximizes the quality of gas samples collected for compositional analysis, and reduces oxidation and desiccation of the shale. Samples were then heated to the circulating fluid temperature (130°F). After 3 hours of gas content measurements the samples were heated to the highest attainable water bath temperature (160°F) and gas content analysis continued for a minimum of 24 hours in the field. After field readings were completed all samples were iced down to inhibit gas production during transport. Upon arrival at the laboratory on July 16, 2010, gas content analysis resumed at 160°F.

A calibrated digital scale was used to weigh the samples before sealing. The measured weights and calculated densities provided represent canistered material at the time of sample collection. Field measurements are preliminary and subject to revision once the samples are removed from the canisters and reweighed in the laboratory. These values assist early estimations of measured gas content. The first 24 hours of measured gas volumes are presented. **Early measured gas volumes provide sample comparisons and should not be used for gas content estimation as the gas content analysis is incomplete.**

Preserved Samples (Whole Core)

Twenty-one (3.5-inch diameter) core samples, approximately one-foot in length, were collected directly below each gas content analysis sample and preserved on site as summarized in Table 3-3. Whole core samples were preserved using saran wrap, aluminum foil, heat barrier and heat stippable plastic. Preserved samples will be used for additional analyses at Weatherford Laboratories in Golden, Colorado and Houston, Texas.

A calibrated digital scale was used to weigh the samples before sealing. The measured weights provided represent the preserved material at the time of sample collection. Field measurements are preliminary and subject to revision once the samples are reweighed in the laboratory.

Core Chip Samples (Geojars)

Thirty-four chip samples removed from end cuts were collected and preserved on site as summarized in Table 3-4. Core chip samples were placed in Geojars with water, inventoried and sealed. Preserved samples will be used for headspace gas analysis at Weatherford Laboratories in Houston, Texas.

Table 3-1 Summary of Gas Content Sample Collection Part 1

| Sample ID | Canister Number | Measured Depth TOP feet | Measured Depth BOTTOM feet | Measured Sample Length feet | Raw Sample Weight grams | Calculated Sample Density g/cm ³ | Measured Gas Volume (first 24hrs) Scf/ton | Bath Temp. °F | Special Testing | Core Run | Date / Time Canister Sealed date hh:mm:ss |
|--------------------|-----------------|----------------------------|-------------------------------|--------------------------------|----------------------------|--|---|------------------|-----------------|----------|--|
| Niobrara Formation | | | | | | | | | | | |
| 48032-1 | GTI-154 | 6,680.00 | 6,681.00 | 1.00 | 4,427.00 | 2.34 | 6,125.00 | 160.0 | GC / ISO | 1 | 7/14/2010 03:44:10 |
| 48032-2 | GTI-233 | 6,684.00 | 6,685.00 | 1.00 | 4,084.00 | 2.16 | 7,502.00 | 160.0 | | 1 | 7/14/2010 04:08:46 |
| 48032-3 | GTI-281 | 6,700.00 | 6,701.00 | 1.00 | 4,183.00 | 2.21 | 7,288.00 | 160.0 | | 1 | 7/14/2010 04:14:53 |
| 48032-4 | GTI-177 | 6,709.00 | 6,710.00 | 1.00 | 4,301.00 | 2.27 | 6,757.00 | 160.0 | GC / ISO | 1 | 7/14/2010 03:53:35 |
| 48032-5 | GTI-401 | 6,723.00 | 6,724.00 | 1.00 | 4,671.00 | 2.47 | 7,374.00 | 160.0 | | 1 | 7/14/2010 04:21:29 |
| 48032-6 | GTI-413 | 6,751.00 | 6,752.00 | 1.00 | 4,006.00 | 2.12 | 6,921.00 | 160.0 | GC / ISO | 1 | 7/14/2010 04:32:53 |
| 48032-7 | GTI-006 | 6,771.00 | 6,772.00 | 1.00 | 4,338.00 | 2.29 | 7,473.00 | 160.0 | | 2 | 7/14/2010 14:24:52 |
| 48032-8 | GTI-052 | 6,786.00 | 6,787.00 | 1.00 | 4,183.00 | 2.21 | 7,419.00 | 160.0 | GC / ISO | 2 | 7/14/2010 14:31:37 |
| 48032-9 | GTI-063 | 6,802.00 | 6,803.00 | 1.00 | 4,153.00 | 2.20 | 7,530.00 | 160.0 | | 2 | 7/14/2010 14:36:36 |
| 48032-10 | GTI-183 | 6,833.00 | 6,834.00 | 1.00 | 4,076.00 | 2.15 | 5,468.00 | 160.0 | GC / ISO | 2 | 7/14/2010 14:46:28 |
| 48032-11 | GTI-186 | 6,856.00 | 6,857.00 | 1.00 | 4,675.00 | 2.47 | 4,587.00 | 160.0 | | 2 | 7/14/2010 14:54:06 |
| 48032-12 | GTI-195 | 6,864.00 | 6,865.00 | 1.00 | 4,098.00 | 2.17 | 4,058.00 | 160.0 | | 3 | 7/15/2010 00:06:10 |

Notes:

GC = Gas Composition Sample

ISO = Isotope Determination Sample

Table 3-2 Summary of Gas Content Sample Collection Part 2

| Sample ID | Canister Number | Measured Depth TOP feet | Measured Depth BOTTOM feet | Measured Sample Length feet | Raw Sample Weight grams | Calculated Sample Density g/cm ³ | Measured Gas Volume (first 24hrs) Scf/ton | Bath Temp. °F | Special Testing | Core Run | Date / Time Canister Sealed date hh:mm:ss |
|--------------------|-----------------|----------------------------|-------------------------------|--------------------------------|----------------------------|--|---|------------------|-----------------|----------|--|
| Niobrara Formation | | | | | | | | | | | |
| 48032-13 | GTI-290 | 6,879.00 | 6,880.00 | 1.0 | 4,666.00 | 2.47 | 3,708.00 | 160.0 | GC / ISO | 3 | 7/15/2010 00:13:19 |
| 48032-14 | GTI-406 | 6,902.00 | 6,903.00 | 1.0 | 4,459.00 | 2.36 | 6,346.00 | 160.0 | | 3 | 7/15/2010 00:19:13 |
| 48032-15 | GTI-426 | 6,918.00 | 6,919.00 | 1.0 | 4,385.00 | 2.32 | 6,825.00 | 160.0 | GC / ISO | 3 | 7/15/2010 00:26:50 |
| 48032-16 | GTI-468 | 6,927.00 | 6,928.00 | 1.0 | 3,871.00 | 2.05 | 4,097.00 | 160.0 | | 3 | 7/15/2010 00:40:02 |
| 48032-17 | GTI-121 | 6,943.00 | 6,944.00 | 1.0 | 4,602.00 | 2.43 | 1,827.00 | 160.0 | GC / ISO | 3 | 7/15/2010 00:53:40 |
| 48032-18 | GTI-074 | 6,960.00 | 6,961.00 | 1.0 | 4,759.00 | 2.52 | 4,298.00 | 160.0 | | 4 | 7/15/2010 07:38:46 |
| 48032-19 | GTI-058 | 7,012.00 | 7,013.00 | 1.0 | 4,473.00 | 2.36 | 2,647.00 | 160.0 | GC / ISO | 4 | 7/15/2010 07:52:02 |
| 48032-20 | GTI-078 | 7,020.00 | 7,021.00 | 1.0 | 4,076.00 | 2.15 | 2,010.00 | 160.0 | | 4 | 7/15/2010 08:02:50 |
| 48032-21 | GTI-084 | 7,040.00 | 7,041.00 | 1.0 | 4,803.00 | 2.54 | 2,257.00 | 160.0 | GC / ISO | 4 | 7/15/2010 08:13:40 |

Notes:

GC = Gas Composition Sample

ISO = Isotope Determination Sample

Table 3-3 Summary of Preserved Sample Collection

| Sample ID | Core Run | Top Depth | Bottom Depth | Sample Length | Sample Weight | Date / Time Sample Preserved |
|-----------|----------------|-----------|--------------|---------------|---------------|------------------------------|
| # | # | feet | feet | feet | grams | date hh:mm:ss |
| 48032-1P | 1 | 6,681.0 | 6,682.0 | 1.0 | 3,693.0 | 7/14/2010 8:10:00 |
| 48032-2P | 1 | 6,685.0 | 6,686.0 | 1.0 | 1,986.0 | 7/14/2010 8:15:00 |
| 48032-3P | 1 | 6,701.0 | 6,702.0 | 1.0 | 3,546.0 | 7/14/2010 8:20:00 |
| 48032-4P | 1 | 6,710.0 | 6,711.0 | 1.0 | 3,254.0 | 7/14/2010 8:25:00 |
| 48032-5P | 1 | 6,724.0 | 6,725.0 | 1.0 | 4,220.0 | 7/14/2010 8:30:00 |
| 48032-6P | 1 | 6,752.0 | 6,753.0 | 1.0 | 3,794.0 | 7/14/2010 8:35:00 |
| 48032-7P | 2 ¹ | 6,772.0 | 6,773.0 | 1.0 | - | 7/14/2010 15:30:00 |
| 48032-8P | 2 ¹ | 6,787.0 | 6,788.0 | 1.0 | - | 7/14/2010 15:35:00 |
| 48032-9P | 2 ¹ | 6,803.0 | 6,804.0 | 1.0 | - | 7/14/2010 15:40:00 |
| 48032-10P | 2 ¹ | 6,834.0 | 6,835.0 | 1.0 | - | 7/14/2010 15:45:00 |
| 48032-11P | 2 ¹ | 6,857.0 | 6,858.0 | 1.0 | - | 7/14/2010 15:50:00 |
| 48032-12P | 3 | 6,865.0 | 6,866.0 | 1.0 | 4,757.0 | 7/15/2010 2:00:00 |
| 48032-13P | 3 | 6,881.0 | 6,882.0 | 1.0 | 4,489.0 | 7/15/2010 2:05:00 |
| 48032-14P | 3 | 6,904.0 | 6,905.0 | 1.0 | 4,702.0 | 7/15/2010 2:10:00 |
| 48032-15P | 3 | 6,920.0 | 6,921.0 | 1.0 | 3,995.0 | 7/15/2010 2:15:00 |
| 48032-16P | 3 | 6,929.0 | 6,930.0 | 1.0 | 3,976.0 | 7/15/2010 2:20:00 |
| 48032-17P | 3 | 6,944.0 | 6,945.0 | 1.0 | 4,780.0 | 7/15/2010 2:25:00 |
| 48032-18P | 4 | 6,961.0 | 6,962.0 | 1.0 | 4,524.0 | 7/15/2010 9:00:00 |
| 48032-19P | 4 | 7,013.0 | 7,014.0 | 1.0 | 3,914.0 | 7/15/2010 9:05:00 |
| 48032-20P | 4 | 7,021.0 | 7,022.0 | 1.0 | 3,871.0 | 7/15/2010 9:10:00 |
| 48032-21P | 4 | 7,041.0 | 7,042.0 | 1.0 | 3,481.0 | 7/15/2010 9:20:00 |
| Total | - | - | - | 21.0 | - | - |

Note 1: Sample weights were not taken in the field. Samples will be weighed upon arrival back at WFT Labs.

Table 3-4 Summary of Core Ship Samples (Geo jars)

| Sample ID | Core Run | Depth |
|-----------|----------|----------|
| # | # | feet |
| 48032-1 | 1 | 6,685.00 |
| 48032-2 | 1 | 6,698.00 |
| 48032-3 | 1 | 6,709.00 |
| 48032-4 | 1 | 6,720.00 |
| 48032-5 | 1 | 6,742.00 |
| 48032--6 | 1 | 6,759.00 |
| 48032-1 | 2 | 6,776.00 |
| 48032-2 | 2 | 6,786.00 |
| 48032-3 | 2 | 6,797.00 |
| 48032-4 | 2 | 6,810.00 |
| 48032-5 | 2 | 6,819.00 |
| 48032-6 | 2 | 6,829.00 |
| 48032-7 | 2 | 6,838.00 |
| 48032-8 | 2 | 6,855.00 |
| 48032-1 | 3 | 6,872.00 |
| 48032-2 | 3 | 6,884.00 |
| 48032-3 | 3 | 6,892.00 |
| 48032-4 | 3 | 6,902.00 |
| 48032-5 | 3 | 6,910.00 |
| 48032-6 | 3 | 6,918.00 |
| 48032-7 | 3 | 6,929.00 |
| 48032-8 | 3 | 6,945.00 |
| 48032-9 | 3 | 6,954.85 |
| 48032-1 | 4 | 6,955.00 |
| 48032-2 | 4 | 6,964.00 |
| 48032-3 | 4 | 6,973.00 |
| 48032-4 | 4 | 6,982.00 |
| 48032-5 | 4 | 6,991.00 |
| 48032-6 | 4 | 7,000.00 |
| 48032-7 | 4 | 7,009.00 |
| 48032-8 | 4 | 7,018.00 |
| 48032-9 | 4 | 7,027.00 |
| 48032-10 | 4 | 7,036.00 |
| 48032-11 | 4 | 7,045.00 |
| Total | 34 | - |