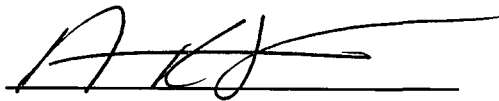


Apache Corporation  
303 Veterans Airpark Lane, #3000  
Midland, TX 79705

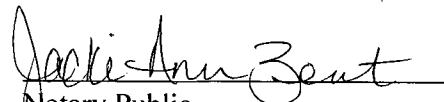
AB State 647 #8 API# 30-015-41492 1375' F&L + 2320' FWL ULL: K 32-178-28E  
Eddy County, New Mexico

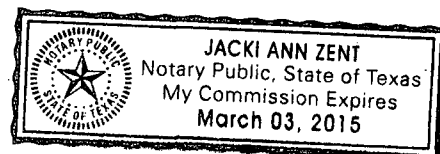
|     |      |      |      |      |      |
|-----|------|------|------|------|------|
| 236 | 2.36 | 0.50 | 0.88 | 2.07 | 2.07 |
| 427 | 1.91 | 0.50 | 0.88 | 1.67 | 3.74 |



Archie Brown - General Manager

The attached instrument was acknowledged before me on the 3<sup>rd</sup> day of December, 2013 by  
Archie Brown - General Manager, CapStar Drilling, Inc.

  
Notary Public





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## Apache Corporation

Eddy County, New Mexico (NAD 83)

Sec 32, T17S, R28E 1375' FGL + 2320' FWL

AB State 647 #8 API # 30-015-41492

Wellbore #1

Survey: MWD

## DDC Survey Report

27 November, 2013





## Survey Certification Sheet

Apache Corporation  
Company

WT-13884  
Job Number

11/27/13  
Date

Sec32, T17S, R28E  
Lease

AB State 647 # 8  
Well Name

Eddy, NM  
County & State

API: 30-015-41492

Surveyed from a depth of: 598 feet to 4326 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: David Ray

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Digitally signed by Larry Wright  
DN: cn=Larry Wright, o=The  
Directional Drilling Company,  
ou=GM of Guidance Services,  
email=larryw@directionaldrillers.c  
om, c=US  
Date: 2013.11.27 11:41:08 -06'00'

Larry Wright  
MWD General Manager



DDC  
Survey Report



|           |                                  |                              |                                  |
|-----------|----------------------------------|------------------------------|----------------------------------|
| Company:  | Apache Corporation               | Local Co-ordinate Reference: | Well AB State 647 #8             |
| Project:  | Eddy County, New Mexico (NAD 83) | TVD Reference:               | WELL @ 3688.0usft (Capstar #118) |
| Site:     | Sec 32, T17S, R28E               | MD Reference:                | WELL @ 3688.0usft (Capstar #118) |
| Well:     | AB State 647 #8                  | North Reference:             | Grid                             |
| Wellbore: | Wellbore #1                      | Survey Calculation Method:   | Minimum Curvature                |
| Design:   | Wellbore #1                      | Database:                    | EDM 5000.1 Single User Db        |

|             |                                  |               |                |
|-------------|----------------------------------|---------------|----------------|
| Project     | Eddy County, New Mexico (NAD 83) |               |                |
| Map System: | US State Plane 1983              | System Datum: | Mean Sea Level |
| Geo Datum:  | North American Datum 1983        |               |                |
| Map Zone:   | New Mexico Eastern Zone          |               |                |

|                       |                    |                   |                   |
|-----------------------|--------------------|-------------------|-------------------|
| Site                  | Sec 32, T17S, R28E |                   |                   |
| Site Position:        |                    | Northing:         | 651,211.44 usft   |
| From:                 | Map                | Easting:          | 582,974.92 usft   |
| Position Uncertainty: | 0.0 usft           | Slot Radius:      | 13-3/16 "         |
|                       |                    | Latitude:         | 32° 47' 24.499 N  |
|                       |                    | Longitude:        | 104° 11' 52.221 W |
|                       |                    | Grid Convergence: | 0.07 °            |

|                      |                 |                     |                   |
|----------------------|-----------------|---------------------|-------------------|
| Well                 | AB State 647 #8 |                     |                   |
| Well Position        | +N/-S           | 0.0 usft            | Northing:         |
|                      | +E/-W           | 0.0 usft            | Easting:          |
| Position Uncertainty | 0.0 usft        | Wellhead Elevation: |                   |
|                      |                 |                     | usft              |
|                      |                 | Latitude:           | 32° 47' 14.754 N  |
|                      |                 | Longitude:          | 104° 11' 55.334 W |
|                      |                 | Ground Level:       | 3,677.0 usft      |

|           |             |             |                |
|-----------|-------------|-------------|----------------|
| Wellbore  | Wellbore #1 |             |                |
| Magnetics | Model Name  | Sample Date | Declination    |
|           |             |             | (°)            |
|           | IGRF2010    | 11/5/2013   | 7.62           |
|           |             |             | Dip Angle      |
|           |             |             | (°)            |
|           |             |             | 60.54          |
|           |             |             | Field Strength |
|           |             |             | (nT)           |
|           |             |             | 48,645         |

|                   |                  |               |           |
|-------------------|------------------|---------------|-----------|
| Design            | Wellbore #1      |               |           |
| Audit Notes:      |                  |               |           |
| Version:          | 1.0              | Phase:        | ACTUAL    |
|                   |                  | Tie On Depth: | 0.0       |
| Vertical Section: | Depth From (TVD) | +N/-S         | +E/-W     |
|                   | (usft)           | (usft)        | (usft)    |
|                   | 0.0              | 0.0           | 0.0       |
|                   |                  |               | Direction |
|                   |                  |               | (°)       |
|                   |                  |               | 338.78    |

|                |                 |                    |             |
|----------------|-----------------|--------------------|-------------|
| Survey Program | Date 11/21/2013 |                    |             |
| From           | To              | Survey (Wellbore)  | Tool Name   |
| (usft)         | (usft)          |                    | Description |
| 100.0          | 400.0           | GYRO (Wellbore #1) |             |
| 598.0          | 4,326.0         | MWD (Wellbore #1)  |             |

|                             |             |         |          |        |        |          |             |             |             |
|-----------------------------|-------------|---------|----------|--------|--------|----------|-------------|-------------|-------------|
| Survey                      |             |         |          |        |        |          |             |             |             |
| Measured                    | Inclination | Azimuth | Vertical | +N/-S  | +E/-W  | Vertical | Dogleg      | Build       | Turn        |
| Depth                       | (°)         | (°)     | Depth    | (usft) | (usft) | Section  | Rate        | Rate        | Rate        |
| (usft)                      |             |         | (usft)   |        |        | (usft)   | (°/100usft) | (°/100usft) | (°/100usft) |
| Tie In @ 400' MD / 400' TVD |             |         |          |        |        |          |             |             |             |
| 400.0                       | 0.66        | 219.64  | 400.0    | -3.6   | -2.0   | -2.6     | 0.00        | 0.00        | 0.00        |
| 598.0                       | 0.80        | 256.50  | 598.0    | -4.8   | -4.1   | -3.0     | 0.24        | 0.07        | 18.62       |
| 790.0                       | 1.80        | 332.30  | 789.9    | -2.4   | -6.8   | 0.2      | 0.93        | 0.52        | 39.48       |
| 875.0                       | 2.70        | 342.30  | 874.9    | 0.7    | -8.0   | 3.6      | 1.15        | 1.06        | 11.76       |
| 961.0                       | 4.10        | 340.40  | 960.7    | 5.5    | -9.7   | 8.6      | 1.63        | 1.63        | -2.21       |
| 1,004.0                     | 4.20        | 340.50  | 1,003.6  | 8.5    | -10.7  | 11.8     | 0.23        | 0.23        | 0.23        |
| 1,089.0                     | 5.50        | 338.60  | 1,088.3  | 15.2   | -13.2  | 18.9     | 1.54        | 1.53        | -2.24       |
| 1,217.0                     | 6.70        | 339.50  | 1,215.6  | 27.9   | -18.1  | 32.5     | 0.94        | 0.94        | 0.70        |
| 1,345.0                     | 7.10        | 338.30  | 1,342.6  | 42.2   | -23.6  | 47.9     | 0.33        | 0.31        | -0.94       |



DDC  
Survey Report



|           |                                  |                              |                                  |
|-----------|----------------------------------|------------------------------|----------------------------------|
| Company:  | Apache Corporation               | Local Co-ordinate Reference: | Well AB State 647 #8             |
| Project:  | Eddy County, New Mexico (NAD 83) | TVD Reference:               | WELL @ 3688.0usft (Capstar #118) |
| Site:     | Sec 32, T17S, R28E               | MD Reference:                | WELL @ 3688.0usft (Capstar #118) |
| Well:     | AB State 647 #8                  | North Reference:             | Grid                             |
| Wellbore: | Wellbore #1                      | Survey Calculation Method:   | Minimum Curvature                |
| Design:   | Wellbore #1                      | Database:                    | EDM 5000.1 Single User Db        |

| Survey                    |                 |             |                       |              |              |                         |                         |                        |                       |  |
|---------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft)     | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |  |
| 1,473.0                   | 8.30            | 344.20      | 1,469.5               | 58.5         | -29.1        | 65.0                    | 1.12                    | 0.94                   | 4.61                  |  |
| 1,601.0                   | 9.80            | 340.90      | 1,595.9               | 77.7         | -35.2        | 85.1                    | 1.24                    | 1.17                   | -2.58                 |  |
| 1,729.0                   | 11.40           | 336.20      | 1,721.7               | 99.5         | -43.8        | 108.6                   | 1.42                    | 1.25                   | -3.67                 |  |
| 1,902.0                   | 13.00           | 333.30      | 1,890.8               | 132.6        | -59.5        | 145.1                   | 0.99                    | 0.92                   | -1.68                 |  |
| 2,071.0                   | 12.50           | 338.30      | 2,055.6               | 166.5        | -74.8        | 182.3                   | 0.72                    | -0.30                  | 2.96                  |  |
| 2,156.0                   | 11.20           | 339.50      | 2,138.8               | 182.8        | -81.1        | 199.8                   | 1.56                    | -1.53                  | 1.41                  |  |
| 2,242.0                   | 9.80            | 342.50      | 2,223.4               | 197.6        | -86.2        | 215.4                   | 1.75                    | -1.63                  | 3.49                  |  |
| 2,370.0                   | 8.30            | 344.90      | 2,349.8               | 216.9        | -91.9        | 235.5                   | 1.21                    | -1.17                  | 1.88                  |  |
| 2,455.0                   | 8.40            | 344.20      | 2,433.9               | 228.8        | -95.2        | 247.7                   | 0.17                    | 0.12                   | -0.82                 |  |
| 2,541.0                   | 6.70            | 344.60      | 2,519.1               | 239.7        | -98.2        | 259.0                   | 1.98                    | -1.98                  | 0.47                  |  |
| 2,626.0                   | 5.80            | 342.00      | 2,603.6               | 248.6        | -100.8       | 268.2                   | 1.11                    | -1.06                  | -3.06                 |  |
| 2,754.0                   | 5.30            | 338.40      | 2,731.0               | 260.2        | -105.0       | 280.6                   | 0.48                    | -0.39                  | -2.81                 |  |
| 2,882.0                   | 3.60            | 333.70      | 2,858.6               | 269.3        | -109.0       | 290.5                   | 1.36                    | -1.33                  | -3.67                 |  |
| 3,010.0                   | 2.60            | 353.20      | 2,986.4               | 275.8        | -111.1       | 297.3                   | 1.12                    | -0.78                  | 15.23                 |  |
| 3,138.0                   | 1.30            | 281.80      | 3,114.4               | 279.0        | -112.9       | 300.9                   | 1.96                    | -1.02                  | -55.78                |  |
| 3,266.0                   | 0.50            | 221.40      | 3,242.4               | 278.9        | -114.7       | 301.5                   | 0.89                    | -0.63                  | -47.19                |  |
| 3,395.0                   | 0.70            | 251.10      | 3,371.4               | 278.2        | -115.8       | 301.2                   | 0.28                    | 0.16                   | 23.02                 |  |
| 3,480.0                   | 0.80            | 266.40      | 3,456.3               | 278.0        | -116.9       | 301.4                   | 0.26                    | 0.12                   | 18.00                 |  |
| 3,608.0                   | 0.30            | 98.10       | 3,584.3               | 277.9        | -117.4       | 301.5                   | 0.86                    | -0.39                  | -131.48               |  |
| 3,736.0                   | 0.10            | 83.90       | 3,712.3               | 277.8        | -117.0       | 301.3                   | 0.16                    | -0.16                  | -11.09                |  |
| 3,906.0                   | 0.20            | 201.50      | 3,882.3               | 277.6        | -116.9       | 301.1                   | 0.15                    | 0.06                   | 69.18                 |  |
| 4,077.0                   | 0.30            | 318.30      | 4,053.3               | 277.6        | -117.3       | 301.3                   | 0.25                    | 0.06                   | 68.30                 |  |
| 4,276.0                   | 1.00            | 2.30        | 4,252.3               | 279.8        | -117.6       | 303.4                   | 0.41                    | 0.35                   | 22.11                 |  |
| TD @ 4326' MD / 4302' TVD |                 |             |                       |              |              |                         |                         |                        |                       |  |
| 4,326.0                   | 1.00            | 2.30        | 4,302.3               | 280.6        | -117.6       | 304.2                   | 0.00                    | 0.00                   | 0.00                  |  |

| Survey Annotations    |                       |                   |              |                             |  |
|-----------------------|-----------------------|-------------------|--------------|-----------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              |                             |  |
|                       |                       | +N/-S (usft)      | +E/-W (usft) | Comment                     |  |
| 400.0                 | 400.0                 | -3.6              | -2.0         | Tie In @ 400' MD / 400' TVD |  |
| 4,326.0               | 4,302.3               | 273.2             | -110.5       | TD @ 4326' MD / 4302' TVD   |  |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_