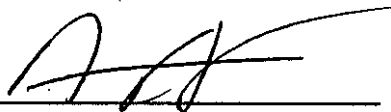


Apache Corporation  
503 Veterans Airpark Lane, #3000  
Midland, TX 79705

Crow Federal #042H  
Eddy County, New Mexico

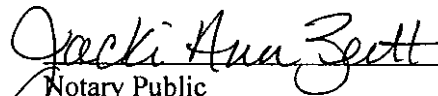
API - 30-015-42744  
L-03-175-31E  
2273 FSL & 10 FWL

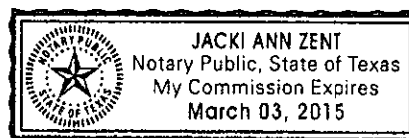
|     |      |      |      |      |      |
|-----|------|------|------|------|------|
| 293 | 2.93 | 0.50 | 0.88 | 2.56 | 2.56 |
| 472 | 1.79 | 0.75 | 1.31 | 2.35 | 4.91 |



Archie Brown - General Manager

The attached instrument was acknowledged before me on the 28<sup>th</sup> day of February, 2015 by  
Archie Brown - General Manager, CapStar Drilling, Inc.

  
Notary Public





## **Apache Corporation**

**Eddy County, NM (NAD27 NME)**

**Crow Federal**

**#42H**

**WB1 / Job #1512794**

**Design: Surveys (Capstar 114)**

## **Standard Survey Report**

**19 February, 2015**





## Survey Report



|           |                             |                              |                                |
|-----------|-----------------------------|------------------------------|--------------------------------|
| Company:  | Apache Corporation          | Local Co-ordinate Reference: | Well #42H                      |
| Project:  | Eddy County, NM (NAD27 NME) | TVD Reference:               | KB @ 3917.00usft (Capstar 114) |
| Site:     | Crow Federal                | MD Reference:                | KB @ 3917.00usft (Capstar 114) |
| Well:     | #42H                        | North Reference:             | Grid                           |
| Wellbore: | WB1 / Job #1512794          | Survey Calculation Method:   | Minimum Curvature              |
| Design:   | Surveys (Capstar 114)       | Database:                    | Compass 5000 GCR               |

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project:    | Eddy County, NM (NAD27 NME)          |               |                |
| Map System: | US State Plane 1927 (Exact solution) | System Datum: | Mean Sea Level |
| Geo Datum:  | NAD 1927 (NADCON CONUS)              |               |                |
| Map Zone:   | New Mexico East 3001                 |               |                |

|                       |           |              |                 |                   |                     |
|-----------------------|-----------|--------------|-----------------|-------------------|---------------------|
| Site: Crow Federal    |           |              |                 |                   |                     |
| Site Position:        |           | Northing:    | 671,130.90 usft | Latitude:         | 32° 50' 38.92796 N  |
| From:                 | Map       | Easting:     | 643,908.80 usft | Longitude:        | 103° 51' 53.16689 W |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13-3/16 "       | Grid Convergence: | 0.25 °              |

|                       |           |                     |           |                 |               |                     |
|-----------------------|-----------|---------------------|-----------|-----------------|---------------|---------------------|
| Well                  | #42H      |                     |           |                 |               |                     |
| Well Position         | +N/-S     | 0.00 usft           | Northing: | 677,765.10 usft | Latitude:     | 32° 51' 44.81313 N  |
|                       | +E/-W     | 0.00 usft           | Easting:  | 638,347.70 usft | Longitude:    | 103° 52' 57.99551 W |
| Position Uncertainty: | 0.00 usft | Wellhead Elevation: | usft      | Ground Level:   | 3,906.00 usft |                     |

|           |            |                    |             |           |                |
|-----------|------------|--------------------|-------------|-----------|----------------|
| Wellbore  |            | WB1 / Job #1512794 |             |           |                |
| Magnetics | Model Name | Sample Date        | Declination | Dip Angle | Field Strength |
|           | BGGM2014   | 2/4/2015           | (°)         | (°)       | (nT)           |
|           |            |                    | 7.51        | 60.83     | 48,548         |

|                   |                       |        |        |               |      |
|-------------------|-----------------------|--------|--------|---------------|------|
| Design:           | Surveys (Capstar 114) |        |        |               |      |
| Audit Notes:      |                       |        |        |               |      |
| Version:          | 1.0                   | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD)      | +N/-S  | +E/-W  | Direction     |      |
|                   | (usft)                | (usft) | (usft) | (°)           |      |
|                   | 0.00                  | 0.00   | 0.00   | 269.59        |      |

|                |           |                                        |              |                                      |
|----------------|-----------|----------------------------------------|--------------|--------------------------------------|
| Survey Program |           | Date                                   | 2/19/2015    |                                      |
| From           | To        | Survey (Wellbore)                      | Tool Name    | Description                          |
| (usft)         | (usft)    |                                        |              |                                      |
| 100.00         | 575.00    | Gyrodata Gyro Survey (WB1 / Job #15127 | NS-GYRO-MS   | North sensing gyrocompassing m/s     |
| 575.00         | 10,387.00 | Phoenix MWD Survey (WB1 / Job #15127   | PHX+MWD+BGGM | PHX+MWD+BGGM v3:standard declination |

| Survey                         | Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|--------------------------------|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
|                                | 0.00                        | 0.00               | 0.00           | 0.00                        | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
|                                | 100.00                      | 0.17               | 121.59         | 100.00                      | -0.08           | 0.13            | -0.13                         | 0.17                          | 0.17                         | 0.00                        |
|                                | 200.00                      | 0.24               | 118.62         | 200.00                      | -0.28           | 0.44            | -0.43                         | 0.07                          | 0.07                         | -2.97                       |
|                                | 300.00                      | 0.28               | 115.04         | 300.00                      | -0.46           | 0.84            | -0.84                         | 0.04                          | 0.04                         | -3.58                       |
|                                | 400.00                      | 0.27               | 92.20          | 400.00                      | -0.57           | 1.30            | -1.29                         | 0.11                          | -0.01                        | -22.84                      |
|                                | 500.00                      | 0.29               | 86.73          | 500.00                      | -0.57           | 1.79            | -1.78                         | 0.03                          | 0.02                         | -5.47                       |
|                                | 575.00                      | 0.41               | 89.19          | 574.99                      | -0.55           | 2.24            | -2.24                         | 0.16                          | 0.16                         | 3.28                        |
| Tie-on to Gyrodata Gyro Survey |                             |                    |                |                             |                 |                 |                               |                               |                              |                             |
|                                | 690.00                      | 0.40               | 69.60          | 689.99                      | -0.41           | 3.03            | -3.03                         | 0.12                          | -0.01                        | -17.03                      |

Company: Apache Corporation  
Project: Eddy County, NM (NAD27 NME)  
Site: Crow Federal  
Well: #42H  
Wellbore: WB1 / Job #1512794  
Design: Surveys (Capstar 114)

Local Co-ordinate Reference:  
TVD Reference: KB @ 3917.00usft (Capstar 114)  
MD Reference: KB @ 3917.00usft (Capstar 114)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: Compass 5000 GCR

| 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) |
|---------------------------------|-----------------|-------------|-----------------------|------------|------------|-------------------------|------------------------|-----------------------|----------------------|
| <b>First Phoenix MWD Survey</b> |                 |             |                       |            |            |                         |                        |                       |                      |
| 775.00                          | 0.20            | 49.30       | 774.99                | -0.21      | 3.42       | -3.42                   | 0.28                   | -0.24                 | -23.88               |
| 861.00                          | 0.80            | 302.70      | 860.99                | 0.22       | 3.03       | -3.03                   | 1.02                   | 0.70                  | -123.95              |
| 947.00                          | 1.60            | 288.30      | 946.97                | 0.92       | 1.39       | -1.39                   | 0.99                   | 0.93                  | -16.74               |
| 1,031.00                        | 2.50            | 284.60      | 1,030.91              | 1.75       | -1.50      | 1.49                    | 1.08                   | 1.07                  | -4.40                |
| 1,117.00                        | 3.20            | 277.90      | 1,116.81              | 2.55       | -5.69      | 5.67                    | 0.90                   | 0.81                  | -7.79                |
| 1,203.00                        | 3.70            | 282.10      | 1,202.65              | 3.46       | -10.78     | 10.76                   | 0.65                   | 0.58                  | 4.88                 |
| 1,288.00                        | 3.90            | 278.10      | 1,287.46              | 4.44       | -16.33     | 16.29                   | 0.39                   | 0.24                  | -4.71                |
| 1,374.00                        | 4.40            | 279.60      | 1,373.24              | 5.41       | -22.48     | 22.44                   | 0.59                   | 0.58                  | 1.74                 |
| 1,459.00                        | 4.80            | 277.00      | 1,457.96              | 6.38       | -29.22     | 29.17                   | 0.53                   | 0.47                  | -3.06                |
| 1,545.00                        | 4.00            | 267.30      | 1,543.71              | 6.68       | -35.79     | 35.74                   | 1.27                   | -0.93                 | -11.28               |
| 1,630.00                        | 3.50            | 264.00      | 1,628.53              | 6.27       | -41.33     | 41.28                   | 0.64                   | -0.59                 | -3.88                |
| 1,716.00                        | 2.40            | 259.70      | 1,714.41              | 5.67       | -45.71     | 45.67                   | 1.30                   | -1.28                 | -5.00                |
| 1,802.00                        | 1.80            | 277.80      | 1,800.36              | 5.51       | -48.67     | 48.63                   | 1.17                   | -0.93                 | 21.05                |
| 1,887.00                        | 1.20            | 283.80      | 1,885.34              | 5.89       | -50.71     | 50.67                   | 0.50                   | -0.47                 | 7.06                 |
| 1,972.00                        | 0.70            | 287.20      | 1,970.32              | 6.07       | -52.10     | 52.05                   | 0.67                   | -0.59                 | -19.53               |
| 2,061.00                        | 0.80            | 260.80      | 2,059.32              | 5.95       | -53.25     | 53.21                   | 0.15                   | 0.11                  | -7.19                |
| 2,146.00                        | 0.50            | 274.90      | 2,144.31              | 5.89       | -54.21     | 54.16                   | 0.40                   | -0.35                 | 16.59                |
| 2,231.00                        | 0.70            | 291.90      | 2,229.31              | 6.11       | -55.06     | 55.01                   | 0.31                   | 0.24                  | 20.00                |
| 2,317.00                        | 0.90            | 287.00      | 2,315.30              | 6.50       | -56.19     | 56.14                   | 0.25                   | 0.23                  | -5.70                |
| 2,403.00                        | 1.00            | 280.00      | 2,401.29              | 6.83       | -57.58     | 57.53                   | 0.18                   | 0.12                  | -8.14                |
| 2,488.00                        | 0.80            | 262.80      | 2,486.28              | 6.89       | -58.90     | 58.85                   | 0.39                   | -0.24                 | -20.24               |
| 2,573.00                        | 0.90            | 255.30      | 2,571.27              | 6.64       | -60.13     | 60.08                   | 0.18                   | 0.12                  | -8.82                |
| 2,659.00                        | 0.90            | 257.80      | 2,657.26              | 6.33       | -61.44     | 61.40                   | 0.05                   | 0.00                  | 2.91                 |
| 2,747.00                        | 1.20            | 265.30      | 2,745.24              | 6.11       | -63.04     | 62.99                   | 0.37                   | 0.34                  | 8.52                 |
| 2,833.00                        | 0.80            | 239.80      | 2,831.23              | 5.73       | -64.45     | 64.41                   | 0.68                   | -0.47                 | -28.65               |
| 2,918.00                        | 1.00            | 235.40      | 2,916.22              | 5.01       | -65.58     | 65.54                   | 0.25                   | 0.24                  | -5.18                |
| 3,004.00                        | 1.00            | 230.20      | 3,002.21              | 4.11       | -66.77     | 66.74                   | 0.11                   | 0.00                  | -6.05                |
| 3,089.00                        | 1.00            | 241.90      | 3,087.19              | 3.28       | -68.00     | 67.97                   | 0.24                   | 0.00                  | 13.78                |
| 3,176.00                        | 1.00            | 244.40      | 3,176.18              | 2.58       | -69.38     | 69.36                   | 0.05                   | 0.00                  | 2.81                 |
| 3,263.00                        | 1.10            | 249.70      | 3,261.16              | 1.98       | -70.82     | 70.80                   | 0.16                   | 0.12                  | 6.24                 |
| 3,349.00                        | 1.20            | 252.70      | 3,347.15              | 1.42       | -72.45     | 72.44                   | 0.14                   | 0.12                  | 3.49                 |
| 3,448.00                        | 0.90            | 243.20      | 3,446.13              | 0.76       | -74.13     | 74.13                   | 0.35                   | -0.30                 | -9.60                |
| 3,557.00                        | 1.00            | 251.30      | 3,555.12              | 0.07       | -75.80     | 75.80                   | 0.15                   | 0.08                  | 7.43                 |
| 3,643.00                        | 0.90            | 249.50      | 3,641.10              | -0.40      | -77.14     | 77.14                   | 0.12                   | -0.12                 | -2.09                |
| 3,728.00                        | 0.70            | 237.80      | 3,726.10              | -0.92      | -78.21     | 78.21                   | 0.30                   | -0.24                 | -13.78               |
| 3,814.00                        | 0.90            | 233.40      | 3,812.09              | -1.60      | -79.19     | 79.20                   | 0.24                   | 0.23                  | -5.12                |
| 3,899.00                        | 0.70            | 249.90      | 3,897.08              | -2.17      | -80.22     | 80.23                   | 0.38                   | -0.24                 | 19.41                |
| 3,985.00                        | 0.70            | 239.70      | 3,983.07              | -2.62      | -81.16     | 81.18                   | 0.14                   | 0.00                  | -11.86               |
| 4,070.00                        | 0.80            | 243.40      | 4,068.07              | -3.15      | -82.14     | 82.16                   | 0.13                   | 0.12                  | 4.35                 |
| 4,156.00                        | 0.30            | 49.10       | 4,154.06              | -3.27      | -82.51     | 82.53                   | 1.27                   | -0.58                 | 192.67               |
| 4,326.00                        | 0.60            | 52.90       | 4,324.06              | -2.44      | -81.46     | 81.48                   | 0.18                   | 0.18                  | 2.24                 |
| 4,411.00                        | 0.40            | 45.20       | 4,409.05              | -1.96      | -80.90     | 80.91                   | 0.25                   | -0.24                 | -9.06                |

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| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | N-S (usft) | E-W (usft) | Section (usft) | Dogleg Rate (°/100usft) | Bulld Rate (°/100usft) | Turn Rate (°/100usft) |
|-----------------------|-----------------|-------------|-----------------------|------------|------------|----------------|-------------------------|------------------------|-----------------------|
| 4,497.00              | 0.30            | 55.50       | 4,495.05              | -1.82      | -80.50     | 80.51          | 0.14                    | -0.12                  | 11.98                 |
| 4,583.00              | 0.20            | 28.10       | 4,581.05              | -1.38      | -80.24     | 80.25          | 0.18                    | -0.12                  | -31.88                |
| 4,668.00              | 0.30            | 41.20       | 4,666.05              | -1.07      | -80.03     | 80.03          | 0.13                    | 0.12                   | 15.41                 |
| 4,754.00              | 0.20            | 14.80       | 4,752.05              | -0.75      | -79.84     | 79.84          | 0.18                    | -0.12                  | -30.93                |
| 4,842.00              | 0.20            | 42.10       | 4,840.05              | -0.49      | -79.70     | 79.70          | 0.11                    | 0.00                   | 31.25                 |
| 4,927.00              | 0.10            | 68.60       | 4,925.05              | -0.35      | -79.53     | 79.53          | 0.14                    | -0.12                  | 28.82                 |
| 5,013.00              | 0.30            | 35.70       | 5,011.05              | -0.14      | -79.33     | 79.33          | 0.26                    | 0.23                   | -35.93                |
| 5,098.00              | 0.30            | 36.70       | 5,096.05              | 0.22       | -79.07     | 79.06          | 0.01                    | 0.00                   | 1.18                  |
| 5,163.00              | 0.00            | 7.80        | 5,161.05              | 0.36       | -78.87     | 78.96          | 0.46                    | -0.46                  | 0.00                  |
| 5,221.00              | 1.40            | 259.60      | 5,219.04              | 0.23       | -79.66     | 79.66          | 2.41                    | 2.41                   | 0.00                  |
| 5,264.00              | 5.60            | 261.10      | 5,261.95              | -0.19      | -82.25     | 82.25          | 9.77                    | 9.77                   | 3.49                  |
| 5,307.00              | 10.90           | 263.00      | 5,304.49              | -1.01      | -88.37     | 88.37          | 12.34                   | 12.33                  | 4.42                  |
| 5,350.00              | 16.40           | 264.80      | 5,346.26              | -2.06      | -98.46     | 98.47          | 12.83                   | 12.79                  | 4.19                  |
| 5,392.00              | 21.90           | 265.40      | 5,385.92              | -3.22      | -112.18    | 112.20         | 13.10                   | 13.10                  | 1.43                  |
| 5,434.00              | 25.60           | 263.80      | 5,424.36              | -4.83      | -129.01    | 129.04         | 8.94                    | 8.81                   | -3.81                 |
| 5,477.00              | 29.20           | 262.70      | 5,462.53              | -7.17      | -148.66    | 148.71         | 8.45                    | 8.37                   | -2.56                 |
| 5,519.00              | 34.10           | 260.70      | 5,498.27              | -10.37     | -170.45    | 170.52         | 11.93                   | 11.67                  | -4.76                 |
| 5,582.00              | 39.70           | 260.10      | 5,532.65              | -14.89     | -195.90    | 196.00         | 13.05                   | 13.02                  | -1.40                 |
| 5,604.00              | 45.90           | 260.80      | 5,563.45              | -19.41     | -224.03    | 224.16         | 14.81                   | 14.76                  | 1.67                  |
| 5,647.00              | 52.20           | 260.40      | 5,591.62              | -24.72     | -256.05    | 256.22         | 14.67                   | 14.65                  | -0.93                 |
| 5,690.00              | 55.10           | 262.70      | 5,617.10              | -29.79     | -290.30    | 290.51         | 8.00                    | 6.74                   | 5.35                  |
| 5,731.00              | 57.50           | 265.00      | 5,639.85              | -33.44     | -324.21    | 324.44         | 7.49                    | 5.85                   | 5.61                  |
| 5,772.00              | 60.80           | 268.00      | 5,660.88              | -35.57     | -359.33    | 359.58         | 10.21                   | 8.05                   | 7.32                  |
| 5,815.00              | 66.00           | 270.20      | 5,680.12              | -36.15     | -397.76    | 398.01         | 12.93                   | 12.09                  | 5.12                  |
| 5,857.00              | 69.30           | 272.80      | 5,696.10              | -35.13     | -436.58    | 436.82         | 9.72                    | 7.86                   | 6.19                  |
| 5,900.00              | 75.10           | 275.00      | 5,709.24              | -32.33     | -477.41    | 477.83         | 14.34                   | 13.49                  | 5.12                  |
| 5,943.00              | 80.90           | 276.50      | 5,718.17              | -28.11     | -519.24    | 519.42         | 13.91                   | 13.49                  | 3.49                  |
| 5,986.00              | 87.20           | 276.10      | 5,722.63              | -23.42     | -561.73    | 561.88         | 14.68                   | 14.65                  | -0.93                 |
| 6,029.00              | 90.10           | 276.00      | 5,723.64              | -18.89     | -604.47    | 604.59         | 6.75                    | 6.74                   | -0.23                 |
| 6,115.00              | 91.60           | 275.60      | 5,722.37              | -10.20     | -690.02    | 690.07         | 1.81                    | 1.74                   | -0.47                 |
| 6,199.00              | 93.10           | 273.80      | 5,718.92              | -3.33      | -773.66    | 773.66         | 2.79                    | 1.79                   | -2.14                 |
| 6,285.00              | 92.40           | 270.40      | 5,714.79              | -0.18      | -859.49    | 859.47         | 4.03                    | -0.81                  | -3.95                 |
| 6,370.00              | 92.70           | 270.70      | 5,711.01              | 0.64       | -944.40    | 944.37         | 0.50                    | 0.35                   | 0.35                  |
| 6,455.00              | 92.50           | 270.60      | 5,707.16              | 1.60       | -1,029.31  | 1,029.27       | 0.26                    | -0.24                  | -0.12                 |
| 6,541.00              | 92.30           | 270.70      | 5,703.56              | 2.57       | -1,115.23  | 1,115.18       | 0.26                    | -0.23                  | 0.12                  |
| 6,628.00              | 92.00           | 270.70      | 5,700.25              | 3.65       | -1,203.16  | 1,203.10       | 0.34                    | -0.34                  | 0.00                  |
| 6,715.00              | 91.30           | 268.40      | 5,697.78              | 2.97       | -1,289.11  | 1,289.06       | 2.79                    | -0.81                  | -2.67                 |
| 6,801.00              | 90.10           | 267.30      | 5,696.73              | -0.25      | -1,375.04  | 1,375.01       | 1.89                    | -1.40                  | -1.28                 |
| 6,888.00              | 89.90           | 267.30      | 5,696.73              | -4.26      | -1,459.95  | 1,459.94       | 0.24                    | -0.24                  | 0.00                  |
| 6,972.00              | 89.60           | 266.90      | 5,697.10              | -8.61      | -1,545.84  | 1,545.86       | 0.58                    | -0.35                  | -0.47                 |
| 7,057.00              | 90.10           | 267.40      | 5,697.32              | -12.83     | -1,630.73  | 1,630.78       | 0.83                    | 0.59                   | 0.59                  |
| 7,143.00              | 90.80           | 268.40      | 5,696.65              | -15.99     | -1,716.67  | 1,716.74       | 1.42                    | 0.81                   | 1.16                  |
| 7,228.00              | 91.20           | 268.00      | 5,695.17              | -18.66     | -1,801.81  | 1,801.70       | 0.67                    | 0.47                   | -0.47                 |
| 7,314.00              | 90.80           | 267.90      | 5,693.59              | -21.73     | -1,887.54  | 1,887.65       | 0.37                    | -0.35                  | -0.12                 |

Company: Apache Corporation  
Project: Eddy County, NM (NAD27 NME)  
Site: Crow Federal  
Well: #42H  
Wellbore: WB1 / Job #1512794  
Design: Surveys (Capstar 114)

Local Co-ordinate Reference:  
TVD Reference: KB @ 3917.00usft (Capstar 114)  
MD Reference: KB @ 3917.00usft (Capstar 114)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: Compass 5000 GCR

| Measured Depth (usft)   | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | N-S (usft) | E-W (usft) | Section (usft) | Dogleg Ratio (°/100usft) | Build Ratio (°/100usft) | Turn Ratio (°/100usft) |
|-------------------------|-----------------|-------------|-----------------------|------------|------------|----------------|--------------------------|-------------------------|------------------------|
| 7,399.00                | 91.60           | 269.30      | 5,691.74              | -23.81     | -1,972.50  | 1,972.62       | 1.84                     | 0.82                    | 1.65                   |
| 7,485.00                | 92.10           | 269.70      | 5,688.96              | -24.56     | -2,058.45  | 2,058.57       | 0.74                     | 0.58                    | 0.47                   |
| 7,571.00                | 91.90           | 269.50      | 5,685.96              | -25.18     | -2,144.39  | 2,144.52       | 0.33                     | -0.23                   | -0.23                  |
| 7,656.00                | 91.70           | 269.10      | 5,683.29              | -26.20     | -2,229.34  | 2,229.48       | 0.53                     | -0.24                   | -0.47                  |
| 7,742.00                | 91.90           | 268.70      | 5,680.59              | -27.85     | -2,315.29  | 2,315.43       | 0.52                     | 0.23                    | -0.47                  |
| 7,828.00                | 91.90           | 268.40      | 5,677.73              | -30.02     | -2,401.21  | 2,401.36       | 0.35                     | 0.00                    | -0.35                  |
| 7,913.00                | 91.90           | 269.40      | 5,674.92              | -31.65     | -2,486.15  | 2,486.31       | 1.18                     | 0.00                    | 1.18                   |
| 7,999.00                | 91.80           | 269.10      | 5,672.14              | -32.78     | -2,572.10  | 2,572.26       | 0.37                     | -0.12                   | -0.35                  |
| 8,084.00                | 91.20           | 268.90      | 5,669.92              | -34.26     | -2,657.05  | 2,657.23       | 0.74                     | -0.71                   | -0.24                  |
| 8,170.00                | 91.80           | 269.70      | 5,667.66              | -35.31     | -2,743.02  | 2,743.20       | 1.16                     | 0.70                    | 0.93                   |
| 8,255.00                | 91.40           | 269.40      | 5,665.29              | -35.98     | -2,827.98  | 2,828.17       | 0.59                     | -0.47                   | -0.35                  |
| 8,341.00                | 90.60           | 269.40      | 5,663.79              | -36.88     | -2,913.96  | 2,914.15       | 0.93                     | -0.93                   | 0.00                   |
| 8,426.00                | 89.90           | 268.80      | 5,663.42              | -38.21     | -2,998.95  | 2,999.15       | 1.08                     | -0.82                   | -0.71                  |
| 8,512.00                | 90.80           | 270.10      | 5,662.89              | -39.04     | -3,084.94  | 3,085.14       | 1.84                     | 1.05                    | 1.51                   |
| 8,597.00                | 91.90           | 270.60      | 5,660.89              | -38.52     | -3,169.91  | 3,170.11       | 1.42                     | 1.29                    | 0.59                   |
| 8,682.00                | 92.00           | 270.30      | 5,658.00              | -37.85     | -3,254.86  | 3,255.05       | 0.37                     | 0.12                    | -0.35                  |
| 8,768.00                | 92.00           | 270.20      | 5,655.00              | -37.48     | -3,340.81  | 3,340.99       | 0.12                     | 0.00                    | -0.12                  |
| 8,854.00                | 91.60           | 270.20      | 5,652.30              | -37.18     | -3,426.77  | 3,426.94       | 0.47                     | -0.47                   | 0.00                   |
| 8,942.00                | 91.50           | 270.30      | 5,649.92              | -36.79     | -3,514.73  | 3,514.91       | 0.16                     | -0.11                   | 0.11                   |
| 9,028.00                | 92.00           | 270.50      | 5,647.29              | -36.19     | -3,600.69  | 3,600.86       | 0.63                     | 0.58                    | 0.23                   |
| 9,114.00                | 91.90           | 270.40      | 5,644.36              | -35.52     | -3,686.64  | 3,686.80       | 0.16                     | -0.12                   | -0.12                  |
| 9,199.00                | 91.60           | 270.30      | 5,641.77              | -35.00     | -3,771.60  | 3,771.75       | 0.37                     | -0.35                   | -0.12                  |
| 9,285.00                | 91.70           | 270.20      | 5,639.29              | -34.62     | -3,857.56  | 3,857.71       | 0.16                     | 0.12                    | -0.12                  |
| 9,370.00                | 91.40           | 270.10      | 5,636.99              | -34.40     | -3,942.53  | 3,942.67       | 0.37                     | -0.35                   | -0.12                  |
| 9,455.00                | 91.60           | 269.80      | 5,634.77              | -34.48     | -4,027.50  | 4,027.64       | 0.42                     | 0.24                    | -0.35                  |
| 9,541.00                | 91.50           | 269.50      | 5,632.44              | -35.00     | -4,113.47  | 4,113.61       | 0.37                     | -0.12                   | -0.35                  |
| 9,627.00                | 91.30           | 268.80      | 5,630.34              | -36.28     | -4,199.43  | 4,199.58       | 0.85                     | -0.23                   | -0.81                  |
| 9,712.00                | 90.90           | 268.30      | 5,628.71              | -38.43     | -4,284.39  | 4,284.55       | 0.75                     | -0.47                   | -0.59                  |
| 9,798.00                | 90.80           | 268.00      | 5,627.43              | -41.20     | -4,370.33  | 4,370.52       | 0.37                     | -0.12                   | -0.35                  |
| 9,883.00                | 90.50           | 267.60      | 5,626.47              | -44.47     | -4,455.26  | 4,455.47       | 0.59                     | -0.35                   | -0.47                  |
| 9,968.00                | 91.60           | 268.70      | 5,624.91              | -47.21     | -4,540.20  | 4,540.42       | 1.83                     | 1.29                    | 1.29                   |
| 10,053.00               | 92.20           | 268.90      | 5,622.09              | -48.99     | -4,625.14  | 4,625.37       | 0.74                     | 0.71                    | 0.24                   |
| 10,138.00               | 92.10           | 268.50      | 5,618.90              | -50.92     | -4,710.06  | 4,710.30       | 0.48                     | -0.12                   | -0.47                  |
| 10,223.00               | 92.00           | 268.30      | 5,615.86              | -53.29     | -4,794.97  | 4,795.23       | 0.26                     | -0.12                   | -0.24                  |
| 10,318.00               | 92.30           | 268.50      | 5,612.30              | -55.94     | -4,889.86  | 4,890.14       | 0.38                     | 0.32                    | 0.21                   |
| Last Phoenix MWD Survey |                 |             |                       |            |            |                |                          |                         |                        |
| 10,387.00               | 92.30           | 268.50      | 5,609.53              | -57.74     | -4,958.78  | 4,959.07       | 0.00                     | 0.00                    | 0.00                   |
| Projection to TD        |                 |             |                       |            |            |                |                          |                         |                        |

Company: Apache Corporation  
Project: Eddy County, NM (NAD27 NME)  
Site: Crow Federal  
Well: #42H  
Wellbore: WB1 / Job #1512794  
Design: Surveys (Capstar 114)

Local Co-ordinate Reference: Well #42H  
TVD Reference: KB @ 3917.00usft (Capstar 114)  
MD Reference: KB @ 3917.00usft (Capstar 114)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: Compass 5000 GCR

| Design Annotations          |                             |                                      |                 |                                |
|-----------------------------|-----------------------------|--------------------------------------|-----------------|--------------------------------|
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates<br>+N/-S<br>(usft) | +E/-W<br>(usft) | Comment                        |
| 575.00                      | 574.99                      | -0.55                                | 2.24            | Tie-on to Gyrodata Gyro Survey |
| 690.00                      | 689.99                      | -0.41                                | 3.03            | First Phoenix MWD Survey       |
| 10,318.00                   | 5,612.30                    | -55.94                               | -4,689.68       | Last Phoenix MWD Survey        |
| 10,387.00                   | 5,609.53                    | -57.74                               | -4,958.78       | Projection to TD               |

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