



## Chesapeake Operating Inc.

Eddy County, New Mexico (NAD 1983)

Los Medanos 36-23-30 State 1H

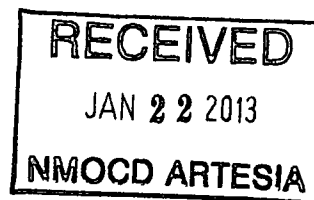
Job # 1211011

Rig: Trinidad 110

Survey: Phoenix MWD Surveys

## Chesapeake Energy, Survey Report

13 November, 2012





# Chesapeake Energy, Survey Report



|           |                                    |                              |                                   |
|-----------|------------------------------------|------------------------------|-----------------------------------|
| Company:  | Chesapeake Operating Inc.          | Local Co-ordinate Reference: | Well Job # 1211011                |
| Project:  | Eddy County, New Mexico (NAD 1983) | TVD Reference:               | WELL @ 3439.00usft (TRinidad 110) |
| Site:     | Los Medanos 36-23-30 State 1H      | MD Reference:                | WELL @ 3439.00usft (TRinidad 110) |
| Well:     | Job # 1211011                      | North Reference:             | Grid                              |
| Wellbore: | Rig: Trinidad 110                  | Survey Calculation Method:   | Minimum Curvature                 |
| Design:   | Rig: Trinidad 110                  | Database:                    | Compass5000                       |

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

|                       |                               |                   |                    |
|-----------------------|-------------------------------|-------------------|--------------------|
| Site                  | Los Medanos 36-23-30 State 1H |                   |                    |
| Site Position:        |                               | Northing:         | 456,745.00 usft    |
| From:                 | Map                           | Easting:          | 693,591.00 usft    |
| Position Uncertainty: | 0.00 usft                     | Slot Radius:      | 13-3/16 "          |
|                       |                               | Latitude:         | 32° 15' 16.9460 N  |
|                       |                               | Longitude:        | 103° 50' 26.9171 W |
|                       |                               | Grid Convergence: | 0.26 °             |

|                      |           |                     |            |                 |               |                    |
|----------------------|-----------|---------------------|------------|-----------------|---------------|--------------------|
| Well                 |           | Job # 1211011       |            |                 |               |                    |
| Well Position        | +N/-S     | 0.00 usft           | Northing:  | 456,745.00 usft | Latitude:     | 32° 15' 16.9460 N  |
|                      | +E/-W     | 0.00 usft           | Easting:   | 693,591.00 usft | Longitude:    | 103° 50' 26.9171 W |
| Position Uncertainty | 0.00 usft | Wellhead Elevation: | 17.00 usft | Ground Level:   | 3,422.00 usft |                    |

|           |                   |             |                    |                  |                        |
|-----------|-------------------|-------------|--------------------|------------------|------------------------|
| Wellbore  | Rig: Trinidad 110 |             |                    |                  |                        |
| Magnetics | Model Name        | Sample Date | Declination<br>(°) | Dip Angle<br>(°) | Field Strength<br>(nT) |
|           | IGRF2010_14       | 10/17/12    | 7.55               | 60.14            | 48,471                 |

|                   |                  |                   |        |                    |
|-------------------|------------------|-------------------|--------|--------------------|
| Design            |                  | Rig: Trinidad 110 |        |                    |
| 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   | 359.61             |

| Survey Program |           | Date: 11/13/12                          |           |                |
|----------------|-----------|-----------------------------------------|-----------|----------------|
| From (usft)    | To (usft) | Survey (Wellbore)                       | Tool Name | Description    |
| 172.00         | 13,740.00 | Phoenix MWD Surveys (Rig: Trinidad 110) | MWD       | MWD - Standard |



# Chesapeake Energy, Survey Report

CHESAPEAKE

|           |                                    |                              |                                    |
|-----------|------------------------------------|------------------------------|------------------------------------|
| Company:  | Chesapeake Operating Inc.          | Local Co-ordinate Reference: | Well Job # 1211011                 |
| Project:  | Eddy County, New Mexico (NAD 1983) | TVD Reference:               | WELL @ 3439.00usft (Trinidad: 110) |
| Site:     | Los Medanos 36-23-30 State: 1H     | MD Reference:                | WELL @ 3439.00usft (Trinidad: 110) |
| Well:     | Job # 1211011                      | North Reference:             | Grid                               |
| Wellbore: | Rig: Trinidad 110                  | Survey Calculation Method:   | Minimum Curvature                  |
| Design:   | Rig: Trinidad 110                  | Database:                    | Compass5000                        |

| Survey                    |            |                      |                 |               |               |               |                  |                     |                    |                   |
|---------------------------|------------|----------------------|-----------------|---------------|---------------|---------------|------------------|---------------------|--------------------|-------------------|
| MD<br>(usft)              | Inc<br>(°) | Azi (azimuth)<br>(°) | TVDSS<br>(usft) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | V. Sec<br>(usft) | DLeg<br>(°/100usft) | Northing<br>(usft) | Easting<br>(usft) |
| 0.00                      | 0.00       | 0.00                 | 3,439.00        | 0.00          | 0.00          | 0.00          | 0.00             | 0.00                | 456,745.00         | 693,591.00        |
| 172.00                    | 0.70       | 343.80               | 3,267.00        | 172.00        | 1.01          | -0.29         | 1.01             | 0.41                | 456,746.01         | 693,590.71        |
| First Phoenix MWD Surveys |            |                      |                 |               |               |               |                  |                     |                    |                   |
| 357.00                    | 1.10       | 350.40               | 3,082.03        | 356.97        | 3.85          | -0.90         | 3.85             | 0.22                | 456,748.85         | 693,590.10        |
| 425.00                    | 1.10       | 348.30               | 3,014.04        | 424.96        | 5.13          | -1.15         | 5.14             | 0.06                | 456,750.13         | 693,589.85        |
| 574.00                    | 1.00       | 342.40               | 2,865.06        | 573.94        | 7.77          | -1.83         | 7.78             | 0.10                | 456,752.77         | 693,589.17        |
| 764.00                    | 1.20       | 337.70               | 2,675.10        | 763.90        | 11.19         | -3.09         | 11.21            | 0.12                | 456,756.19         | 693,587.91        |
| 955.00                    | 1.00       | 335.80               | 2,484.14        | 954.86        | 14.56         | -4.53         | 14.59            | 0.11                | 456,759.56         | 693,586.47        |
| 1,145.00                  | 0.80       | 336.50               | 2,294.16        | 1,144.84      | 17.29         | -5.74         | 17.33            | 0.11                | 456,762.29         | 693,585.26        |
| 1,336.00                  | 0.60       | 346.00               | 2,103.17        | 1,335.83      | 19.48         | -6.51         | 19.53            | 0.12                | 456,764.48         | 693,584.49        |
| 1,526.00                  | 0.50       | 344.40               | 1,913.18        | 1,525.82      | 21.24         | -6.97         | 21.29            | 0.05                | 456,766.24         | 693,584.03        |
| 1,716.00                  | 0.40       | 316.00               | 1,723.19        | 1,715.81      | 22.52         | -7.66         | 22.57            | 0.13                | 456,767.52         | 693,583.34        |
| 1,907.00                  | 0.30       | 331.30               | 1,532.19        | 1,906.81      | 23.44         | -8.36         | 23.50            | 0.07                | 456,768.44         | 693,582.64        |
| 2,097.00                  | 0.40       | 342.90               | 1,342.19        | 2,096.81      | 24.51         | -8.79         | 24.57            | 0.06                | 456,769.51         | 693,582.21        |
| 2,287.00                  | 0.40       | 320.50               | 1,152.20        | 2,286.80      | 25.65         | -9.41         | 25.72            | 0.08                | 456,770.65         | 693,581.59        |
| 2,477.00                  | 0.30       | 280.30               | 962.20          | 2,476.80      | 26.26         | -10.32        | 26.32            | 0.14                | 456,771.26         | 693,580.68        |
| 2,667.00                  | 0.30       | 268.30               | 772.21          | 2,666.79      | 26.33         | -11.31        | 26.41            | 0.03                | 456,771.33         | 693,579.69        |
| 2,857.00                  | 0.40       | 261.30               | 582.21          | 2,856.79      | 26.21         | -12.46        | 26.30            | 0.06                | 456,771.21         | 693,578.54        |
| 3,047.00                  | 0.40       | 288.10               | 392.21          | 3,046.79      | 26.32         | -13.75        | 26.41            | 0.10                | 456,771.32         | 693,577.25        |
| 3,238.00                  | 0.30       | 239.70               | 201.22          | 3,237.78      | 26.27         | -14.81        | 26.38            | 0.16                | 456,771.27         | 693,576.19        |
| 3,429.00                  | 0.80       | 133.80               | 10.22           | 3,428.78      | 25.10         | -14.28        | 25.20            | 0.49                | 456,770.10         | 693,576.72        |
| 3,620.00                  | 1.00       | 151.60               | -180.75         | 3,619.75      | 22.71         | -12.53        | 22.80            | 0.18                | 456,767.71         | 693,578.47        |
| 3,810.00                  | 1.50       | 147.20               | -370.71         | 3,809.71      | 19.16         | -10.39        | 19.23            | 0.27                | 456,764.16         | 693,580.61        |
| 3,857.00                  | 1.30       | 144.40               | -417.69         | 3,856.69      | 18.21         | -9.75         | 18.28            | 0.45                | 456,763.21         | 693,581.25        |
| 4,013.00                  | 1.10       | 128.70               | -573.66         | 4,012.66      | 15.84         | -7.55         | 15.89            | 0.25                | 456,760.84         | 693,583.45        |
| 4,204.00                  | 1.00       | 130.80               | -764.63         | 4,203.63      | 13.60         | -4.86         | 13.63            | 0.06                | 456,758.60         | 693,586.14        |
| 4,394.00                  | 0.70       | 143.00               | -954.61         | 4,393.61      | 11.59         | -2.90         | 11.61            | 0.18                | 456,756.59         | 693,588.10        |



# Chesapeake Energy, Survey Report

Chesapeake

|                  |                                    |                                     |                                   |
|------------------|------------------------------------|-------------------------------------|-----------------------------------|
| <b>Company:</b>  | Chesapeake Operating, Inc.         | <b>Local Co-ordinate Reference:</b> | Well Job #: 1211011               |
| <b>Project:</b>  | Eddy County, New Mexico (NAD 1983) | <b>TVD Reference:</b>               | WELL @ 3439.00usft (Trinidad 110) |
| <b>Site:</b>     | Los Medanos 36-23-30 State 1H      | <b>MD Reference:</b>                | WELL @ 3439.00usft (Trinidad 110) |
| <b>Well:</b>     | Job # 1211011                      | <b>North Reference:</b>             | Grid                              |
| <b>Wellbore:</b> | Rig: Trinidad 110                  | <b>Survey Calculation Method:</b>   | Minimum Curvature                 |
| <b>Design:</b>   | Rig: Trinidad 110                  | <b>Database:</b>                    | Compass5000                       |

| Survey       |            |                      |                 |               |               |               |                  |                     |                    |                   |  |
|--------------|------------|----------------------|-----------------|---------------|---------------|---------------|------------------|---------------------|--------------------|-------------------|--|
| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVDSS<br>(usft) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | V. Sec<br>(usft) | DLeg<br>(°/100usft) | Northing<br>(usft) | Easting<br>(usft) |  |
| 4,585.00     | 0.50       | 153.50               | -1,145.60       | 4,584.60      | 9.91          | -1.83         | 9.93             | 0.12                | 456,754.91         | 693,589.17        |  |
| 4,775.00     | 0.80       | 121.60               | -1,335.58       | 4,774.58      | 8.48          | -0.33         | 8.48             | 0.24                | 456,753.48         | 693,590.67        |  |
| 4,965.00     | 0.70       | 121.90               | -1,525.57       | 4,964.57      | 7.17          | 1.79          | 7.16             | 0.05                | 456,752.17         | 693,592.79        |  |
| 5,156.00     | 0.40       | 102.30               | -1,716.56       | 5,155.56      | 6.41          | 3.43          | 6.39             | 0.18                | 456,751.41         | 693,594.43        |  |
| 5,347.00     | 0.40       | 94.50                | -1,907.56       | 5,346.56      | 6.21          | 4.74          | 6.18             | 0.03                | 456,751.21         | 693,595.74        |  |
| 5,537.00     | 0.50       | 102.80               | -2,097.55       | 5,536.55      | 5.98          | 6.21          | 5.94             | 0.06                | 456,750.98         | 693,597.21        |  |
| 5,728.00     | 0.60       | 103.10               | -2,288.54       | 5,727.54      | 5.57          | 8.00          | 5.51             | 0.05                | 456,750.57         | 693,599.00        |  |
| 5,918.00     | 0.50       | 112.70               | -2,478.53       | 5,917.53      | 5.02          | 9.73          | 4.96             | 0.07                | 456,750.02         | 693,600.73        |  |
| 6,108.00     | 0.70       | 136.90               | -2,668.52       | 6,107.52      | 3.86          | 11.29         | 3.78             | 0.17                | 456,748.86         | 693,602.29        |  |
| 6,298.00     | 0.60       | 125.30               | -2,858.51       | 6,297.51      | 2.43          | 12.90         | 2.34             | 0.09                | 456,747.43         | 693,603.90        |  |
| 6,479.00     | 0.20       | 138.40               | -3,039.50       | 6,478.50      | 1.65          | 13.88         | 1.55             | 0.23                | 456,746.65         | 693,604.88        |  |
| 6,659.00     | 0.20       | 152.30               | -3,219.50       | 6,658.50      | 1.14          | 14.23         | 1.04             | 0.03                | 456,746.14         | 693,605.23        |  |
| 6,840.00     | 0.70       | 31.90                | -3,400.50       | 6,839.50      | 1.79          | 14.97         | 1.69             | 0.45                | 456,746.79         | 693,605.97        |  |
| 7,021.00     | 0.80       | 38.30                | -3,581.48       | 7,020.48      | 3.73          | 16.33         | 3.61             | 0.07                | 456,748.73         | 693,607.33        |  |
| 7,201.00     | 1.10       | 46.10                | -3,761.46       | 7,200.46      | 5.91          | 18.36         | 5.78             | 0.18                | 456,750.91         | 693,609.36        |  |
| 7,383.00     | 0.80       | 48.50                | -3,943.43       | 7,382.43      | 7.96          | 20.57         | 7.82             | 0.17                | 456,752.96         | 693,611.57        |  |
| 7,563.00     | 0.60       | 91.80                | -4,123.42       | 7,562.42      | 8.77          | 22.45         | 8.61             | 0.30                | 456,753.77         | 693,613.45        |  |
| 7,744.00     | 0.30       | 101.10               | -4,304.42       | 7,743.42      | 8.64          | 23.86         | 8.48             | 0.17                | 456,753.64         | 693,614.86        |  |
| 7,925.00     | 0.80       | 222.90               | -4,485.41       | 7,924.41      | 7.63          | 23.47         | 7.47             | 0.55                | 456,752.63         | 693,614.47        |  |
| 8,105.00     | 2.00       | 260.20               | -4,665.36       | 8,104.36      | 6.17          | 19.52         | 6.04             | 0.80                | 456,751.17         | 693,610.52        |  |
| 8,286.00     | 3.60       | 268.40               | -4,846.13       | 8,285.13      | 5.48          | 10.72         | 5.40             | 0.91                | 456,750.48         | 693,601.72        |  |
| 8,466.00     | 4.20       | 249.70               | -5,025.72       | 8,464.72      | 3.03          | -1.11         | 3.04             | 0.78                | 456,748.03         | 693,589.89        |  |
| 8,654.00     | 3.40       | 252.10               | -5,213.31       | 8,652.31      | -1.07         | -12.87        | -0.98            | 0.43                | 456,743.93         | 693,578.13        |  |
| 8,735.00     | 7.00       | 298.40               | -5,293.99       | 8,732.99      | 0.54          | -19.50        | 0.67             | 6.49                | 456,745.54         | 693,571.50        |  |
| 8,781.00     | 13.50      | 317.90               | -5,339.25       | 8,778.25      | 5.86          | -25.58        | 6.04             | 15.82               | 456,750.86         | 693,565.42        |  |
| 8,826.00     | 20.50      | 317.10               | -5,382.25       | 8,821.25      | 15.55         | -34.47        | 15.78            | 15.56               | 456,760.55         | 693,556.53        |  |
| 8,871.00     | 28.90      | 316.30               | -5,423.10       | 8,862.10      | 29.20         | -47.37        | 29.53            | 18.68               | 456,774.20         | 693,543.63        |  |



# Chesapeake Energy, Survey Report



|           |                                    |                              |                                   |
|-----------|------------------------------------|------------------------------|-----------------------------------|
| Company:  | Chesapeake Operating Inc.          | Local Co-ordinate Reference: | Well Job # 1211011                |
| Project:  | Eddy County, New Mexico (NAD 1983) | TVD Reference:               | WELL @ 3439.00usft (Trinidad 110) |
| Site:     | Los Medanos 36-23-30 State 1H      | MD Reference:                | WELL @ 3439.00usft (Trinidad 110) |
| Well:     | Job # 1211011                      | North Reference:             | Grid                              |
| Wellbore: | Rig: Trinidad 110                  | Survey Calculation Method:   | Minimum Curvature                 |
| Design:   | Rig: Trinidad 110                  | Database:                    | Compass5000                       |

| Survey       |            |                      |                 |               |               |               |                  |                     |                    |                   |  |
|--------------|------------|----------------------|-----------------|---------------|---------------|---------------|------------------|---------------------|--------------------|-------------------|--|
| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVDSS<br>(usft) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | V. Sec<br>(usft) | DLeg<br>(°/100usft) | Northing<br>(usft) | Easting<br>(usft) |  |
| 8,916.00     | 32.10      | 326.40               | -5,461.89       | 8,900.89      | 47.04         | -61.51        | 47.46            | 13.41               | 456,792.04         | 693,529.49        |  |
| 8,961.00     | 40.00      | 332.20               | -5,498.26       | 8,937.26      | 69.84         | -74.90        | 70.34            | 19.11               | 456,814.84         | 693,516.10        |  |
| 9,006.00     | 44.70      | 342.50               | -5,531.55       | 8,970.55      | 97.77         | -86.43        | 98.36            | 18.60               | 456,842.77         | 693,504.57        |  |
| 9,052.00     | 48.80      | 353.30               | -5,563.11       | 9,002.11      | 130.45        | -93.32        | 131.09           | 19.26               | 456,875.45         | 693,497.68        |  |
| 9,097.00     | 52.00      | 357.70               | -5,591.80       | 9,030.80      | 165.00        | -96.01        | 165.65           | 10.36               | 456,910.00         | 693,494.99        |  |
| 9,142.00     | 53.30      | 358.60               | -5,619.10       | 9,058.10      | 200.76        | -97.16        | 201.41           | 3.30                | 456,945.76         | 693,493.84        |  |
| 9,187.00     | 56.70      | 1.70                 | -5,644.91       | 9,083.91      | 237.60        | -97.05        | 238.26           | 9.43                | 456,982.60         | 693,493.95        |  |
| 9,232.00     | 57.30      | 1.90                 | -5,669.42       | 9,108.42      | 275.33        | -95.86        | 275.97           | 1.38                | 457,020.33         | 693,495.14        |  |
| 9,277.00     | 56.60      | 1.30                 | -5,693.96       | 9,132.96      | 313.03        | -94.81        | 313.67           | 1.92                | 457,058.03         | 693,496.19        |  |
| 9,323.00     | 55.90      | 1.10                 | -5,719.52       | 9,158.52      | 351.27        | -94.01        | 351.90           | 1.56                | 457,096.27         | 693,496.99        |  |
| 9,368.00     | 60.40      | 2.70                 | -5,743.26       | 9,182.26      | 389.46        | -92.73        | 390.08           | 10.45               | 457,134.46         | 693,498.27        |  |
| 9,413.00     | 67.30      | 7.10                 | -5,763.09       | 9,202.09      | 429.66        | -89.23        | 430.26           | 17.66               | 457,174.66         | 693,501.77        |  |
| 9,458.00     | 74.40      | 6.00                 | -5,777.84       | 9,216.84      | 471.87        | -84.40        | 472.43           | 15.95               | 457,216.87         | 693,506.60        |  |
| 9,503.00     | 83.20      | 2.90                 | -5,786.57       | 9,225.57      | 515.83        | -80.99        | 516.37           | 20.69               | 457,260.83         | 693,510.01        |  |
| 9,548.00     | 91.30      | 0.30                 | -5,788.73       | 9,227.73      | 560.72        | -79.74        | 561.25           | 18.90               | 457,305.72         | 693,511.26        |  |
| 9,639.00     | 91.40      | 3.10                 | -5,786.59       | 9,225.59      | 651.65        | -77.04        | 652.16           | 3.08                | 457,396.65         | 693,513.96        |  |
| 9,726.00     | 87.10      | 4.00                 | -5,787.72       | 9,226.72      | 738.45        | -71.66        | 738.92           | 5.05                | 457,483.45         | 693,519.34        |  |
| 9,816.00     | 86.60      | 4.10                 | -5,792.67       | 9,231.67      | 828.09        | -65.31        | 828.52           | 0.57                | 457,573.09         | 693,525.69        |  |
| 9,906.00     | 88.80      | 3.10                 | -5,796.28       | 9,235.28      | 917.83        | -59.67        | 918.22           | 2.68                | 457,662.83         | 693,531.33        |  |
| 9,997.00     | 87.10      | 2.90                 | -5,799.54       | 9,238.54      | 1,008.65      | -54.91        | 1,009.00         | 1.88                | 457,753.65         | 693,536.09        |  |
| 10,087.00    | 89.30      | 1.40                 | -5,802.36       | 9,241.36      | 1,098.53      | -51.53        | 1,098.86         | 2.96                | 457,843.53         | 693,539.47        |  |
| 10,177.00    | 91.50      | 1.70                 | -5,801.73       | 9,240.73      | 1,188.49      | -49.10        | 1,188.80         | 2.47                | 457,933.49         | 693,541.90        |  |
| 10,268.00    | 92.30      | 3.50                 | -5,798.72       | 9,237.72      | 1,279.34      | -44.97        | 1,279.62         | 2.16                | 458,024.34         | 693,546.03        |  |
| 10,358.00    | 87.20      | 4.20                 | -5,799.11       | 9,238.11      | 1,369.11      | -38.93        | 1,369.34         | 5.72                | 458,114.11         | 693,552.07        |  |
| 10,448.00    | 86.00      | 4.60                 | -5,804.45       | 9,243.45      | 1,458.68      | -32.04        | 1,458.87         | 1.41                | 458,203.68         | 693,558.96        |  |
| 10,539.00    | 88.50      | 2.40                 | -5,808.81       | 9,247.81      | 1,549.40      | -26.49        | 1,549.54         | 3.66                | 458,294.40         | 693,564.51        |  |
| 10,629.00    | 87.20      | 1.90                 | -5,812.19       | 9,251.19      | 1,639.27      | -23.12        | 1,639.39         | 1.55                | 458,384.27         | 693,567.88        |  |



# Chesapeake Energy, Survey Report

CHESAPEAKE

|           |                                    |                              |                                   |
|-----------|------------------------------------|------------------------------|-----------------------------------|
| Company:  | Chesapeake Operating Inc.          | Local Co-ordinate Reference: | Well Job #: 1211011               |
| Project:  | Eddy County, New Mexico (NAD 1983) | TVD Reference:               | WELL @ 3439.00usft (TRinidad 110) |
| Site:     | Los Medanos 36-23-30 State 1H      | MD Reference:                | WELL @ 3439.00usft (TRinidad 110) |
| Well:     | Job # 1211011                      | North Reference:             | Grid                              |
| Wellbore: | Rig: Trinidad 110                  | Survey Calculation Method:   | Minimum Curvature                 |
| Design:   | Rig: Trinidad 110                  | Database:                    | Compass5000                       |

| Survey       |            |                      |                 |               |               |               |                  |                     |                    |                   |  |
|--------------|------------|----------------------|-----------------|---------------|---------------|---------------|------------------|---------------------|--------------------|-------------------|--|
| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVDSS<br>(usft) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | V. Sec<br>(usft) | DLeg<br>(°/100usft) | Northing<br>(usft) | Easting<br>(usft) |  |
| 10,719.00    | 88.00      | 1.30                 | -5,815.96       | 9,254.96      | 1,729.15      | -20.61        | 1,729.25         | 1.11                | 458,474.15         | 693,570.39        |  |
| 10,810.00    | 90.40      | 0.20                 | -5,817.23       | 9,256.23      | 1,820.13      | -19.42        | 1,820.22         | 2.90                | 458,565.13         | 693,571.58        |  |
| 10,900.00    | 90.60      | 0.20                 | -5,816.44       | 9,255.44      | 1,910.12      | -19.11        | 1,910.21         | 0.22                | 458,655.12         | 693,571.89        |  |
| 10,990.00    | 90.40      | 0.20                 | -5,815.66       | 9,254.66      | 2,000.12      | -18.79        | 2,000.20         | 0.22                | 458,745.12         | 693,572.21        |  |
| 11,080.00    | 89.10      | 359.50               | -5,816.05       | 9,255.05      | 2,090.12      | -19.03        | 2,090.20         | 1.64                | 458,835.12         | 693,571.97        |  |
| 11,171.00    | 88.90      | 359.20               | -5,817.64       | 9,256.64      | 2,181.10      | -20.06        | 2,181.18         | 0.40                | 458,926.10         | 693,570.94        |  |
| 11,261.00    | 87.60      | 359.00               | -5,820.39       | 9,259.39      | 2,271.04      | -21.47        | 2,271.14         | 1.46                | 459,016.04         | 693,569.53        |  |
| 11,351.00    | 89.30      | 358.80               | -5,822.82       | 9,261.82      | 2,360.99      | -23.20        | 2,361.09         | 1.90                | 459,105.99         | 693,567.80        |  |
| 11,441.00    | 88.90      | 357.70               | -5,824.24       | 9,263.24      | 2,450.93      | -25.95        | 2,451.05         | 1.30                | 459,195.93         | 693,565.05        |  |
| 11,532.00    | 92.10      | 358.90               | -5,823.44       | 9,262.44      | 2,541.88      | -28.65        | 2,542.01         | 3.76                | 459,286.88         | 693,562.35        |  |
| 11,620.00    | 92.70      | 358.80               | -5,819.76       | 9,258.76      | 2,629.78      | -30.41        | 2,629.93         | 0.69                | 459,374.78         | 693,560.59        |  |
| 11,709.00    | 91.70      | 358.30               | -5,816.34       | 9,255.34      | 2,718.69      | -32.66        | 2,718.85         | 1.26                | 459,463.69         | 693,558.34        |  |
| 11,799.00    | 92.40      | 358.80               | -5,813.12       | 9,252.12      | 2,808.60      | -34.94        | 2,808.77         | 0.96                | 459,553.60         | 693,556.06        |  |
| 11,889.00    | 91.80      | 358.90               | -5,809.82       | 9,248.82      | 2,898.52      | -36.74        | 2,898.70         | 0.68                | 459,643.52         | 693,554.26        |  |
| 11,980.00    | 90.20      | 358.80               | -5,808.23       | 9,247.23      | 2,989.48      | -38.57        | 2,989.68         | 1.76                | 459,734.48         | 693,552.43        |  |
| 12,070.00    | 89.60      | 0.20                 | -5,808.39       | 9,247.39      | 3,079.48      | -39.35        | 3,079.68         | 1.69                | 459,824.48         | 693,551.65        |  |
| 12,160.00    | 88.40      | 0.50                 | -5,809.96       | 9,248.96      | 3,169.46      | -38.80        | 3,169.65         | 1.37                | 459,914.46         | 693,552.20        |  |
| 12,250.00    | 87.50      | 1.10                 | -5,813.18       | 9,252.18      | 3,259.39      | -37.55        | 3,259.57         | 1.20                | 460,004.39         | 693,553.45        |  |
| 12,340.00    | 89.10      | 0.70                 | -5,815.85       | 9,254.85      | 3,349.34      | -36.14        | 3,349.51         | 1.83                | 460,094.34         | 693,554.86        |  |
| 12,431.00    | 87.80      | 0.90                 | -5,818.31       | 9,257.31      | 3,440.30      | -34.87        | 3,440.45         | 1.45                | 460,185.30         | 693,556.13        |  |
| 12,521.00    | 91.70      | 0.20                 | -5,818.71       | 9,257.71      | 3,530.27      | -34.00        | 3,530.42         | 4.40                | 460,275.27         | 693,557.00        |  |
| 12,611.00    | 90.40      | 359.50               | -5,817.06       | 9,256.06      | 3,620.25      | -34.24        | 3,620.40         | 1.64                | 460,365.25         | 693,556.76        |  |
| 12,701.00    | 89.80      | 359.40               | -5,816.90       | 9,255.90      | 3,710.25      | -35.10        | 3,710.40         | 0.68                | 460,455.25         | 693,555.90        |  |
| 12,791.00    | 88.60      | 359.40               | -5,818.16       | 9,257.16      | 3,800.23      | -36.04        | 3,800.39         | 1.33                | 460,545.23         | 693,554.96        |  |
| 12,882.00    | 90.30      | 0.80                 | -5,819.03       | 9,258.03      | 3,891.22      | -35.88        | 3,891.38         | 2.42                | 460,636.22         | 693,555.12        |  |
| 12,972.00    | 89.80      | 0.50                 | -5,818.95       | 9,257.95      | 3,981.22      | -34.86        | 3,981.36         | 0.65                | 460,726.22         | 693,556.14        |  |
| 13,062.00    | 89.70      | 1.20                 | -5,819.34       | 9,258.34      | 4,071.21      | -33.53        | 4,071.34         | 0.79                | 460,816.21         | 693,557.47        |  |



# Chesapeake Energy, Survey Report

Chesapeake

|           |                                    |                              |                                   |
|-----------|------------------------------------|------------------------------|-----------------------------------|
| Company:  | Chesapeake Operating, Inc.         | Local Co-ordinate Reference: | Well Job # 1211011                |
| Project:  | Eddy County, New Mexico (NAD 1983) | TVD Reference:               | WELL @ 3439.00usft (TRinidad 110) |
| Site:     | Los Medanos 36-23-30 State 1H      | MD Reference:                | WELL @ 3439.00usft (TRinidad 110) |
| Well:     | Job # 1211011                      | North Reference:             | Grid                              |
| Wellbore: | Rig: Trinidad 110                  | Survey Calculation Method:   | Minimum Curvature                 |
| Design:   | Rig: Trinidad 110                  | Database:                    | Compass5000                       |

| Survey                               |            |                      |                 |               |               |               |                  |                     |                    |                   |  |
|--------------------------------------|------------|----------------------|-----------------|---------------|---------------|---------------|------------------|---------------------|--------------------|-------------------|--|
| MD<br>(usft)                         | Inc<br>(°) | Azi (azimuth)<br>(°) | TVDSS<br>(usft) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | V. Sec<br>(usft) | DLeg<br>(°/100usft) | Northing<br>(usft) | Easting<br>(usft) |  |
| 13,152.00                            | 88.90      | 0.70                 | -5,820.44       | 9,259.44      | 4,161.19      | -32.04        | 4,161.31         | 1.05                | 460,906.19         | 693,558.96        |  |
| 13,242.00                            | 91.40      | 1.00                 | -5,820.21       | 9,259.21      | 4,251.17      | -30.70        | 4,251.28         | 2.80                | 460,996.17         | 693,560.30        |  |
| 13,333.00                            | 90.50      | 0.40                 | -5,818.70       | 9,257.70      | 4,342.15      | -29.59        | 4,342.25         | 1.19                | 461,087.15         | 693,561.41        |  |
| 13,423.00                            | 89.80      | 0.10                 | -5,818.46       | 9,257.46      | 4,432.15      | -29.20        | 4,432.24         | 0.85                | 461,177.15         | 693,561.80        |  |
| 13,514.00                            | 89.00      | 359.90               | -5,819.42       | 9,258.42      | 4,523.14      | -29.20        | 4,523.24         | 0.91                | 461,268.14         | 693,561.80        |  |
| 13,604.00                            | 87.00      | 359.50               | -5,822.56       | 9,261.56      | 4,613.08      | -29.67        | 4,613.18         | 2.27                | 461,358.08         | 693,561.33        |  |
| 13,689.00                            | 86.10      | 359.50               | -5,827.67       | 9,266.67      | 4,697.92      | -30.41        | 4,698.02         | 1.06                | 461,442.92         | 693,560.59        |  |
| Last phoenix MWD Surveys @ 13689' MD |            |                      |                 |               |               |               |                  |                     |                    |                   |  |
| 13,740.00                            | 86.10      | 359.50               | -5,831.14       | 9,270.14      | 4,748.80      | -30.85        | 4,748.90         | 0.00                | 461,493.80         | 693,560.15        |  |
| Projection to TD @ 13740' MD         |            |                      |                 |               |               |               |                  |                     |                    |                   |  |

| Survey Annotations          |                             |                   |                 |                                      |
|-----------------------------|-----------------------------|-------------------|-----------------|--------------------------------------|
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                              |
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                                      |
| 172.00                      | 172.00                      | 1.01              | -0.29           | First Phoenix MWD Surveys            |
| 13,689.00                   | 9,266.67                    | 4,697.92          | -30.41          | Last phoenix MWD Surveys @ 13689' MD |
| 13,740.00                   | 9,270.14                    | 4,748.80          | -30.85          | Projection to TD @ 13740' MD         |

|                   |                    |             |
|-------------------|--------------------|-------------|
| Checked By: _____ | Approved By: _____ | Date: _____ |
|-------------------|--------------------|-------------|

# Chesapeake Operating Inc.

Project: Eddy County, New Mexico (NAD 1983)

Site: Los Medanos 36-23-30 State 1H

Well: Job # 1211011

Wellbore: Rig: Trinidad 110

Plan: Plan 2 11-5-2012



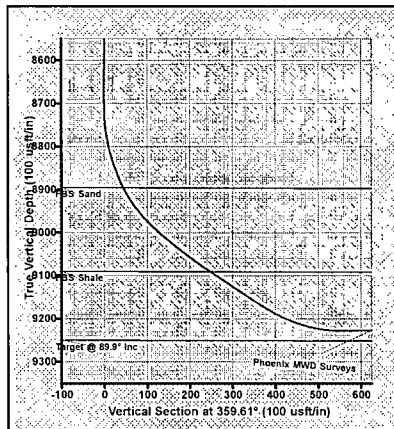
## SECTION DETAILS

| MD       | Inc   | Azi    | TVD     | HL      | EL     | Dieg | TFace  | VSet    |
|----------|-------|--------|---------|---------|--------|------|--------|---------|
| 9554.00  | 91.31 | 0.48   | 9227.59 | 566.72  | -79.70 | 0.00 | 0.00   | 567.24  |
| 9729.23  | 87.00 | 3.50   | 9230.18 | 741.76  | -73.61 | 3.00 | 145.01 | 742.24  |
| 10029.23 | 87.00 | 3.50   | 9245.88 | 1040.79 | -55.33 | 0.00 | 0.00   | 1041.14 |
| 10235.91 | 89.80 | 3.50   | 9251.50 | 1247.98 | -42.65 | 1.40 | 0.00   | 1248.24 |
| 10411.91 | 89.80 | 3.50   | 9251.81 | 1422.66 | -31.97 | 0.00 | 0.00   | 1422.84 |
| 10530.71 | 89.89 | 359.94 | 9252.02 | 1541.39 | -28.41 | 3.00 | 90.11  | 1541.54 |
| 13743.33 | 89.89 | 359.94 | 9258.00 | 4754.00 | -32.00 | 0.00 | 0.00   | 4754.11 |

Los Medanos 36-23-30 State 1H PBHL

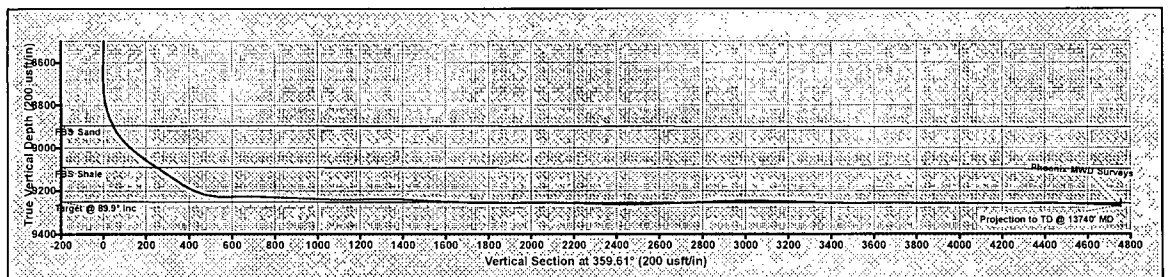
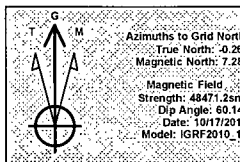
## FORMATION TOP DETAILS

| TVDPath | MDPath  | Formation      | DipAngle | DipDir |
|---------|---------|----------------|----------|--------|
| 418.01  | 418.05  | Rustler        | 0.10     | 359.61 |
| 3815.03 | 3815.33 | Base of Halite | 0.10     | 359.61 |
| 4024.03 | 4024.37 | Lamar          | 0.10     | 359.61 |
| 4067.03 | 4067.38 | Bell Canyon    | 0.10     | 359.61 |
| 5011.01 | 5011.45 | Cherry Canyon  | 0.10     | 359.61 |
| 6281.00 | 6281.43 | Brushy Canyon  | 0.10     | 359.61 |
| 7904.01 | 7904.60 | Bone Spring    | 0.10     | 359.61 |
| 8894.96 | 8899.00 | FBS Sand       | 0.10     | 359.61 |
| 9090.48 | 9199.00 | FBS Shale      | 0.10     | 359.61 |



## ANNOTATIONS

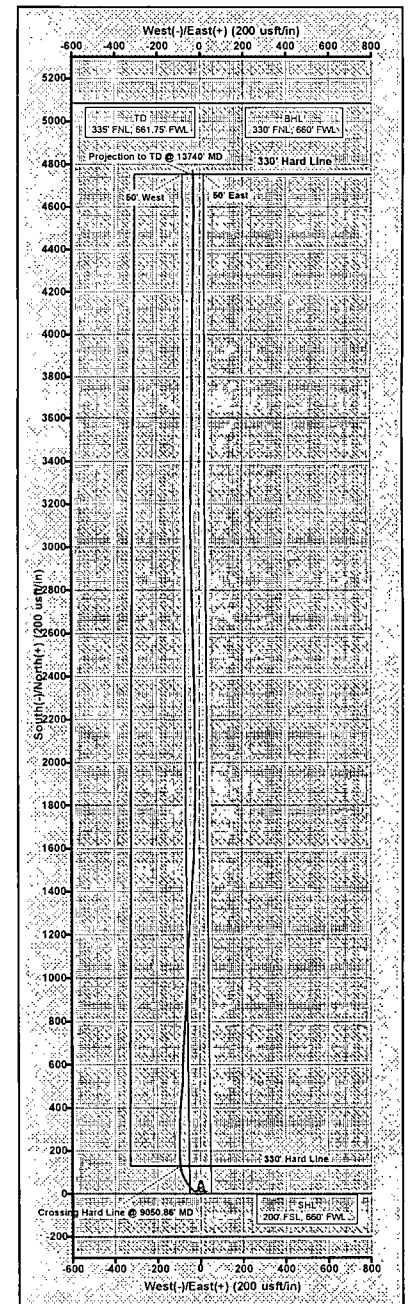
| TVD     | MD       | Annotation                   |
|---------|----------|------------------------------|
| 9227.59 | 9554.00  | Tie on point Build @ 3°/100' |
| 9228.42 | 9688.82  | Hold 87° Inc for 300'        |
| 9243.77 | 9988.82  | Build @ 1.48°/100'           |
| 9251.08 | 10184.65 | Hold Tangent for 175'        |
| 9251.71 | 10359.65 | Turn @ 3°/100'               |
| 9251.93 | 10479.59 | End Turn                     |
| 9258.00 | 13743.00 | TD @ 13743.43' MD            |



Created By: Jose Hernandez

## WELL DETAILS: Job # 1211011

| Ground Level | 3422.00           | Longitude          |
|--------------|-------------------|--------------------|
| Northing     | 456745.00         | 693591.00          |
| Easting      | 32° 15' 16.9460 N | 103° 50' 26.9171 W |



Los Medanos 36-23 30 State 1H Final Surveys.txt

Chesapeake Operating Inc.  
Job # 1211011 - Phoenix MWD Surveys

Eddy County, New Mexico (NAD 1983)  
Los Medanos 36-23-30 State 1H  
Your Ref:

| Measured<br>UTM Coordinates |              |         | Sub-Sea  |         | Vertical  |  | Local Coordinates |          |
|-----------------------------|--------------|---------|----------|---------|-----------|--|-------------------|----------|
| Depth                       | Incl.        | Azim.   | Vertical | Dogleg  | Depth     |  | Northings         | Eastings |
| Northings                   | Eastings     |         | Section  | Rate    |           |  | (ft)              | (ft)     |
| (ft)                        | (ft)         |         | (ft)     | (ft)    | (°/100ft) |  |                   |          |
| 0.00                        | 0.000        | 0.000   | -3439.00 | 0.00    |           |  | 0.00 N            | 0.00 E   |
| 456745.000 N                | 693591.000 E |         | 0.00     | 0.00    |           |  |                   |          |
| 172.00                      | 0.700        | 343.800 | -3267.00 | 172.00  |           |  | 1.01 N            | 0.29 W   |
| 456746.009 N                | 693590.707 E |         | 1.01     | 0.41    |           |  |                   |          |
| 357.00                      | 1.100        | 350.400 | -3082.03 | 356.97  |           |  | 3.85 N            | 0.90 W   |
| 456748.845 N                | 693590.095 E |         | 3.85     | 0.22    |           |  |                   |          |
| 425.00                      | 1.100        | 348.300 | -3014.04 | 424.96  |           |  | 5.13 N            | 1.15 W   |
| 456750.128 N                | 693589.854 E |         | 5.14     | 0.06    |           |  |                   |          |
| 574.00                      | 1.000        | 342.400 | -2865.06 | 573.94  |           |  | 7.77 N            | 1.83 W   |
| 456752.768 N                | 693589.171 E |         | 7.78     | 0.10    |           |  |                   |          |
| 764.00                      | 1.200        | 337.700 | -2675.10 | 763.90  |           |  | 11.19 N           | 3.09 W   |
| 456756.189 N                | 693587.915 E |         | 11.21    | 0.12    |           |  |                   |          |
| 955.00                      | 1.000        | 335.800 | -2484.14 | 954.86  |           |  | 14.56 N           | 4.53 W   |
| 456759.559 N                | 693586.473 E |         | 14.59    | 0.11    |           |  |                   |          |
| 1145.00                     | 0.800        | 336.500 | -2294.16 | 1144.84 |           |  | 17.29 N           | 5.74 W   |
| 456762.288 N                | 693585.264 E |         | 17.33    | 0.11    |           |  |                   |          |
| 1336.00                     | 0.600        | 346.000 | -2103.17 | 1335.83 |           |  | 19.48 N           | 6.51 W   |
| 456764.481 N                | 693584.490 E |         | 19.53    | 0.12    |           |  |                   |          |
| 1526.00                     | 0.500        | 344.400 | -1913.18 | 1525.82 |           |  | 21.24 N           | 6.97 W   |
| 456766.245 N                | 693584.027 E |         | 21.29    | 0.05    |           |  |                   |          |
| 1716.00                     | 0.400        | 316.000 | -1723.19 | 1715.81 |           |  | 22.52 N           | 7.66 W   |
| 456767.521 N                | 693583.343 E |         | 22.57    | 0.13    |           |  |                   |          |
| 1907.00                     | 0.300        | 331.300 | -1532.19 | 1906.81 |           |  | 23.44 N           | 8.36 W   |
| 456768.439 N                | 693582.640 E |         | 23.50    | 0.07    |           |  |                   |          |
| 2097.00                     | 0.400        | 342.900 | -1342.19 | 2096.81 |           |  | 24.51 N           | 8.79 W   |
| 456769.509 N                | 693582.206 E |         | 24.57    | 0.06    |           |  |                   |          |
| 2287.00                     | 0.400        | 320.500 | -1152.20 | 2286.80 |           |  | 25.65 N           | 9.41 W   |
| 456770.655 N                | 693581.589 E |         | 25.72    | 0.08    |           |  |                   |          |
| 2477.00                     | 0.300        | 280.300 | -962.20  | 2476.80 |           |  | 26.26 N           | 10.32 W  |
| 456771.255 N                | 693580.678 E |         | 26.32    | 0.14    |           |  |                   |          |
| 2667.00                     | 0.300        | 268.300 | -772.21  | 2666.79 |           |  | 26.33 N           | 11.31 W  |
| 456771.329 N                | 693579.691 E |         | 26.41    | 0.03    |           |  |                   |          |
| 2857.00                     | 0.400        | 261.300 | -582.21  | 2856.79 |           |  | 26.21 N           | 12.46 W  |
| 456771.214 N                | 693578.539 E |         | 26.30    | 0.06    |           |  |                   |          |
| 3047.00                     | 0.400        | 288.100 | -392.21  | 3046.79 |           |  | 26.32 N           | 13.75 W  |
| 456771.320 N                | 693577.253 E |         | 26.41    | 0.10    |           |  |                   |          |
| 3238.00                     | 0.300        | 239.700 | -201.22  | 3237.78 |           |  | 26.27 N           | 14.81 W  |
| 456771.275 N                | 693576.187 E |         | 26.38    | 0.16    |           |  |                   |          |
| 3429.00                     | 0.800        | 133.800 | -10.22   | 3428.78 |           |  | 25.10 N           | 14.28 W  |
| 456770.100 N                | 693576.718 E |         | 25.20    | 0.49    |           |  |                   |          |
| 3620.00                     | 1.000        | 151.600 | 180.75   | 3619.75 |           |  | 22.71 N           | 12.53 W  |
| 456767.711 N                | 693578.473 E |         | 22.80    | 0.18    |           |  |                   |          |
| 3810.00                     | 1.500        | 147.200 | 370.71   | 3809.71 |           |  | 19.16 N           | 10.39 W  |
| 456764.162 N                | 693580.609 E |         | 19.23    | 0.27    |           |  |                   |          |
| 3857.00                     | 1.300        | 144.400 | 417.69   | 3856.69 |           |  | 18.21 N           | 9.75 W   |
| 456763.211 N                | 693581.252 E |         | 18.28    | 0.45    |           |  |                   |          |
| 4013.00                     | 1.100        | 128.700 | 573.66   | 4012.66 |           |  | 15.84 N           | 7.55 W   |

Los Medanos 36-23 30 State 1H Final Surveys.txt

|            |   |            |         |         |         |       |           |
|------------|---|------------|---------|---------|---------|-------|-----------|
| 456760.836 | N | 693583.451 | E       | 15.89   | 0.25    |       |           |
| 4204.00    |   | 1.000      | 130.800 | 764.63  | 4203.63 | 13.60 | N 4.86 W  |
| 456758.601 | N | 693586.143 | E       | 13.63   | 0.06    |       |           |
| 4394.00    |   | 0.700      | 143.000 | 954.61  | 4393.61 | 11.59 | N 2.90 W  |
| 456756.591 | N | 693588.097 | E       | 11.61   | 0.18    |       |           |
| 4585.00    |   | 0.500      | 153.500 | 1145.60 | 4584.60 | 9.91  | N 1.83 W  |
| 456754.913 | N | 693589.171 | E       | 9.93    | 0.12    |       |           |
| 4775.00    |   | 0.800      | 121.600 | 1335.58 | 4774.58 | 8.48  | N 0.33 W  |
| 456753.476 | N | 693590.671 | E       | 8.48    | 0.24    |       |           |
| 4965.00    |   | 0.700      | 121.900 | 1525.57 | 4964.57 | 7.17  | N 1.79 E  |
| 456752.168 | N | 693592.786 | E       | 7.16    | 0.05    |       |           |
| 5156.00    |   | 0.400      | 102.300 | 1716.56 | 5155.56 | 6.41  | N 3.43 E  |
| 456751.409 | N | 693594.428 | E       | 6.39    | 0.18    |       |           |
| 5347.00    |   | 0.400      | 94.500  | 1907.56 | 5346.56 | 6.21  | N 4.74 E  |
| 456751.215 | N | 693595.744 | E       | 6.18    | 0.03    |       |           |
| 5537.00    |   | 0.500      | 102.800 | 2097.55 | 5536.55 | 5.98  | N 6.21 E  |
| 456750.979 | N | 693597.213 | E       | 5.94    | 0.06    |       |           |
| 5728.00    |   | 0.600      | 103.100 | 2288.54 | 5727.54 | 5.57  | N 8.00 E  |
| 456750.568 | N | 693599.000 | E       | 5.51    | 0.05    |       |           |
| 5918.00    |   | 0.500      | 112.700 | 2478.53 | 5917.53 | 5.02  | N 9.73 E  |
| 456750.022 | N | 693600.734 | E       | 4.96    | 0.07    |       |           |
| 6108.00    |   | 0.700      | 136.900 | 2668.52 | 6107.52 | 3.86  | N 11.29 E |
| 456748.855 | N | 693602.292 | E       | 3.78    | 0.17    |       |           |
| 6298.00    |   | 0.600      | 125.300 | 2858.51 | 6297.51 | 2.43  | N 12.90 E |
| 456747.433 | N | 693603.897 | E       | 2.34    | 0.09    |       |           |
| 6479.00    |   | 0.200      | 138.400 | 3039.50 | 6478.50 | 1.65  | N 13.88 E |
| 456746.649 | N | 693604.880 | E       | 1.55    | 0.23    |       |           |
| 6659.00    |   | 0.200      | 152.300 | 3219.50 | 6658.50 | 1.14  | N 14.23 E |
| 456746.136 | N | 693605.234 | E       | 1.04    | 0.03    |       |           |
| 6840.00    |   | 0.700      | 31.900  | 3400.50 | 6839.50 | 1.79  | N 14.97 E |
| 456746.795 | N | 693605.965 | E       | 1.69    | 0.45    |       |           |
| 7021.00    |   | 0.800      | 38.300  | 3581.48 | 7020.48 | 3.73  | N 16.33 E |
| 456748.725 | N | 693607.333 | E       | 3.61    | 0.07    |       |           |
| 7201.00    |   | 1.100      | 46.100  | 3761.46 | 7200.46 | 5.91  | N 18.36 E |
| 456750.909 | N | 693609.357 | E       | 5.78    | 0.18    |       |           |
| 7383.00    |   | 0.800      | 48.500  | 3943.43 | 7382.43 | 7.96  | N 20.57 E |
| 456752.962 | N | 693611.567 | E       | 7.82    | 0.17    |       |           |
| 7563.00    |   | 0.600      | 91.800  | 4123.42 | 7562.42 | 8.77  | N 22.45 E |
| 456753.766 | N | 693613.450 | E       | 8.61    | 0.30    |       |           |
| 7744.00    |   | 0.300      | 101.100 | 4304.42 | 7743.42 | 8.64  | N 23.86 E |
| 456753.645 | N | 693614.862 | E       | 8.48    | 0.17    |       |           |
| 7925.00    |   | 0.800      | 222.900 | 4485.41 | 7924.41 | 7.63  | N 23.47 E |
| 456752.628 | N | 693614.467 | E       | 7.47    | 0.55    |       |           |
| 8105.00    |   | 2.000      | 260.200 | 4665.36 | 8104.36 | 6.17  | N 19.52 E |
| 456751.172 | N | 693610.516 | E       | 6.04    | 0.80    |       |           |
| 8286.00    |   | 3.600      | 268.400 | 4846.13 | 8285.13 | 5.48  | N 10.72 E |
| 456750.476 | N | 693601.723 | E       | 5.40    | 0.91    |       |           |
| 8466.00    |   | 4.200      | 249.700 | 5025.72 | 8464.72 | 3.03  | N 1.11 W  |
| 456748.031 | N | 693589.892 | E       | 3.04    | 0.78    |       |           |
| 8654.00    |   | 3.400      | 252.100 | 5213.31 | 8652.31 | 1.07  | S 12.87 W |
| 456743.929 | N | 693578.130 | E       | -0.98   | 0.43    |       |           |
| 8735.00    |   | 7.000      | 298.400 | 5293.99 | 8732.99 | 0.54  | N 19.50 W |
| 456745.540 | N | 693571.498 | E       | 0.67    | 6.49    |       |           |
| 8781.00    |   | 13.500     | 317.900 | 5339.25 | 8778.25 | 5.86  | N 25.58 W |
| 456750.864 | N | 693565.424 | E       | 6.04    | 15.82   |       |           |
| 8826.00    |   | 20.500     | 317.100 | 5382.25 | 8821.25 | 15.55 | N 34.47 W |
| 456760.546 | N | 693556.528 | E       | 15.78   | 15.56   |       |           |
| 8871.00    |   | 28.900     | 316.300 | 5423.10 | 8862.10 | 29.20 | N 47.37 W |
| 456774.204 | N | 693543.628 | E       | 29.53   | 18.68   |       |           |
| 8916.00    |   | 32.100     | 326.400 | 5461.89 | 8900.89 | 47.04 | N 61.51 W |
| 456792.040 | N | 693529.486 | E       | 47.46   | 13.41   |       |           |
| 8961.00    |   | 40.000     | 332.200 | 5498.26 | 8937.26 | 69.84 | N 74.90 W |
| 456814.835 | N | 693516.099 | E       | 70.34   | 19.11   |       |           |

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|----------------------|--------|--------------|----------|---------|-------------|---------|
| 9006.00              | 44.700 | 342.500      | 5531.55  | 8970.55 | 97.77 N     | 86.43 W |
| 456842.773           | N      | 693504.574 E | 98.36    | 18.60   |             |         |
| 9052.00              | 48.800 | 353.300      | 5563.11  | 9002.11 | 130.45 N    | 93.32 W |
| 456875.454           | N      | 693497.677 E | 131.09   | 19.26   |             |         |
| 9097.00              | 52.000 | 357.700      | 5591.80  | 9030.80 | 165.00 N    | 96.01 W |
| 456910.003           | N      | 693494.988 E | 165.65   | 10.36   |             |         |
| 9142.00              | 53.300 | 358.600      | 5619.10  | 9058.10 | 200.76 N    | 97.16 W |
| 456945.756           | N      | 693493.836 E | 201.41   | 3.30    |             |         |
| 9187.00              | 56.700 | 1.700        | 5644.91  | 9083.91 | 237.60 N    | 97.05 W |
| 456982.604           | N      | 693493.953 E | 238.26   | 9.43    |             |         |
| 9232.00              | 57.300 | 1.900        | 5669.42  | 9108.42 | 275.33 N    | 95.86 W |
| 457020.326           | N      | 693495.139 E | 275.97   | 1.38    |             |         |
| 9277.00              | 56.600 | 1.300        | 5693.96  | 9132.96 | 313.03 N    | 94.81 W |
| 457058.029           | N      | 693496.193 E | 313.67   | 1.92    |             |         |
| 9323.00              | 55.900 | 1.100        | 5719.52  | 9158.52 | 351.27 N    | 94.01 W |
| 457096.268           | N      | 693496.994 E | 351.90   | 1.56    |             |         |
| 9368.00              | 60.400 | 2.700        | 5743.26  | 9182.26 | 389.46 N    | 92.73 W |
| 457134.459           | N      | 693498.274 E | 390.08   | 10.45   |             |         |
| 9413.00              | 67.300 | 7.100        | 5763.09  | 9202.09 | 429.66 N    | 89.23 W |
| 457174.664           | N      | 693501.767 E | 430.26   | 17.66   |             |         |
| 9458.00              | 74.400 | 6.000        | 5777.84  | 9216.84 | 471.87 N    | 84.40 W |
| 457216.869           | N      | 693506.604 E | 472.43   | 15.95   |             |         |
| 9503.00              | 83.200 | 2.900        | 5786.57  | 9225.57 | 515.83 N    | 80.99 W |
| 457260.832           | N      | 693510.007 E | 516.37   | 20.69   |             |         |
| 9548.00              | 91.300 | 0.300        | 5788.73  | 9227.73 | 560.72 N    | 79.74 W |
| 457305.721           | N      | 693511.258 E | 561.25   | 18.90   |             |         |
| 9639.00              | 91.400 | 3.100        | 5786.59  | 9225.59 | 651.65 N    | 77.04 W |
| 457396.647           | N      | 693513.956 E | 652.16   | 3.08    |             |         |
| 9726.00              | 87.100 | 4.000        | 5787.72  | 9226.72 | 738.45 N    | 71.66 W |
| 457483.451           | N      | 693519.341 E | 738.92   | 5.05    |             |         |
| 9816.00              | 86.600 | 4.100        | 5792.67  | 9231.67 | 828.09 N    | 65.31 W |
| 457573.091           | N      | 693525.688 E | 828.52   | 0.57    |             |         |
| 9906.00              | 88.800 | 3.100        | 5796.28  | 9235.28 | 917.83 N    | 59.67 W |
| 457662.834           | N      | 693531.333 E | 918.22   | 2.68    |             |         |
| 9997.00              | 87.100 | 2.900        | 5799.54  | 9238.54 | 1008.65 N   | 54.91 W |
| 457753.648           | N      | 693536.093 E | 1009.00  | 1.88    |             |         |
| 10087.00             | 89.300 | 1.400        | 5802.36  | 9241.36 | 1098.53 N   | 51.53 W |
| 457843.532           | N      | 693539.467 E | 1098.86  | 2.96    |             |         |
| 10177.00             | 91.500 | 1.700        | 5801.73  | 9240.73 | 1188.49 N   | 49.10 W |
| 457933.491           | N      | 693541.901 E | 1188.80  | 2.47    |             |         |
| 10268.00             | 92.300 | 3.500        | 5798.72  | 9237.72 | 1279.34 N   | 44.97 W |
| 458024.343           | N      | 693546.026 E | 1279.62  | 2.16    |             |         |
| 10358.00             | 87.200 | 4.200        | 5799.11  | 9238.11 | 1369.11 N   | 38.93 W |
| 458114.109           | N      | 693552.067 E | 1369.34  | 5.72    |             |         |
| 10448.00             | 86.000 | 4.600        | 5804.45  | 9243.45 | 1458.68 N   | 32.04 W |
| 458203.684           | N      | 693558.959 E | 1458.87  | 1.41    |             |         |
| 10539.00             | 88.500 | 2.400        | 5808.81  | 9247.81 | 1549.40 N   | 26.49 W |
| 458294.397           | N      | 693564.505 E | 1549.54  | 3.66    |             |         |
| 10629.00             | 87.200 | 1.900        | 5812.19  | 9251.19 | 1639.27 N   | 23.12 W |
| 458384.268           | N      | 693567.880 E | 1639.39  | 1.55    |             |         |
| 10719.00             | 88.000 | 1.300        | 5815.96  | 9254.96 | 1729.15 N   | 20.61 W |
| 458474.153           | N      | 693570.390 E | 1729.25  | 1.11    |             |         |
| 10810.00             | 90.400 | 0.200        | 5817.23  | 9256.23 | 1820.13 N   | 19.42 W |
| 458565.128           | N      | 693571.581 E | 1820.22  | 2.90    |             |         |
| 10900.00             | 90.600 | 0.200        | 5816.44  | 9255.44 | 1910.12 N   | 19.11 W |
| 458655.124           | N      | 693571.895 E | 1910.21  | 0.22    |             |         |
| 10990.00             | 90.400 | 0.200        | 5815.66  | 9254.66 | 2000.12 N   | 18.79 W |
| 458745.120           | N      | 693572.209 E | 2000.20  | 0.22    |             |         |
| 11080.00             | 89.100 | 359.500      | 5816.05  | 9255.05 | 2090.12 N   | 19.03 W |
| 458835.116           | N      | 693571.974 E | 2090.20  | 1.64    |             |         |
| 11171.00             | 88.900 | 359.200      | 5817.64  | 9256.64 | 2181.10 N   | 20.06 W |
| 458926.097           | N      | 693570.941 E | 2181.18  | 0.40    |             |         |
| 11261.00             | 87.600 | 359.000      | 5820.39  | 9259.39 | 2271.04 N   | 21.47 W |

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|----------------------|--------|------------|---|----------|---------|-------------|-----------|
| 459016.041           | N      | 693569.528 | E | 2271.14  | 1.46    |             |           |
| 11351.00             | 89.300 | 358.800    |   | 5822.82  | 9261.82 | 2360.99     | N 23.20 W |
| 459105.989           | N      | 693567.801 | E | 2361.09  | 1.90    |             |           |
| 11441.00             | 88.900 | 357.700    |   | 5824.24  | 9263.24 | 2450.93     | N 25.95 W |
| 459195.934           | N      | 693565.053 | E | 2451.05  | 1.30    |             |           |
| 11532.00             | 92.100 | 358.900    |   | 5823.44  | 9262.44 | 2541.88     | N 28.65 W |
| 459286.877           | N      | 693562.354 | E | 2542.01  | 3.76    |             |           |
| 11620.00             | 92.700 | 358.800    |   | 5819.76  | 9258.76 | 2629.78     | N 30.41 W |
| 459374.782           | N      | 693560.589 | E | 2629.93  | 0.69    |             |           |
| 11709.00             | 91.700 | 358.300    |   | 5816.34  | 9255.34 | 2718.69     | N 32.66 W |
| 459463.686           | N      | 693558.339 | E | 2718.85  | 1.26    |             |           |
| 11799.00             | 92.400 | 358.800    |   | 5813.12  | 9252.12 | 2808.60     | N 34.94 W |
| 459553.599           | N      | 693556.063 | E | 2808.77  | 0.96    |             |           |
| 11889.00             | 91.800 | 358.900    |   | 5809.82  | 9248.82 | 2898.52     | N 36.74 W |
| 459643.520           | N      | 693554.258 | E | 2898.70  | 0.68    |             |           |
| 11980.00             | 90.200 | 358.800    |   | 5808.23  | 9247.23 | 2989.48     | N 38.57 W |
| 459734.485           | N      | 693552.432 | E | 2989.68  | 1.76    |             |           |
| 12070.00             | 89.600 | 0.200      |   | 5808.39  | 9247.39 | 3079.48     | N 39.35 W |
| 459824.479           | N      | 693551.646 | E | 3079.68  | 1.69    |             |           |
| 12160.00             | 88.400 | 0.500      |   | 5809.96  | 9248.96 | 3169.46     | N 38.80 W |
| 459914.461           | N      | 693552.196 | E | 3169.65  | 1.37    |             |           |
| 12250.00             | 87.500 | 1.100      |   | 5813.18  | 9252.18 | 3259.39     | N 37.55 W |
| 460004.394           | N      | 693553.452 | E | 3259.57  | 1.20    |             |           |
| 12340.00             | 89.100 | 0.700      |   | 5815.85  | 9254.85 | 3349.34     | N 36.14 W |
| 460094.340           | N      | 693554.864 | E | 3349.51  | 1.83    |             |           |
| 12431.00             | 87.800 | 0.900      |   | 5818.31  | 9257.31 | 3440.30     | N 34.87 W |
| 460185.296           | N      | 693556.134 | E | 3440.45  | 1.45    |             |           |
| 12521.00             | 91.700 | 0.200      |   | 5818.71  | 9257.71 | 3530.27     | N 34.00 W |
| 460275.273           | N      | 693556.998 | E | 3530.42  | 4.40    |             |           |
| 12611.00             | 90.400 | 359.500    |   | 5817.06  | 9256.06 | 3620.25     | N 34.24 W |
| 460365.255           | N      | 693556.762 | E | 3620.40  | 1.64    |             |           |
| 12701.00             | 89.800 | 359.400    |   | 5816.90  | 9255.90 | 3710.25     | N 35.10 W |
| 460455.250           | N      | 693555.899 | E | 3710.40  | 0.68    |             |           |
| 12791.00             | 88.600 | 359.400    |   | 5818.16  | 9257.16 | 3800.23     | N 36.04 W |
| 460545.235           | N      | 693554.956 | E | 3800.39  | 1.33    |             |           |
| 12882.00             | 90.300 | 0.800      |   | 5819.03  | 9258.03 | 3891.22     | N 35.88 W |
| 460636.225           | N      | 693555.115 | E | 3891.38  | 2.42    |             |           |
| 12972.00             | 89.800 | 0.500      |   | 5818.95  | 9257.95 | 3981.22     | N 34.86 W |
| 460726.219           | N      | 693556.136 | E | 3981.36  | 0.65    |             |           |
| 13062.00             | 89.700 | 1.200      |   | 5819.34  | 9258.34 | 4071.21     | N 33.53 W |
| 460816.207           | N      | 693557.471 | E | 4071.34  | 0.79    |             |           |
| 13152.00             | 88.900 | 0.700      |   | 5820.44  | 9259.44 | 4161.19     | N 32.04 W |
| 460906.187           | N      | 693558.963 | E | 4161.31  | 1.05    |             |           |
| 13242.00             | 91.400 | 1.000      |   | 5820.21  | 9259.21 | 4251.17     | N 30.70 W |
| 460996.170           | N      | 693560.298 | E | 4251.28  | 2.80    |             |           |
| 13333.00             | 90.500 | 0.400      |   | 5818.70  | 9257.70 | 4342.15     | N 29.59 W |
| 461087.149           | N      | 693561.410 | E | 4342.25  | 1.19    |             |           |
| 13423.00             | 89.800 | 0.100      |   | 5818.46  | 9257.46 | 4432.15     | N 29.20 W |
| 461177.147           | N      | 693561.803 | E | 4432.24  | 0.85    |             |           |
| 13514.00             | 89.000 | 359.900    |   | 5819.42  | 9258.42 | 4523.14     | N 29.20 W |
| 461268.142           | N      | 693561.803 | E | 4523.24  | 0.91    |             |           |
| 13604.00             | 87.000 | 359.500    |   | 5822.56  | 9261.56 | 4613.08     | N 29.67 W |
| 461358.081           | N      | 693561.332 | E | 4613.18  | 2.27    |             |           |
| 13689.00             | 86.100 | 359.500    |   | 5827.67  | 9266.67 | 4697.92     | N 30.41 W |
| 461442.923           | N      | 693560.591 | E | 4698.02  | 1.06    |             |           |
| 13740.00             | 86.100 | 359.500    |   | 5831.14  | 9270.14 | 4748.80     | N 30.85 W |
| 461493.803           | N      | 693560.147 | E | 4748.90  | 0.00    |             |           |

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.  
Vertical depths are relative to WELL. Northings and Eastings are relative to well.

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The Dogleg Severity is in Degrees per 100 feet.

Vertical Section is from Slot and calculated along an Azimuth of 359.610° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.

Grid Convergence at Surface is 0.263°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 13740.00ft., the Bottom Hole Displacement is 4748.90ft., in the Direction of 359.610° (Grid).

| MD   | Inc | Az    | TVDSS    | TVD     | N/S     | E/W     |
|------|-----|-------|----------|---------|---------|---------|
| 0    | 0   | 0     | -3439    | 0       | 0 N     | 0 E     |
| 172  | 0.7 | 343.8 | -3267    | 172     | 1.01 N  | 0.29 W  |
| 357  | 1.1 | 350.4 | -3082.03 | 356.97  | 3.85 N  | 0.9 W   |
| 425  | 1.1 | 348.3 | -3014.04 | 424.96  | 5.13 N  | 1.15 W  |
| 574  | 1   | 342.4 | -2865.06 | 573.94  | 7.77 N  | 1.83 W  |
| 764  | 1.2 | 337.7 | -2675.1  | 763.9   | 11.19 N | 3.09 W  |
| 955  | 1   | 335.8 | -2484.14 | 954.86  | 14.56 N | 4.53 W  |
| 1145 | 0.8 | 336.5 | -2294.16 | 1144.84 | 17.29 N | 5.74 W  |
| 1336 | 0.6 | 346   | -2103.17 | 1335.83 | 19.48 N | 6.51 W  |
| 1526 | 0.5 | 344.4 | -1913.18 | 1525.82 | 21.24 N | 6.97 W  |
| 1716 | 0.4 | 316   | -1723.19 | 1715.81 | 22.52 N | 7.66 W  |
| 1907 | 0.3 | 331.3 | -1532.19 | 1906.81 | 23.44 N | 8.36 W  |
| 2097 | 0.4 | 342.9 | -1342.19 | 2096.81 | 24.51 N | 8.79 W  |
| 2287 | 0.4 | 320.5 | -1152.2  | 2286.8  | 25.65 N | 9.41 W  |
| 2477 | 0.3 | 280.3 | -962.2   | 2476.8  | 26.26 N | 10.32 W |
| 2667 | 0.3 | 268.3 | -772.21  | 2666.79 | 26.33 N | 11.31 W |
| 2857 | 0.4 | 261.3 | -582.21  | 2856.79 | 26.21 N | 12.46 W |
| 3047 | 0.4 | 288.1 | -392.21  | 3046.79 | 26.32 N | 13.75 W |
| 3238 | 0.3 | 239.7 | -201.22  | 3237.78 | 26.27 N | 14.81 W |
| 3429 | 0.8 | 133.8 | -10.22   | 3428.78 | 25.1 N  | 14.28 W |
| 3620 | 1   | 151.6 | 180.75   | 3619.75 | 22.71 N | 12.53 W |
| 3810 | 1.5 | 147.2 | 370.71   | 3809.71 | 19.16 N | 10.39 W |
| 3857 | 1.3 | 144.4 | 417.69   | 3856.69 | 18.21 N | 9.75 W  |
| 4013 | 1.1 | 128.7 | 573.66   | 4012.66 | 15.84 N | 7.55 W  |
| 4204 | 1   | 130.8 | 764.63   | 4203.63 | 13.6 N  | 4.86 W  |
| 4394 | 0.7 | 143   | 954.61   | 4393.61 | 11.59 N | 2.9 W   |
| 4585 | 0.5 | 153.5 | 1145.6   | 4584.6  | 9.91 N  | 1.83 W  |
| 4775 | 0.8 | 121.6 | 1335.58  | 4774.58 | 8.48 N  | 0.33 W  |
| 4965 | 0.7 | 121.9 | 1525.57  | 4964.57 | 7.17 N  | 1.79 E  |
| 5156 | 0.4 | 102.3 | 1716.56  | 5155.56 | 6.41 N  | 3.43 E  |
| 5347 | 0.4 | 94.5  | 1907.56  | 5346.56 | 6.21 N  | 4.74 E  |
| 5537 | 0.5 | 102.8 | 2097.55  | 5536.55 | 5.98 N  | 6.21 E  |
| 5728 | 0.6 | 103.1 | 2288.54  | 5727.54 | 5.57 N  | 8 E     |
| 5918 | 0.5 | 112.7 | 2478.53  | 5917.53 | 5.02 N  | 9.73 E  |
| 6108 | 0.7 | 136.9 | 2668.52  | 6107.52 | 3.86 N  | 11.29 E |
| 6298 | 0.6 | 125.3 | 2858.51  | 6297.51 | 2.43 N  | 12.9 E  |
| 6479 | 0.2 | 138.4 | 3039.5   | 6478.5  | 1.65 N  | 13.88 E |
| 6659 | 0.2 | 152.3 | 3219.5   | 6658.5  | 1.14 N  | 14.23 E |
| 6840 | 0.7 | 31.9  | 3400.5   | 6839.5  | 1.79 N  | 14.97 E |
| 7021 | 0.8 | 38.3  | 3581.48  | 7020.48 | 3.73 N  | 16.33 E |
| 7201 | 1.1 | 46.1  | 3761.46  | 7200.46 | 5.91 N  | 18.36 E |
| 7383 | 0.8 | 48.5  | 3943.43  | 7382.43 | 7.96 N  | 20.57 E |
| 7563 | 0.6 | 91.8  | 4123.42  | 7562.42 | 8.77 N  | 22.45 E |
| 7744 | 0.3 | 101.1 | 4304.42  | 7743.42 | 8.64 N  | 23.86 E |
| 7925 | 0.8 | 222.9 | 4485.41  | 7924.41 | 7.63 N  | 23.47 E |
| 8105 | 2   | 260.2 | 4665.36  | 8104.36 | 6.17 N  | 19.52 E |

|       |      |       |         |         |           |         |
|-------|------|-------|---------|---------|-----------|---------|
| 8286  | 3.6  | 268.4 | 4846.13 | 8285.13 | 5.48 N    | 10.72 E |
| 8466  | 4.2  | 249.7 | 5025.72 | 8464.72 | 3.03 N    | 1.11 W  |
| 8654  | 3.4  | 252.1 | 5213.31 | 8652.31 | 1.07 S    | 12.87 W |
| 8735  | 7    | 298.4 | 5293.99 | 8732.99 | 0.54 N    | 19.5 W  |
| 8781  | 13.5 | 317.9 | 5339.25 | 8778.25 | 5.86 N    | 25.58 W |
| 8826  | 20.5 | 317.1 | 5382.25 | 8821.25 | 15.55 N   | 34.47 W |
| 8871  | 28.9 | 316.3 | 5423.1  | 8862.1  | 29.2 N    | 47.37 W |
| 8916  | 32.1 | 326.4 | 5461.89 | 8900.89 | 47.04 N   | 61.51 W |
| 8961  | 40   | 332.2 | 5498.26 | 8937.26 | 69.84 N   | 74.9 W  |
| 9006  | 44.7 | 342.5 | 5531.55 | 8970.55 | 97.77 N   | 86.43 W |
| 9052  | 48.8 | 353.3 | 5563.11 | 9002.11 | 130.45 N  | 93.32 W |
| 9097  | 52   | 357.7 | 5591.8  | 9030.8  | 165 N     | 96.01 W |
| 9142  | 53.3 | 358.6 | 5619.1  | 9058.1  | 200.76 N  | 97.16 W |
| 9187  | 56.7 | 1.7   | 5644.91 | 9083.91 | 237.6 N   | 97.05 W |
| 9232  | 57.3 | 1.9   | 5669.42 | 9108.42 | 275.33 N  | 95.86 W |
| 9277  | 56.6 | 1.3   | 5693.96 | 9132.96 | 313.03 N  | 94.81 W |
| 9323  | 55.9 | 1.1   | 5719.52 | 9158.52 | 351.27 N  | 94.01 W |
| 9368  | 60.4 | 2.7   | 5743.26 | 9182.26 | 389.46 N  | 92.73 W |
| 9413  | 67.3 | 7.1   | 5763.09 | 9202.09 | 429.66 N  | 89.23 W |
| 9458  | 74.4 | 6     | 5777.84 | 9216.84 | 471.87 N  | 84.4 W  |
| 9503  | 83.2 | 2.9   | 5786.57 | 9225.57 | 515.83 N  | 80.99 W |
| 9548  | 91.3 | 0.3   | 5788.73 | 9227.73 | 560.72 N  | 79.74 W |
| 9639  | 91.4 | 3.1   | 5786.59 | 9225.59 | 651.65 N  | 77.04 W |
| 9726  | 87.1 | 4     | 5787.72 | 9226.72 | 738.45 N  | 71.66 W |
| 9816  | 86.6 | 4.1   | 5792.67 | 9231.67 | 828.09 N  | 65.31 W |
| 9906  | 88.8 | 3.1   | 5796.28 | 9235.28 | 917.83 N  | 59.67 W |
| 9997  | 87.1 | 2.9   | 5799.54 | 9238.54 | 1008.65 N | 54.91 W |
| 10087 | 89.3 | 1.4   | 5802.36 | 9241.36 | 1098.53 N | 51.53 W |
| 10177 | 91.5 | 1.7   | 5801.73 | 9240.73 | 1188.49 N | 49.1 W  |
| 10268 | 92.3 | 3.5   | 5798.72 | 9237.72 | 1279.34 N | 44.97 W |
| 10358 | 87.2 | 4.2   | 5799.11 | 9238.11 | 1369.11 N | 38.93 W |
| 10448 | 86   | 4.6   | 5804.45 | 9243.45 | 1458.68 N | 32.04 W |
| 10539 | 88.5 | 2.4   | 5808.81 | 9247.81 | 1549.4 N  | 26.49 W |
| 10629 | 87.2 | 1.9   | 5812.19 | 9251.19 | 1639.27 N | 23.12 W |
| 10719 | 88   | 1.3   | 5815.96 | 9254.96 | 1729.15 N | 20.61 W |
| 10810 | 90.4 | 0.2   | 5817.23 | 9256.23 | 1820.13 N | 19.42 W |
| 10900 | 90.6 | 0.2   | 5816.44 | 9255.44 | 1910.12 N | 19.11 W |
| 10990 | 90.4 | 0.2   | 5815.66 | 9254.66 | 2000.12 N | 18.79 W |
| 11080 | 89.1 | 359.5 | 5816.05 | 9255.05 | 2090.12 N | 19.03 W |
| 11171 | 88.9 | 359.2 | 5817.64 | 9256.64 | 2181.1 N  | 20.06 W |
| 11261 | 87.6 | 359   | 5820.39 | 9259.39 | 2271.04 N | 21.47 W |
| 11351 | 89.3 | 358.8 | 5822.82 | 9261.82 | 2360.99 N | 23.2 W  |
| 11441 | 88.9 | 357.7 | 5824.24 | 9263.24 | 2450.93 N | 25.95 W |
| 11532 | 92.1 | 358.9 | 5823.44 | 9262.44 | 2541.88 N | 28.65 W |
| 11620 | 92.7 | 358.8 | 5819.76 | 9258.76 | 2629.78 N | 30.41 W |
| 11709 | 91.7 | 358.3 | 5816.34 | 9255.34 | 2718.69 N | 32.66 W |
| 11799 | 92.4 | 358.8 | 5813.12 | 9252.12 | 2808.6 N  | 34.94 W |

|       |      |       |         |         |           |         |
|-------|------|-------|---------|---------|-----------|---------|
| 11889 | 91.8 | 358.9 | 5809.82 | 9248.82 | 2898.52 N | 36.74 W |
| 11980 | 90.2 | 358.8 | 5808.23 | 9247.23 | 2989.48 N | 38.57 W |
| 12070 | 89.6 | 0.2   | 5808.39 | 9247.39 | 3079.48 N | 39.35 W |
| 12160 | 88.4 | 0.5   | 5809.96 | 9248.96 | 3169.46 N | 38.8 W  |
| 12250 | 87.5 | 1.1   | 5813.18 | 9252.18 | 3259.39 N | 37.55 W |
| 12340 | 89.1 | 0.7   | 5815.85 | 9254.85 | 3349.34 N | 36.14 W |
| 12431 | 87.8 | 0.9   | 5818.31 | 9257.31 | 3440.3 N  | 34.87 W |
| 12521 | 91.7 | 0.2   | 5818.71 | 9257.71 | 3530.27 N | 34 W    |
| 12611 | 90.4 | 359.5 | 5817.06 | 9256.06 | 3620.25 N | 34.24 W |
| 12701 | 89.8 | 359.4 | 5816.9  | 9255.9  | 3710.25 N | 35.1 W  |
| 12791 | 88.6 | 359.4 | 5818.16 | 9257.16 | 3800.23 N | 36.04 W |
| 12882 | 90.3 | 0.8   | 5819.03 | 9258.03 | 3891.22 N | 35.88 W |
| 12972 | 89.8 | 0.5   | 5818.95 | 9257.95 | 3981.22 N | 34.86 W |
| 13062 | 89.7 | 1.2   | 5819.34 | 9258.34 | 4071.21 N | 33.53 W |
| 13152 | 88.9 | 0.7   | 5820.44 | 9259.44 | 4161.19 N | 32.04 W |
| 13242 | 91.4 | 1     | 5820.21 | 9259.21 | 4251.17 N | 30.7 W  |
| 13333 | 90.5 | 0.4   | 5818.7  | 9257.7  | 4342.15 N | 29.59 W |
| 13423 | 89.8 | 0.1   | 5818.46 | 9257.46 | 4432.15 N | 29.2 W  |
| 13514 | 89   | 359.9 | 5819.42 | 9258.42 | 4523.14 N | 29.2 W  |
| 13604 | 87   | 359.5 | 5822.56 | 9261.56 | 4613.08 N | 29.67 W |
| 13689 | 86.1 | 359.5 | 5827.67 | 9266.67 | 4697.92 N | 30.41 W |
| 13740 | 86.1 | 359.5 | 5831.14 | 9270.14 | 4748.8 N  | 30.85 W |

| Northing   | Easting    | V Sec | D leg |
|------------|------------|-------|-------|
| 456745 N   | 693591 E   | 0     | 0     |
| 456746 N   | 693590.7 E | 1.01  | 0.41  |
| 456748.8 N | 693590.1 E | 3.85  | 0.22  |
| 456750.1 N | 693589.9 E | 5.14  | 0.06  |
| 456752.8 N | 693589.2 E | 7.78  | 0.1   |
| 456756.2 N | 693587.9 E | 11.21 | 0.12  |
| 456759.6 N | 693586.5 E | 14.59 | 0.11  |
| 456762.3 N | 693585.3 E | 17.33 | 0.11  |
| 456764.5 N | 693584.5 E | 19.53 | 0.12  |
| 456766.2 N | 693584 E   | 21.29 | 0.05  |
| 456767.5 N | 693583.3 E | 22.57 | 0.13  |
| 456768.4 N | 693582.6 E | 23.5  | 0.07  |
| 456769.5 N | 693582.2 E | 24.57 | 0.06  |
| 456770.7 N | 693581.6 E | 25.72 | 0.08  |
| 456771.3 N | 693580.7 E | 26.32 | 0.14  |
| 456771.3 N | 693579.7 E | 26.41 | 0.03  |
| 456771.2 N | 693578.5 E | 26.3  | 0.06  |
| 456771.3 N | 693577.3 E | 26.41 | 0.1   |
| 456771.3 N | 693576.2 E | 26.38 | 0.16  |
| 456770.1 N | 693576.7 E | 25.2  | 0.49  |
| 456767.7 N | 693578.5 E | 22.8  | 0.18  |
| 456764.2 N | 693580.6 E | 19.23 | 0.27  |
| 456763.2 N | 693581.3 E | 18.28 | 0.45  |
| 456760.8 N | 693583.5 E | 15.89 | 0.25  |
| 456758.6 N | 693586.1 E | 13.63 | 0.06  |
| 456756.6 N | 693588.1 E | 11.61 | 0.18  |
| 456754.9 N | 693589.2 E | 9.93  | 0.12  |
| 456753.5 N | 693590.7 E | 8.48  | 0.24  |
| 456752.2 N | 693592.8 E | 7.16  | 0.05  |
| 456751.4 N | 693594.4 E | 6.39  | 0.18  |
| 456751.2 N | 693595.7 E | 6.18  | 0.03  |
| 456751 N   | 693597.2 E | 5.94  | 0.06  |
| 456750.6 N | 693599 E   | 5.51  | 0.05  |
| 456750 N   | 693600.7 E | 4.96  | 0.07  |
| 456748.9 N | 693602.3 E | 3.78  | 0.17  |
| 456747.4 N | 693603.9 E | 2.34  | 0.09  |
| 456746.6 N | 693604.9 E | 1.55  | 0.23  |
| 456746.1 N | 693605.2 E | 1.04  | 0.03  |
| 456746.8 N | 693606 E   | 1.69  | 0.45  |
| 456748.7 N | 693607.3 E | 3.61  | 0.07  |
| 456750.9 N | 693609.4 E | 5.78  | 0.18  |
| 456753 N   | 693611.6 E | 7.82  | 0.17  |
| 456753.8 N | 693613.5 E | 8.61  | 0.3   |
| 456753.6 N | 693614.9 E | 8.48  | 0.17  |
| 456752.6 N | 693614.5 E | 7.47  | 0.55  |
| 456751.2 N | 693610.5 E | 6.04  | 0.8   |

|            |            |         |       |
|------------|------------|---------|-------|
| 456750.5 N | 693601.7 E | 5.4     | 0.91  |
| 456748 N   | 693589.9 E | 3.04    | 0.78  |
| 456743.9 N | 693578.1 E | -0.98   | 0.43  |
| 456745.5 N | 693571.5 E | 0.67    | 6.49  |
| 456750.9 N | 693565.4 E | 6.04    | 15.82 |
| 456760.5 N | 693556.5 E | 15.78   | 15.56 |
| 456774.2 N | 693543.6 E | 29.53   | 18.68 |
| 456792 N   | 693529.5 E | 47.46   | 13.41 |
| 456814.8 N | 693516.1 E | 70.34   | 19.11 |
| 456842.8 N | 693504.6 E | 98.36   | 18.6  |
| 456875.5 N | 693497.7 E | 131.09  | 19.26 |
| 456910 N   | 693495 E   | 165.65  | 10.36 |
| 456945.8 N | 693493.8 E | 201.41  | 3.3   |
| 456982.6 N | 693494 E   | 238.26  | 9.43  |
| 457020.3 N | 693495.1 E | 275.97  | 1.38  |
| 457058 N   | 693496.2 E | 313.67  | 1.92  |
| 457096.3 N | 693497 E   | 351.9   | 1.56  |
| 457134.5 N | 693498.3 E | 390.08  | 10.45 |
| 457174.7 N | 693501.8 E | 430.26  | 17.66 |
| 457216.9 N | 693506.6 E | 472.43  | 15.95 |
| 457260.8 N | 693510 E   | 516.37  | 20.69 |
| 457305.7 N | 693511.3 E | 561.25  | 18.9  |
| 457396.6 N | 693514 E   | 652.16  | 3.08  |
| 457483.5 N | 693519.3 E | 738.92  | 5.05  |
| 457573.1 N | 693525.7 E | 828.52  | 0.57  |
| 457662.8 N | 693531.3 E | 918.22  | 2.68  |
| 457753.6 N | 693536.1 E | 1009    | 1.88  |
| 457843.5 N | 693539.5 E | 1098.86 | 2.96  |
| 457933.5 N | 693541.9 E | 1188.8  | 2.47  |
| 458024.3 N | 693546 E   | 1279.62 | 2.16  |
| 458114.1 N | 693552.1 E | 1369.34 | 5.72  |
| 458203.7 N | 693559 E   | 1458.87 | 1.41  |
| 458294.4 N | 693564.5 E | 1549.54 | 3.66  |
| 458384.3 N | 693567.9 E | 1639.39 | 1.55  |
| 458474.2 N | 693570.4 E | 1729.25 | 1.11  |
| 458565.1 N | 693571.6 E | 1820.22 | 2.9   |
| 458655.1 N | 693571.9 E | 1910.21 | 0.22  |
| 458745.1 N | 693572.2 E | 2000.2  | 0.22  |
| 458835.1 N | 693572 E   | 2090.2  | 1.64  |
| 458926.1 N | 693570.9 E | 2181.18 | 0.4   |
| 459016 N   | 693569.5 E | 2271.14 | 1.46  |
| 459106 N   | 693567.8 E | 2361.09 | 1.9   |
| 459195.9 N | 693565.1 E | 2451.05 | 1.3   |
| 459286.9 N | 693562.4 E | 2542.01 | 3.76  |
| 459374.8 N | 693560.6 E | 2629.93 | 0.69  |
| 459463.7 N | 693558.3 E | 2718.85 | 1.26  |
| 459553.6 N | 693556.1 E | 2808.77 | 0.96  |

|            |            |         |      |
|------------|------------|---------|------|
| 459643.5 N | 693554.3 E | 2898.7  | 0.68 |
| 459734.5 N | 693552.4 E | 2989.68 | 1.76 |
| 459824.5 N | 693551.6 E | 3079.68 | 1.69 |
| 459914.5 N | 693552.2 E | 3169.65 | 1.37 |
| 460004.4 N | 693553.5 E | 3259.57 | 1.2  |
| 460094.3 N | 693554.9 E | 3349.51 | 1.83 |
| 460185.3 N | 693556.1 E | 3440.45 | 1.45 |
| 460275.3 N | 693557 E   | 3530.42 | 4.4  |
| 460365.3 N | 693556.8 E | 3620.4  | 1.64 |
| 460455.3 N | 693555.9 E | 3710.4  | 0.68 |
| 460545.2 N | 693555 E   | 3800.39 | 1.33 |
| 460636.2 N | 693555.1 E | 3891.38 | 2.42 |
| 460726.2 N | 693556.1 E | 3981.36 | 0.65 |
| 460816.2 N | 693557.5 E | 4071.34 | 0.79 |
| 460906.2 N | 693559 E   | 4161.31 | 1.05 |
| 460996.2 N | 693560.3 E | 4251.28 | 2.8  |
| 461087.1 N | 693561.4 E | 4342.25 | 1.19 |
| 461177.1 N | 693561.8 E | 4432.24 | 0.85 |
| 461268.1 N | 693561.8 E | 4523.24 | 0.91 |
| 461358.1 N | 693561.3 E | 4613.18 | 2.27 |
| 461442.9 N | 693560.6 E | 4698.02 | 1.06 |
| 461493.8 N | 693560.1 E | 4748.9  | 0    |