



PO Box 1370  
Artesia, NM 88211-1370  
(575) 748-1288

January 13, 2015

Mack Energy Corporation  
PO Box 960  
Artesia, NM 88211-0960

RE: Norway State #2  
1700' FSL & 2043' FEL  
Sec. 36, T21S, R36E  
Lea County, New Mexico

HOBBS OCD

MAR 09 2015

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Dear Sir,

The attached is the Deviation Survey for the above captioned well.

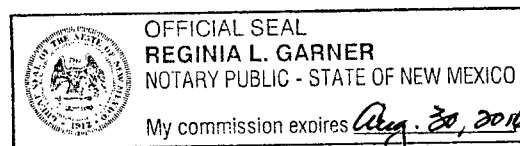
Very truly yours,

Chris Graham  
Drilling Superintendent

State of New Mexico }  
County of Eddy }

*The foregoing was acknowledged before me this 13<sup>th</sup> day of January, 2015.*

\_\_\_\_\_  
Notary Public



MAR 17 2015

Norway State #2

| Date       | Depth | Deviation | Direction |
|------------|-------|-----------|-----------|
| 12/28/2014 | 151   | 0.90      | 214.30    |
| 12/29/2014 | 335   | 1.40      | 228.40    |
| 12/29/2014 | 518   | 1.30      | 225.80    |
| 12/29/2014 | 697   | 1.90      | 222.50    |
| 12/29/2014 | 854   | 0.80      | 231.10    |
| 12/29/2014 | 1041  | 1.50      | 234.80    |
| 12/29/2014 | 1174  | 1.70      | 229.80    |
| 1/1/2015   | 1479  | 1.80      | 218.80    |
| 1/1/2015   | 1793  | 2.00      | 123.90    |
| 1/1/2015   | 2106  | 2.30      | 284.90    |
| 1/1/2015   | 2388  | 1.10      | 230.30    |
| 1/1/2015   | 2489  | 1.80      | 163.50    |
| 1/1/2015   | 2520  | 3.10      | 188.70    |
| 1/1/2015   | 2551  | 4.10      | 211.30    |
| 1/1/2015   | 2583  | 5.40      | 216.60    |
| 1/2/2015   | 2643  | 5.70      | 212.90    |
| 1/2/2015   | 2702  | 5.70      | 237.60    |
| 1/2/2015   | 2733  | 6.50      | 248.70    |
| 1/2/2015   | 2764  | 6.50      | 251.40    |
| 1/2/2015   | 2795  | 7.60      | 246.30    |
| 1/2/2015   | 2827  | 9.50      | 227.60    |
| 1/2/2015   | 2858  | 11.90     | 211.50    |
| 1/3/2015   | 2889  | 14.90     | 34.80     |
| 1/3/2015   | 2920  | 17.40     | 196.10    |
| 1/3/2015   | 2952  | 19.20     | 195.80    |
| 1/3/2015   | 3046  | 23.30     | 193.50    |
| 1/3/2015   | 3077  | 25.20     | 192.20    |
| 1/3/2015   | 3108  | 26.90     | 192.90    |
| 1/3/2015   | 3233  | 32.10     | 196.50    |
| 1/3/2015   | 3264  | 31.50     | 197.00    |
| 1/3/2015   | 3296  | 29.50     | 198.60    |
| 1/3/2015   | 3327  | 29.00     | 196.70    |
| 1/3/2015   | 3359  | 29.50     | 193.00    |
| 1/4/2015   | 3390  | 27.90     | 189.70    |
| 1/4/2015   | 3421  | 27.50     | 188.80    |
| 1/4/2015   | 3452  | 27.70     | 185.60    |
| 1/4/2015   | 3484  | 28.10     | 185.30    |
| 1/4/2015   | 3515  | 28.60     | 187.10    |
| 1/4/2015   | 3546  | 28.60     | 187.10    |
| 1/4/2015   | 3578  | 28.40     | 189.10    |
| 1/4/2015   | 3609  | 28.10     | 188.80    |
| 1/5/2015   | 3642  | 27.80     | 188.20    |

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| Date      | Depth | Deviation | Direction |
|-----------|-------|-----------|-----------|
| 1/5/2015  | 3673  | 28.40     | 189.50    |
| 1/5/2015  | 3704  | 28.30     | 191.80    |
| 1/5/2015  | 3736  | 28.30     | 191.40    |
| 1/5/2015  | 3767  | 28.10     | 191.30    |
| 1/5/2015  | 3923  | 27.50     | 190.80    |
| 1/5/2015  | 3954  | 27.30     | 190.10    |
| 1/5/2015  | 3986  | 27.10     | 192.00    |
| 1/5/2015  | 4112  | 26.70     | 195.40    |
| 1/6/2015  | 4142  | 27.00     | 197.20    |
| 1/6/2015  | 4173  | 25.80     | 198.40    |
| 1/6/2015  | 4204  | 25.90     | 198.30    |
| 1/6/2015  | 4236  | 25.50     | 197.80    |
| 1/6/2015  | 4267  | 25.20     | 197.80    |
| 1/6/2015  | 4286  | 17.00     | 205.60    |
| 1/6/2015  | 4298  | 25.20     | 197.80    |
| 1/6/2015  | 4329  | 25.10     | 198.40    |
| 1/6/2015  | 4349  | 12.70     | 197.90    |
| 1/6/2015  | 4361  | 24.70     | 199.10    |
| 1/6/2015  | 4455  | 19.90     | 203.20    |
| 1/6/2015  | 4518  | 14.40     | 204.20    |
| 1/6/2015  | 4590  | 17.00     | 190.70    |
| 1/6/2015  | 4612  | 9.10      | 192.70    |
| 1/7/2015  | 4644  | 6.60      | 19632.00  |
| 1/7/2015  | 4675  | 4.20      | 191.10    |
| 1/7/2015  | 4706  | 1.80      | 181.30    |
| 1/7/2015  | 4737  | 0.70      | 358.90    |
| 1/8/2015  | 5058  | 1.10      | 94.40     |
| 1/8/2015  | 5370  | 1.90      | 82.30     |
| 1/8/2015  | 5683  | 1.70      | 53.90     |
| 1/8/2015  | 5995  | 1.00      | 34.70     |
| 1/9/2015  | 6308  | 1.00      | 18.40     |
| 1/9/2015  | 6620  | 0.90      | 347.40    |
| 1/9/2015  | 6932  | 0.40      | 13.60     |
| 1/10/2015 | 7166  | 0.80      | 34.30     |

**Mack Energy**  
Lea County, NM (NAD83)  
Norway State  
#2

OH

Survey: MWD #1

## **Standard Survey Report**

11 January, 2015

HOBBS OCD

MAR 09 2015

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# Wellplanning

## Survey Report

|                  |                       |                                     |                                        |
|------------------|-----------------------|-------------------------------------|----------------------------------------|
| <b>Company:</b>  | Mack Energy           | <b>Local Co-ordinate Reference:</b> | Well #2                                |
| <b>Project:</b>  | Lea County,NM (NAD83) | <b>TVD Reference:</b>               | WELL @ 3525.4usft (Original Well Elev) |
| <b>Site:</b>     | Norway State          | <b>MD Reference:</b>                | WELL @ 3525.4usft (Original Well Elev) |
| <b>Well:</b>     | #2                    | <b>North Reference:</b>             | Grid                                   |
| <b>Wellbore:</b> | OH                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Design:</b>   | OH                    | <b>Database:</b>                    | EDM 5000.1 Single User Db              |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Lea County,NM (NAD83)     |                      |                |
| <b>Map System:</b> | US State Plane 1983       | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983 |                      |                |
| <b>Map Zone:</b>   | New Mexico Eastern Zone   |                      |                |

|                              |              |                          |                  |
|------------------------------|--------------|--------------------------|------------------|
| <b>Site:</b>                 | Norway State |                          |                  |
| <b>Site Position:</b>        |              | <b>Northing:</b>         | 522,984.87 usft  |
| <b>From:</b>                 | Map          | <b>Easting:</b>          | 885,771.76 usft  |
| <b>Position Uncertainty:</b> | 0.0 usft     | <b>Slot Radius:</b>      | 13-3/16 "        |
|                              |              | <b>Latitude:</b>         | 32° 25' 58.094 N |
|                              |              | <b>Longitude:</b>        | 103° 13' 1.080 W |
|                              |              | <b>Grid Convergence:</b> | 0.60 °           |

|                             |              |                            |                                  |
|-----------------------------|--------------|----------------------------|----------------------------------|
| <b>Well</b>                 | #2           |                            |                                  |
| <b>Well Position</b>        | <b>+N/-S</b> | 0.0 usft                   | <b>Northing:</b> 522,984.87 usft |
|                             | <b>+E/-W</b> | 0.0 usft                   | <b>Easting:</b> 885,771.76 usft  |
| <b>Position Uncertainty</b> | 0.0 usft     | <b>Wellhead Elevation:</b> | usft                             |
|                             |              | <b>Latitude:</b>           | 32° 25' 58.094 N                 |
|                             |              | <b>Longitude:</b>          | 103° 13' 1.080 W                 |
|                             |              | <b>Ground Level:</b>       | 3,508.4 usft                     |

|                  |                   |                    |                     |
|------------------|-------------------|--------------------|---------------------|
| <b>Wellbore</b>  | OH                |                    |                     |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination</b>  |
|                  | IGRF2010          | 12/8/2014          | (°)                 |
|                  |                   |                    | 7.00                |
|                  |                   |                    | Dip Angle (°)       |
|                  |                   |                    | 60.35               |
|                  |                   |                    | Field Strength (nT) |
|                  |                   |                    | 48,430              |

|                          |                         |                      |               |
|--------------------------|-------------------------|----------------------|---------------|
| <b>Design</b>            | OH                      |                      |               |
| <b>Audit Notes:</b>      |                         |                      |               |
| <b>Version:</b>          | 1.0                     | <b>Phase:</b>        | ACTUAL        |
|                          |                         | <b>Tie On Depth:</b> | 0.0           |
| <b>Vertical Section:</b> | <b>Depth From (TVD)</b> | <b>+N/-S</b>         | <b>+E/-W</b>  |
|                          | (usft)                  | (usft)               | (usft)        |
|                          | 0.0                     | 0.0                  | 0.0           |
|                          |                         |                      | Direction (°) |
|                          |                         |                      | 197.06        |

|                       |                |                          |                  |
|-----------------------|----------------|--------------------------|------------------|
| <b>Survey Program</b> | Date 1/11/2015 |                          |                  |
| <b>From</b>           | <b>To</b>      | <b>Survey (Wellbore)</b> | <b>Tool Name</b> |
| (usft)                | (usft)         |                          |                  |
| 151.0                 | 7,212.0        | MWD #1 (OH)              | MWD              |
|                       |                |                          | Description      |
|                       |                |                          | MWD - Standard   |

|                 |                    |                |                 |               |               |                 |                    |                    |                    |  |
|-----------------|--------------------|----------------|-----------------|---------------|---------------|-----------------|--------------------|--------------------|--------------------|--|
| <b>Survey</b>   |                    |                |                 |               |               |                 |                    |                    |                    |  |
| <b>Measured</b> | <b>Inclination</b> | <b>Azimuth</b> | <b>Vertical</b> | <b>+N/-S</b>  | <b>+E/-W</b>  | <b>Vertical</b> | <b>Dogleg</b>      | <b>Build</b>       | <b>Turn</b>        |  |
| <b>Depth</b>    | <b>(°)</b>         | <b>(°)</b>     | <b>Depth</b>    | <b>(usft)</b> | <b>(usft)</b> | <b>Section</b>  | <b>Rate</b>        | <b>Rate</b>        | <b>Rate</b>        |  |
| <b>(usft)</b>   |                    |                | <b>(usft)</b>   |               |               | <b>(usft)</b>   | <b>(°/100usft)</b> | <b>(°/100usft)</b> | <b>(°/100usft)</b> |  |
| 0.0             | 0.00               | 0.00           | 0.0             | 0.0           | 0.0           | 0.0             | 0.00               | 0.00               | 0.00               |  |
| 151.0           | 0.90               | 214.30         | 151.0           | -1.0          | -0.7          | 1.1             | 0.60               | 0.60               | 0.00               |  |
| 335.0           | 1.40               | 228.40         | 335.0           | -3.7          | -3.2          | 4.4             | 0.31               | 0.27               | 7.66               |  |
| 518.0           | 1.30               | 225.80         | 517.9           | -6.6          | -6.3          | 8.2             | 0.06               | -0.05              | -1.42              |  |
| 697.0           | 1.90               | 222.50         | 696.8           | -10.2         | -9.8          | 12.6            | 0.34               | 0.34               | -1.84              |  |
| 854.0           | 0.80               | 231.10         | 853.8           | -12.8         | -12.4         | 15.9            | 0.71               | -0.70              | 5.48               |  |
| 1,041.0         | 1.50               | 234.80         | 1,040.8         | -15.0         | -15.4         | 18.9            | 0.38               | 0.37               | 1.98               |  |
| 1,177.0         | 1.70               | 229.80         | 1,176.7         | -17.4         | -18.4         | 22.0            | 0.18               | 0.15               | -3.68              |  |
| 1,479.0         | 1.80               | 218.80         | 1,478.6         | -24.0         | -24.8         | 30.2            | 0.12               | 0.03               | -3.64              |  |
| 1,793.0         | 2.00               | 123.90         | 1,792.4         | -30.9         | -23.3         | 36.3            | 0.89               | 0.06               | -30.22             |  |

# Wellplanning

## Survey Report

|           |                       |                              |                                        |
|-----------|-----------------------|------------------------------|----------------------------------------|
| Company:  | Mack Energy           | Local Co-ordinate Reference: | Well #2                                |
| Project:  | Lea County,NM (NAD83) | TVD Reference:               | WELL @ 3525.4usft (Original Well Elev) |
| Site:     | Norway State          | MD Reference:                | WELL @ 3525.4usft (Original Well Elev) |
| Well:     | #2                    | North Reference:             | Grid                                   |
| Wellbore: | OH                    | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | OH                    | Database:                    | EDM 5000.1 Single User Db              |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |  |
| 2,106.0               | 2.30            | 284.30      | 2,105.4               | -32.4        | -24.9        | 38.2                    | 1.35                    | 0.10                   | 51.25                 |  |
| 2,388.0               | 1.10            | 230.30      | 2,387.3               | -32.7        | -32.5        | 40.8                    | 0.67                    | -0.43                  | -19.15                |  |
| 2,489.0               | 1.80            | 163.50      | 2,488.2               | -34.8        | -32.8        | 42.9                    | 1.68                    | 0.69                   | -66.14                |  |
| 2,520.0               | 3.10            | 188.70      | 2,519.2               | -36.1        | -32.7        | 44.1                    | 5.35                    | 4.19                   | 81.29                 |  |
| 2,551.0               | 4.10            | 211.30      | 2,550.1               | -37.9        | -33.4        | 46.0                    | 5.54                    | 3.23                   | 72.90                 |  |
| 2,583.0               | 5.40            | 216.60      | 2,582.0               | -40.1        | -34.9        | 48.6                    | 4.28                    | 4.06                   | 16.56                 |  |
| 2,615.0               | 6.90            | 219.50      | 2,613.8               | -42.8        | -37.1        | 51.8                    | 4.79                    | 4.69                   | 9.06                  |  |
| 2,643.0               | 5.70            | 212.90      | 2,641.7               | -45.2        | -38.9        | 54.7                    | 5.00                    | -4.29                  | -23.57                |  |
| 2,671.0               | 5.40            | 217.40      | 2,669.5               | -47.5        | -40.4        | 57.2                    | 1.89                    | -1.07                  | 16.07                 |  |
| 2,702.0               | 5.70            | 237.60      | 2,700.4               | -49.4        | -42.6        | 59.8                    | 6.34                    | 0.97                   | 65.16                 |  |
| 2,733.0               | 6.50            | 248.70      | 2,731.2               | -50.9        | -45.6        | 62.0                    | 4.59                    | 2.58                   | 35.81                 |  |
| 2,764.0               | 6.50            | 251.40      | 2,762.0               | -52.1        | -48.9        | 64.1                    | 0.99                    | 0.00                   | 8.71                  |  |
| 2,795.0               | 7.60            | 246.30      | 2,792.8               | -53.5        | -52.4        | 66.5                    | 4.08                    | 3.55                   | -16.45                |  |
| 2,827.0               | 9.50            | 227.60      | 2,824.4               | -56.1        | -56.3        | 70.2                    | 10.45                   | 5.94                   | -58.44                |  |
| 2,858.0               | 11.90           | 211.50      | 2,854.9               | -60.6        | -59.9        | 75.5                    | 12.30                   | 7.74                   | -51.94                |  |
| 2,889.0               | 14.90           | 200.80      | 2,885.1               | -67.0        | -62.9        | 82.5                    | 12.52                   | 9.68                   | -34.52                |  |
| 2,920.0               | 17.40           | 196.10      | 2,914.8               | -75.2        | -65.6        | 91.1                    | 9.09                    | 8.06                   | -15.16                |  |
| 2,952.0               | 19.20           | 195.80      | 2,945.2               | -84.9        | -68.4        | 101.2                   | 5.63                    | 5.63                   | -0.94                 |  |
| 2,983.0               | 20.60           | 195.50      | 2,974.4               | -95.0        | -71.2        | 111.7                   | 4.53                    | 4.52                   | -0.97                 |  |
| 3,014.0               | 21.80           | 194.70      | 3,003.3               | -105.8       | -74.2        | 122.9                   | 3.98                    | 3.87                   | -2.58                 |  |
| 3,046.0               | 23.30           | 193.50      | 3,032.8               | -117.7       | -77.1        | 135.2                   | 4.90                    | 4.69                   | -3.75                 |  |
| 3,077.0               | 25.20           | 192.20      | 3,061.1               | -130.2       | -80.0        | 147.9                   | 6.37                    | 6.13                   | -4.19                 |  |
| 3,108.0               | 26.90           | 192.90      | 3,088.9               | -143.4       | -82.9        | 161.5                   | 5.57                    | 5.48                   | 2.26                  |  |
| 3,139.0               | 28.50           | 195.20      | 3,116.4               | -157.4       | -86.4        | 175.9                   | 6.21                    | 5.16                   | 7.42                  |  |
| 3,170.0               | 29.80           | 197.30      | 3,143.5               | -171.9       | -90.7        | 190.9                   | 5.34                    | 4.19                   | 6.77                  |  |
| 3,202.0               | 31.00           | 197.10      | 3,171.1               | -187.4       | -95.5        | 207.1                   | 3.76                    | 3.75                   | -0.63                 |  |
| 3,233.0               | 32.10           | 196.50      | 3,197.5               | -202.9       | -100.1       | 223.4                   | 3.69                    | 3.55                   | -1.94                 |  |
| 3,264.0               | 31.50           | 197.00      | 3,223.8               | -218.6       | -104.9       | 239.7                   | 2.11                    | -1.94                  | 1.61                  |  |
| 3,296.0               | 29.50           | 198.60      | 3,251.4               | -234.0       | -109.8       | 255.9                   | 6.75                    | -6.25                  | 5.00                  |  |
| 3,327.0               | 29.00           | 196.70      | 3,278.4               | -248.4       | -114.4       | 271.1                   | 3.40                    | -1.61                  | -6.13                 |  |
| 3,359.0               | 28.50           | 193.00      | 3,306.5               | -263.3       | -118.3       | 286.5                   | 5.78                    | -1.56                  | -11.56                |  |
| 3,390.0               | 27.90           | 189.70      | 3,333.8               | -277.7       | -121.2       | 301.0                   | 5.39                    | -1.94                  | -10.65                |  |
| 3,421.0               | 27.50           | 188.80      | 3,361.3               | -291.9       | -123.6       | 315.3                   | 1.87                    | -1.29                  | -2.90                 |  |
| 3,452.0               | 27.70           | 185.60      | 3,388.7               | -306.1       | -125.4       | 329.4                   | 4.83                    | 0.65                   | -10.32                |  |
| 3,484.0               | 28.10           | 185.30      | 3,417.0               | -321.0       | -126.8       | 344.1                   | 1.32                    | 1.25                   | -0.94                 |  |
| 3,515.0               | 28.60           | 187.10      | 3,444.3               | -335.7       | -128.4       | 358.6                   | 3.19                    | 1.61                   | 5.81                  |  |
| 3,546.0               | 28.60           | 189.30      | 3,471.5               | -350.4       | -130.5       | 373.2                   | 3.40                    | 0.00                   | 7.10                  |  |
| 3,578.0               | 28.40           | 189.20      | 3,499.6               | -365.4       | -132.9       | 388.4                   | 0.64                    | -0.63                  | -0.31                 |  |
| 3,609.0               | 28.10           | 188.80      | 3,527.0               | -379.9       | -135.2       | 402.9                   | 1.14                    | -0.97                  | -1.29                 |  |
| 3,642.0               | 27.80           | 188.20      | 3,556.1               | -395.2       | -137.5       | 418.2                   | 1.25                    | -0.91                  | -1.82                 |  |
| 3,673.0               | 28.40           | 189.50      | 3,583.4               | -409.6       | -139.8       | 432.6                   | 2.77                    | 1.94                   | 4.19                  |  |
| 3,704.0               | 28.30           | 191.80      | 3,610.7               | -424.1       | -142.5       | 447.3                   | 3.54                    | -0.32                  | 7.42                  |  |
| 3,735.0               | 28.30           | 191.40      | 3,638.0               | -438.5       | -145.4       | 461.9                   | 0.61                    | 0.00                   | -1.29                 |  |
| 3,767.0               | 28.10           | 191.30      | 3,666.2               | -453.3       | -148.4       | 476.9                   | 0.64                    | -0.63                  | -0.31                 |  |

# Wellplanning

## Survey Report

|                  |                       |                                     |                                        |
|------------------|-----------------------|-------------------------------------|----------------------------------------|
| <b>Company:</b>  | Mack Energy           | <b>Local Co-ordinate Reference:</b> | Well #2                                |
| <b>Project:</b>  | Lea County,NM (NAD83) | <b>TVD Reference:</b>               | WELL @ 3525.4usft (Original Well Elev) |
| <b>Site:</b>     | Norway State          | <b>MD Reference:</b>                | WELL @ 3525.4usft (Original Well Elev) |
| <b>Well:</b>     | #2                    | <b>North Reference:</b>             | Grid                                   |
| <b>Wellbore:</b> | OH                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Design:</b>   | OH                    | <b>Database:</b>                    | EDM 5000.1 Single User Db              |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 3,798.0               | 27.90           | 191.70      | 3,693.6               | -467.6       | -151.3       | 491.4                   | 0.88                    | -0.65                  | 1.29                  |
| 3,829.0               | 27.70           | 190.80      | 3,721.0               | -481.8       | -154.1       | 505.8                   | 1.50                    | -0.65                  | -2.90                 |
| 3,861.0               | 27.50           | 191.00      | 3,749.4               | -496.3       | -156.9       | 520.5                   | 0.69                    | -0.63                  | 0.63                  |
| 3,892.0               | 27.50           | 190.70      | 3,776.9               | -510.4       | -159.6       | 534.8                   | 0.45                    | 0.00                   | -0.97                 |
| 3,923.0               | 27.50           | 190.80      | 3,804.4               | -524.5       | -162.3       | 549.0                   | 0.15                    | 0.00                   | 0.32                  |
| 3,954.0               | 27.30           | 190.10      | 3,831.9               | -538.5       | -164.9       | 563.2                   | 1.22                    | -0.65                  | -2.26                 |
| 3,986.0               | 27.10           | 192.00      | 3,860.4               | -552.8       | -167.7       | 577.7                   | 2.78                    | -0.63                  | 5.94                  |
| 4,017.0               | 26.30           | 190.80      | 3,888.1               | -566.5       | -170.5       | 591.6                   | 3.11                    | -2.58                  | -3.87                 |
| 4,049.0               | 26.20           | 190.80      | 3,916.8               | -580.4       | -173.1       | 605.6                   | 0.31                    | -0.31                  | 0.00                  |
| 4,080.0               | 25.90           | 193.20      | 3,944.6               | -593.7       | -175.9       | 619.2                   | 3.53                    | -0.97                  | 7.74                  |
| 4,112.0               | 26.70           | 195.40      | 3,973.3               | -607.4       | -179.4       | 633.4                   | 3.94                    | 2.50                   | 6.88                  |
| 4,142.0               | 27.00           | 197.20      | 4,000.1               | -620.4       | -183.2       | 646.9                   | 2.89                    | 1.00                   | 6.00                  |
| 4,173.0               | 25.80           | 198.40      | 4,027.8               | -633.6       | -187.4       | 660.7                   | 4.24                    | -3.87                  | 3.87                  |
| 4,204.0               | 25.90           | 198.30      | 4,055.7               | -646.4       | -191.7       | 674.2                   | 0.35                    | 0.32                   | -0.32                 |
| 4,236.0               | 25.50           | 197.80      | 4,084.6               | -659.6       | -196.0       | 688.1                   | 1.42                    | -1.25                  | -1.56                 |
| 4,267.0               | 25.20           | 197.80      | 4,112.6               | -672.2       | -200.1       | 701.3                   | 0.97                    | -0.97                  | 0.00                  |
| 4,298.0               | 25.20           | 197.80      | 4,140.6               | -684.8       | -204.1       | 714.5                   | 0.00                    | 0.00                   | 0.00                  |
| 4,329.0               | 25.10           | 198.40      | 4,168.7               | -697.3       | -208.2       | 727.7                   | 0.88                    | -0.32                  | 1.94                  |
| 4,361.0               | 24.70           | 199.10      | 4,197.7               | -710.1       | -212.5       | 741.2                   | 1.55                    | -1.25                  | 2.19                  |
| 4,392.0               | 23.70           | 198.70      | 4,226.0               | -722.1       | -216.6       | 753.9                   | 3.27                    | -3.23                  | -1.29                 |
| 4,423.0               | 22.20           | 200.70      | 4,254.5               | -733.5       | -220.7       | 766.0                   | 5.45                    | -4.84                  | 6.45                  |
| 4,455.0               | 19.90           | 203.20      | 4,284.4               | -744.1       | -225.0       | 777.4                   | 7.71                    | -7.19                  | 7.81                  |
| 4,486.0               | 17.00           | 205.60      | 4,313.8               | -753.1       | -229.0       | 787.1                   | 9.67                    | -9.35                  | 7.74                  |
| 4,518.0               | 14.40           | 204.20      | 4,344.6               | -760.9       | -232.7       | 795.7                   | 8.21                    | -8.13                  | -4.38                 |
| 4,549.0               | 12.90           | 197.90      | 4,374.7               | -767.7       | -235.3       | 803.0                   | 6.81                    | -4.84                  | -20.32                |
| 4,580.0               | 11.10           | 190.70      | 4,405.0               | -774.0       | -236.9       | 809.4                   | 7.54                    | -5.81                  | -23.23                |
| 4,612.0               | 9.10            | 192.70      | 4,436.6               | -779.5       | -238.1       | 815.0                   | 6.34                    | -6.25                  | 6.25                  |
| 4,644.0               | 6.60            | 196.20      | 4,468.2               | -783.7       | -239.1       | 819.4                   | 7.95                    | -7.81                  | 10.94                 |
| 4,671.1               | 4.50            | 192.04      | 4,495.2               | -786.2       | -239.8       | 822.0                   | 7.89                    | -7.75                  | -15.36                |
| VP(NS#1)              |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,675.0               | 4.20            | 191.10      | 4,499.1               | -786.5       | -239.9       | 822.3                   | 7.89                    | -7.67                  | -24.08                |
| 4,706.0               | 1.80            | 181.30      | 4,530.1               | -788.1       | -240.1       | 823.9                   | 7.89                    | -7.74                  | -31.61                |
| 4,737.0               | 0.70            | 358.90      | 4,561.1               | -788.4       | -240.1       | 824.2                   | 8.06                    | -3.55                  | 572.90                |
| 5,058.0               | 1.10            | 94.40       | 4,882.0               | -786.7       | -237.1       | 821.6                   | 0.42                    | 0.12                   | 29.75                 |
| 5,370.0               | 1.90            | 82.30       | 5,193.9               | -786.2       | -229.0       | 818.8                   | 0.27                    | 0.26                   | -3.88                 |
| 5,683.0               | 1.70            | 53.90       | 5,506.8               | -782.8       | -220.1       | 812.9                   | 0.29                    | -0.06                  | -9.07                 |
| 5,995.0               | 1.00            | 34.70       | 5,818.7               | -777.8       | -214.8       | 806.6                   | 0.26                    | -0.22                  | -6.15                 |
| 6,308.0               | 1.00            | 18.40       | 6,131.6               | -773.0       | -212.4       | 801.3                   | 0.09                    | 0.00                   | -5.21                 |
| 6,620.0               | 0.90            | 347.40      | 6,443.6               | -768.0       | -212.0       | 796.4                   | 0.17                    | -0.03                  | -9.94                 |
| 6,932.0               | 0.40            | 13.60       | 6,755.6               | -764.6       | -212.3       | 793.2                   | 0.18                    | -0.16                  | 8.40                  |
| 7,166.0               | 0.80            | 34.30       | 6,989.6               | -762.4       | -211.2       | 790.8                   | 0.19                    | 0.17                   | 8.85                  |
| 7,212.0               | 0.80            | 34.30       | 7,035.6               | -761.9       | -210.8       | 790.2                   | 0.00                    | 0.00                   | 0.00                  |

## Wellplanning

### Survey Report

|                  |                       |                                     |                                        |
|------------------|-----------------------|-------------------------------------|----------------------------------------|
| <b>Company:</b>  | Mack Energy           | <b>Local Co-ordinate Reference:</b> | Well #2                                |
| <b>Project:</b>  | Lea County,NM (NAD83) | <b>TVD Reference:</b>               | WELL @ 3525.4usft (Original Well Elev) |
| <b>Site:</b>     | Norway State          | <b>MD Reference:</b>                | WELL @ 3525.4usft (Original Well Elev) |
| <b>Well:</b>     | #2                    | <b>North Reference:</b>             | Grid                                   |
| <b>Wellbore:</b> | OH                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Design:</b>   | OH                    | <b>Database:</b>                    | EDM 5000.1 Single User Db              |

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