

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

**NOV 26 2019**

**RECEIVED**

## **Devon Energy**

**Eddy County, NM (NAD-83)**

**Spud Muffin 31-30 Com**

**Spud Muffin 31-30 623H**

**OH**

**Design: OH**

## **Survey Report - Geographic**

**01 March, 2019**

# LEAM Drilling Services

## Survey Report - Geographic

|                  |                          |                                     |                                     |
|------------------|--------------------------|-------------------------------------|-------------------------------------|
| <b>Company:</b>  | Devon Energy             | <b>Local Co-ordinate Reference:</b> | Well Spud Muffin 31-30 623H         |
| <b>Project:</b>  | Eddy County, NM (NAD-83) | <b>TVD Reference:</b>               | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Site:</b>     | Spud Muffin 31-30 Com    | <b>MD Reference:</b>                | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Well:</b>     | Spud Muffin 31-30 623H   | <b>North Reference:</b>             | Grid                                |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                   |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | LEAM Multi_User Db                  |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Eddy County, NM (NAD-83)  |                      |                |
| <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>                  | Spud Muffin 31-30 Com |                     |                 |                          |                   |
| <b>Site Position:</b>        |                       | <b>Northing:</b>    | 456,837.82 usft | <b>Latitude:</b>         | 32° 15' 19.9378 N |
| <b>From:</b>                 | Map                   | <b>Easting:</b>     | 637,646.02 usft | <b>Longitude:</b>        | 104° 1' 18.4160 W |
| <b>Position Uncertainty:</b> | 0.00 usft             | <b>Slot Radius:</b> | 13-3/16 "       | <b>Grid Convergence:</b> | 0.17 °            |

|                             |                        |           |                            |                 |                                     |
|-----------------------------|------------------------|-----------|----------------------------|-----------------|-------------------------------------|
| <b>Well</b>                 | Spud Muffin 31-30 623H |           |                            |                 |                                     |
| <b>Well Position</b>        | <b>+N/-S</b>           | 0.00 usft | <b>Northing:</b>           | 456,993.59 usft | <b>Latitude:</b> 32° 15' 21.5030 N  |
|                             | <b>+E/-W</b>           | 0.00 usft | <b>Easting:</b>            | 636,815.61 usft | <b>Longitude:</b> 104° 1' 28.0814 W |
| <b>Position Uncertainty</b> | 0.00 usft              |           | <b>Wellhead Elevation:</b> | 0.00 usft       | <b>Ground Level:</b> 2,959.30 usft  |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | OH                |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | HDGM              | 12/3/2018          | 7.12                   | 60.03                | 47,955.10000000            |

|                          |                                |                     |                     |                      |      |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| <b>Design</b>            | OH                             |                     |                     |                      |      |
| <b>Audit Notes:</b>      |                                |                     |                     |                      |      |
| <b>Version:</b>          | 1.0                            | <b>Phase:</b>       | ACTUAL              | <b>Tie On Depth:</b> | 0.00 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Direction (°)</b> |      |
|                          | 0.00                           | 0.00                | 0.00                | 0.01                 |      |

|                       |                  |                          |                  |                    |  |
|-----------------------|------------------|--------------------------|------------------|--------------------|--|
| <b>Survey Program</b> | <b>Date</b>      | 3/1/2019                 |                  |                    |  |
| <b>From (usft)</b>    | <b>To (usft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b> | <b>Description</b> |  |
| 172.00                | 20,101.00        | Survey #1 - MWD (OH)     | LEAM MWD+HDGM    | MWD+HDGM           |  |
| 20,155.00             | 20,155.00        | Projection (OH)          | Project          | Projection         |  |

| Survey                                  |                    |                |                             |                 |                 |                           |                          |                   |                   |  |
|-----------------------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|-------------------|-------------------|--|
| Measured<br>Depth<br>(usft)             | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude          | Longitude         |  |
| 0.00                                    | 0.00               | 0.00           | 0.00                        | 0.00            | 0.00            | 456,993.59                | 636,815.61               | 32° 15' 21.5030 N | 104° 1' 28.0814 W |  |
| SHL (SM 623H) - 625' FSL, 2435' FWL S31 |                    |                |                             |                 |                 |                           |                          |                   |                   |  |
| 172.00                                  | 0.40               | 1.00           | 172.00                      | 0.60            | 0.01            | 456,994.19                | 636,815.62               | 32° 15' 21.5090 N | 104° 1' 28.0812 W |  |
| 263.00                                  | 0.70               | 358.70         | 262.99                      | 1.47            | 0.00            | 456,995.06                | 636,815.62               | 32° 15' 21.5176 N | 104° 1' 28.0813 W |  |
| 299.00                                  | 0.80               | 346.90         | 298.99                      | 1.94            | -0.06           | 456,995.53                | 636,815.56               | 32° 15' 21.5222 N | 104° 1' 28.0820 W |  |
| 414.00                                  | 0.60               | 330.20         | 413.98                      | 3.24            | -0.54           | 456,996.83                | 636,815.07               | 32° 15' 21.5351 N | 104° 1' 28.0876 W |  |
| 506.00                                  | 0.90               | 339.90         | 505.97                      | 4.34            | -1.03           | 456,997.93                | 636,814.59               | 32° 15' 21.5460 N | 104° 1' 28.0932 W |  |
| 598.00                                  | 1.20               | 347.40         | 597.96                      | 5.96            | -1.49           | 456,999.55                | 636,814.13               | 32° 15' 21.5620 N | 104° 1' 28.0985 W |  |
| 690.00                                  | 1.50               | 349.70         | 689.93                      | 8.08            | -1.91           | 457,001.67                | 636,813.70               | 32° 15' 21.5831 N | 104° 1' 28.1034 W |  |
| 783.00                                  | 1.80               | 353.40         | 782.89                      | 10.73           | -2.30           | 457,004.32                | 636,813.32               | 32° 15' 21.6093 N | 104° 1' 28.1078 W |  |
| 875.00                                  | 0.90               | 338.80         | 874.87                      | 12.84           | -2.72           | 457,006.43                | 636,812.89               | 32° 15' 21.6302 N | 104° 1' 28.1127 W |  |

# LEAM Drilling Services

## Survey Report - Geographic

|           |                          |                              |                                     |
|-----------|--------------------------|------------------------------|-------------------------------------|
| Company:  | Devon Energy             | Local Co-ordinate Reference: | Well Spud Muffin 31-30 623H         |
| Project:  | Eddy County, NM (NAD-83) | TVD Reference:               | 2959.3' GE + 23.5' KB @ 2982.80usft |
| Site:     | Spud Muffin 31-30 Com    | MD Reference:                | 2959.3' GE + 23.5' KB @ 2982.80usft |
| Well:     | Spud Muffin 31-30 623H   | North Reference:             | Grid                                |
| Wellbore: | OH                       | Survey Calculation Method:   | Minimum Curvature                   |
| Design:   | OH                       | Database:                    | LEAM Multi_User Db                  |

| Survey                |                 |             |                       |              |              |                     |                    |                   |                   |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-------------------|-------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude          | Longitude         |
| 967.00                | 1.30            | 348.80      | 966.85                | 14.54        | -3.19        | 457,008.13          | 636,812.43         | 32° 15' 21.6470 N | 104° 1' 28.1180 W |
| 1,058.00              | 1.10            | 332.10      | 1,057.83              | 16.32        | -3.80        | 457,009.91          | 636,811.82         | 32° 15' 21.6647 N | 104° 1' 28.1251 W |
| 1,149.00              | 0.20            | 248.50      | 1,148.83              | 17.04        | -4.35        | 457,010.63          | 636,811.26         | 32° 15' 21.6717 N | 104° 1' 28.1315 W |
| 1,241.00              | 0.40            | 338.80      | 1,240.83              | 17.28        | -4.62        | 457,010.87          | 636,810.99         | 32° 15' 21.6741 N | 104° 1' 28.1346 W |
| 1,332.00              | 0.90            | 7.50        | 1,331.82              | 18.28        | -4.64        | 457,011.87          | 636,810.97         | 32° 15' 21.6841 N | 104° 1' 28.1348 W |
| 1,423.00              | 0.60            | 139.30      | 1,422.82              | 18.63        | -4.24        | 457,012.22          | 636,811.38         | 32° 15' 21.6875 N | 104° 1' 28.1301 W |
| 1,514.00              | 0.40            | 116.30      | 1,513.81              | 18.13        | -3.64        | 457,011.72          | 636,811.97         | 32° 15' 21.6825 N | 104° 1' 28.1232 W |
| 1,606.00              | 0.30            | 78.80       | 1,605.81              | 18.03        | -3.12        | 457,011.62          | 636,812.50         | 32° 15' 21.6816 N | 104° 1' 28.1171 W |
| 1,698.00              | 0.40            | 43.90       | 1,697.81              | 18.31        | -2.66        | 457,011.90          | 636,812.96         | 32° 15' 21.6843 N | 104° 1' 28.1117 W |
| 1,791.00              | 0.60            | 158.60      | 1,790.81              | 18.09        | -2.26        | 457,011.68          | 636,813.36         | 32° 15' 21.6821 N | 104° 1' 28.1070 W |
| 1,885.00              | 0.40            | 181.30      | 1,884.80              | 17.30        | -2.08        | 457,010.89          | 636,813.53         | 32° 15' 21.6743 N | 104° 1' 28.1051 W |
| 1,979.00              | 0.10            | 263.20      | 1,978.80              | 16.97        | -2.17        | 457,010.56          | 636,813.44         | 32° 15' 21.6710 N | 104° 1' 28.1061 W |
| 2,074.00              | 0.50            | 308.60      | 2,073.80              | 17.21        | -2.58        | 457,010.80          | 636,813.04         | 32° 15' 21.6735 N | 104° 1' 28.1108 W |
| 2,169.00              | 0.20            | 351.50      | 2,168.80              | 17.64        | -2.93        | 457,011.23          | 636,812.69         | 32° 15' 21.6776 N | 104° 1' 28.1149 W |
| 2,264.00              | 1.40            | 140.40      | 2,263.79              | 16.91        | -2.21        | 457,010.50          | 636,813.40         | 32° 15' 21.6704 N | 104° 1' 28.1066 W |
| 2,358.00              | 2.20            | 152.10      | 2,357.74              | 14.43        | -0.64        | 457,008.02          | 636,814.98         | 32° 15' 21.6458 N | 104° 1' 28.0883 W |
| 2,453.00              | 2.30            | 134.00      | 2,452.67              | 11.49        | 1.59         | 457,005.08          | 636,817.20         | 32° 15' 21.6167 N | 104° 1' 28.0625 W |
| 2,547.00              | 2.80            | 145.50      | 2,546.58              | 8.29         | 4.25         | 457,001.88          | 636,819.86         | 32° 15' 21.5849 N | 104° 1' 28.0317 W |
| 2,641.00              | 2.60            | 147.90      | 2,640.47              | 4.59         | 6.68         | 456,998.18          | 636,822.29         | 32° 15' 21.5483 N | 104° 1' 28.0034 W |
| 2,736.00              | 2.40            | 147.40      | 2,735.38              | 1.09         | 8.90         | 456,994.68          | 636,824.51         | 32° 15' 21.5136 N | 104° 1' 27.9777 W |
| 2,831.00              | 3.50            | 138.40      | 2,830.26              | -2.75        | 11.89        | 456,990.84          | 636,827.51         | 32° 15' 21.4754 N | 104° 1' 27.9430 W |
| 2,926.00              | 4.40            | 131.80      | 2,925.03              | -7.35        | 16.54        | 456,986.24          | 636,832.15         | 32° 15' 21.4298 N | 104° 1' 27.8891 W |
| 3,020.00              | 5.50            | 130.30      | 3,018.68              | -12.67       | 22.66        | 456,980.92          | 636,838.27         | 32° 15' 21.3770 N | 104° 1' 27.8179 W |
| 3,115.00              | 6.60            | 128.40      | 3,113.15              | -19.00       | 30.41        | 456,974.59          | 636,846.02         | 32° 15' 21.3141 N | 104° 1' 27.7279 W |
| 3,210.00              | 7.70            | 128.90      | 3,207.41              | -26.39       | 39.64        | 456,967.20          | 636,855.26         | 32° 15' 21.2407 N | 104° 1' 27.6206 W |
| 3,304.00              | 7.80            | 129.30      | 3,300.55              | -34.39       | 49.48        | 456,959.20          | 636,865.09         | 32° 15' 21.1613 N | 104° 1' 27.5063 W |
| 3,398.00              | 8.40            | 125.40      | 3,393.61              | -42.40       | 60.01        | 456,951.19          | 636,875.63         | 32° 15' 21.0817 N | 104° 1' 27.3839 W |
| 3,493.00              | 9.10            | 124.00      | 3,487.51              | -50.63       | 71.90        | 456,942.96          | 636,887.51         | 32° 15' 21.0000 N | 104° 1' 27.2458 W |
| 3,587.00              | 9.90            | 121.40      | 3,580.22              | -58.99       | 84.96        | 456,934.60          | 636,900.57         | 32° 15' 20.9168 N | 104° 1' 27.0940 W |
| 3,682.00              | 10.80           | 120.30      | 3,673.67              | -67.74       | 99.61        | 456,925.85          | 636,915.23         | 32° 15' 20.8299 N | 104° 1' 26.9236 W |
| 3,777.00              | 11.70           | 119.80      | 3,766.84              | -77.02       | 115.66       | 456,916.57          | 636,931.27         | 32° 15' 20.7376 N | 104° 1' 26.7371 W |
| 3,871.00              | 12.60           | 121.40      | 3,858.74              | -87.09       | 132.68       | 456,906.50          | 636,948.29         | 32° 15' 20.6374 N | 104° 1' 26.5392 W |
| 3,966.00              | 12.50           | 122.40      | 3,951.47              | -98.00       | 150.20       | 456,895.59          | 636,965.82         | 32° 15' 20.5289 N | 104° 1' 26.3355 W |
| 4,060.00              | 12.50           | 121.20      | 4,043.24              | -108.72      | 167.49       | 456,884.87          | 636,983.11         | 32° 15' 20.4224 N | 104° 1' 26.1345 W |
| 4,154.00              | 11.70           | 121.40      | 4,135.15              | -118.96      | 184.33       | 456,874.63          | 636,999.94         | 32° 15' 20.3206 N | 104° 1' 25.9387 W |
| 4,249.00              | 10.60           | 121.00      | 4,228.36              | -128.48      | 200.04       | 456,865.11          | 637,015.66         | 32° 15' 20.2259 N | 104° 1' 25.7561 W |
| 4,344.00              | 10.90           | 124.00      | 4,321.69              | -138.00      | 214.98       | 456,855.59          | 637,030.59         | 32° 15' 20.1313 N | 104° 1' 25.5825 W |
| 4,438.00              | 12.00           | 126.30      | 4,413.82              | -148.76      | 230.22       | 456,844.83          | 637,045.84         | 32° 15' 20.0244 N | 104° 1' 25.4053 W |
| 4,532.00              | 12.20           | 126.00      | 4,505.73              | -160.38      | 246.13       | 456,833.21          | 637,061.75         | 32° 15' 19.9089 N | 104° 1' 25.2204 W |
| 4,627.00              | 12.00           | 126.50      | 4,598.62              | -172.15      | 262.19       | 456,821.44          | 637,077.81         | 32° 15' 19.7919 N | 104° 1' 25.0338 W |
| 4,721.00              | 12.00           | 125.30      | 4,690.56              | -183.61      | 278.02       | 456,809.98          | 637,093.64         | 32° 15' 19.6781 N | 104° 1' 24.8498 W |
| 4,814.00              | 11.70           | 125.10      | 4,781.58              | -194.62      | 293.63       | 456,798.97          | 637,109.24         | 32° 15' 19.5687 N | 104° 1' 24.6684 W |
| 4,909.00              | 11.30           | 124.90      | 4,874.68              | -205.49      | 309.14       | 456,788.10          | 637,124.76         | 32° 15' 19.4608 N | 104° 1' 24.4881 W |
| 5,005.00              | 10.60           | 122.60      | 4,968.93              | -215.62      | 324.30       | 456,777.97          | 637,139.91         | 32° 15' 19.3600 N | 104° 1' 24.3120 W |
| 5,100.00              | 11.30           | 126.70      | 5,062.20              | -225.89      | 339.12       | 456,767.70          | 637,154.73         | 32° 15' 19.2579 N | 104° 1' 24.1397 W |
| 5,194.00              | 12.20           | 126.70      | 5,154.23              | -237.33      | 354.47       | 456,756.26          | 637,170.08         | 32° 15' 19.1443 N | 104° 1' 23.9614 W |
| 5,289.00              | 11.20           | 125.10      | 5,247.25              | -248.64      | 370.06       | 456,744.95          | 637,185.68         | 32° 15' 19.0320 N | 104° 1' 23.7801 W |
| 5,383.00              | 11.30           | 123.80      | 5,339.45              | -259.01      | 385.19       | 456,734.58          | 637,200.80         | 32° 15' 18.9289 N | 104° 1' 23.6044 W |
| 5,477.00              | 12.20           | 122.60      | 5,431.48              | -269.49      | 401.21       | 456,724.10          | 637,216.82         | 32° 15' 18.8248 N | 104° 1' 23.4181 W |
| 5,572.00              | 11.60           | 121.60      | 5,524.43              | -279.90      | 417.80       | 456,713.69          | 637,233.41         | 32° 15' 18.7213 N | 104° 1' 23.2253 W |
| 5,666.00              | 11.10           | 121.60      | 5,616.60              | -289.59      | 433.55       | 456,704.00          | 637,249.17         | 32° 15' 18.6249 N | 104° 1' 23.0421 W |
| 5,761.00              | 12.20           | 121.60      | 5,709.64              | -299.64      | 449.89       | 456,693.95          | 637,265.51         | 32° 15' 18.5250 N | 104° 1' 22.8522 W |
| 5,856.00              | 12.70           | 120.90      | 5,802.40              | -310.27      | 467.40       | 456,683.32          | 637,283.02         | 32° 15' 18.4193 N | 104° 1' 22.6486 W |
| 5,950.00              | 12.10           | 120.20      | 5,894.21              | -320.53      | 484.78       | 456,673.06          | 637,300.40         | 32° 15' 18.3173 N | 104° 1' 22.4465 W |
| 6,045.00              | 11.50           | 120.70      | 5,987.20              | -330.37      | 501.53       | 456,663.22          | 637,317.15         | 32° 15' 18.2194 N | 104° 1' 22.2518 W |

# LEAM Drilling Services

## Survey Report - Geographic

|                  |                          |                                     |                                     |
|------------------|--------------------------|-------------------------------------|-------------------------------------|
| <b>Company:</b>  | Devon Energy             | <b>Local Co-ordinate Reference:</b> | Well Spud Muffin 31-30 623H         |
| <b>Project:</b>  | Eddy County, NM (NAD-83) | <b>TVD Reference:</b>               | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Site:</b>     | Spud Muffin 31-30 Com    | <b>MD Reference:</b>                | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Well:</b>     | Spud Muffin 31-30 623H   | <b>North Reference:</b>             | Grid                                |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                   |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | LEAM Multi_User Db                  |

| Survey                                  |                 |             |                       |              |              |                     |                    |                   |                   |
|-----------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-------------------|-------------------|
| Measured Depth (usft)                   | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude          | Longitude         |
| 6,138.00                                | 10.80           | 120.30      | 6,078.45              | -339.50      | 517.03       | 456,654.09          | 637,332.64         | 32° 15' 18.1286 N | 104° 1' 22.0717 W |
| 6,233.00                                | 11.30           | 121.70      | 6,171.68              | -348.88      | 532.63       | 456,644.71          | 637,348.25         | 32° 15' 18.0353 N | 104° 1' 21.8903 W |
| 6,327.00                                | 12.40           | 124.20      | 6,263.68              | -359.39      | 548.82       | 456,634.20          | 637,364.43         | 32° 15' 17.9308 N | 104° 1' 21.7022 W |
| 6,422.00                                | 12.00           | 124.00      | 6,356.54              | -370.65      | 565.44       | 456,622.94          | 637,381.05         | 32° 15' 17.8190 N | 104° 1' 21.5090 W |
| 6,517.00                                | 11.30           | 123.30      | 6,449.58              | -381.28      | 581.41       | 456,612.31          | 637,397.02         | 32° 15' 17.7133 N | 104° 1' 21.3234 W |
| 6,612.00                                | 10.50           | 125.80      | 6,542.86              | -391.46      | 596.21       | 456,602.13          | 637,411.82         | 32° 15' 17.6122 N | 104° 1' 21.1514 W |
| 6,707.00                                | 11.20           | 124.20      | 6,636.16              | -401.71      | 610.86       | 456,591.88          | 637,426.47         | 32° 15' 17.5103 N | 104° 1' 20.9811 W |
| 6,801.00                                | 11.60           | 124.40      | 6,728.31              | -412.18      | 626.21       | 456,581.41          | 637,441.82         | 32° 15' 17.4063 N | 104° 1' 20.8027 W |
| 6,896.00                                | 11.90           | 126.70      | 6,821.32              | -423.43      | 641.94       | 456,570.16          | 637,457.55         | 32° 15' 17.2945 N | 104° 1' 20.6199 W |
| 6,991.00                                | 9.80            | 121.40      | 6,914.62              | -433.49      | 656.70       | 456,560.10          | 637,472.31         | 32° 15' 17.1945 N | 104° 1' 20.4484 W |
| 7,086.00                                | 10.60           | 121.00      | 7,008.12              | -442.21      | 671.09       | 456,551.38          | 637,486.70         | 32° 15' 17.1078 N | 104° 1' 20.2811 W |
| 7,180.00                                | 11.00           | 124.50      | 7,100.45              | -451.74      | 685.89       | 456,541.85          | 637,501.50         | 32° 15' 17.0131 N | 104° 1' 20.1090 W |
| 7,274.00                                | 11.30           | 122.80      | 7,192.68              | -461.81      | 701.02       | 456,531.78          | 637,516.63         | 32° 15' 16.9130 N | 104° 1' 19.9331 W |
| 7,370.00                                | 9.50            | 120.20      | 7,287.10              | -470.89      | 715.77       | 456,522.70          | 637,531.39         | 32° 15' 16.8227 N | 104° 1' 19.7616 W |
| 7,464.00                                | 10.30           | 125.10      | 7,379.70              | -479.62      | 729.36       | 456,513.97          | 637,544.97         | 32° 15' 16.7359 N | 104° 1' 19.6038 W |
| 7,558.00                                | 11.20           | 127.00      | 7,472.05              | -489.95      | 743.52       | 456,503.64          | 637,559.14         | 32° 15' 16.6333 N | 104° 1' 19.4391 W |
| 7,653.00                                | 9.90            | 127.20      | 7,565.44              | -500.44      | 757.40       | 456,493.15          | 637,573.01         | 32° 15' 16.5291 N | 104° 1' 19.2779 W |
| 7,747.00                                | 9.50            | 123.80      | 7,658.10              | -509.64      | 770.28       | 456,483.95          | 637,585.89         | 32° 15' 16.4377 N | 104° 1' 19.1282 W |
| 7,842.00                                | 7.90            | 120.00      | 7,752.00              | -517.27      | 782.45       | 456,476.32          | 637,598.06         | 32° 15' 16.3619 N | 104° 1' 18.9867 W |
| 7,936.00                                | 7.10            | 112.10      | 7,845.20              | -522.68      | 793.43       | 456,470.91          | 637,609.04         | 32° 15' 16.3079 N | 104° 1' 18.8591 W |
| 8,032.00                                | 7.20            | 124.20      | 7,940.46              | -528.30      | 803.90       | 456,465.29          | 637,619.51         | 32° 15' 16.2521 N | 104° 1' 18.7373 W |
| 8,126.00                                | 6.50            | 128.10      | 8,033.79              | -534.89      | 812.96       | 456,458.70          | 637,628.57         | 32° 15' 16.1866 N | 104° 1' 18.6320 W |
| 8,220.00                                | 4.20            | 127.50      | 8,127.37              | -540.27      | 819.88       | 456,453.32          | 637,635.49         | 32° 15' 16.1331 N | 104° 1' 18.5516 W |
| 8,315.00                                | 3.20            | 130.90      | 8,222.17              | -544.12      | 824.64       | 456,449.47          | 637,640.26         | 32° 15' 16.0949 N | 104° 1' 18.4963 W |
| 8,410.00                                | 2.60            | 140.40      | 8,317.05              | -547.52      | 828.02       | 456,446.07          | 637,643.63         | 32° 15' 16.0612 N | 104° 1' 18.4571 W |
| 8,505.00                                | 2.70            | 149.50      | 8,411.95              | -551.11      | 830.53       | 456,442.48          | 637,646.14         | 32° 15' 16.0256 N | 104° 1' 18.4280 W |
| 8,599.00                                | 2.50            | 154.30      | 8,505.85              | -554.86      | 832.54       | 456,438.73          | 637,648.15         | 32° 15' 15.9884 N | 104° 1' 18.4047 W |
| 8,693.00                                | 1.80            | 155.10      | 8,599.79              | -558.05      | 834.05       | 456,435.54          | 637,649.67         | 32° 15' 15.9568 N | 104° 1' 18.3872 W |
| 8,788.00                                | 1.10            | 165.30      | 8,694.76              | -560.29      | 834.91       | 456,433.30          | 637,650.52         | 32° 15' 15.9346 N | 104° 1' 18.3772 W |
| 8,883.00                                | 1.20            | 165.50      | 8,789.74              | -562.13      | 835.39       | 456,431.46          | 637,651.01         | 32° 15' 15.9164 N | 104° 1' 18.3717 W |
| 8,977.00                                | 0.90            | 114.70      | 8,883.72              | -563.39      | 836.31       | 456,430.20          | 637,651.92         | 32° 15' 15.9039 N | 104° 1' 18.3611 W |
| 9,072.00                                | 1.20            | 150.90      | 8,978.71              | -564.57      | 837.47       | 456,429.02          | 637,653.08         | 32° 15' 15.8921 N | 104° 1' 18.3476 W |
| 9,167.00                                | 1.20            | 179.40      | 9,073.69              | -566.44      | 837.96       | 456,427.15          | 637,653.58         | 32° 15' 15.8737 N | 104° 1' 18.3419 W |
| 9,205.00                                | 1.30            | 192.90      | 9,111.68              | -567.25      | 837.87       | 456,426.34          | 637,653.49         | 32° 15' 15.8656 N | 104° 1' 18.3430 W |
| 9,259.00                                | 1.30            | 196.24      | 9,165.66              | -568.44      | 837.56       | 456,425.15          | 637,653.18         | 32° 15' 15.8539 N | 104° 1' 18.3466 W |
| 7 5/8"                                  |                 |             |                       |              |              |                     |                    |                   |                   |
| 9,268.00                                | 1.30            | 196.80      | 9,174.66              | -568.64      | 837.51       | 456,424.95          | 637,653.12         | 32° 15' 15.8519 N | 104° 1' 18.3473 W |
| 9,340.86                                | 3.32            | 353.60      | 9,247.49              | -567.33      | 837.03       | 456,426.26          | 637,652.65         | 32° 15' 15.8649 N | 104° 1' 18.3528 W |
| KOP (SM 623H) - 50' FSL, 1870' FEL S31  |                 |             |                       |              |              |                     |                    |                   |                   |
| 9,363.00                                | 4.70            | 355.50      | 9,269.58              | -565.78      | 836.89       | 456,427.81          | 637,652.50         | 32° 15' 15.8802 N | 104° 1' 18.3544 W |
| 9,457.00                                | 17.90           | 6.60        | 9,361.56              | -547.51      | 838.25       | 456,446.08          | 637,653.87         | 32° 15' 16.0609 N | 104° 1' 18.3379 W |
| 9,504.42                                | 23.93           | 10.07       | 9,405.83              | -530.79      | 840.77       | 456,462.80          | 637,656.39         | 32° 15' 16.2264 N | 104° 1' 18.3080 W |
| 100' FSL HL Crossing @ 9504.42' MD      |                 |             |                       |              |              |                     |                    |                   |                   |
| 9,505.00                                | 24.00           | 10.10       | 9,406.36              | -530.56      | 840.82       | 456,463.03          | 637,656.43         | 32° 15' 16.2286 N | 104° 1' 18.3075 W |
| 9,551.00                                | 26.80           | 9.60        | 9,447.91              | -511.12      | 844.19       | 456,482.47          | 637,659.80         | 32° 15' 16.4209 N | 104° 1' 18.2676 W |
| 9,559.87                                | 27.63           | 9.20        | 9,455.80              | -507.12      | 844.85       | 456,486.47          | 637,660.46         | 32° 15' 16.4605 N | 104° 1' 18.2597 W |
| FTP (SM 623H) - 100' FSL, 1870' FEL S31 |                 |             |                       |              |              |                     |                    |                   |                   |
| 9,598.00                                | 31.20           | 7.70        | 9,489.01              | -488.60      | 847.59       | 456,504.99          | 637,663.20         | 32° 15' 16.6437 N | 104° 1' 18.2272 W |
| 9,646.00                                | 36.10           | 5.50        | 9,528.96              | -462.18      | 850.61       | 456,531.41          | 637,666.22         | 32° 15' 16.9050 N | 104° 1' 18.1911 W |
| 9,693.00                                | 39.60           | 4.00        | 9,566.06              | -433.45      | 852.98       | 456,560.14          | 637,668.60         | 32° 15' 17.1893 N | 104° 1' 18.1625 W |
| 9,741.00                                | 44.60           | 2.70        | 9,601.67              | -401.33      | 854.84       | 456,592.26          | 637,670.46         | 32° 15' 17.5070 N | 104° 1' 18.1397 W |
| 9,788.00                                | 47.50           | 3.10        | 9,634.28              | -367.54      | 856.56       | 456,626.05          | 637,672.17         | 32° 15' 17.8414 N | 104° 1' 18.1186 W |
| 9,836.00                                | 50.50           | 3.40        | 9,665.77              | -331.38      | 858.61       | 456,662.21          | 637,674.23         | 32° 15' 18.1992 N | 104° 1' 18.0935 W |
| 9,883.00                                | 54.30           | 3.10        | 9,694.44              | -294.21      | 860.72       | 456,699.38          | 637,676.34         | 32° 15' 18.5670 N | 104° 1' 18.0677 W |

# LEAM Drilling Services

## Survey Report - Geographic

|                  |                          |                                     |                                     |
|------------------|--------------------------|-------------------------------------|-------------------------------------|
| <b>Company:</b>  | Devon Energy             | <b>Local Co-ordinate Reference:</b> | Well Spud Muffin 31-30 623H         |
| <b>Project:</b>  | Eddy County, NM (NAD-83) | <b>TVD Reference:</b>               | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Site:</b>     | Spud Muffin 31-30 Com    | <b>MD Reference:</b>                | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Well:</b>     | Spud Muffin 31-30 623H   | <b>North Reference:</b>             | Grid                                |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                   |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | LEAM Multi_User Db                  |

| Survey                      |                    |                |                             |                 |                 |                           |                          |                   |                   |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|-------------------|-------------------|
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude          | Longitude         |
| 9,930.00                    | 58.60              | 3.30           | 9,720.41                    | -255.11         | 862.91          | 456,738.48                | 637,678.52               | 32° 15' 18.9538 N | 104° 1' 18.0409 W |
| 9,977.00                    | 63.00              | 3.30           | 9,743.34                    | -214.16         | 865.27          | 456,779.43                | 637,680.89               | 32° 15' 19.3590 N | 104° 1' 18.0120 W |
| 10,024.00                   | 66.50              | 2.40           | 9,763.38                    | -171.71         | 867.38          | 456,821.88                | 637,682.99               | 32° 15' 19.7790 N | 104° 1' 17.9860 W |
| 10,071.00                   | 70.40              | 1.10           | 9,780.64                    | -128.03         | 868.71          | 456,865.56                | 637,684.32               | 32° 15' 20.2113 N | 104° 1' 17.9690 W |
| 10,120.00                   | 74.10              | 359.40         | 9,795.58                    | -81.37          | 868.90          | 456,912.22                | 637,684.52               | 32° 15' 20.6730 N | 104° 1' 17.9652 W |
| 10,167.00                   | 76.20              | 358.70         | 9,807.63                    | -35.95          | 868.15          | 456,957.64                | 637,683.76               | 32° 15' 21.1225 N | 104° 1' 17.9724 W |
| 10,214.00                   | 79.80              | 358.90         | 9,817.40                    | 10.01           | 867.19          | 457,003.60                | 637,682.80               | 32° 15' 21.5773 N | 104° 1' 17.9821 W |
| 10,261.00                   | 83.40              | 359.70         | 9,824.26                    | 56.49           | 866.62          | 457,050.08                | 637,682.24               | 32° 15' 22.0373 N | 104° 1' 17.9871 W |
| 10,309.00                   | 86.90              | 0.10           | 9,828.32                    | 104.31          | 866.54          | 457,097.90                | 637,682.15               | 32° 15' 22.5105 N | 104° 1' 17.9865 W |
| 10,403.00                   | 88.40              | 0.30           | 9,832.17                    | 198.23          | 866.87          | 457,191.82                | 637,682.48               | 32° 15' 23.4399 N | 104° 1' 17.9795 W |
| 10,498.00                   | 88.50              | 0.40           | 9,834.74                    | 293.19          | 867.45          | 457,286.78                | 637,683.06               | 32° 15' 24.3796 N | 104° 1' 17.9695 W |
| 10,592.00                   | 87.70              | 0.60           | 9,837.86                    | 387.14          | 868.27          | 457,380.73                | 637,683.88               | 32° 15' 25.3093 N | 104° 1' 17.9568 W |
| 10,686.00                   | 87.50              | 1.00           | 9,841.80                    | 481.05          | 869.58          | 457,474.64                | 637,685.19               | 32° 15' 26.2385 N | 104° 1' 17.9383 W |
| 10,781.00                   | 88.90              | 2.70           | 9,844.78                    | 575.94          | 872.64          | 457,569.53                | 637,688.26               | 32° 15' 27.1775 N | 104° 1' 17.8994 W |
| 10,876.00                   | 91.60              | 3.10           | 9,844.36                    | 670.81          | 877.45          | 457,664.40                | 637,693.06               | 32° 15' 28.1162 N | 104° 1' 17.8402 W |
| 10,970.00                   | 90.80              | 1.50           | 9,842.40                    | 764.71          | 881.22          | 457,758.30                | 637,696.83               | 32° 15' 29.0453 N | 104° 1' 17.7931 W |
| 11,065.00                   | 89.80              | 0.30           | 9,841.90                    | 859.70          | 882.71          | 457,853.29                | 637,698.33               | 32° 15' 29.9852 N | 104° 1' 17.7726 W |
| 11,159.00                   | 90.50              | 1.30           | 9,841.65                    | 953.68          | 884.02          | 457,947.27                | 637,699.64               | 32° 15' 30.9153 N | 104° 1' 17.7541 W |
| 11,254.00                   | 88.40              | 0.30           | 9,842.56                    | 1,048.66        | 885.35          | 458,042.25                | 637,700.96               | 32° 15' 31.8551 N | 104° 1' 17.7354 W |
| 11,349.00                   | 89.10              | 0.10           | 9,844.64                    | 1,143.64        | 885.68          | 458,137.23                | 637,701.30               | 32° 15' 32.7950 N | 104° 1' 17.7284 W |
| 11,444.00                   | 88.50              | 359.40         | 9,846.63                    | 1,238.62        | 885.27          | 458,232.21                | 637,700.88               | 32° 15' 33.7349 N | 104° 1' 17.7300 W |
| 11,496.00                   | 88.90              | 358.90         | 9,847.81                    | 1,290.60        | 884.50          | 458,284.19                | 637,700.11               | 32° 15' 34.2493 N | 104° 1' 17.7372 W |
| 11,587.00                   | 90.10              | 359.90         | 9,848.60                    | 1,381.59        | 883.54          | 458,375.18                | 637,699.16               | 32° 15' 35.1498 N | 104° 1' 17.7452 W |
| 11,679.00                   | 91.00              | 1.30           | 9,847.72                    | 1,473.57        | 884.51          | 458,467.16                | 637,700.12               | 32° 15' 36.0600 N | 104° 1' 17.7309 W |
| 11,770.00                   | 88.90              | 2.20           | 9,847.80                    | 1,564.53        | 887.29          | 458,558.12                | 637,702.90               | 32° 15' 36.9600 N | 104° 1' 17.6955 W |
| 11,862.00                   | 88.60              | 4.00           | 9,849.80                    | 1,656.37        | 892.26          | 458,649.96                | 637,707.87               | 32° 15' 37.8687 N | 104° 1' 17.6344 W |
| 11,953.00                   | 89.20              | 5.20           | 9,851.55                    | 1,747.05        | 899.56          | 458,740.64                | 637,715.17               | 32° 15' 38.7659 N | 104° 1' 17.5464 W |
| 12,043.00                   | 89.10              | 8.40           | 9,852.89                    | 1,836.40        | 910.21          | 458,829.99                | 637,725.82               | 32° 15' 39.6497 N | 104° 1' 17.4193 W |
| 12,135.00                   | 88.30              | 7.80           | 9,854.97                    | 1,927.46        | 923.17          | 458,921.05                | 637,738.78               | 32° 15' 40.5505 N | 104° 1' 17.2653 W |
| 12,226.00                   | 89.30              | 9.80           | 9,856.88                    | 2,017.36        | 937.09          | 459,010.95                | 637,752.70               | 32° 15' 41.4397 N | 104° 1' 17.1001 W |
| 12,321.00                   | 89.30              | 9.40           | 9,858.04                    | 2,111.02        | 952.93          | 459,104.61                | 637,768.54               | 32° 15' 42.3662 N | 104° 1' 16.9125 W |
| 12,416.00                   | 88.70              | 8.40           | 9,859.70                    | 2,204.86        | 967.62          | 459,198.45                | 637,783.24               | 32° 15' 43.2944 N | 104° 1' 16.7381 W |
| 12,510.00                   | 87.30              | 7.30           | 9,862.98                    | 2,297.92        | 980.46          | 459,291.51                | 637,796.07               | 32° 15' 44.2149 N | 104° 1' 16.5856 W |
| 12,605.00                   | 89.40              | 7.10           | 9,865.71                    | 2,392.13        | 992.36          | 459,385.72                | 637,807.97               | 32° 15' 45.1468 N | 104° 1' 16.4438 W |
| 12,699.00                   | 86.00              | 3.40           | 9,869.49                    | 2,485.63        | 1,000.95        | 459,479.22                | 637,816.57               | 32° 15' 46.0718 N | 104° 1' 16.3405 W |
| 12,794.00                   | 86.80              | 2.00           | 9,875.45                    | 2,580.33        | 1,005.42        | 459,573.92                | 637,821.03               | 32° 15' 47.0089 N | 104° 1' 16.2853 W |
| 12,889.00                   | 88.20              | 358.90         | 9,879.60                    | 2,675.22        | 1,006.16        | 459,668.81                | 637,821.77               | 32° 15' 47.9479 N | 104° 1' 16.2734 W |
| 12,983.00                   | 90.10              | 357.80         | 9,880.99                    | 2,769.17        | 1,003.45        | 459,762.76                | 637,819.07               | 32° 15' 48.8776 N | 104° 1' 16.3017 W |
| 13,078.00                   | 91.80              | 357.50         | 9,879.42                    | 2,864.07        | 999.56          | 459,857.66                | 637,815.17               | 32° 15' 49.8169 N | 104° 1' 16.3439 W |
| 13,172.00                   | 92.50              | 357.50         | 9,875.89                    | 2,957.92        | 995.46          | 459,951.51                | 637,811.08               | 32° 15' 50.7457 N | 104° 1' 16.3884 W |
| 13,267.00                   | 90.20              | 354.60         | 9,873.65                    | 3,052.65        | 988.92          | 460,046.24                | 637,804.53               | 32° 15' 51.6833 N | 104° 1' 16.4614 W |
| 13,361.00                   | 89.00              | 353.20         | 9,874.31                    | 3,146.11        | 978.93          | 460,139.70                | 637,794.55               | 32° 15' 52.6085 N | 104° 1' 16.5746 W |
| 13,456.00                   | 91.60              | 353.10         | 9,873.81                    | 3,240.42        | 967.60          | 460,234.01                | 637,783.22               | 32° 15' 53.5421 N | 104° 1' 16.7033 W |
| 13,550.00                   | 89.50              | 353.20         | 9,872.91                    | 3,333.74        | 956.39          | 460,327.33                | 637,772.01               | 32° 15' 54.4659 N | 104° 1' 16.8307 W |
| 13,644.00                   | 89.10              | 353.40         | 9,874.06                    | 3,427.09        | 945.43          | 460,420.68                | 637,761.04               | 32° 15' 55.3900 N | 104° 1' 16.9553 W |
| 13,739.00                   | 89.60              | 354.30         | 9,875.13                    | 3,521.54        | 935.25          | 460,515.13                | 637,750.86               | 32° 15' 56.3249 N | 104° 1' 17.0706 W |
| 13,834.00                   | 94.50              | 355.50         | 9,871.74                    | 3,616.07        | 926.81          | 460,609.66                | 637,742.43               | 32° 15' 57.2606 N | 104° 1' 17.1657 W |
| 13,928.00                   | 91.50              | 355.90         | 9,866.82                    | 3,709.67        | 919.77          | 460,703.26                | 637,735.39               | 32° 15' 58.1871 N | 104° 1' 17.2445 W |
| 14,023.00                   | 91.70              | 354.80         | 9,864.17                    | 3,804.32        | 912.08          | 460,797.91                | 637,727.69               | 32° 15' 59.1239 N | 104° 1' 17.3310 W |
| 14,118.00                   | 91.80              | 354.30         | 9,861.26                    | 3,898.84        | 903.06          | 460,892.43                | 637,718.67               | 32° 16' 0.0596 N  | 104° 1' 17.4328 W |
| 14,212.00                   | 92.70              | 354.60         | 9,857.57                    | 3,992.33        | 893.97          | 460,985.92                | 637,709.59               | 32° 16' 0.9850 N  | 104° 1' 17.5354 W |
| 14,307.00                   | 90.60              | 354.80         | 9,854.84                    | 4,086.88        | 885.20          | 461,080.47                | 637,700.82               | 32° 16' 1.9209 N  | 104° 1' 17.6344 W |
| 14,401.00                   | 89.60              | 355.00         | 9,854.67                    | 4,180.50        | 876.85          | 461,174.09                | 637,692.46               | 32° 16' 2.8476 N  | 104° 1' 17.7285 W |
| 14,495.00                   | 87.80              | 354.10         | 9,856.81                    | 4,274.05        | 867.92          | 461,267.64                | 637,683.54               | 32° 16' 3.7736 N  | 104° 1' 17.8293 W |
| 14,590.00                   | 90.00              | 355.50         | 9,858.63                    | 4,368.63        | 859.31          | 461,362.22                | 637,674.93               | 32° 16' 4.7098 N  | 104° 1' 17.9264 W |

# LEAM Drilling Services

## Survey Report - Geographic

|                  |                          |                                     |                                     |
|------------------|--------------------------|-------------------------------------|-------------------------------------|
| <b>Company:</b>  | Devon Energy             | <b>Local Co-ordinate Reference:</b> | Well Spud Muffin 31-30 623H         |
| <b>Project:</b>  | Eddy County, NM (NAD-83) | <b>TVD Reference:</b>               | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Site:</b>     | Spud Muffin 31-30 Com    | <b>MD Reference:</b>                | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Well:</b>     | Spud Muffin 31-30 623H   | <b>North Reference:</b>             | Grid                                |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                   |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | LEAM Multi_User Db                  |

| Survey                      |                    |                |                             |                 |                 |                           |                          |                   |                   |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|-------------------|-------------------|
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude          | Longitude         |
| 14,685.00                   | 90.00              | 356.20         | 9,858.63                    | 4,463.38        | 852.44          | 461,456.97                | 637,668.05               | 32° 16' 5.6477 N  | 104° 1' 18.0033 W |
| 14,780.00                   | 89.10              | 358.20         | 9,859.38                    | 4,558.26        | 847.80          | 461,551.85                | 637,663.41               | 32° 16' 6.5867 N  | 104° 1' 18.0541 W |
| 14,867.61                   | 90.30              | 359.12         | 9,859.84                    | 4,645.84        | 845.75          | 461,639.43                | 637,661.37               | 32° 16' 7.4535 N  | 104° 1' 18.0750 W |
| SL Crossing @ 14867.61' MD  |                    |                |                             |                 |                 |                           |                          |                   |                   |
| 14,875.00                   | 90.40              | 359.20         | 9,859.79                    | 4,653.23        | 845.64          | 461,646.82                | 637,661.26               | 32° 16' 7.5266 N  | 104° 1' 18.0760 W |
| 14,969.00                   | 90.90              | 1.70           | 9,858.72                    | 4,747.22        | 846.38          | 461,740.81                | 637,662.00               | 32° 16' 8.4566 N  | 104° 1' 18.0642 W |
| 15,064.00                   | 90.10              | 0.60           | 9,857.90                    | 4,842.19        | 848.29          | 461,835.78                | 637,663.90               | 32° 16' 9.3964 N  | 104° 1' 18.0388 W |
| 15,158.00                   | 87.70              | 0.10           | 9,859.70                    | 4,936.17        | 848.86          | 461,929.76                | 637,664.48               | 32° 16' 10.3263 N | 104° 1' 18.0289 W |
| 15,252.00                   | 90.80              | 1.70           | 9,860.93                    | 5,030.13        | 850.34          | 462,023.72                | 637,665.95               | 32° 16' 11.2562 N | 104° 1' 18.0085 W |
| 15,346.00                   | 90.00              | 1.70           | 9,860.27                    | 5,124.09        | 853.13          | 462,117.68                | 637,668.74               | 32° 16' 12.1859 N | 104° 1' 17.9729 W |
| 15,439.00                   | 89.80              | 1.50           | 9,860.44                    | 5,217.05        | 855.72          | 462,210.64                | 637,671.34               | 32° 16' 13.1057 N | 104° 1' 17.9395 W |
| 15,534.00                   | 90.10              | 1.70           | 9,860.52                    | 5,312.01        | 858.38          | 462,305.60                | 637,673.99               | 32° 16' 14.0454 N | 104° 1' 17.9054 W |
| 15,630.00                   | 90.80              | 2.70           | 9,859.77                    | 5,407.94        | 862.06          | 462,401.53                | 637,677.68               | 32° 16' 14.9945 N | 104° 1' 17.8592 W |
| 15,724.00                   | 90.40              | 1.90           | 9,858.78                    | 5,501.86        | 865.83          | 462,495.45                | 637,681.45               | 32° 16' 15.9238 N | 104° 1' 17.8121 W |
| 15,819.00                   | 91.80              | 2.90           | 9,856.96                    | 5,596.75        | 869.81          | 462,590.34                | 637,685.42               | 32° 16' 16.8628 N | 104° 1' 17.7626 W |
| 15,914.00                   | 86.50              | 359.70         | 9,858.37                    | 5,691.67        | 871.97          | 462,685.26                | 637,687.58               | 32° 16' 17.8020 N | 104° 1' 17.7343 W |
| 16,009.00                   | 86.50              | 359.20         | 9,864.17                    | 5,786.49        | 871.06          | 462,780.08                | 637,686.67               | 32° 16' 18.7404 N | 104° 1' 17.7416 W |
| 16,104.00                   | 89.40              | 358.20         | 9,867.56                    | 5,881.39        | 868.90          | 462,874.98                | 637,684.52               | 32° 16' 19.6796 N | 104° 1' 17.7635 W |
| 16,198.00                   | 89.10              | 358.00         | 9,868.79                    | 5,975.33        | 865.79          | 462,968.92                | 637,681.40               | 32° 16' 20.6093 N | 104° 1' 17.7966 W |
| 16,293.00                   | 89.10              | 358.20         | 9,870.29                    | 6,070.27        | 862.64          | 463,063.86                | 637,678.25               | 32° 16' 21.5488 N | 104° 1' 17.8301 W |
| 16,387.00                   | 90.10              | 0.40           | 9,870.94                    | 6,164.25        | 861.49          | 463,157.84                | 637,677.10               | 32° 16' 22.4789 N | 104° 1' 17.8403 W |
| 16,482.00                   | 90.70              | 0.10           | 9,870.28                    | 6,259.25        | 861.90          | 463,252.84                | 637,677.52               | 32° 16' 23.4190 N | 104° 1' 17.8323 W |
| 16,577.00                   | 91.50              | 0.10           | 9,868.46                    | 6,354.23        | 862.07          | 463,347.82                | 637,677.68               | 32° 16' 24.3589 N | 104° 1' 17.8271 W |
| 16,671.00                   | 91.80              | 0.30           | 9,865.75                    | 6,448.19        | 862.40          | 463,441.78                | 637,678.01               | 32° 16' 25.2887 N | 104° 1' 17.8201 W |
| 16,766.00                   | 92.50              | 0.80           | 9,862.19                    | 6,543.12        | 863.31          | 463,536.71                | 637,678.92               | 32° 16' 26.2281 N | 104° 1' 17.8063 W |
| 16,860.00                   | 89.30              | 0.40           | 9,860.71                    | 6,637.09        | 864.29          | 463,630.68                | 637,679.91               | 32° 16' 27.1580 N | 104° 1' 17.7917 W |
| 16,955.00                   | 89.30              | 0.60           | 9,861.87                    | 6,732.08        | 865.12          | 463,725.67                | 637,680.73               | 32° 16' 28.0979 N | 104° 1' 17.7788 W |
| 17,049.00                   | 92.90              | 2.00           | 9,860.07                    | 6,826.02        | 867.25          | 463,819.61                | 637,682.87               | 32° 16' 29.0275 N | 104° 1' 17.7508 W |
| 17,144.00                   | 88.80              | 0.60           | 9,858.66                    | 6,920.96        | 869.41          | 463,914.55                | 637,685.02               | 32° 16' 29.9670 N | 104° 1' 17.7225 W |
| 17,238.00                   | 88.70              | 0.80           | 9,860.71                    | 7,014.93        | 870.55          | 464,008.52                | 637,686.17               | 32° 16' 30.8969 N | 104° 1' 17.7059 W |
| 17,333.00                   | 89.10              | 0.10           | 9,862.53                    | 7,109.91        | 871.30          | 464,103.50                | 637,686.91               | 32° 16' 31.8367 N | 104° 1' 17.6940 W |
| 17,429.00                   | 92.40              | 1.10           | 9,861.27                    | 7,205.88        | 872.30          | 464,199.47                | 637,687.92               | 32° 16' 32.7864 N | 104° 1' 17.6791 W |
| 17,523.00                   | 90.20              | 0.10           | 9,859.14                    | 7,299.85        | 873.29          | 464,293.44                | 637,688.90               | 32° 16' 33.7162 N | 104° 1' 17.6644 W |
| 17,618.00                   | 87.50              | 359.40         | 9,861.05                    | 7,394.82        | 872.87          | 464,388.41                | 637,688.49               | 32° 16' 34.6561 N | 104° 1' 17.6660 W |
| 17,711.00                   | 89.40              | 359.40         | 9,863.56                    | 7,487.77        | 871.90          | 464,481.36                | 637,687.51               | 32° 16' 35.5760 N | 104° 1' 17.6742 W |
| 17,805.00                   | 91.80              | 0.60           | 9,862.58                    | 7,581.76        | 871.90          | 464,575.35                | 637,687.51               | 32° 16' 36.5061 N | 104° 1' 17.6711 W |
| 17,900.00                   | 91.20              | 0.60           | 9,860.09                    | 7,676.72        | 872.89          | 464,670.31                | 637,688.51               | 32° 16' 37.4458 N | 104° 1' 17.6563 W |
| 17,996.00                   | 89.60              | 359.80         | 9,859.42                    | 7,772.71        | 873.23          | 464,766.30                | 637,688.84               | 32° 16' 38.3957 N | 104° 1' 17.6491 W |
| 18,090.00                   | 89.40              | 0.50           | 9,860.24                    | 7,866.71        | 873.48          | 464,860.30                | 637,689.09               | 32° 16' 39.3258 N | 104° 1' 17.6431 W |
| 18,184.00                   | 89.00              | 1.00           | 9,861.56                    | 7,960.69        | 874.71          | 464,954.28                | 637,690.32               | 32° 16' 40.2558 N | 104° 1' 17.6256 W |
| 18,279.00                   | 88.50              | 1.00           | 9,863.63                    | 8,055.65        | 876.36          | 465,049.25                | 637,691.98               | 32° 16' 41.1955 N | 104° 1' 17.6030 W |
| 18,374.00                   | 88.40              | 1.30           | 9,866.20                    | 8,150.60        | 878.27          | 465,144.19                | 637,693.88               | 32° 16' 42.1350 N | 104° 1' 17.5776 W |
| 18,469.00                   | 87.30              | 359.80         | 9,869.76                    | 8,245.53        | 879.18          | 465,239.12                | 637,694.80               | 32° 16' 43.0744 N | 104° 1' 17.5638 W |
| 18,563.00                   | 86.10              | 358.50         | 9,875.17                    | 8,339.36        | 877.79          | 465,332.95                | 637,693.40               | 32° 16' 44.0029 N | 104° 1' 17.5768 W |
| 18,658.00                   | 86.70              | 358.20         | 9,881.14                    | 8,434.13        | 875.06          | 465,427.72                | 637,690.67               | 32° 16' 44.9409 N | 104° 1' 17.6054 W |
| 18,753.00                   | 91.90              | 358.20         | 9,882.30                    | 8,529.04        | 872.08          | 465,522.63                | 637,687.69               | 32° 16' 45.8802 N | 104° 1' 17.6369 W |
| 18,848.00                   | 92.30              | 359.10         | 9,878.82                    | 8,623.95        | 869.84          | 465,617.54                | 637,685.45               | 32° 16' 46.8195 N | 104° 1' 17.6598 W |
| 18,941.00                   | 91.30              | 358.50         | 9,875.90                    | 8,716.88        | 867.89          | 465,710.47                | 637,683.51               | 32° 16' 47.7392 N | 104° 1' 17.6793 W |
| 19,035.00                   | 91.20              | 358.20         | 9,873.84                    | 8,810.82        | 865.19          | 465,804.41                | 637,680.80               | 32° 16' 48.6688 N | 104° 1' 17.7077 W |
| 19,130.00                   | 91.10              | 358.40         | 9,871.94                    | 8,905.76        | 862.37          | 465,899.35                | 637,677.98               | 32° 16' 49.6084 N | 104° 1' 17.7373 W |
| 19,225.00                   | 90.00              | 358.20         | 9,871.03                    | 9,000.71        | 859.55          | 465,994.30                | 637,675.17               | 32° 16' 50.5481 N | 104° 1' 17.7669 W |
| 19,320.00                   | 89.80              | 358.90         | 9,871.19                    | 9,095.68        | 857.15          | 466,089.27                | 637,672.76               | 32° 16' 51.4880 N | 104° 1' 17.7917 W |
| 19,414.00                   | 90.00              | 359.20         | 9,871.36                    | 9,189.67        | 855.59          | 466,183.26                | 637,671.20               | 32° 16' 52.4181 N | 104° 1' 17.8066 W |
| 19,508.00                   | 89.10              | 358.20         | 9,872.09                    | 9,283.64        | 853.46          | 466,277.23                | 637,669.07               | 32° 16' 53.3481 N | 104° 1' 17.8283 W |
| 19,603.00                   | 88.00              | 357.60         | 9,874.50                    | 9,378.54        | 849.98          | 466,372.13                | 637,665.59               | 32° 16' 54.2873 N | 104° 1' 17.8656 W |

# LEAM Drilling Services

## Survey Report - Geographic

|                  |                          |                                     |                                     |
|------------------|--------------------------|-------------------------------------|-------------------------------------|
| <b>Company:</b>  | Devon Energy             | <b>Local Co-ordinate Reference:</b> | Well Spud Muffin 31-30 623H         |
| <b>Project:</b>  | Eddy County, NM (NAD-83) | <b>TVD Reference:</b>               | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Site:</b>     | Spud Muffin 31-30 Com    | <b>MD Reference:</b>                | 2959.3' GE + 23.5' KB @ 2982.80usft |
| <b>Well:</b>     | Spud Muffin 31-30 623H   | <b>North Reference:</b>             | Grid                                |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                   |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | LEAM Multi_User Db                  |

| Survey                                                                                                      |                 |             |                       |              |              |                     |                    |                   |                   |
|-------------------------------------------------------------------------------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|-------------------|-------------------|
| Measured Depth (usft)                                                                                       | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude          | Longitude         |
| 19,698.00                                                                                                   | 87.10           | 358.20      | 9,878.56              | 9,473.39     | 846.50       | 466,466.98          | 637,662.11         | 32° 16' 55.2260 N | 104° 1' 17.9029 W |
| 19,792.00                                                                                                   | 89.20           | 0.30        | 9,881.59              | 9,567.32     | 845.27       | 466,560.91          | 637,660.88         | 32° 16' 56.1556 N | 104° 1' 17.9141 W |
| 19,886.00                                                                                                   | 90.60           | 359.80      | 9,881.76              | 9,661.32     | 845.35       | 466,654.91          | 637,660.97         | 32° 16' 57.0858 N | 104° 1' 17.9099 W |
| 19,981.00                                                                                                   | 88.90           | 359.60      | 9,882.17              | 9,756.31     | 844.85       | 466,749.90          | 637,660.47         | 32° 16' 58.0259 N | 104° 1' 17.9125 W |
| 20,073.98                                                                                                   | 88.41           | 358.71      | 9,884.36              | 9,849.26     | 843.48       | 466,842.85          | 637,659.10         | 32° 16' 58.9456 N | 104° 1' 17.9253 W |
| <b>100' FNL HL Crossing @ 20073.98' MD</b>                                                                  |                 |             |                       |              |              |                     |                    |                   |                   |
| 20,075.00                                                                                                   | 88.40           | 358.70      | 9,884.39              | 9,850.28     | 843.46       | 466,843.87          | 637,659.07         | 32° 16' 58.9557 N | 104° 1' 17.9256 W |
| 20,081.91                                                                                                   | 88.29           | 358.62      | 9,884.59              | 9,857.18     | 843.30       | 466,850.77          | 637,658.91         | 32° 16' 59.0241 N | 104° 1' 17.9272 W |
| <b>LTP (SM 623H) - 100' FNL, 1870' FEL S30</b>                                                              |                 |             |                       |              |              |                     |                    |                   |                   |
| 20,101.00                                                                                                   | 88.00           | 358.40      | 9,885.20              | 9,876.26     | 842.80       | 466,869.85          | 637,658.42         | 32° 16' 59.2128 N | 104° 1' 17.9323 W |
| 20,155.00                                                                                                   | 88.00           | 358.40      | 9,887.09              | 9,930.20     | 841.30       | 466,923.79          | 637,656.91         | 32° 16' 59.7467 N | 104° 1' 17.9481 W |
| <b>TD Projection - BHL (SM 623H) - 19.1' FNL, 1893.7' FEL S30 - PBHL (SM 623H) - 20' FNL, 1870' FEL S30</b> |                 |             |                       |              |              |                     |                    |                   |                   |

| Design Targets                                                             |               |              |            |              |              |                 |                |                   |                   |
|----------------------------------------------------------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|-------------------|-------------------|
| Target Name<br>- hit/miss target<br>- Shape                                | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude          | Longitude         |
| SHL (SM 623H) - 625' F<br>- actual wellpath hits target center<br>- Point  | 0.00          | 0.01         | 0.00       | 0.00         | 0.00         | 456,993.59      | 636,815.61     | 32° 15' 21.5030 N | 104° 1' 28.0814 W |
| BHL (SM 623H) - 19.1' F<br>- actual wellpath hits target center<br>- Point | 0.00          | 0.00         | 9,887.09   | 9,930.20     | 841.30       | 466,923.79      | 637,656.91     | 32° 16' 59.7467 N | 104° 1' 17.9481 W |

| Casing Points         |                       |        |                     |                   |  |
|-----------------------|-----------------------|--------|---------------------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name   | Casing Diameter (") | Hole Diameter (") |  |
| 9,259.00              | 9,165.66              | 7 5/8" | 7-5/8               | 9-7/8             |  |

| Design Annotations    |                       |                   |              |                                     |  |
|-----------------------|-----------------------|-------------------|--------------|-------------------------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                             |  |
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                                     |  |
| 9,504.42              | 9,405.83              | -530.79           | 840.77       | 100' FSL HL Crossing @ 9504.42' MD  |  |
| 14,867.61             | 9,859.84              | 4,645.84          | 845.75       | SL Crossing @ 14867.61' MD          |  |
| 20,073.98             | 9,884.36              | 9,849.26          | 843.48       | 100' FNL HL Crossing @ 20073.98' MD |  |
| 20,155.00             | 9,887.09              | 9,930.20          | 841.30       | TD Projection                       |  |

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