

Schlumberger Drilling and Measurements  
Drilling Group  
Geo Market Area: South West Texas Basin  
7220 W I-H 20  
Midland, Texas 79706  
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**Schlumberger**

NM OIL CONSERVATION  
ARTESIA DISTRICT

FEB 07 2018

Well Reference:  
29, 24S, 29E. Eddy NM  
N 32.18556 W -104.01380

RECEIVED

I, Roseleigh Taylor certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of December 02, 2017 through January 11, 2018, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 711.00 feet to a depth of 13348.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of Oxy U.S.A Inc for the Cedar Canyon 29 Federal 26H Well (Original Hole) API No. 30-015-44523 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By  
Roseleigh Taylor  
FE

*Roseleigh Taylor*

Subscribed and Sworn to before me this 16<sup>th</sup> day of January (month) 2018 (yr)

My Commission expires:

12-20-2020

J. Allemand

Notary Public

Adams County Colorado  
(County State)

JENNIFER ALLEMAND  
(signature) Notary Public  
State of Colorado  
Notary ID # 20164047962  
My Commission Expires 12-20-20



**Oxy Cedar Canyon 29 Federal Com 26H Gyro+MWD+MS 0-13395 ftMD**  
**Survey Geodetic Report**  
 (Def Survey)

|                                      |                                                                           |                                         |                              |
|--------------------------------------|---------------------------------------------------------------------------|-----------------------------------------|------------------------------|
| <b>Report Date:</b>                  | January 11, 2018 03:49 PM                                                 | <b>Survey / DLS Computation:</b>        | Minimum Curvature / Lubinski |
| <b>Client:</b>                       | OXY                                                                       | <b>Vertical Section Azimuth:</b>        | 104.165° (Grid North)        |
| <b>Field:</b>                        | NM Eddy County (NAD 83)                                                   | <b>Vertical Section Origin:</b>         | 0.000 ft, 0.000 ft           |
| <b>Structure / Slot:</b>             | Oxy Cedar Canyon 29 Federal Com 26H / Oxy Cedar Canyon 29 Federal Com 26H | <b>TVD Reference Datum:</b>             | RKB-26.5'                    |
| <b>Well:</b>                         | Oxy Cedar Canyon 29 Federal Com 26H                                       | <b>TVD Reference Elevation:</b>         | 2954.900 ft above MSL        |
| <b>Borehole:</b>                     | Original Borehole                                                         | <b>Seabed / Ground Elevation:</b>       | 2928.400 ft above MSL        |
| <b>UWI / API#:</b>                   | Unknown / Unknown                                                         | <b>Magnetic Declination:</b>            | 7.149°                       |
| <b>Survey Name:</b>                  | Oxy Cedar Canyon 29 Federal Com 26H Gyro+MWD+MS 0-13395 ftMD              | <b>Total Gravity Field Strength:</b>    | 998.464mgm (9.80665 Based)   |
| <b>Survey Date:</b>                  | November 29, 2017                                                         | <b>Gravity Model:</b>                   | GARM                         |
| <b>Tort / AHD / DDI / ERO Ratio:</b> | 223.806° / 6209.618 ft / 6.334 / 0.720                                    | <b>Total Magnetic Field Strength:</b>   | 48055.563 nT                 |
| <b>Coordinate Reference System:</b>  | NAD83 New Mexico State Plane, Eastern Zone, US Feet                       | <b>Magnetic Dip Angle:</b>              | 59.978°                      |
| <b>Location Lat / Long:</b>          | N 32° 11' 9.02611" W 104° 0' 49.68892"                                    | <b>Declination Date:</b>                | November 29, 2017            |
| <b>Location Grid N/E Y/X:</b>        | N 431389 170 HUS E 640188 640 HUS                                         | <b>Magnetic Declination Model:</b>      | HDGM 2017                    |
| <b>CRS Grid Convergence Angle:</b>   | 0.1702°                                                                   | <b>North Reference:</b>                 | Grid North                   |
| <b>Grid Scale Factor:</b>            | 0.99992028                                                                | <b>Grid Convergence Used:</b>           | 0.1702°                      |
| <b>Version / Patch:</b>              | 2.10.696.0                                                                | <b>Total Corr Mag North-Grid North:</b> | 0.9784°                      |
|                                      |                                                                           | <b>Local Coord Referenced To:</b>       | Well Head                    |

| Comments  | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(ft/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ")     | Longitude<br>(E/W ° ' ") |
|-----------|------------|-------------|------------------|-------------|--------------|------------|------------|-------------------|--------------------|-------------------|-----------------------------|--------------------------|
| SHL       | 0.00       | 0.00        | 0.00             | 0.00        | 0.00         | 0.00       | 0.00       | N/A               | 431389.17          | 640188.64         | N 32 11 8.03 W 104 0 49.69  |                          |
|           | 64.66      | 0.40        | 170.80           | 64.66       | 0.09         | 0.22       | 0.04       | 0.82              | 431388.95          | 640188.68         | N 32 11 8.02 W 104 0 49.69  |                          |
|           | 120.67     | 0.60        | 176.56           | 120.67      | 0.26         | 0.71       | 0.08       | 0.37              | 431388.46          | 640188.72         | N 32 11 8.02 W 104 0 49.69  |                          |
|           | 209.87     | 0.97        | 173.12           | 209.86      | 0.67         | -1.92      | 0.20       | 0.42              | 431387.25          | 640188.84         | N 32 11 8.01 W 104 0 49.68  |                          |
|           | 304.74     | 1.19        | 176.01           | 304.71      | 1.26         | 3.70       | 0.37       | 0.24              | 431386.47          | 640189.01         | N 32 11 7.99 W 104 0 49.68  |                          |
|           | 397.21     | 1.11        | 182.38           | 397.16      | 1.75         | -5.56      | 0.40       | 0.16              | 431383.61          | 640189.04         | N 32 11 7.97 W 104 0 49.68  |                          |
|           | 491.62     | 0.90        | 190.07           | 491.56      | 1.99         | -7.20      | 0.23       | 0.26              | 431381.97          | 640188.87         | N 32 11 7.95 W 104 0 49.68  |                          |
| Last Gyro | 591.74     | 0.53        | 187.56           | 591.67      | 2.09         | -8.43      | 0.03       | 0.37              | 431380.74          | 640188.67         | N 32 11 7.94 W 104 0 49.69  |                          |
|           | 711.00     | 0.13        | 259.30           | 710.93      | 2.04         | -9.01      | 0.17       | 0.42              | 431380.16          | 640188.47         | N 32 11 7.94 W 104 0 49.69  |                          |
|           | 801.00     | 0.18        | 3.99             | 800.93      | 1.92         | -8.88      | 0.26       | 0.27              | 431380.29          | 640188.38         | N 32 11 7.94 W 104 0 49.69  |                          |
|           | 890.00     | 0.18        | 166.81           | 889.93      | 1.96         | -8.88      | 0.22       | 0.40              | 431380.29          | 640188.42         | N 32 11 7.94 W 104 0 49.69  |                          |
|           | 980.00     | 0.11        | 50.19            | 979.93      | 2.07         | -8.96      | 0.12       | 0.26              | 431380.21          | 640188.52         | N 32 11 7.94 W 104 0 49.69  |                          |
|           | 1070.00    | 0.08        | 365.28           | 1069.93     | 2.10         | -8.84      | -0.06      | 0.10              | 431380.33          | 640188.58         | N 32 11 7.94 W 104 0 49.68  |                          |
|           | 1166.00    | 0.18        | 97.52            | 1165.93     | 2.23         | -8.80      | 0.08       | 0.22              | 431380.37          | 640188.72         | N 32 11 7.94 W 104 0 49.69  |                          |
|           | 1260.00    | 0.13        | 103.30           | 1259.93     | 2.48         | -8.84      | 0.33       | 0.06              | 431380.33          | 640188.97         | N 32 11 7.94 W 104 0 49.68  |                          |
|           | 1365.00    | 0.20        | 222.93           | 1354.93     | 2.51         | -8.99      | 0.32       | 0.30              | 431380.18          | 640188.98         | N 32 11 7.94 W 104 0 49.68  |                          |
|           | 1545.00    | 0.99        | 210.72           | 1544.92     | 1.89         | -10.84     | -0.74      | 0.42              | 431378.53          | 640187.90         | N 32 11 7.92 W 104 0 49.70  |                          |
|           | 1640.00    | 1.47        | 191.52           | 1639.99     | 1.71         | -12.54     | -1.40      | 0.86              | 431376.63          | 640187.24         | N 32 11 7.90 W 104 0 49.70  |                          |
|           | 1735.00    | 1.41        | 199.73           | 1734.86     | 1.65         | -14.84     | -2.04      | 0.23              | 431374.34          | 640186.80         | N 32 11 7.88 W 104 0 49.71  |                          |
|           | 1830.00    | 1.23        | 188.18           | 1829.84     | 1.47         | -16.90     | -2.75      | 0.19              | 431372.27          | 640185.89         | N 32 11 7.86 W 104 0 49.72  |                          |
|           | 2018.00    | 0.34        | 50.66            | 2018.83     | 1.68         | -18.48     | -2.95      | 0.81              | 431370.69          | 640185.69         | N 32 11 7.84 W 104 0 49.72  |                          |
|           | 2114.00    | 0.30        | 64.59            | 2113.83     | 2.02         | -18.19     | -2.51      | 0.09              | 431370.88          | 640186.13         | N 32 11 7.85 W 104 0 49.72  |                          |
|           | 2209.00    | 0.40        | 189.38           | 2208.82     | 2.24         | -18.41     | -2.34      | 0.65              | 431370.76          | 640186.30         | N 32 11 7.84 W 104 0 49.71  |                          |
|           | 2304.00    | 1.76        | 134.91           | 2303.81     | 3.52         | -19.77     | -1.38      | 1.64              | 431369.40          | 640187.28         | N 32 11 7.83 W 104 0 49.70  |                          |
|           | 2399.00    | 3.77        | 131.59           | 2398.69     | 7.55         | -22.87     | 2.01       | 2.12              | 431368.30          | 640190.65         | N 32 11 7.80 W 104 0 49.66  |                          |
|           | 2493.00    | 5.70        | 139.09           | 2492.37     | 14.12        | -26.45     | 7.38       | 2.15              | 431360.72          | 640196.02         | N 32 11 7.74 W 104 0 49.60  |                          |
|           | 2588.00    | 7.89        | 152.43           | 2586.72     | 22.22        | -37.65     | 13.41      | 2.65              | 431351.52          | 640202.05         | N 32 11 7.65 W 104 0 49.53  |                          |
|           | 2688.00    | 7.89        | 164.31           | 2686.01     | 28.44        | -47.56     | 17.34      | 1.88              | 431341.82          | 640206.97         | N 32 11 7.58 W 104 0 49.49  |                          |
|           | 2858.00    | 8.30        | 175.90           | 2854.17     | 39.07        | -73.47     | 21.75      | 0.91              | 431315.70          | 640210.39         | N 32 11 7.30 W 104 0 49.44  |                          |
|           | 3048.00    | 10.42       | 186.04           | 3041.84     | 45.80        | -104.24    | 29.93      | 1.41              | 431284.94          | 640209.56         | N 32 11 6.99 W 104 0 49.45  |                          |
|           | 3142.00    | 11.58       | 192.91           | 3133.92     | 47.21        | -121.89    | 17.92      | 1.86              | 431267.29          | 640206.58         | N 32 11 6.82 W 104 0 49.48  |                          |
|           | 3237.00    | 12.73       | 199.08           | 3226.79     | 46.52        | -141.08    | 12.37      | 1.82              | 431248.10          | 640201.01         | N 32 11 6.63 W 104 0 49.55  |                          |
|           | 3332.00    | 13.47       | 203.12           | 3319.32     | 43.90        | -161.15    | 4.61       | 1.24              | 431228.03          | 640193.25         | N 32 11 6.43 W 104 0 49.64  |                          |
|           | 3427.00    | 13.86       | 207.20           | 3411.83     | 39.61        | -181.45    | -4.94      | 1.09              | 431207.74          | 640183.70         | N 32 11 6.23 W 104 0 49.75  |                          |
|           | 3522.00    | 15.06       | 210.37           | 3503.83     | 33.60        | -202.21    | -16.38     | 1.50              | 431186.96          | 640172.26         | N 32 11 6.03 W 104 0 49.88  |                          |
|           | 3712.00    | 16.07       | 211.12           | 3686.66     | 19.05        | -248.00    | -42.44     | 0.55              | 431143.19          | 640148.20         | N 32 11 5.59 W 104 0 50.19  |                          |
|           | 3902.00    | 15.89       | 208.65           | 3869.32     | 4.87         | -291.34    | -88.50     | 0.37              | 431097.85          | 640120.14         | N 32 11 5.15 W 104 0 50.49  |                          |
|           | 4091.00    | 16.26       | 207.03           | 4050.93     | -7.49        | -337.62    | -92.93     | 0.31              | 431051.58          | 640095.71         | N 32 11 4.69 W 104 0 50.78  |                          |
|           | 4281.00    | 15.80       | 205.72           | 4233.83     | -18.53       | -384.33    | -116.11    | 0.40              | 431004.87          | 640072.54         | N 32 11 4.23 W 104 0 51.05  |                          |
|           | 4378.00    | 15.84       | 205.31           | 4325.08     | -23.80       | -407.56    | -127.20    | 0.28              | 430991.64          | 640061.45         | N 32 11 4.00 W 104 0 51.19  |                          |
|           | 4568.00    | 16.25       | 205.31           | 4507.68     | -33.75       | -465.03    | -149.85    | 0.22              | 430934.17          | 640039.01         | N 32 11 3.63 W 104 0 51.44  |                          |
|           | 4758.00    | 16.29       | 204.14           | 4690.07     | -43.50       | -503.38    | -171.91    | 0.17              | 430885.83          | 640016.74         | N 32 11 3.05 W 104 0 51.70  |                          |
|           | 4948.00    | 16.56       | 201.76           | 4872.78     | -51.49       | -551.37    | -192.28    | 0.52              | 430837.85          | 639998.40         | N 32 11 2.58 W 104 0 51.94  |                          |
|           | 5135.00    | 15.42       | 199.97           | 5054.91     | -57.38       | -598.53    | -210.23    | 0.26              | 430790.69          | 639978.42         | N 32 11 2.11 W 104 0 52.15  |                          |
|           | 5230.00    | 14.39       | 198.32           | 5146.72     | -59.51       | -621.60    | -218.26    | 1.17              | 430767.82          | 639970.40         | N 32 11 1.88 W 104 0 52.25  |                          |
|           | 5420.00    | 14.69       | 198.58           | 5330.67     | -63.06       | -666.70    | -233.30    | 0.11              | 430722.52          | 639955.35         | N 32 11 1.44 W 104 0 52.42  |                          |
|           | 5615.00    | 14.87       | 198.33           | 5422.55     | -64.87       | -689.81    | -240.95    | 0.30              | 430699.61          | 639947.71         | N 32 11 1.21 W 104 0 52.51  |                          |
|           | 5810.00    | 14.91       | 198.25           | 5514.36     | -66.83       | -712.79    | -248.81    | 0.05              | 430676.44          | 639940.05         | N 32 11 0.98 W 104 0 52.60  |                          |
|           | 5800.00    | 14.91       | 197.36           | 5597.96     | -69.73       | -759.34    | -263.56    | 0.12              | 430629.90          | 639925.10         | N 32 11 0.52 W 104 0 52.78  |                          |
|           | 5894.00    | 14.90       | 198.90           | 5788.80     | -71.40       | -782.31    | -271.08    | 0.42              | 430606.92          | 639917.58         | N 32 11 0.29 W 104 0 52.87  |                          |
|           | 5989.00    | 14.72       | 196.37           | 5880.65     | -72.87       | -805.45    | -278.44    | 0.71              | 430583.79          | 639910.22         | N 32 11 0.06 W 104 0 52.95  |                          |
|           | 6084.00    | 14.94       | 196.58           | 5972.48     | -73.85       | -828.77    | -285.34    | 0.24              | 430560.47          | 639903.33         | N 32 10 59.83 W 104 0 53.04 |                          |
|           | 6178.00    | 14.69       | 194.58           | 6063.36     | -74.45       | -851.91    | -291.80    | 0.61              | 430537.33          | 639898.87         | N 32 10 56.60 W 104 0 53.11 |                          |
|           | 6273.00    | 14.79       | 194.41           | 6155.23     | -74.59       | -875.32    | -297.84    | 0.11              | 430513.93          | 639890.82         | N 32 10 59.37 W 104 0 53.18 |                          |
|           | 6368.00    | 14.44       | 194.09           | 6247.16     | -74.63       | -898.55    | -303.75    | 0.38              | 430490.70          | 639884.92         | N 32 10 59.14 W 104 0 53.25 |                          |
|           | 6558.00    | 14.45       | 193.19           | 6431.15     | -74.19       | -944.61    | -314.62    | 0.12              | 430444.64          | 639873.74         | N 32 10 56.69 W 104 0 53.38 |                          |
|           | 6748.00    | 13.48       | 194.22           | 6615.53     | -73.81       | -989.15    | -325.77    | 0.53              | 430400.10          | 639862.89         | N 32 10 58.25 W 104 0 53.51 |                          |
|           | 6842.00    | 13.67       | 195.36           | 6708.91     | -74.05       | -1010.48   | -331.41    | 0.35              | 430378.77          | 639857.27         | N 32 10 58.04 W 104 0 53.58 |                          |
|           | 6937.00    | 9.60        | 190.29           | 6798.94     | -73.75       | -1029.11   | -335.80    | 4.41              | 430360.14          | 639852.87         | N 32 10 57.85 W 104 0 53.63 |                          |
|           | 7032.00    | 5.43        | 189.08           | 6894.10     | -72.82       | -1041.35   | -337.92    | 4.39              | 430347.91          | 639850.75         | N 32 10 57.73 W 104 0 53.65 |                          |
|           | 7127.00    | 4.93        | 191.06           | 6988.71     | -72.20       | -1049.78   | -339.41    | 0.58              | 430336.46          | 639848.25         | N 32 10 57.65 W 104 0 53.67 |                          |
|           | 7221.00    | 3.92        | 225.89           | 7082.45     | -73.67       | -1056.00   | -342.50    | 3.00              | 430333.28          | 639846.17         | N 32 10 57.59 W 104 0 53.71 |                          |
|           | 7316.00    | 4.45        | 242.45           | 7177.20     | -78.13       | -1059.96   | -348.10    | 1.38              | 430329.30          | 639840.57         | N 32 10 57.55 W 104 0 53.77 |                          |
|           | 7410.00    | 3.22        | 240.02           | 7270.99     | -82.75       | -1062.97   | -353.82    | 1.32              | 430326.29          | 639835.05         | N 32 10 57.52 W 104 0 53.84 |                          |
|           | 7505.00    | 1.85        | 263.84           | 7365.89     | -86.10       | -1064.46   | -357.45    | 1.79              | 430324.79          | 639831.22         | N 32 10 57.50 W 104 0 53.88 |                          |
|           | 7600.00    | 1.02        | 303.15           | 7460.86     | -88.34       | -1064.17   | -359.68    | 1.31              | 430325.09          | 639828.98         | N 32 10 57.51 W 104 0 53.91 |                          |
|           | 7695.00    | 0.17        | 66.29            | 7555.86     | -89.03       | -1063.65   | -360.26    | 1.18              | 430325.61          | 639828.41         | N 32 10 57.51 W 104 0 53.92 |                          |
|           | 7790.00    | 1.06        | 88.68            | 7650.85     | -88.07       | -1063.57   | -359.26    | 0.95              | 430325.69          | 639829.41         | N 32 10 57.51 W 104 0 53.90 |                          |
|           | 7885.00    | 1.74        | 84.05            | 7745.82     | -85.87       | -1063.40   | -356.94    | 0.73              | 430325.86          | 639831.73         | N 32 10 57.51 W 104 0 53.98 |                          |
|           | 7921.00    | 2.65        | 89.79            | 7781.80     | -84.56       | -1063.34   | -355.57    | 2.60              | 430325.92          | 639833.10         | N 32 10 57.51 W 104 0 53.93 |                          |

| Comments         | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(ft/100ft) | Northing<br>(ft) | Easting<br>(ft) | Latitude<br>(N/S ° ' ")      | Longitude<br>(E/W ° ' ") |
|------------------|------------|-------------|------------------|-------------|--------------|------------|------------|-------------------|------------------|-----------------|------------------------------|--------------------------|
|                  | 8117.00    | 8.51        | 109.09           | 7976.90     | -65.89       | -1068.07   | -337.31    | 3.10              | 430321.19        | 639851.35       | N 32 10 57.47 W 104 0 53.05  |                          |
|                  | 8212.00    | 21.16       | 102.19           | 8068.45     | -41.45       | -1074.02   | -313.82    | 13.42             | 430315.24        | 639874.85       | N 32 10 57.41 W 104 0 53.38  |                          |
|                  | 8307.00    | 31.84       | 101.14           | 8153.35     | 0.83         | -1082.50   | -272.35    | 11.25             | 430306.78        | 639916.31       | N 32 10 57.32 W 104 0 52.89  |                          |
|                  | 8402.00    | 41.85       | 108.69           | 8229.42     | 57.49        | -1087.50   | -217.70    | 11.35             | 430291.78        | 639970.98       | N 32 10 57.17 W 104 0 52.28  |                          |
|                  | 8497.00    | 49.84       | 98.81            | 8295.74     | 125.30       | -1113.23   | -151.73    | 11.37             | 430276.03        | 640036.93       | N 32 10 57.02 W 104 0 51.48  |                          |
|                  | 8592.00    | 47.98       | 93.65            | 8368.20     | 196.18       | -1121.04   | -80.80     | 4.54              | 430268.23        | 640108.04       | N 32 10 56.94 W 104 0 50.68  |                          |
|                  | 8687.00    | 58.01       | 95.83            | 8415.31     | 270.93       | -1127.39   | -5.11      | 10.71             | 430261.87        | 640183.53       | N 32 10 56.87 W 104 0 49.79  |                          |
|                  | 8782.00    | 72.95       | 89.55            | 8454.66     | 355.28       | -1131.15   | 80.94      | 16.83             | 430258.11        | 640269.57       | N 32 10 56.83 W 104 0 48.78  |                          |
|                  | 8842.00    | 74.44       | 87.50            | 8471.50     | 410.73       | -1129.67   | 138.50     | 4.11              | 430259.60        | 640327.13       | N 32 10 56.84 W 104 0 48.11  |                          |
|                  | 8882.00    | 74.92       | 86.68            | 8482.07     | 447.61       | -1127.70   | 177.03     | 2.35              | 430261.56        | 640365.86       | N 32 10 56.86 W 104 0 47.87  |                          |
|                  | 8977.00    | 76.42       | 81.38            | 8505.80     | 535.43       | -1128.14   | 289.03     | 5.07              | 430263.12        | 640457.85       | N 32 10 56.87 W 104 0 46.60  |                          |
|                  | 9072.00    | 80.74       | 84.09            | 8524.40     | 627.87       | -1130.60   | 382.01     | 5.34              | 430258.66        | 640550.82       | N 32 10 56.83 W 104 0 45.51  |                          |
|                  | 9167.00    | 84.35       | 94.49            | 8538.73     | 720.46       | -1137.64   | 465.93     | 3.82              | 430251.82        | 640644.53       | N 32 10 56.78 W 104 0 44.42  |                          |
|                  | 9262.00    | 88.04       | 95.96            | 8543.03     | 814.06       | -1146.28   | 550.30     | 4.18              | 430242.99        | 640738.90       | N 32 10 56.67 W 104 0 43.32  |                          |
|                  | 9357.00    | 90.58       | 99.03            | 8544.18     | 908.41       | -1158.67   | 644.47     | 4.19              | 430230.60        | 640833.05       | N 32 10 56.54 W 104 0 42.23  |                          |
|                  | 9452.00    | 89.10       | 96.79            | 8544.44     | 1002.84      | -1171.74   | 738.55     | 2.83              | 430217.53        | 640927.13       | N 32 10 56.41 W 104 0 41.13  |                          |
|                  | 9547.00    | 87.93       | 93.48            | 8548.90     | 1096.61      | -1180.24   | 833.13     | 3.89              | 430209.03        | 641021.70       | N 32 10 56.32 W 104 0 40.03  |                          |
|                  | 9642.00    | 87.38       | 93.51            | 8550.79     | 1189.89      | -1188.02   | 927.87     | 0.58              | 430203.24        | 641116.43       | N 32 10 56.26 W 104 0 38.93  |                          |
|                  | 9737.00    | 87.18       | 92.33            | 8555.30     | 1282.95      | -1190.86   | 1022.64    | 1.28              | 430198.41        | 641211.19       | N 32 10 56.21 W 104 0 37.83  |                          |
|                  | 9831.00    | 87.66       | 85.28            | 8559.62     | 1373.45      | -1188.90   | 1116.48    | 7.50              | 430200.37        | 641305.01       | N 32 10 56.23 W 104 0 36.74  |                          |
|                  | 9926.00    | 87.59       | 84.82            | 8563.64     | 1463.13      | -1180.71   | 1211.02    | 0.48              | 430208.56        | 641399.56       | N 32 10 56.31 W 104 0 35.64  |                          |
|                  | 10021.00   | 89.21       | 83.57            | 8566.29     | 1552.38      | -1171.11   | 1305.49    | 2.15              | 430218.16        | 641494.02       | N 32 10 56.40 W 104 0 34.54  |                          |
|                  | 10116.00   | 88.87       | 84.68            | 8567.88     | 1641.61      | -1161.38   | 1399.98    | 1.22              | 430227.88        | 641588.50       | N 32 10 56.49 W 104 0 33.44  |                          |
|                  | 10211.00   | 88.73       | 86.44            | 8569.87     | 1731.83      | -1154.03   | 1494.87    | 1.86              | 430235.23        | 641683.18       | N 32 10 56.56 W 104 0 32.34  |                          |
|                  | 10307.00   | 88.49       | 87.86            | 8572.20     | 1823.35      | -1149.09   | 1590.51    | 1.29              | 430240.17        | 641778.02       | N 32 10 56.61 W 104 0 31.22  |                          |
|                  | 10401.00   | 89.07       | 91.03            | 8574.20     | 1914.19      | -1148.02   | 1684.47    | 3.64              | 430241.25        | 641872.97       | N 32 10 56.62 W 104 0 30.13  |                          |
|                  | 10592.00   | 88.90       | 90.16            | 8577.75     | 2099.82      | -1150.00   | 1875.42    | 0.48              | 430239.26        | 642063.91       | N 32 10 56.59 W 104 0 27.91  |                          |
|                  | 10687.00   | 88.86       | 90.22            | 8579.86     | 2191.99      | -1150.32   | 1970.40    | 0.16              | 430238.95        | 642158.88       | N 32 10 56.59 W 104 0 26.80  |                          |
|                  | 10782.00   | 88.80       | 89.81            | 8581.96     | 2284.08      | -1150.34   | 2065.38    | 0.48              | 430238.92        | 642253.85       | N 32 10 56.58 W 104 0 25.70  |                          |
|                  | 10877.00   | 88.89       | 90.37            | 8584.05     | 2376.21      | -1150.49   | 2160.35    | 0.80              | 430238.77        | 642348.82       | N 32 10 56.58 W 104 0 24.59  |                          |
|                  | 10972.00   | 88.87       | 90.54            | 8586.07     | 2468.48      | -1151.24   | 2255.33    | 0.28              | 430238.02        | 642443.78       | N 32 10 56.57 W 104 0 23.49  |                          |
|                  | 11067.00   | 89.31       | 91.81            | 8587.58     | 2561.03      | -1153.19   | 2350.29    | 1.41              | 430236.07        | 642538.74       | N 32 10 56.55 W 104 0 22.38  |                          |
|                  | 11162.00   | 88.78       | 89.86            | 8589.18     | 2653.48      | -1154.58   | 2445.26    | 2.13              | 430234.89        | 642633.70       | N 32 10 56.53 W 104 0 21.28  |                          |
|                  | 11257.00   | 88.86       | 89.50            | 8591.15     | 2745.42      | -1154.05   | 2540.24    | 0.39              | 430235.22        | 642728.68       | N 32 10 56.53 W 104 0 20.17  |                          |
|                  | 11352.00   | 89.07       | 89.54            | 8592.87     | 2837.32      | -1153.25   | 2635.22    | 0.23              | 430236.01        | 642823.65       | N 32 10 56.54 W 104 0 19.07  |                          |
|                  | 11447.00   | 89.04       | 90.13            | 8594.43     | 2929.35      | -1152.98   | 2730.21    | 0.82              | 430236.29        | 642918.63       | N 32 10 56.54 W 104 0 17.98  |                          |
|                  | 11542.00   | 89.93       | 92.69            | 8595.29     | 3021.99      | -1155.31   | 2825.17    | 2.85              | 430233.95        | 643013.58       | N 32 10 56.51 W 104 0 16.88  |                          |
|                  | 11637.00   | 89.21       | 90.04            | 8596.00     | 3114.62      | -1157.58   | 2920.13    | 2.89              | 430231.69        | 643108.53       | N 32 10 56.48 W 104 0 15.75  |                          |
|                  | 11733.00   | 89.66       | 90.81            | 8596.95     | 3207.83      | -1158.12   | 3016.12    | 0.76              | 430231.14        | 643204.52       | N 32 10 56.48 W 104 0 14.63  |                          |
|                  | 11828.00   | 89.76       | 90.55            | 8597.43     | 3300.17      | -1159.06   | 3111.12    | 0.12              | 430230.16        | 643299.50       | N 32 10 56.46 W 104 0 13.53  |                          |
|                  | 11923.00   | 89.80       | 91.22            | 8597.71     | 3392.63      | -1160.55   | 3206.10    | 0.72              | 430228.71        | 643394.48       | N 32 10 56.45 W 104 0 12.42  |                          |
|                  | 12018.00   | 89.72       | 91.91            | 8598.02     | 3485.34      | -1163.15   | 3301.07    | 0.75              | 430226.12        | 643489.44       | N 32 10 56.42 W 104 0 11.32  |                          |
|                  | 12113.00   | 89.93       | 91.71            | 8598.31     | 3578.14      | -1166.15   | 3396.02    | 0.31              | 430223.12        | 643584.38       | N 32 10 56.39 W 104 0 10.21  |                          |
|                  | 12208.00   | 88.42       | 89.81            | 8599.68     | 3670.53      | -1167.41   | 3490.89    | 2.55              | 430221.86        | 643679.35       | N 32 10 56.37 W 104 0 9.11   |                          |
|                  | 12303.00   | 88.35       | 91.11            | 8602.36     | 3762.79      | -1168.17   | 3585.95    | 1.37              | 430221.10        | 643774.30       | N 32 10 56.36 W 104 0 8.00   |                          |
|                  | 12398.00   | 89.14       | 92.23            | 8604.44     | 3855.51      | -1170.94   | 3680.89    | 1.44              | 430218.33        | 643869.25       | N 32 10 56.33 W 104 0 6.90   |                          |
|                  | 12493.00   | 88.73       | 92.26            | 8606.21     | 3948.45      | -1174.86   | 3775.80    | 0.43              | 430214.81        | 643964.13       | N 32 10 56.29 W 104 0 5.80   |                          |
|                  | 12588.00   | 89.59       | 94.21            | 8607.60     | 4041.71      | -1180.02   | 3870.63    | 2.24              | 430209.25        | 644059.05       | N 32 10 56.23 W 104 0 4.69   |                          |
|                  | 12683.00   | 89.28       | 92.01            | 8608.54     | 4134.84      | -1185.17   | 3965.48    | 2.34              | 430204.10        | 644153.80       | N 32 10 56.18 W 104 0 3.59   |                          |
|                  | 12778.00   | 88.25       | 90.57            | 8610.58     | 4227.52      | -1187.31   | 4060.43    | 1.86              | 430201.95        | 644248.74       | N 32 10 56.18 W 104 0 2.48   |                          |
|                  | 12873.00   | 88.73       | 90.55            | 8613.09     | 4319.83      | -1188.24   | 4155.39    | 0.51              | 430201.03        | 644343.69       | N 32 10 56.13 W 104 0 1.38   |                          |
|                  | 12968.00   | 88.79       | 90.82            | 8615.14     | 4412.19      | -1189.37   | 4250.36    | 0.29              | 430199.89        | 644438.68       | N 32 10 56.13 W 104 0 0.27   |                          |
|                  | 13063.00   | 87.63       | 89.56            | 8618.11     | 4504.33      | -1189.69   | 4345.31    | 1.80              | 430199.58        | 644533.50       | N 32 10 56.12 W 103 59 59.17 |                          |
|                  | 13158.00   | 87.94       | 90.14            | 8621.78     | 4596.31      | -1189.44   | 4440.24    | 0.69              | 430199.83        | 644628.52       | N 32 10 56.12 W 103 59 58.06 |                          |
|                  | 13253.00   | 87.83       | 90.71            | 8625.29     | 4688.53      | -1190.14   | 4535.17    | 0.61              | 430199.12        | 644723.44       | N 32 10 56.11 W 103 59 56.95 |                          |
| Final MWD Survey | 13348.00   | 88.31       | 90.31            | 8628.49     | 4780.79      | -1190.99   | 4630.11    | 0.66              | 430198.28        | 644818.38       | N 32 10 56.10 W 103 59 55.88 |                          |
| Proj to Bit      | 13395.00   | 88.31       | 90.31            | 8629.87     | 4826.40      | -1191.24   | 4677.09    | 0.00              | 430198.02        | 644865.35       | N 32 10 56.10 W 103 59 55.31 |                          |

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 \*\*\* 3-D 95 000% Confidence 2.7955 sigma  
Survey Program:

| Description | Part | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size | Casing Diameter<br>(in) | Survey Tool Type         | Borehole / Survey                                                                |
|-------------|------|-----------------|---------------|------------------|-----------|-------------------------|--------------------------|----------------------------------------------------------------------------------|
|             | 1    | 0.000           | 26.500        | 1/98.425         | 30 000    | 30 000                  | NAL_NSG+MSHOT-Depth Only | Original Borehole / Oxy Cedar Canyon 29 Federal Com 26H Gyro+MWD+MS 0-13395 ftMD |
|             | 1    | 26.500          | 26.500        | Act Sins         | 30 000    | 30 000                  | NAL_NSG+MSHOT-Depth Only | Original Borehole / Oxy Cedar Canyon 29 Federal Com 26H Gyro+MWD+MS 0-13395 ftMD |
|             | 1    | 26.500          | 591.740       | Act Sins         | 30 000    | 30 000                  | NAL_NSG+MSHOT            | Original Borehole / Oxy Cedar Canyon 29 Federal Com 26H                          |
|             | 1    | 591.740         | 8842.000      | Act Sins         | 30.000    | 30 000                  | NAL_MWD_PLUS_0.5_DEG     | Original Borehole / Oxy Cedar Canyon 29 Federal Com 26H                          |
|             | 1    | 8842.000        | 13395.000     | Act Sins         | 30.000    | 30 000                  | NAL_MWD_HDGM+MS          | Original Borehole / Oxy Cedar Canyon 29 Federal Com 26H                          |

# Schlumberger

OXY



Borehole:

Original Borehole

Well:

Oxy Cedar Canyon 28 Federal Com 28H

Field:

NM Eddy County (NMD 83)

Structure:

Oxy Cedar Canyon 28 Federal Com 28H

Geology & Magnetic Parameters

Model: H002 2817  
Magnetic: 7.148°  
Dip: 84.87°  
Gravity: 9.816 m/s²  
Date: 28-Jun-2017  
Gravity File: 984-Mag-Grav-Base.m

Surface Location  
Loc: N 22 11 E 83  
Lat: 36 19 0 42.80  
Easting: 648348.61  
Datum: NAD 83

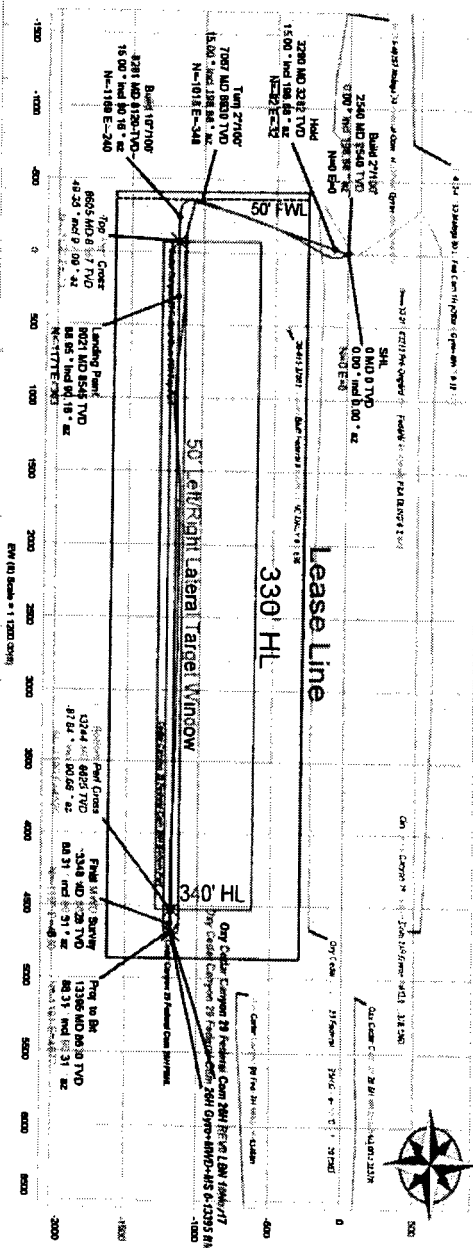
Well Location  
Loc: N 22 11 E 83  
Lat: 36 19 0 42.80  
Easting: 648348.61  
Datum: NAD 83

Well Name  
Well: Oxy Cedar Canyon 28 Federal Com 28H  
Well ID: 984-Mag-Grav-Base.m

Well Depth  
Depth: 13360 MD 85.31 TVD  
Depth: 13360 MD 85.31 TVD

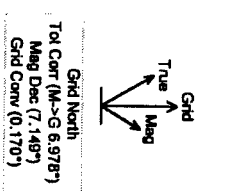
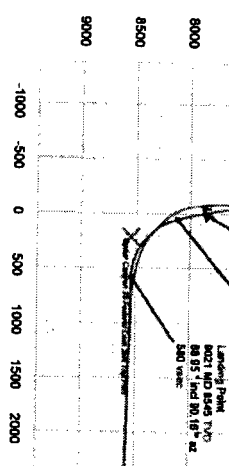
Well Status  
Status: Active

TVD (ft) Scale = 1:1600 00(ft)



Critical Points

| MD       | NCL   | AZIM   | TVD      | VEFC    | WYFC     | EYFC    | DLS   |
|----------|-------|--------|----------|---------|----------|---------|-------|
| 0.00     | 0.00  | 0.00   | 0.00     | 0.00    | 0.00     | 0.00    | 0.00  |
| 280.00   | 0.00  | 198.88 | 280.00   | 0.00    | 0.00     | 0.00    | 0.00  |
| 725.00   | 0.00  | 198.88 | 725.00   | 0.00    | 0.00     | 0.00    | 0.00  |
| 1240.00  | 0.00  | 198.88 | 1240.00  | 0.00    | 0.00     | 0.00    | 0.00  |
| 2540.00  | 0.00  | 198.88 | 2540.00  | 0.00    | 0.00     | 0.00    | 0.00  |
| 2794.33  | 5.39  | 198.88 | 2794.33  | -0.83   | -10.86   | -3.65   | 2.00  |
| 2825.47  | 5.71  | 198.88 | 2825.47  | -1.17   | -13.45   | -4.60   | 2.00  |
| 3290.18  | 15.00 | 198.88 | 3290.18  | -8.02   | -31.90   | -31.90  | 2.00  |
| 3600.11  | 15.00 | 198.88 | 3600.11  | -14.61  | -57.55   | -57.55  | 0.00  |
| 5005.03  | 15.00 | 198.88 | 5005.03  | -45.13  | -177.74  | -177.74 | 0.00  |
| 6486.32  | 15.00 | 198.88 | 6486.32  | -78.37  | -308.67  | -308.67 | 0.00  |
| 7099.87  | 15.00 | 198.88 | 7099.87  | -86.33  | -347.91  | -347.91 | 0.00  |
| 8024.00  | 11.28 | 106.01 | 8024.00  | -4.13   | -1161.96 | -287.52 | 2.00  |
| 8281.23  | 15.00 | 90.16  | 8281.23  | 53.36   | -1168.00 | -240.00 | 2.00  |
| 8620.78  | 88.65 | 90.16  | 8620.78  | 580.21  | -1170.53 | 10.00   | 10.00 |
| 13405.65 | 88.65 | 90.16  | 13405.65 | 4534.05 | -1182.85 | 4687.10 | 0.00  |



Vertical Section (ft) Azim = 104.17° Scale = 1:1600 00(ft) Origin = ON-S, 05E-W

Grid North  
Tot Cor (N-G 6.978°)  
Mag Dec (7.148°)  
Grid Conv (0.170°)