



# **COG Operating LLC**

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

**Coachman Fee**

**14H**

**OH**

**Plan: Plan 1 07-17-18**

## **Standard Planning Report**

**17 July, 2018**



|                  |                            |                                     |                                     |
|------------------|----------------------------|-------------------------------------|-------------------------------------|
| <b>Database:</b> | USA Compass                | <b>Local Co-ordinate Reference:</b> | Well 14H                            |
| <b>Company:</b>  | COG Operating LLC          | <b>TVD Reference:</b>               | RKB @ 3268.70usft (Scandrill Quest) |
| <b>Project:</b>  | Lea County, NM (NAD27 NME) | <b>MD Reference:</b>                | RKB @ 3268.70usft (Scandrill Quest) |
| <b>Site:</b>     | Coachman Fee               | <b>North Reference:</b>             | Grid                                |
| <b>Well:</b>     | 14H                        | <b>Survey Calculation Method:</b>   | Minimum Curvature                   |
| <b>Wellbore:</b> | OH                         |                                     |                                     |
| <b>Design:</b>   | Plan 1 07-17-18            |                                     |                                     |

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

|                              |              |                          |                     |
|------------------------------|--------------|--------------------------|---------------------|
| <b>Site</b>                  | Coachman Fee |                          |                     |
| <b>Site Position:</b>        |              | <b>Northing:</b>         | 409,552.30 usft     |
| <b>From:</b>                 | Map          | <b>Easting:</b>          | 796,162.50 usft     |
| <b>Position Uncertainty:</b> | 0.00 usft    | <b>Slot Radius:</b>      | 13-3/16 "           |
|                              |              | <b>Latitude:</b>         | 32° 7' 20.50141 N   |
|                              |              | <b>Longitude:</b>        | 103° 22' 36.12328 W |
|                              |              | <b>Grid Convergence:</b> | 0.51 °              |

|                             |              |                            |                                       |
|-----------------------------|--------------|----------------------------|---------------------------------------|
| <b>Well</b>                 | 14H          |                            |                                       |
| <b>Well Position</b>        | <b>+N/-S</b> | 0.00 usft                  | <b>Northing:</b> 409,552.30 usft      |
|                             | <b>+E/-W</b> | 0.00 usft                  | <b>Easting:</b> 796,162.50 usft       |
| <b>Position Uncertainty</b> | 0.00 usft    | <b>Wellhead Elevation:</b> | <b>Latitude:</b> 32° 7' 20.50141 N    |
|                             |              |                            | <b>Longitude:</b> 103° 22' 36.12328 W |
|                             |              |                            | <b>Ground Level:</b> 3,238.70 usft    |

|                  |                   |                    |                                            |
|------------------|-------------------|--------------------|--------------------------------------------|
| <b>Wellbore</b>  | OH                |                    |                                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b>                     |
|                  | MVHD              | 7/17/2018          | 6.69                                       |
|                  |                   |                    | <b>Dip Angle (°)</b> 59.79                 |
|                  |                   |                    | <b>Field Strength (nT)</b> 47,868.04498550 |

|                          |                                |                     |                             |
|--------------------------|--------------------------------|---------------------|-----------------------------|
| <b>Design</b>            | Plan 1 07-17-18                |                     |                             |
| <b>Audit Notes:</b>      |                                |                     |                             |
| <b>Version:</b>          | <b>Phase:</b>                  | PROTOTYPE           | <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>         |
|                          | 0.00                           | 0.00                | <b>Direction (°)</b> 186.69 |

| <b>Plan Sections</b>  |                 |             |                       |              |              |                         |                        |                       |         |                  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target           |
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                  |
| 1,400.00              | 0.00            | 0.00        | 1,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                  |
| 1,700.19              | 6.00            | 285.83      | 1,699.64              | 4.29         | -15.12       | 2.00                    | 2.00                   | 0.00                  | 285.83  |                  |
| 7,512.79              | 6.00            | 285.83      | 7,480.36              | 170.14       | -600.03      | 0.00                    | 0.00                   | 0.00                  | 0.00    |                  |
| 7,812.98              | 0.00            | 0.00        | 7,780.00              | 174.42       | -615.15      | 2.00                    | -2.00                  | 0.00                  | 180.00  |                  |
| 10,394.05             | 0.00            | 0.00        | 10,361.06             | 174.42       | -615.15      | 0.00                    | 0.00                   | 0.00                  | 0.00    |                  |
| 11,289.55             | 89.55           | 179.48      | 10,934.00             | -394.02      | -609.98      | 10.00                   | 10.00                  | 0.00                  | 179.48  |                  |
| 15,749.35             | 89.55           | 179.48      | 10,969.00             | -4,853.50    | -569.40      | 0.00                    | 0.00                   | 0.00                  | 0.00    | BHL - Coachman F |

|                  |                            |                                     |                                    |
|------------------|----------------------------|-------------------------------------|------------------------------------|
| <b>Database:</b> | USA Compass                | <b>Local Co-ordinate Reference:</b> | Well 14H                           |
| <b>Company:</b>  | COG Operating LLC          | <b>TVD Reference:</b>               | RKB @ 3268.70usft (Scandril Quest) |
| <b>Project:</b>  | Lea County, NM (NAD27 NME) | <b>MD Reference:</b>                | RKB @ 3268.70usft (Scandril Quest) |
| <b>Site:</b>     | Coachman Fee               | <b>North Reference:</b>             | Grid                               |
| <b>Well:</b>     | 14H                        | <b>Survey Calculation Method:</b>   | Minimum Curvature                  |
| <b>Wellbore:</b> | OH                         |                                     |                                    |
| <b>Design:</b>   | Plan 1 07-17-18            |                                     |                                    |

| Planned Survey                       |                 |             |                       |              |              |                         |                         |                        |                       |
|--------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)                | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 0.00                                 | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 886.70                               | 0.00            | 0.00        | 886.70                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>Rustler</b>                       |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,277.70                             | 0.00            | 0.00        | 1,277.70              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>TOS</b>                           |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,400.00                             | 0.00            | 0.00        | 1,400.00              | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| <b>KOP1, Begin 2.00°/100' Build</b>  |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,500.00                             | 2.00            | 285.83      | 1,499.98              | 0.48         | -1.68        | -0.28                   | 2.00                    | 2.00                   | 0.00                  |
| 1,600.00                             | 4.00            | 285.83      | 1,599.84              | 1.90         | -6.71        | -1.11                   | 2.00                    | 2.00                   | 0.00                  |
| 1,700.00                             | 6.00            | 285.83      | 1,699.45              | 4.28         | -15.10       | -2.49                   | 2.00                    | 2.00                   | 0.00                  |
| 1,700.19                             | 6.00            | 285.83      | 1,699.64              | 4.29         | -15.12       | -2.50                   | 2.00                    | 2.00                   | 0.00                  |
| <b>Hold 6.00° Inc at 285.83° Azm</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,800.00                             | 6.00            | 285.83      | 1,798.90              | 7.13         | -25.16       | -4.15                   | 0.00                    | 0.00                   | 0.00                  |
| 1,900.00                             | 6.00            | 285.83      | 1,898.36              | 9.99         | -35.22       | -5.82                   | 0.00                    | 0.00                   | 0.00                  |
| 2,000.00                             | 6.00            | 285.83      | 1,997.81              | 12.84        | -45.29       | -7.48                   | 0.00                    | 0.00                   | 0.00                  |
| 2,100.00                             | 6.00            | 285.83      | 2,097.26              | 15.69        | -55.35       | -9.14                   | 0.00                    | 0.00                   | 0.00                  |
| 2,200.00                             | 6.00            | 285.83      | 2,196.71              | 18.55        | -65.41       | -10.80                  | 0.00                    | 0.00                   | 0.00                  |
| 2,300.00                             | 6.00            | 285.83      | 2,296.16              | 21.40        | -75.48       | -12.46                  | 0.00                    | 0.00                   | 0.00                  |
| 2,400.00                             | 6.00            | 285.83      | 2,395.61              | 24.25        | -85.54       | -14.12                  | 0.00                    | 0.00                   | 0.00                  |
| 2,500.00                             | 6.00            | 285.83      | 2,495.06              | 27.11        | -95.60       | -15.78                  | 0.00                    | 0.00                   | 0.00                  |
| 2,600.00                             | 6.00            | 285.83      | 2,594.52              | 29.96        | -105.66      | -17.44                  | 0.00                    | 0.00                   | 0.00                  |
| 2,700.00                             | 6.00            | 285.83      | 2,693.97              | 32.81        | -115.73      | -19.11                  | 0.00                    | 0.00                   | 0.00                  |
| 2,800.00                             | 6.00            | 285.83      | 2,793.42              | 35.67        | -125.79      | -20.77                  | 0.00                    | 0.00                   | 0.00                  |
| 2,900.00                             | 6.00            | 285.83      | 2,892.87              | 38.52        | -135.85      | -22.43                  | 0.00                    | 0.00                   | 0.00                  |
| 3,000.00                             | 6.00            | 285.83      | 2,992.32              | 41.37        | -145.92      | -24.09                  | 0.00                    | 0.00                   | 0.00                  |
| 3,100.00                             | 6.00            | 285.83      | 3,091.77              | 44.23        | -155.98      | -25.75                  | 0.00                    | 0.00                   | 0.00                  |
| 3,200.00                             | 6.00            | 285.83      | 3,191.22              | 47.08        | -166.04      | -27.41                  | 0.00                    | 0.00                   | 0.00                  |
| 3,300.00                             | 6.00            | 285.83      | 3,290.68              | 49.93        | -176.10      | -29.07                  | 0.00                    | 0.00                   | 0.00                  |
| 3,400.00                             | 6.00            | 285.83      | 3,390.13              | 52.79        | -186.17      | -30.74                  | 0.00                    | 0.00                   | 0.00                  |
| 3,500.00                             | 6.00            | 285.83      | 3,489.58              | 55.64        | -196.23      | -32.40                  | 0.00                    | 0.00                   | 0.00                  |
| 3,600.00                             | 6.00            | 285.83      | 3,589.03              | 58.49        | -206.29      | -34.06                  | 0.00                    | 0.00                   | 0.00                  |
| 3,700.00                             | 6.00            | 285.83      | 3,688.48              | 61.35        | -216.35      | -35.72                  | 0.00                    | 0.00                   | 0.00                  |
| 3,800.00                             | 6.00            | 285.83      | 3,787.93              | 64.20        | -226.42      | -37.38                  | 0.00                    | 0.00                   | 0.00                  |
| 3,900.00                             | 6.00            | 285.83      | 3,887.38              | 67.05        | -236.48      | -39.04                  | 0.00                    | 0.00                   | 0.00                  |
| 4,000.00                             | 6.00            | 285.83      | 3,986.84              | 69.91        | -246.54      | -40.70                  | 0.00                    | 0.00                   | 0.00                  |
| 4,100.00                             | 6.00            | 285.83      | 4,086.29              | 72.76        | -256.61      | -42.36                  | 0.00                    | 0.00                   | 0.00                  |
| 4,200.00                             | 6.00            | 285.83      | 4,185.74              | 75.61        | -266.67      | -44.03                  | 0.00                    | 0.00                   | 0.00                  |
| 4,300.00                             | 6.00            | 285.83      | 4,285.19              | 78.47        | -276.73      | -45.69                  | 0.00                    | 0.00                   | 0.00                  |
| 4,400.00                             | 6.00            | 285.83      | 4,384.64              | 81.32        | -286.79      | -47.35                  | 0.00                    | 0.00                   | 0.00                  |
| 4,500.00                             | 6.00            | 285.83      | 4,484.09              | 84.17        | -296.86      | -49.01                  | 0.00                    | 0.00                   | 0.00                  |
| 4,600.00                             | 6.00            | 285.83      | 4,583.55              | 87.03        | -306.92      | -50.67                  | 0.00                    | 0.00                   | 0.00                  |
| 4,700.00                             | 6.00            | 285.83      | 4,683.00              | 89.88        | -316.98      | -52.33                  | 0.00                    | 0.00                   | 0.00                  |
| 4,800.00                             | 6.00            | 285.83      | 4,782.45              | 92.73        | -327.05      | -53.99                  | 0.00                    | 0.00                   | 0.00                  |
| 4,900.00                             | 6.00            | 285.83      | 4,881.90              | 95.59        | -337.11      | -55.66                  | 0.00                    | 0.00                   | 0.00                  |
| 5,000.00                             | 6.00            | 285.83      | 4,981.35              | 98.44        | -347.17      | -57.32                  | 0.00                    | 0.00                   | 0.00                  |
| 5,014.98                             | 6.00            | 285.83      | 4,996.25              | 98.87        | -348.68      | -57.57                  | 0.00                    | 0.00                   | 0.00                  |
| <b>BOS (Fletcher)</b>                |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,100.00                             | 6.00            | 285.83      | 5,080.80              | 101.29       | -357.23      | -58.98                  | 0.00                    | 0.00                   | 0.00                  |
| 5,200.00                             | 6.00            | 285.83      | 5,180.25              | 104.15       | -367.30      | -60.64                  | 0.00                    | 0.00                   | 0.00                  |
| 5,300.00                             | 6.00            | 285.83      | 5,279.71              | 107.00       | -377.36      | -62.30                  | 0.00                    | 0.00                   | 0.00                  |
| 5,342.73                             | 6.00            | 285.83      | 5,322.21              | 108.22       | -381.66      | -63.01                  | 0.00                    | 0.00                   | 0.00                  |
| <b>LMAR (Delaware)</b>               |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,368.87                             | 6.00            | 285.83      | 5,348.20              | 108.96       | -384.29      | -63.44                  | 0.00                    | 0.00                   | 0.00                  |

|                  |                            |                                     |                                    |
|------------------|----------------------------|-------------------------------------|------------------------------------|
| <b>Database:</b> | USA Compass                | <b>Local Co-ordinate Reference:</b> | Well 14H                           |
| <b>Company:</b>  | COG Operating LLC          | <b>TVD Reference:</b>               | RKB @ 3268.70usft (Scandril Quest) |
| <b>Project:</b>  | Lea County, NM (NAD27 NME) | <b>MD Reference:</b>                | RKB @ 3268.70usft (Scandril Quest) |
| <b>Site:</b>     | Coachman Fee               | <b>North Reference:</b>             | Grid                               |
| <b>Well:</b>     | 14H                        | <b>Survey Calculation Method:</b>   | Minimum Curvature                  |
| <b>Wellbore:</b> | OH                         |                                     |                                    |
| <b>Design:</b>   | Plan 1 07-17-18            |                                     |                                    |

**Planned Survey**

| Measured Depth (usft)                | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|--------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| <b>BCLN</b>                          |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,400.00                             | 6.00            | 285.83      | 5,379.16              | 109.85       | -387.42      | -63.96                  | 0.00                    | 0.00                   | 0.00                  |
| 5,500.00                             | 6.00            | 285.83      | 5,478.61              | 112.71       | -397.49      | -65.62                  | 0.00                    | 0.00                   | 0.00                  |
| 5,600.00                             | 6.00            | 285.83      | 5,578.06              | 115.56       | -407.55      | -67.28                  | 0.00                    | 0.00                   | 0.00                  |
| 5,700.00                             | 6.00            | 285.83      | 5,677.51              | 118.41       | -417.61      | -68.95                  | 0.00                    | 0.00                   | 0.00                  |
| 5,800.00                             | 6.00            | 285.83      | 5,776.96              | 121.27       | -427.67      | -70.61                  | 0.00                    | 0.00                   | 0.00                  |
| 5,900.00                             | 6.00            | 285.83      | 5,876.41              | 124.12       | -437.74      | -72.27                  | 0.00                    | 0.00                   | 0.00                  |
| 6,000.00                             | 6.00            | 285.83      | 5,975.87              | 126.97       | -447.80      | -73.93                  | 0.00                    | 0.00                   | 0.00                  |
| 6,100.00                             | 6.00            | 285.83      | 6,075.32              | 129.82       | -457.86      | -75.59                  | 0.00                    | 0.00                   | 0.00                  |
| 6,200.00                             | 6.00            | 285.83      | 6,174.77              | 132.68       | -467.93      | -77.25                  | 0.00                    | 0.00                   | 0.00                  |
| 6,300.00                             | 6.00            | 285.83      | 6,274.22              | 135.53       | -477.99      | -78.91                  | 0.00                    | 0.00                   | 0.00                  |
| 6,308.91                             | 6.00            | 285.83      | 6,283.08              | 135.79       | -478.88      | -79.06                  | 0.00                    | 0.00                   | 0.00                  |
| <b>CYCN</b>                          |                 |             |                       |              |              |                         |                         |                        |                       |
| 6,400.00                             | 6.00            | 285.83      | 6,373.67              | 138.38       | -488.05      | -80.58                  | 0.00                    | 0.00                   | 0.00                  |
| 6,500.00                             | 6.00            | 285.83      | 6,473.12              | 141.24       | -498.11      | -82.24                  | 0.00                    | 0.00                   | 0.00                  |
| 6,600.00                             | 6.00            | 285.83      | 6,572.58              | 144.09       | -508.18      | -83.90                  | 0.00                    | 0.00                   | 0.00                  |
| 6,700.00                             | 6.00            | 285.83      | 6,672.03              | 146.94       | -518.24      | -85.56                  | 0.00                    | 0.00                   | 0.00                  |
| 6,800.00                             | 6.00            | 285.83      | 6,771.48              | 149.80       | -528.30      | -87.22                  | 0.00                    | 0.00                   | 0.00                  |
| 6,900.00                             | 6.00            | 285.83      | 6,870.93              | 152.65       | -538.37      | -88.88                  | 0.00                    | 0.00                   | 0.00                  |
| 7,000.00                             | 6.00            | 285.83      | 6,970.38              | 155.50       | -548.43      | -90.54                  | 0.00                    | 0.00                   | 0.00                  |
| 7,100.00                             | 6.00            | 285.83      | 7,069.83              | 158.36       | -558.49      | -92.20                  | 0.00                    | 0.00                   | 0.00                  |
| 7,200.00                             | 6.00            | 285.83      | 7,169.28              | 161.21       | -568.55      | -93.87                  | 0.00                    | 0.00                   | 0.00                  |
| 7,300.00                             | 6.00            | 285.83      | 7,268.74              | 164.06       | -578.62      | -95.53                  | 0.00                    | 0.00                   | 0.00                  |
| 7,400.00                             | 6.00            | 285.83      | 7,368.19              | 166.92       | -588.68      | -97.19                  | 0.00                    | 0.00                   | 0.00                  |
| 7,500.00                             | 6.00            | 285.83      | 7,467.64              | 169.77       | -598.74      | -98.85                  | 0.00                    | 0.00                   | 0.00                  |
| 7,512.79                             | 6.00            | 285.83      | 7,480.36              | 170.14       | -600.03      | -99.06                  | 0.00                    | 0.00                   | 0.00                  |
| <b>Begin 2.00°/100' Drop</b>         |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,600.00                             | 4.26            | 285.83      | 7,567.22              | 172.26       | -607.53      | -100.30                 | 2.00                    | -2.00                  | 0.00                  |
| 7,700.00                             | 2.26            | 285.83      | 7,667.05              | 173.81       | -613.00      | -101.20                 | 2.00                    | -2.00                  | 0.00                  |
| 7,800.00                             | 0.26            | 285.83      | 7,767.02              | 174.41       | -615.12      | -101.55                 | 2.00                    | -2.00                  | 0.00                  |
| 7,812.98                             | 0.00            | 0.00        | 7,780.00              | 174.42       | -615.15      | -101.56                 | 2.00                    | -2.00                  | 0.00                  |
| <b>Begin Vertical Hold</b>           |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,843.88                             | 0.00            | 0.00        | 7,810.90              | 174.42       | -615.15      | -101.56                 | 0.00                    | 0.00                   | 0.00                  |
| <b>BYCN</b>                          |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,120.88                             | 0.00            | 0.00        | 9,087.90              | 174.42       | -615.15      | -101.56                 | 0.00                    | 0.00                   | 0.00                  |
| <b>Bone Sprg (BSGL)</b>              |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,383.88                             | 0.00            | 0.00        | 9,350.90              | 174.42       | -615.15      | -101.56                 | 0.00                    | 0.00                   | 0.00                  |
| <b>U Avalon Sh</b>                   |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,829.88                             | 0.00            | 0.00        | 9,796.90              | 174.42       | -615.15      | -101.56                 | 0.00                    | 0.00                   | 0.00                  |
| <b>L Avalon Sh</b>                   |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,189.88                            | 0.00            | 0.00        | 10,156.90             | 174.42       | -615.15      | -101.56                 | 0.00                    | 0.00                   | 0.00                  |
| <b>B Avalon Sh</b>                   |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,363.88                            | 0.00            | 0.00        | 10,330.90             | 174.42       | -615.15      | -101.56                 | 0.00                    | 0.00                   | 0.00                  |
| <b>FBSG_Sand</b>                     |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,394.05                            | 0.00            | 0.00        | 10,361.06             | 174.42       | -615.15      | -101.56                 | 0.00                    | 0.00                   | 0.00                  |
| <b>KOP2, Begin 10.00°/100' Build</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,400.00                            | 0.60            | 179.48      | 10,367.02             | 174.39       | -615.15      | -101.53                 | 10.00                   | 10.00                  | 0.00                  |
| 10,500.00                            | 10.60           | 179.48      | 10,466.42             | 164.65       | -615.06      | -91.87                  | 10.00                   | 10.00                  | 0.00                  |
| 10,600.00                            | 20.60           | 179.48      | 10,562.61             | 137.80       | -614.81      | -65.23                  | 10.00                   | 10.00                  | 0.00                  |
| 10,700.00                            | 30.60           | 179.48      | 10,652.68             | 94.66        | -614.42      | -22.42                  | 10.00                   | 10.00                  | 0.00                  |
| 10,800.00                            | 40.60           | 179.48      | 10,733.90             | 36.53        | -613.89      | 35.25                   | 10.00                   | 10.00                  | 0.00                  |
| 10,900.00                            | 50.60           | 179.48      | 10,803.78             | -34.82       | -613.24      | 106.04                  | 10.00                   | 10.00                  | 0.00                  |
| 10,989.76                            | 59.57           | 179.48      | 10,855.11             | -108.35      | -612.57      | 178.98                  | 10.00                   | 10.00                  | 0.00                  |

|                  |                            |                                     |                                    |
|------------------|----------------------------|-------------------------------------|------------------------------------|
| <b>Database:</b> | USA Compass                | <b>Local Co-ordinate Reference:</b> | Well 14H                           |
| <b>Company:</b>  | COG Operating LLC          | <b>TVD Reference:</b>               | RKB @ 3268.70usft (Scandril Quest) |
| <b>Project:</b>  | Lea County, NM (NAD27 NME) | <b>MD Reference:</b>                | RKB @ 3268.70usft (Scandril Quest) |
| <b>Site:</b>     | Coachman Fee               | <b>North Reference:</b>             | Grid                               |
| <b>Well:</b>     | 14H                        | <b>Survey Calculation Method:</b>   | Minimum Curvature                  |
| <b>Wellbore:</b> | OH                         |                                     |                                    |
| <b>Design:</b>   | Plan 1 07-17-18            |                                     |                                    |

| Planned Survey                            |                 |             |                       |              |              |                         |                         |                        |                       |
|-------------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)                     | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| <b>SBSG_Sand</b>                          |                 |             |                       |              |              |                         |                         |                        |                       |
| 11,000.00                                 | 60.60           | 179.48      | 10,860.21             | -117.22      | -612.49      | 187.79                  | 10.00                   | 10.00                  | 0.00                  |
| 11,100.00                                 | 70.60           | 179.48      | 10,901.48             | -208.16      | -611.67      | 278.02                  | 10.00                   | 10.00                  | 0.00                  |
| 11,200.00                                 | 80.60           | 179.48      | 10,926.32             | -304.89      | -610.79      | 373.98                  | 10.00                   | 10.00                  | 0.00                  |
| 11,289.55                                 | 89.55           | 179.48      | 10,934.00             | -394.02      | -609.98      | 462.41                  | 10.00                   | 10.00                  | 0.00                  |
| <b>LP, Hold 89.55° Inc at 179.48° Azm</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 11,300.00                                 | 89.55           | 179.48      | 10,934.09             | -404.47      | -609.88      | 472.77                  | 0.00                    | 0.00                   | 0.00                  |
| 11,400.00                                 | 89.55           | 179.48      | 10,934.87             | -504.46      | -608.97      | 571.98                  | 0.00                    | 0.00                   | 0.00                  |
| 11,500.00                                 | 89.55           | 179.48      | 10,935.66             | -604.45      | -608.06      | 671.19                  | 0.00                    | 0.00                   | 0.00                  |
| 11,600.00                                 | 89.55           | 179.48      | 10,936.44             | -704.44      | -607.15      | 770.39                  | 0.00                    | 0.00                   | 0.00                  |
| 11,700.00                                 | 89.55           | 179.48      | 10,937.23             | -804.44      | -606.24      | 869.60                  | 0.00                    | 0.00                   | 0.00                  |
| 11,800.00                                 | 89.55           | 179.48      | 10,938.01             | -904.43      | -605.33      | 968.80                  | 0.00                    | 0.00                   | 0.00                  |
| 11,900.00                                 | 89.55           | 179.48      | 10,938.79             | -1,004.42    | -604.42      | 1,068.01                | 0.00                    | 0.00                   | 0.00                  |
| 12,000.00                                 | 89.55           | 179.48      | 10,939.58             | -1,104.42    | -603.51      | 1,167.21                | 0.00                    | 0.00                   | 0.00                  |
| 12,100.00                                 | 89.55           | 179.48      | 10,940.36             | -1,204.41    | -602.60      | 1,266.42                | 0.00                    | 0.00                   | 0.00                  |
| 12,200.00                                 | 89.55           | 179.48      | 10,941.15             | -1,304.40    | -601.69      | 1,365.62                | 0.00                    | 0.00                   | 0.00                  |
| 12,300.00                                 | 89.55           | 179.48      | 10,941.93             | -1,404.39    | -600.78      | 1,464.83                | 0.00                    | 0.00                   | 0.00                  |
| 12,400.00                                 | 89.55           | 179.48      | 10,942.72             | -1,504.39    | -599.87      | 1,564.04                | 0.00                    | 0.00                   | 0.00                  |
| 12,500.00                                 | 89.55           | 179.48      | 10,943.50             | -1,604.38    | -598.96      | 1,663.24                | 0.00                    | 0.00                   | 0.00                  |
| 12,600.00                                 | 89.55           | 179.48      | 10,944.29             | -1,704.37    | -598.05      | 1,762.45                | 0.00                    | 0.00                   | 0.00                  |
| 12,700.00                                 | 89.55           | 179.48      | 10,945.07             | -1,804.37    | -597.14      | 1,861.65                | 0.00                    | 0.00                   | 0.00                  |
| 12,800.00                                 | 89.55           | 179.48      | 10,945.86             | -1,904.36    | -596.23      | 1,960.86                | 0.00                    | 0.00                   | 0.00                  |
| 12,900.00                                 | 89.55           | 179.48      | 10,946.64             | -2,004.35    | -595.32      | 2,060.06                | 0.00                    | 0.00                   | 0.00                  |
| 13,000.00                                 | 89.55           | 179.48      | 10,947.43             | -2,104.34    | -594.41      | 2,159.27                | 0.00                    | 0.00                   | 0.00                  |
| 13,100.00                                 | 89.55           | 179.48      | 10,948.21             | -2,204.34    | -593.50      | 2,258.48                | 0.00                    | 0.00                   | 0.00                  |
| 13,200.00                                 | 89.55           | 179.48      | 10,949.00             | -2,304.33    | -592.59      | 2,357.68                | 0.00                    | 0.00                   | 0.00                  |
| 13,300.00                                 | 89.55           | 179.48      | 10,949.78             | -2,404.32    | -591.68      | 2,456.89                | 0.00                    | 0.00                   | 0.00                  |
| 13,400.00                                 | 89.55           | 179.48      | 10,950.57             | -2,504.31    | -590.77      | 2,556.09                | 0.00                    | 0.00                   | 0.00                  |
| 13,500.00                                 | 89.55           | 179.48      | 10,951.35             | -2,604.31    | -589.86      | 2,655.30                | 0.00                    | 0.00                   | 0.00                  |
| 13,600.00                                 | 89.55           | 179.48      | 10,952.13             | -2,704.30    | -588.95      | 2,754.50                | 0.00                    | 0.00                   | 0.00                  |
| 13,700.00                                 | 89.55           | 179.48      | 10,952.92             | -2,804.29    | -588.04      | 2,853.71                | 0.00                    | 0.00                   | 0.00                  |
| 13,800.00                                 | 89.55           | 179.48      | 10,953.70             | -2,904.29    | -587.14      | 2,952.92                | 0.00                    | 0.00                   | 0.00                  |
| 13,900.00                                 | 89.55           | 179.48      | 10,954.49             | -3,004.28    | -586.23      | 3,052.12                | 0.00                    | 0.00                   | 0.00                  |
| 14,000.00                                 | 89.55           | 179.48      | 10,955.27             | -3,104.27    | -585.32      | 3,151.33                | 0.00                    | 0.00                   | 0.00                  |
| 14,100.00                                 | 89.55           | 179.48      | 10,956.06             | -3,204.26    | -584.41      | 3,250.53                | 0.00                    | 0.00                   | 0.00                  |
| 14,200.00                                 | 89.55           | 179.48      | 10,956.84             | -3,304.26    | -583.50      | 3,349.74                | 0.00                    | 0.00                   | 0.00                  |
| 14,300.00                                 | 89.55           | 179.48      | 10,957.63             | -3,404.25    | -582.59      | 3,448.94                | 0.00                    | 0.00                   | 0.00                  |
| 14,400.00                                 | 89.55           | 179.48      | 10,958.41             | -3,504.24    | -581.68      | 3,548.15                | 0.00                    | 0.00                   | 0.00                  |
| 14,500.00                                 | 89.55           | 179.48      | 10,959.20             | -3,604.24    | -580.77      | 3,647.36                | 0.00                    | 0.00                   | 0.00                  |
| 14,600.00                                 | 89.55           | 179.48      | 10,959.98             | -3,704.23    | -579.86      | 3,746.56                | 0.00                    | 0.00                   | 0.00                  |
| 14,700.00                                 | 89.55           | 179.48      | 10,960.77             | -3,804.22    | -578.95      | 3,845.77                | 0.00                    | 0.00                   | 0.00                  |
| 14,800.00                                 | 89.55           | 179.48      | 10,961.55             | -3,904.21    | -578.04      | 3,944.97                | 0.00                    | 0.00                   | 0.00                  |
| 14,900.00                                 | 89.55           | 179.48      | 10,962.34             | -4,004.21    | -577.13      | 4,044.18                | 0.00                    | 0.00                   | 0.00                  |
| 15,000.00                                 | 89.55           | 179.48      | 10,963.12             | -4,104.20    | -576.22      | 4,143.38                | 0.00                    | 0.00                   | 0.00                  |
| 15,100.00                                 | 89.55           | 179.48      | 10,963.90             | -4,204.19    | -575.31      | 4,242.59                | 0.00                    | 0.00                   | 0.00                  |
| 15,200.00                                 | 89.55           | 179.48      | 10,964.69             | -4,304.19    | -574.40      | 4,341.80                | 0.00                    | 0.00                   | 0.00                  |
| 15,300.00                                 | 89.55           | 179.48      | 10,965.47             | -4,404.18    | -573.49      | 4,441.00                | 0.00                    | 0.00                   | 0.00                  |
| 15,400.00                                 | 89.55           | 179.48      | 10,966.26             | -4,504.17    | -572.58      | 4,540.21                | 0.00                    | 0.00                   | 0.00                  |
| 15,500.00                                 | 89.55           | 179.48      | 10,967.04             | -4,604.16    | -571.67      | 4,639.41                | 0.00                    | 0.00                   | 0.00                  |
| 15,600.00                                 | 89.55           | 179.48      | 10,967.83             | -4,704.16    | -570.76      | 4,738.62                | 0.00                    | 0.00                   | 0.00                  |
| 15,700.00                                 | 89.55           | 179.48      | 10,968.61             | -4,804.15    | -569.85      | 4,837.82                | 0.00                    | 0.00                   | 0.00                  |
| 15,749.35                                 | 89.55           | 179.48      | 10,969.00             | -4,853.50    | -569.40      | 4,886.79                | 0.00                    | 0.00                   | 0.00                  |
| <b>TD at 15749.35</b>                     |                 |             |                       |              |              |                         |                         |                        |                       |

|                  |                            |                                     |                                    |
|------------------|----------------------------|-------------------------------------|------------------------------------|
| <b>Database:</b> | USA Compass                | <b>Local Co-ordinate Reference:</b> | Well 14H                           |
| <b>Company:</b>  | COG Operating LLC          | <b>TVD Reference:</b>               | RKB @ 3268.70usft (Scandril Quest) |
| <b>Project:</b>  | Lea County, NM (NAD27 NME) | <b>MD Reference:</b>                | RKB @ 3268.70usft (Scandril Quest) |
| <b>Site:</b>     | Coachman Fee               | <b>North Reference:</b>             | Grid                               |
| <b>Well:</b>     | 14H                        | <b>Survey Calculation Method:</b>   | Minimum Curvature                  |
| <b>Wellbore:</b> | OH                         |                                     |                                    |
| <b>Design:</b>   | Plan 1 07-17-18            |                                     |                                    |

| Design Targets                                                                                   |                   |           |          |           |           |         |            |            |                                      |
|--------------------------------------------------------------------------------------------------|-------------------|-----------|----------|-----------|-----------|---------|------------|------------|--------------------------------------|
| Target Name                                                                                      | - hit/miss target | Dip Angle | Dip Dir. | TVD       | +N/-S     | +E/-W   | Northing   | Easting    |                                      |
| - Shape                                                                                          |                   | (°)       | (°)      | (usft)    | (usft)    | (usft)  | (usft)     | (usft)     | Latitude Longitude                   |
| FTP - Coachman Fee                                                                               |                   | 0.00      | 0.00     | 10,934.00 | -105.50   | -612.60 | 409,446.80 | 795,549.90 | 32° 7' 19.51123 N 03° 22' 43.25682 W |
| - plan misses target center by 70.65usft at 11019.84usft MD (10869.65 TVD, -134.67 N, -612.33 E) |                   |           |          |           |           |         |            |            |                                      |
| - Point                                                                                          |                   |           |          |           |           |         |            |            |                                      |
| LTP - Coachman Fee                                                                               |                   | 0.00      | 0.00     | 10,967.99 | -4,723.50 | -570.60 | 404,828.80 | 795,591.90 | 32° 6' 33.81163 N 03° 22' 43.24414 W |
| - plan misses target center by 0.02usft at 15619.35usft MD (10967.98 TVD, -4723.50 N, -570.58 E) |                   |           |          |           |           |         |            |            |                                      |
| - Point                                                                                          |                   |           |          |           |           |         |            |            |                                      |
| BHL - Coachman Fee                                                                               |                   | 0.00      | 0.00     | 10,969.00 | -4,853.50 | -569.40 | 404,698.80 | 795,593.10 | 32° 6' 32.52515 N 03° 22' 43.24358 W |
| - plan hits target center                                                                        |                   |           |          |           |           |         |            |            |                                      |
| - Point                                                                                          |                   |           |          |           |           |         |            |            |                                      |

| Formations     |                |                  |           |      |               |  |
|----------------|----------------|------------------|-----------|------|---------------|--|
| Measured Depth | Vertical Depth | Name             | Lithology | Dip  | Dip Direction |  |
| (usft)         | (usft)         |                  |           | (°)  | (°)           |  |
| 886.70         | 886.70         | Rustler          |           | 0.45 | 186.69        |  |
| 1,277.70       | 1,277.70       | TOS              |           | 0.45 | 186.69        |  |
| 5,014.98       | 4,996.25       | BOS (Fletcher)   |           | 0.45 | 186.69        |  |
| 5,342.73       | 5,322.21       | LMAR (Delaware)  |           | 0.45 | 186.69        |  |
| 5,368.87       | 5,348.20       | BCLN             |           | 0.45 | 186.69        |  |
| 6,308.91       | 6,283.08       | CYCN             |           | 0.45 | 186.69        |  |
| 7,843.88       | 7,810.90       | BYCN             |           | 0.45 | 186.69        |  |
| 9,120.88       | 9,087.90       | Bone Sprg (BSGL) |           | 0.45 | 186.69        |  |
| 9,383.88       | 9,350.90       | U Avalon Sh      |           | 0.45 | 186.69        |  |
| 9,829.88       | 9,796.90       | L Avalon Sh      |           | 0.45 | 186.69        |  |
| 10,189.88      | 10,156.90      | B Avalon Sh      |           | 0.45 | 186.69        |  |
| 10,363.88      | 10,330.90      | FBSG_Sand        |           | 0.45 | 186.69        |  |
| 10,989.76      | 10,855.11      | SBSG_Sand        |           | 0.45 | 186.69        |  |

| Plan Annotations |                |                   |              |                                    |
|------------------|----------------|-------------------|--------------|------------------------------------|
| Measured Depth   | Vertical Depth | Local Coordinates |              | Comment                            |
| (usft)           | (usft)         | +N/-S (usft)      | +E/-W (usft) |                                    |
| 1,400.00         | 1,400.00       | 0.00              | 0.00         | KOP1, Begin 2.00°/100' Build       |
| 1,700.19         | 1,699.64       | 4.29              | -15.12       | Hold 6.00° Inc at 285.83° Azm      |
| 7,512.79         | 7,480.36       | 170.14            | -600.03      | Begin 2.00°/100' Drop              |
| 7,812.98         | 7,780.00       | 174.42            | -615.15      | Begin Vertical Hold                |
| 10,394.05        | 10,361.06      | 174.42            | -615.15      | KOP2, Begin 10.00°/100' Build      |
| 11,289.55        | 10,934.00      | -394.02           | -609.98      | LP, Hold 89.55° Inc at 179.48° Azm |
| 15,749.35        | 10,969.00      | -4,853.50         | -569.40      | TD at 15749.35                     |



Project: Lea County, NM (NAD27 NME)  
Site: Coachman Fee  
Well: 14H  
Wellbore: OH  
Design: Plan 1 07-17-18  
Rig: Scandril Quest



PHOENIX  
TECHNOLOGY SERVICES



Azimuths to Grid North  
True North: -0.51°  
Magnetic North: 6.18°

Magnetic Field  
Strength: 47868.0nT  
Dip Angle: 59.79°  
Date: 7/17/2018  
Model: MVHD

Map System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone Name: New Mexico East 3001

Local Origin: Well 14H, Grid North

Latitude: 32° 7' 20.50141 N  
Longitude: 103° 22' 36.12328 W

Grid East: 796162.50  
Grid North: 409552.30  
Scale Factor: 1.000

Geomagnetic Model: MVHD  
Sample Date: 17-Jul-18  
Magnetic Declination: 6.69°  
Dip Angle from Horizontal: 59.79°  
Magnetic Field Strength: 47868.04498550nT

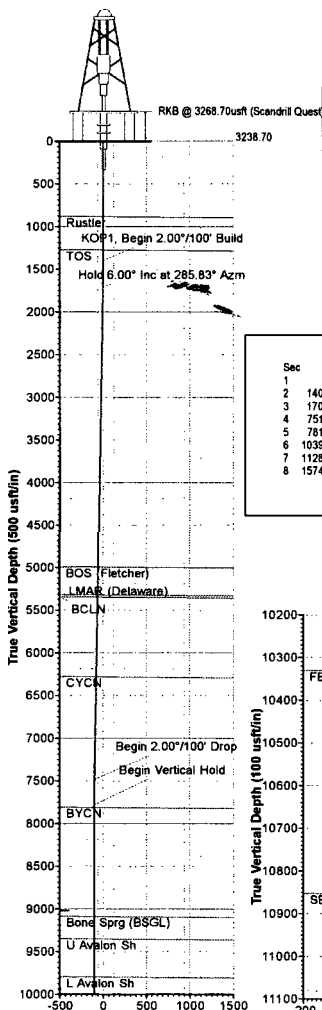
To convert a Magnetic Direction to a Grid Direction, Add 6.18°  
To convert a Magnetic Direction to a True Direction, Add 6.69° East  
To convert a True Direction to a Grid Direction, Subtract 0.51°

### LEGEND

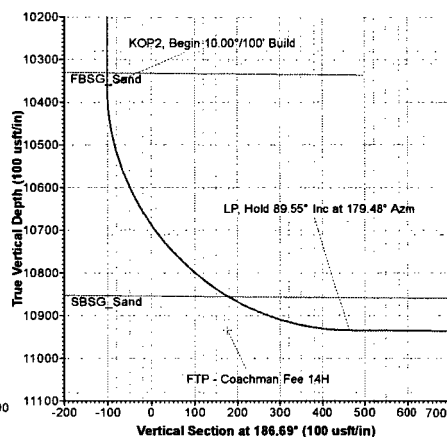
— 1H, OH, Surveys V0  
— Plan 1 07-17-18

### FORMATION TOP DETAILS

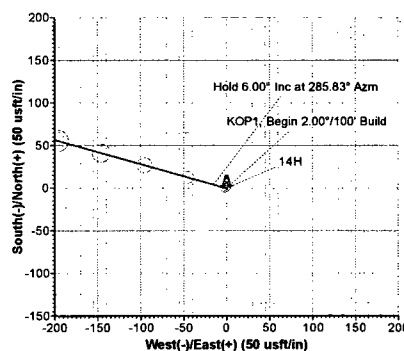
| TVDepth  | MDPath   | Formation        | DipAngle | DpDir  |
|----------|----------|------------------|----------|--------|
| 886.70   | 886.70   | Rustler          | 0.45     | 186.69 |
| 1277.70  | 1277.70  | TOS              | 0.45     | 186.69 |
| 4596.25  | 5014.98  | BOS (Fletcher)   | 0.45     | 186.69 |
| 5322.21  | 5342.73  | LMAR (Delaware)  | 0.45     | 186.69 |
| 5348.20  | 5368.87  | BCLN             | 0.45     | 186.69 |
| 6283.08  | 6308.91  | CYCN             | 0.45     | 186.69 |
| 7810.90  | 7843.88  | BYCN             | 0.45     | 186.69 |
| 9087.90  | 9120.88  | Bone Sprg (BSGL) | 0.45     | 186.69 |
| 9350.90  | 9383.88  | U Avalon Sh      | 0.45     | 186.69 |
| 9798.90  | 9829.88  | L Avalon Sh      | 0.45     | 186.69 |
| 10156.80 | 10189.88 | B Avalon Sh      | 0.45     | 186.69 |
| 10330.90 | 10363.88 | FBSG_Sand        | 0.45     | 186.69 |
| 10855.11 | 10989.76 | SBSG_Sand        | 0.45     | 186.69 |



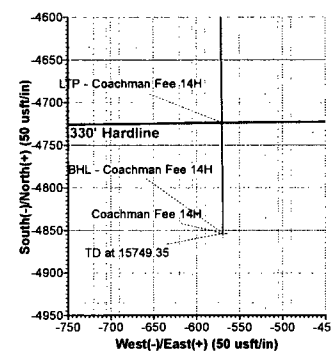
Vertical Section at 186.69° (500 usf/in)



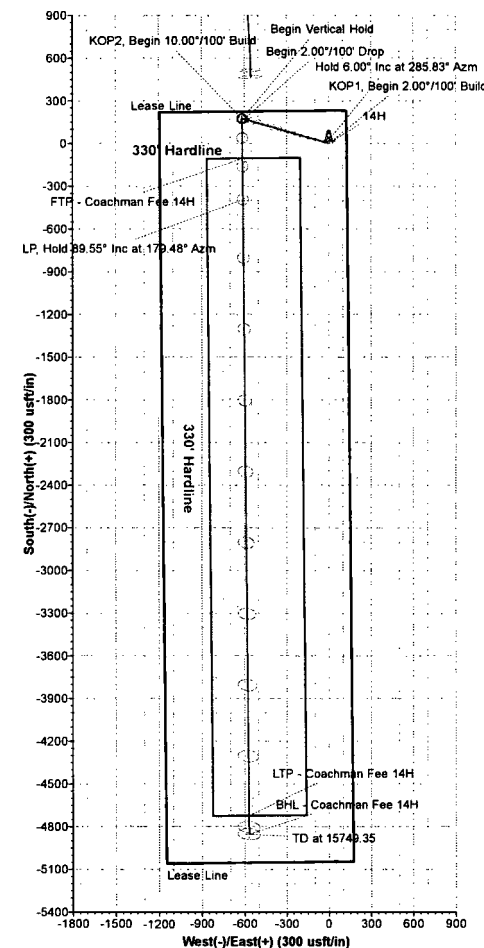
Vertical Section at 186.69° (100 usf/in)



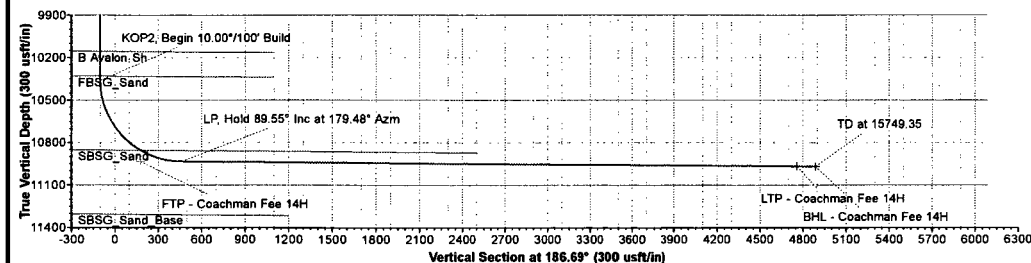
Vertical Section at 186.69° (50 usf/in)



Vertical Section at 186.69° (50 usf/in)



Vertical Section at 186.69° (300 usf/in)



Vertical Section at 186.69° (300 usf/in)

HOBBS OCD

JUL 17 2018

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