



**EOG Resources - Midland**

Lea County, NM (NAD 83 NME)

Savage 2 State Com

#502H

OH

Design: OH

**Midland PVA**

07 April, 2019

**HOBBS OCD**  
**SEP 25 2019**  
**RECEIVED**



# Midland PVA

Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Savage 2 State Com  
 Well: #502H  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #502H  
 TVD Reference: KB = 25' @ 3545.0usft  
 MD Reference: KB = 25' @ 3545.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.14

Project Lea County, NM (NAD 83 NME)

Map System: US State Plane 1983  
 Geo Datum: North American Datum 1983  
 Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Savage 2 State Com

Site Position: Northing: 424,469.00 usft Latitude: 32° 9' 54.412 N  
 From: Map Easting: 751,845.00 usft Longitude: 103° 38' 10.928 W  
 Position Uncertainty: 0.0 usft Slot Radius: 13-3/16 " Grid Convergence: 0.36 "

Well #502H

Well Position +N-S 0.0 usft Northing: 424,612.00 usft Latitude: 32° 9' 55.753 N  
 +E-W 0.0 usft Easting: 753,032.00 usft Longitude: 103° 38' 57.109 W  
 Position Uncertainty 0.0 usft Wellhead Elevation: usft Ground Level: 3,520.0 usft

Wellbore OH

| Magnetics | Model Name | Sample Date | Declination<br>(°) | Dip Angle<br>(°) | Field Strength<br>(nT) |
|-----------|------------|-------------|--------------------|------------------|------------------------|
|           | IGRF2015   | 2/21/2019   | 6.80               | 59.97            | 47,721.70480392        |

Design OH

Audit Notes:  
 Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0  
 Vertical Section: Depth From (TVD) +N-S +E-W Direction  
 (usft) (usft) (usft) (°)  
 0.0 0.0 0.0 187.74

Survey Program Date 4/7/2019

| From<br>(usft) | To<br>(usft) | Survey (Wellbore) | Tool Name | Description         |
|----------------|--------------|-------------------|-----------|---------------------|
| 145.0          | 15,927.0     | Leam MWD (OH)     | MWD       | OWSG MWD - Standard |



Midland PVA

Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Savage 2 State Corn  
 Well: #502H  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #502H  
 TVD Reference: KB = 25' @ 3545.0usft  
 MD Reference: KB = 25' @ 3545.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.14

Survey

| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | DLog<br>(°/100usft) | Build<br>(°/100usft) | Turn<br>(°/100usft) | High to Plan<br>(usft) | Right to Plan<br>(usft) |
|--------------|------------|----------------------|---------------|---------------|---------------|---------------------|----------------------|---------------------|------------------------|-------------------------|
| 0.0          | 0.00       | 0.00                 | 0.0           | 0.0           | 0.0           | 0.00                | 0.00                 | 0.00                | 0.0                    | 0.0                     |
| 145.0        | 0.90       | 247.00               | 145.0         | -0.4          | -1.0          | 0.62                | 0.62                 | 0.00                | -1.1                   | 0.0                     |
| 231.0        | 0.90       | 261.20               | 231.0         | -0.6          | -2.3          | 0.62                | 0.00                 | 39.77               | -2.2                   | 1.0                     |
| 318.0        | 0.70       | 252.90               | 318.0         | -0.6          | -3.5          | 0.50                | -0.23                | -32.53              | -3.5                   | -0.5                    |
| 406.0        | 1.10       | 253.60               | 406.0         | -1.0          | -4.8          | 0.45                | 0.45                 | 0.80                | -4.9                   | -0.4                    |
| 493.0        | 1.70       | 261.60               | 492.9         | -1.4          | -6.9          | 0.72                | 0.69                 | 9.20                | -7.0                   | 0.4                     |
| 590.0        | 1.80       | 250.50               | 589.9         | -2.1          | -9.8          | 0.36                | 0.10                 | -11.44              | -9.9                   | -1.2                    |
| 684.0        | 1.80       | 260.10               | 683.8         | -2.9          | -12.6         | 0.32                | 0.00                 | 10.21               | -12.9                  | 0.7                     |
| 778.0        | 2.70       | 257.70               | 777.8         | -3.6          | -16.2         | 0.98                | 0.98                 | -2.55               | -16.6                  | 0.1                     |
| 872.0        | 3.70       | 256.50               | 871.6         | -4.8          | -21.3         | 1.07                | 1.06                 | -1.28               | -21.9                  | -0.3                    |
| 894.0        | 4.00       | 252.90               | 893.6         | -5.2          | -22.8         | 1.75                | 1.36                 | -16.36              | -23.3                  | -1.7                    |
| 967.0        | 4.90       | 255.10               | 966.4         | -6.7          | -28.2         | 1.25                | 1.23                 | 3.01                | -29.0                  | -0.8                    |
| 1,060.0      | 4.00       | 254.00               | 1,059.1       | -6.6          | -35.2         | 0.97                | -0.97                | -1.18               | -36.2                  | -1.4                    |
| 1,154.0      | 4.80       | 249.80               | 1,152.8       | -10.9         | -42.0         | 0.92                | 0.85                 | -4.47               | -42.9                  | -3.9                    |
| 1,247.0      | 5.60       | 242.20               | 1,245.4       | -14.4         | -49.7         | 1.13                | 0.86                 | -8.17               | -48.8                  | -7.2                    |
| 1,341.0      | 7.40       | 232.20               | 1,338.8       | -20.2         | -58.5         | 2.26                | 1.91                 | -10.64              | -55.2                  | -10.4                   |
| 1,434.0      | 10.80      | 224.50               | 1,430.6       | -30.1         | -69.4         | 3.88                | 3.66                 | -8.28               | -66.1                  | -9.4                    |
| 1,528.0      | 17.20      | 218.80               | 1,521.8       | -47.2         | -84.3         | 6.96                | 6.81                 | -6.06               | -86.1                  | -4.9                    |
| 1,621.0      | 19.70      | 231.70               | 1,610.0       | -67.7         | -105.2        | 5.13                | 2.69                 | 13.87               | -109.3                 | 31.6                    |
| 1,715.0      | 18.30      | 239.80               | 1,698.9       | -84.9         | -130.4        | 3.17                | -1.49                | 8.62                | -127.6                 | 61.6                    |
| 1,809.0      | 17.10      | 247.80               | 1,788.5       | -97.6         | -155.9        | 2.88                | -1.28                | 8.51                | -138.2                 | 92.2                    |
| 1,903.0      | 17.50      | 257.30               | 1,878.3       | -105.9        | -182.5        | 3.03                | 0.43                 | 10.11               | -138.8                 | 126.2                   |
| 1,987.0      | 17.10      | 266.80               | 1,968.0       | -109.8        | -210.1        | 3.03                | -0.43                | 10.11               | -133.0                 | 157.7                   |
| 2,090.0      | 15.40      | 277.90               | 2,057.3       | -108.9        | -236.0        | 3.80                | -1.83                | 11.94               | -114.8                 | 188.0                   |
| 2,184.0      | 13.10      | 288.30               | 2,148.4       | -103.8        | -258.5        | 3.65                | -2.45                | 11.06               | -90.0                  | 210.8                   |
| 2,278.0      | 11.10      | 300.90               | 2,240.4       | -95.8         | -276.4        | 3.51                | -2.13                | 13.40               | -48.7                  | 227.8                   |
| 2,372.0      | 10.00      | 308.80               | 2,332.8       | -86.0         | -280.5        | 1.93                | -1.17                | 8.40                | -20.9                  | 231.9                   |



# Midland PVA

Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Savage 2 State Com  
 Well: #502H  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #502H  
 TVD Reference: KB = 25' @ 3545.0usft  
 MD Reference: KB = 25' @ 3545.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.14

## Survey

| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | DLeg<br>(°/100usft) | Build<br>(°/100usft) | Turn<br>(°/100usft) | High to Plan<br>(usft) | Right to Plan<br>(usft) |
|--------------|------------|----------------------|---------------|---------------|---------------|---------------------|----------------------|---------------------|------------------------|-------------------------|
| 2,468.0      | 9.80       | 311.10               | 2,425.4       | -75.7         | -302.9        | 0.47                | -0.21                | 2.45                | -14.1                  | 230.8                   |
| 2,559.0      | 8.20       | 320.30               | 2,517.2       | -65.4         | -313.1        | 2.31                | -1.72                | 9.89                | 21.4                   | 227.2                   |
| 2,653.0      | 8.00       | 323.10               | 2,610.3       | -55.0         | -321.3        | 0.47                | -0.21                | 2.98                | 32.1                   | 221.3                   |
| 2,747.0      | 7.50       | 322.60               | 2,703.4       | -44.9         | -329.0        | 0.54                | -0.53                | -0.53               | 30.7                   | 216.7                   |
| 2,840.0      | 7.00       | 323.30               | 2,795.7       | -35.5         | -336.0        | 0.55                | -0.54                | 0.75                | 34.6                   | 211.4                   |
| 2,934.0      | 6.80       | 323.40               | 2,889.0       | -28.4         | -342.8        | 0.21                | -0.21                | 0.11                | 36.7                   | 206.4                   |
| 3,028.0      | 6.40       | 323.40               | 2,982.4       | -17.8         | -349.2        | 0.43                | -0.43                | 0.00                | 38.9                   | 201.4                   |
| 3,121.0      | 6.20       | 323.40               | 3,074.8       | -9.6          | -355.3        | 0.22                | -0.22                | 0.00                | 41.6                   | 196.4                   |
| 3,215.0      | 5.70       | 323.80               | 3,168.3       | -1.7          | -361.1        | 0.53                | -0.53                | 0.43                | 46.3                   | 191.1                   |
| 3,309.0      | 6.20       | 317.10               | 3,261.8       | 5.8           | -367.3        | 0.91                | 0.53                 | -7.13               | 27.5                   | 191.1                   |
| 3,403.0      | 6.90       | 313.40               | 3,355.2       | 13.4          | -374.9        | 0.87                | 0.74                 | -3.94               | 18.0                   | 189.5                   |
| 3,497.0      | 6.40       | 315.70               | 3,448.6       | 21.0          | -382.6        | 0.60                | -0.53                | 2.45                | 28.3                   | 185.6                   |
| 3,591.0      | 6.70       | 320.30               | 3,542.0       | 29.0          | -389.8        | 0.64                | 0.32                 | 4.89                | 45.5                   | 178.9                   |
| 3,684.0      | 6.60       | 323.60               | 3,634.3       | 37.4          | -396.4        | 0.42                | -0.11                | 3.55                | 57.8                   | 171.4                   |
| 3,777.0      | 6.20       | 325.50               | 3,726.8       | 45.9          | -402.4        | 0.49                | -0.43                | 2.04                | 65.8                   | 164.1                   |
| 3,871.0      | 6.90       | 323.10               | 3,820.1       | 54.6          | -408.7        | 0.80                | 0.74                 | -2.55               | 61.1                   | 161.8                   |
| 3,965.0      | 8.20       | 321.50               | 3,913.3       | 64.3          | -416.3        | 1.40                | 1.38                 | -1.70               | 57.2                   | 158.6                   |
| 4,059.0      | 9.10       | 319.70               | 4,006.3       | 75.2          | -425.2        | 1.00                | 0.96                 | -1.91               | 51.3                   | 156.0                   |
| 4,152.0      | 7.80       | 322.70               | 4,098.3       | 85.7          | -433.7        | 1.68                | -1.61                | 3.23                | 58.9                   | 148.6                   |
| 4,246.0      | 6.20       | 327.10               | 4,191.6       | 95.0          | -440.2        | 1.59                | -1.49                | 4.88                | 71.6                   | 138.3                   |
| 4,340.0      | 6.40       | 322.70               | 4,285.0       | 103.4         | -446.2        | 0.56                | 0.21                 | -4.68               | 63.6                   | 138.2                   |
| 4,434.0      | 6.10       | 323.80               | 4,378.5       | 111.6         | -452.3        | 0.34                | -0.32                | 1.17                | 69.0                   | 131.9                   |
| 4,528.0      | 4.90       | 327.10               | 4,472.0       | 118.0         | -457.4        | 1.32                | -1.28                | 3.51                | 80.1                   | 122.2                   |
| 4,622.0      | 3.70       | 331.30               | 4,565.8       | 125.0         | -461.1        | 1.32                | -1.28                | 4.47                | 94.0                   | 109.6                   |
| 4,715.0      | 2.90       | 337.30               | 4,658.6       | 129.8         | -463.4        | 0.94                | -0.86                | 6.45                | 110.9                  | 91.6                    |
| 4,797.0      | 2.60       | 340.70               | 4,740.5       | 133.5         | -464.8        | 0.42                | -0.37                | 4.15                | 121.7                  | 77.6                    |
| 4,890.0      | 5.40       | 319.70               | 4,833.3       | 138.8         | -468.4        | 3.35                | -3.01                | -22.58              | 92.7                   | 111.1                   |



Midland PVA

Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Savage 2 State Com  
 Well: #502H  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #502H  
 TVD Reference: KB = 25' @ 3545.0usft  
 MD Reference: KB = 25' @ 3545.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.14

| Survey       |            |                      |               |               |               |                     |                      |                     |                        |                         |  |
|--------------|------------|----------------------|---------------|---------------|---------------|---------------------|----------------------|---------------------|------------------------|-------------------------|--|
| MD<br>(usft) | Inc<br>(°) | Asd (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | DLeg<br>(°/100usft) | Bulld<br>(°/100usft) | Turn<br>(°/100usft) | High to Plan<br>(usft) | Right to Plan<br>(usft) |  |
| 4,984.0      | 7.70       | 328.40               | 4,928.7       | 147.6         | -474.5        | 2.86                | 2.45                 | 9.26                | 110.2                  | 90.5                    |  |
| 5,078.0      | 10.60      | 325.00               | 5,019.5       | 160.0         | -482.8        | 3.14                | 3.09                 | -3.62               | 102.4                  | 91.4                    |  |
| 5,172.0      | 11.00      | 326.40               | 5,111.8       | 174.6         | -492.7        | 0.51                | 0.43                 | 1.49                | 99.6                   | 83.4                    |  |
| 5,268.0      | 10.80      | 327.50               | 5,204.1       | 189.5         | -502.4        | 0.31                | -0.21                | 1.17                | 95.9                   | 75.8                    |  |
| 5,359.0      | 10.40      | 328.20               | 5,295.5       | 203.9         | -511.5        | 0.45                | -0.43                | 0.75                | 92.1                   | 68.7                    |  |
| 5,453.0      | 10.10      | 329.80               | 5,388.0       | 218.3         | -520.1        | 0.44                | -0.32                | 1.70                | 89.6                   | 59.9                    |  |
| 5,547.0      | 10.60      | 325.50               | 5,480.5       | 232.5         | -529.2        | 0.98                | 0.53                 | -4.57               | 80.7                   | 60.4                    |  |
| 5,640.0      | 11.00      | 325.20               | 5,571.8       | 246.9         | -539.1        | 0.43                | 0.43                 | -0.32               | 75.6                   | 55.5                    |  |
| 5,734.0      | 10.00      | 323.40               | 5,664.3       | 260.8         | -549.1        | 1.12                | -1.06                | -1.91               | 69.7                   | 52.5                    |  |
| 5,828.0      | 9.20       | 322.40               | 5,756.9       | 273.3         | -558.5        | 0.87                | -0.85                | -1.06               | 66.2                   | 48.7                    |  |
| 5,921.0      | 8.90       | 322.60               | 5,848.8       | 284.9         | -567.4        | 0.32                | -0.32                | 0.22                | 64.6                   | 43.8                    |  |
| 6,015.0      | 9.20       | 321.00               | 5,941.6       | 296.5         | -576.6        | 0.42                | 0.32                 | -1.70               | 61.8                   | 40.9                    |  |
| 6,109.0      | 10.10      | 323.10               | 6,034.3       | 308.9         | -586.2        | 1.03                | 0.96                 | 2.23                | 60.4                   | 34.0                    |  |
| 6,202.0      | 11.00      | 326.20               | 6,125.7       | 322.8         | -596.1        | 1.14                | 0.97                 | 3.33                | 57.7                   | 25.6                    |  |
| 6,296.0      | 11.10      | 326.40               | 6,218.0       | 337.8         | -606.1        | 0.11                | 0.11                 | 0.21                | 52.4                   | 19.8                    |  |
| 6,389.0      | 10.90      | 327.10               | 6,309.3       | 352.7         | -615.8        | 0.26                | -0.22                | 0.75                | 47.4                   | 13.5                    |  |
| 6,483.0      | 9.80       | 326.10               | 6,401.7       | 366.8         | -625.1        | 1.19                | -1.17                | -1.06               | 42.9                   | 8.6                     |  |
| 6,578.0      | 10.10      | 329.90               | 6,493.3       | 380.4         | -633.6        | 0.78                | 0.32                 | 4.09                | 39.3                   | 0.0                     |  |
| 6,669.0      | 9.60       | 331.30               | 6,585.0       | 394.2         | -641.4        | 0.60                | -0.54                | 1.51                | 32.9                   | -8.1                    |  |
| 6,763.0      | 9.10       | 332.90               | 6,677.7       | 407.7         | -648.6        | 0.60                | -0.53                | 1.70                | 24.3                   | -10.9                   |  |
| 6,857.0      | 7.80       | 332.40               | 6,770.7       | 420.0         | -654.9        | 1.39                | -1.38                | -0.53               | 14.8                   | -13.2                   |  |
| 6,950.0      | 4.00       | 330.60               | 6,863.2       | 428.4         | -659.4        | 4.09                | -4.09                | -1.94               | 7.3                    | -13.8                   |  |
| 7,044.0      | 2.60       | 329.60               | 6,957.0       | 433.1         | -662.1        | 1.49                | -1.49                | -1.06               | 2.1                    | -13.7                   |  |
| 7,137.0      | 2.50       | 328.00               | 7,049.9       | 436.7         | -664.3        | 0.13                | -0.11                | -1.72               | -1.6                   | -13.7                   |  |
| 7,231.0      | 2.30       | 322.20               | 7,143.8       | 439.9         | -666.5        | 0.33                | -0.21                | -8.17               | -4.2                   | -14.0                   |  |
| 7,325.0      | 1.90       | 317.50               | 7,237.8       | 442.5         | -668.7        | 0.46                | -0.43                | -5.00               | -6.4                   | -14.5                   |  |
| 7,419.0      | 1.80       | 309.00               | 7,331.7       | 444.6         | -670.9        | 0.31                | -0.11                | -9.04               | -7.3                   | -15.5                   |  |



Midland PVA

|           |                             |                              |                       |
|-----------|-----------------------------|------------------------------|-----------------------|
| Company:  | EOG Resources - Midland     | Local Co-ordinate Reference: | Well #502H            |
| Project:  | Lea County, NM (NAD 83 NME) | TVD Reference:               | KB = 25' @ 3545.0usft |
| Site:     | Savage 2 State Com          | MD Reference:                | KB = 25' @ 3545.0usft |
| Well:     | #502H                       | North Reference:             | Grid                  |
| Wellbore: | OH                          | Survey Calculation Method:   | Minimum Curvature     |
| Design:   | OH                          | Database:                    | EDM 5000.14           |

| Survey       |            |                      |               |               |               |                     |                      |                     |                        |                         |  |
|--------------|------------|----------------------|---------------|---------------|---------------|---------------------|----------------------|---------------------|------------------------|-------------------------|--|
| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | DLeg<br>(°/100usft) | Build<br>(°/100usft) | Turn<br>(°/100usft) | High to Plan<br>(usft) | Right to Plan<br>(usft) |  |
| 7,512.0      | 1.40       | 313.10               | 7,424.7       | 448.3         | -872.9        | 0.45                | -0.43                | 4.41                | -10.9                  | -14.8                   |  |
| 7,608.0      | 1.10       | 305.10               | 7,518.7       | 447.6         | -874.4        | 0.37                | -0.32                | -8.51               | -10.8                  | -16.4                   |  |
| 7,700.0      | 0.80       | 314.50               | 7,612.7       | 448.6         | -875.6        | 0.36                | -0.32                | 10.00               | -14.9                  | -14.2                   |  |
| 7,793.0      | 0.80       | 291.30               | 7,705.7       | 449.3         | -876.7        | 0.35                | 0.00                 | -24.95              | -9.3                   | -19.2                   |  |
| 7,887.0      | 0.80       | 272.80               | 7,799.6       | 449.5         | -877.8        | 0.32                | -0.21                | -19.89              | -3.8                   | -21.4                   |  |
| 7,980.0      | 0.40       | 275.40               | 7,892.6       | 449.6         | -878.6        | 0.22                | -0.22                | 3.01                | -5.6                   | -21.1                   |  |
| 8,074.0      | 0.40       | 269.50               | 7,986.6       | 449.6         | -879.3        | 0.04                | 0.00                 | -6.28               | -4.1                   | -21.6                   |  |
| 8,168.0      | 0.40       | 225.90               | 8,080.6       | 449.4         | -879.8        | 0.32                | 0.00                 | -46.38              | 11.4                   | -16.7                   |  |
| 8,261.0      | 0.50       | 215.10               | 8,173.6       | 448.8         | -880.3        | 0.14                | 0.11                 | -11.61              | 14.0                   | -16.3                   |  |
| 8,355.0      | 0.90       | 191.60               | 8,267.6       | 447.8         | -880.7        | 0.52                | 0.43                 | -25.00              | 18.2                   | -9.6                    |  |
| 8,449.0      | 1.00       | 203.40               | 8,361.6       | 446.3         | -881.2        | 0.23                | 0.11                 | 12.55               | 14.3                   | -12.9                   |  |
| 8,542.0      | 1.20       | 203.70               | 8,454.6       | 444.7         | -881.9        | 0.22                | 0.22                 | 0.32                | 12.5                   | -13.0                   |  |
| 8,636.0      | 1.40       | 196.90               | 8,548.6       | 442.7         | -882.6        | 0.27                | 0.21                 | -7.23               | 11.8                   | -11.5                   |  |
| 8,730.0      | 1.80       | 195.10               | 8,642.5       | 440.1         | -883.3        | 0.43                | 0.43                 | -1.91               | 9.5                    | -11.2                   |  |
| 8,824.0      | 1.70       | 204.10               | 8,736.5       | 437.4         | -884.3        | 0.31                | -0.11                | 9.57                | 4.8                    | -12.3                   |  |
| 8,917.0      | 2.00       | 210.80               | 8,829.4       | 434.8         | -885.7        | 0.40                | 0.32                 | 7.31                | 0.3                    | -12.6                   |  |
| 9,011.0      | 2.20       | 216.20               | 8,923.4       | 431.9         | -887.6        | 0.30                | 0.21                 | 5.64                | -4.3                   | -12.5                   |  |
| 9,105.0      | 1.70       | 237.80               | 9,017.3       | 429.7         | -889.8        | 0.94                | -0.53                | 22.88               | -11.6                  | -9.4                    |  |
| 9,199.0      | 1.10       | 210.80               | 9,111.3       | 428.2         | -891.5        | 0.93                | -0.64                | -28.72              | -8.3                   | -14.3                   |  |
| 9,292.0      | 1.20       | 202.80               | 9,204.3       | 426.5         | -892.3        | 0.20                | 0.11                 | -8.60               | -8.1                   | -15.4                   |  |
| 9,386.0      | 0.90       | 203.40               | 9,298.3       | 424.9         | -893.0        | 0.32                | -0.32                | 0.64                | -9.9                   | -15.3                   |  |
| 9,480.0      | 0.70       | 262.30               | 9,392.3       | 424.2         | -893.9        | 0.86                | -0.21                | 62.66               | -19.2                  | 1.2                     |  |
| 9,573.0      | 1.50       | 291.40               | 9,485.2       | 424.6         | -895.5        | 1.02                | 0.86                 | 31.29               | -17.9                  | 10.7                    |  |
| 9,667.0      | 1.10       | 313.10               | 9,579.2       | 425.6         | -897.4        | 0.67                | -0.43                | 23.09               | -14.7                  | 17.0                    |  |
| 9,761.0      | 0.70       | 305.00               | 9,673.2       | 426.8         | -898.5        | 0.45                | -0.43                | -8.62               | -18.4                  | 14.6                    |  |
| 9,855.0      | 0.90       | 237.30               | 9,767.2       | 426.5         | -899.8        | 0.96                | 0.21                 | -72.02              | -21.5                  | -12.0                   |  |
| 9,948.0      | 2.30       | 248.90               | 9,860.2       | 425.4         | -701.9        | 1.54                | 1.51                 | 12.47               | -26.0                  | -7.3                    |  |



# Midland PVA

Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Savage 2 State Com  
 Well: #502H  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #502H  
 TVD Reference: KB = 25' @ 3545.0usft  
 MD Reference: KB = 25' @ 3545.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.14

## Survey

| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | DLeg<br>(°/100usft) | Build<br>(°/100usft) | Turn<br>(°/100usft) | High to Plan<br>(usft) | Right to Plan<br>(usft) |
|--------------|------------|----------------------|---------------|---------------|---------------|---------------------|----------------------|---------------------|------------------------|-------------------------|
| 10,042.0     | 2.40       | 245.70               | 9,954.1       | 423.9         | -705.5        | 0.18                | 0.11                 | -3.40               | -29.4                  | -8.9                    |
| 10,136.0     | 1.90       | 248.20               | 10,048.0      | 422.6         | -708.7        | 0.54                | -0.53                | 2.66                | -33.3                  | -7.5                    |
| 10,230.0     | 2.20       | 236.80               | 10,142.0      | 421.0         | -711.7        | 0.54                | 0.32                 | -12.13              | -34.5                  | -14.2                   |
| 10,323.0     | 1.70       | 210.10               | 10,234.9      | 418.8         | -713.9        | 1.10                | -0.54                | -28.71              | -27.4                  | -28.0                   |
| 10,444.0     | 0.90       | 48.00                | 10,355.9      | 417.9         | -714.1        | 2.13                | -0.88                | -133.97             | 35.1                   | 19.4                    |
| 10,538.0     | 8.10       | 171.70               | 10,449.8      | 411.8         | -712.8        | 9.18                | 7.66                 | 131.60              | 3.5                    | -37.5                   |
| 10,631.0     | 15.40      | 170.70               | 10,540.8      | 393.1         | -709.6        | 7.85                | 7.85                 | -1.08               | 12.9                   | -33.3                   |
| 10,724.0     | 15.80      | 170.00               | 10,630.2      | 368.5         | -705.4        | 0.48                | 0.43                 | -0.75               | 29.8                   | -27.0                   |
| 10,818.0     | 24.60      | 167.00               | 10,718.3      | 338.8         | -698.8        | 9.42                | 9.36                 | -3.19               | 53.9                   | -15.6                   |
| 10,911.0     | 41.40      | 179.50               | 10,798.1      | 286.7         | -694.1        | 19.41               | 18.06                | 13.44               | 67.9                   | -20.2                   |
| 10,957.0     | 50.00      | 180.50               | 10,828.2      | 253.8         | -694.1        | 18.76               | 18.70                | 2.17                | 70.9                   | -21.1                   |
| 11,005.0     | 60.40      | 180.30               | 10,855.5      | 214.5         | -694.4        | 21.67               | 21.67                | -0.42               | 69.8                   | -21.5                   |
| 11,047.0     | 70.50      | 178.90               | 10,873.0      | 178.3         | -694.1        | 24.24               | 24.05                | -3.33               | 64.4                   | -20.9                   |
| 11,097.0     | 80.20      | 178.60               | 10,885.8      | 128.0         | -693.1        | 19.41               | 19.40                | -0.60               | 52.7                   | -20.6                   |
| 11,191.0     | 82.60      | 178.90               | 10,899.7      | 35.1          | -691.0        | 2.57                | 2.55                 | 0.32                | 31.5                   | -19.0                   |
| 11,284.0     | 88.20      | 178.80               | 10,907.1      | -57.5         | -689.2        | 6.02                | 6.02                 | -0.11               | 18.0                   | -17.7                   |
| 11,377.0     | 89.00      | 178.30               | 10,909.4      | -150.5        | -687.6        | 1.01                | 0.86                 | 0.54                | 13.9                   | -16.8                   |
| 11,471.0     | 89.10      | 178.90               | 10,910.9      | -244.5        | -686.2        | 0.44                | 0.11                 | -0.43               | 15.9                   | -16.0                   |
| 11,564.0     | 88.50      | 178.10               | 10,912.9      | -337.4        | -683.7        | 1.08                | -0.65                | -0.88               | 18.2                   | -14.2                   |
| 11,657.0     | 90.30      | 178.10               | 10,913.9      | -430.4        | -681.5        | 2.21                | 1.94                 | 1.08                | 19.6                   | -12.7                   |
| 11,751.0     | 89.70      | 178.90               | 10,913.9      | -524.4        | -679.8        | 0.67                | -0.64                | -0.21               | 20.1                   | -11.7                   |
| 11,845.0     | 90.40      | 179.50               | 10,913.8      | -618.4        | -678.5        | 0.98                | 0.74                 | 0.64                | 20.6                   | -11.1                   |
| 11,938.0     | 89.50      | 178.80               | 10,913.9      | -711.3        | -677.1        | 1.23                | -0.97                | -0.75               | 21.3                   | -10.3                   |
| 12,032.0     | 90.20      | 178.20               | 10,914.1      | -805.3        | -674.7        | 0.98                | 0.74                 | -0.64               | 22.1                   | -8.6                    |
| 12,126.0     | 90.80      | 177.00               | 10,913.2      | -899.2        | -670.7        | 1.48                | 0.74                 | -1.28               | 21.8                   | -5.3                    |
| 12,220.0     | 90.00      | 178.50               | 10,912.5      | -993.1        | -665.4        | 1.10                | -0.96                | -0.53               | 21.6                   | -0.7                    |
| 12,313.0     | 91.20      | 178.60               | 10,911.5      | -1,086.0      | -661.4        | 2.60                | 1.29                 | 2.26                | 21.2                   | 2.6                     |



# Midland PVA

Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Savage 2 State Com  
 Well: #502H  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #502H  
 TVD Reference: KB = 25' @ 3545.0usft  
 MD Reference: KB = 25' @ 3545.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.14

## Survey

| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | EW<br>(usft) | DLeg<br>(°/100usft) | Build<br>(°/100usft) | Turn<br>(°/100usft) | High to Plan<br>(usft) | Right to Plan<br>(usft) |
|--------------|------------|----------------------|---------------|---------------|--------------|---------------------|----------------------|---------------------|------------------------|-------------------------|
| 12,407.0     | 90.20      | 178.90               | 10,910.4      | -1,179.9      | -859.4       | 1.11                | -1.06                | 0.32                | 20.7                   | 4.0                     |
| 12,500.0     | 88.90      | 177.00               | 10,912.7      | -1,272.8      | -856.0       | 4.09                | -3.55                | -2.04               | 23.6                   | 6.7                     |
| 12,594.0     | 88.00      | 178.40               | 10,916.9      | -1,366.7      | -852.3       | 1.89                | 1.17                 | 1.49                | 28.4                   | 9.8                     |
| 12,688.0     | 91.10      | 179.80               | 10,917.6      | -1,460.6      | -850.8       | 3.62                | 3.30                 | 1.49                | 29.7                   | 10.6                    |
| 12,781.0     | 90.70      | 180.20               | 10,916.2      | -1,553.6      | -850.8       | 0.61                | -0.43                | 0.43                | 28.8                   | 9.9                     |
| 12,876.0     | 90.80      | 179.30               | 10,914.9      | -1,648.6      | -850.4       | 0.95                | 0.11                 | -0.95               | 28.1                   | 9.6                     |
| 12,970.0     | 90.00      | 179.10               | 10,914.3      | -1,742.6      | -849.1       | 0.88                | -0.85                | -0.21               | 28.1                   | 10.3                    |
| 13,063.0     | 92.50      | 180.00               | 10,912.2      | -1,835.6      | -848.3       | 2.88                | 2.69                 | 0.97                | 26.6                   | 10.3                    |
| 13,157.0     | 92.90      | 180.20               | 10,907.8      | -1,929.5      | -848.5       | 0.48                | 0.43                 | 0.21                | 22.7                   | 9.5                     |
| 13,250.0     | 92.20      | 180.70               | 10,903.7      | -2,022.4      | -849.2       | 0.92                | -0.75                | 0.54                | 19.2                   | 8.1                     |
| 13,345.0     | 90.70      | 181.60               | 10,901.3      | -2,117.3      | -851.1       | 1.84                | -1.58                | 0.95                | 17.4                   | 5.5                     |
| 13,439.0     | 88.80      | 181.20               | 10,901.7      | -2,211.3      | -853.4       | 2.07                | -2.02                | -0.43               | 18.8                   | 2.5                     |
| 13,533.0     | 88.50      | 181.00               | 10,903.9      | -2,305.2      | -855.2       | 0.38                | -0.32                | -0.21               | 22.0                   | 0.0                     |
| 13,626.0     | 88.40      | 180.30               | 10,906.4      | -2,398.2      | -856.3       | 0.76                | -0.11                | -0.75               | 25.5                   | -1.7                    |
| 13,720.0     | 87.50      | 179.80               | 10,909.8      | -2,492.1      | -856.4       | 1.10                | -0.96                | -0.53               | 29.8                   | -2.5                    |
| 13,813.0     | 90.70      | 179.60               | 10,911.2      | -2,585.1      | -855.9       | 3.45                | 3.44                 | -0.22               | 32.2                   | -2.6                    |
| 13,907.0     | 90.40      | 179.10               | 10,910.3      | -2,679.1      | -854.8       | 0.62                | -0.32                | -0.53               | 32.3                   | -2.3                    |
| 14,001.0     | 89.60      | 178.60               | 10,910.3      | -2,773.1      | -852.9       | 1.00                | -0.85                | -0.53               | 33.3                   | -1.1                    |
| 14,094.0     | 88.80      | 178.10               | 10,911.6      | -2,866.0      | -850.3       | 1.01                | -0.88                | -0.54               | 35.5                   | 0.9                     |
| 14,188.0     | 90.40      | 179.30               | 10,912.3      | -2,960.0      | -848.1       | 2.13                | 1.70                 | 1.28                | 37.1                   | 2.4                     |
| 14,281.0     | 88.10      | 178.10               | 10,913.5      | -3,053.0      | -848.0       | 2.79                | -2.47                | -1.29               | 39.3                   | 3.8                     |
| 14,374.0     | 89.80      | 178.20               | 10,915.2      | -3,145.9      | -843.0       | 1.83                | 1.83                 | 0.11                | 42.1                   | 6.2                     |
| 14,468.0     | 91.50      | 179.80               | 10,914.1      | -3,239.9      | -841.4       | 2.48                | 1.81                 | 1.70                | 42.2                   | 7.1                     |
| 14,563.0     | 91.30      | 179.30               | 10,911.6      | -3,334.8      | -840.6       | 0.57                | -0.21                | -0.53               | 41.1                   | 7.2                     |
| 14,657.0     | 90.70      | 179.10               | 10,910.2      | -3,428.8      | -839.3       | 0.67                | -0.64                | -0.21               | 40.6                   | 7.8                     |
| 14,750.0     | 91.30      | 179.30               | 10,908.6      | -3,521.6      | -838.0       | 0.68                | 0.65                 | 0.22                | 40.1                   | 8.5                     |
| 14,844.0     | 90.80      | 178.90               | 10,906.8      | -3,615.6      | -836.5       | 0.68                | -0.53                | -0.43               | 39.5                   | 9.3                     |





# Midland PVA

Company: EOG Resources - Midland  
 Project: Lea County, NM (NAD 83 NME)  
 Site: Savage 2 State Com  
 Well: #502H  
 Wellbore: OH  
 Design: OH

Local Co-ordinate Reference: Well #502H  
 TVD Reference: KB = 25' @ 3545.0usft  
 MD Reference: KB = 25' @ 3545.0usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: EDM 5000.14

## Survey

| MD<br>(usft) | Inc<br>(") | Azi (azimuth)<br>(") | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | DLeg<br>("/100usft) | Build<br>("/100usft) | Turn<br>("/100usft) | High to Plan<br>(usft) | Right to Plan<br>(usft) |
|--------------|------------|----------------------|---------------|---------------|---------------|---------------------|----------------------|---------------------|------------------------|-------------------------|
| 14,938.0     | 88.80      | 180.90               | 10,907.2      | -3,709.7      | -638.4        | 3.01                | -2.13                | 2.13                | 41.0                   | 8.8                     |
| 15,031.0     | 89.70      | 178.80               | 10,908.4      | -3,802.7      | -636.1        | 2.46                | 0.97                 | -2.26               | 43.4                   | 8.3                     |
| 15,125.0     | 91.10      | 180.30               | 10,907.7      | -3,896.7      | -635.4        | 2.18                | 1.49                 | 1.60                | 43.9                   | 8.4                     |
| 15,218.0     | 90.50      | 180.70               | 10,908.4      | -3,989.7      | -638.2        | 0.78                | -0.65                | 0.43                | 43.7                   | 6.9                     |
| 15,312.0     | 90.60      | 179.80               | 10,905.5      | -4,083.7      | -638.6        | 0.96                | 0.11                 | -0.96               | 44.0                   | 5.8                     |
| 15,406.0     | 88.90      | 179.50               | 10,905.9      | -4,177.7      | -638.1        | 1.84                | -1.81                | -0.32               | 45.5                   | 5.7                     |
| 15,500.0     | 90.10      | 178.80               | 10,906.8      | -4,271.7      | -634.7        | 1.48                | 1.28                 | -0.74               | 47.5                   | 6.4                     |
| 15,593.0     | 90.50      | 178.80               | 10,908.3      | -4,364.7      | -632.7        | 0.43                | 0.43                 | 0.00                | 48.2                   | 7.7                     |
| 15,686.0     | 89.80      | 178.40               | 10,906.0      | -4,457.6      | -630.4        | 0.87                | -0.75                | -0.43               | 49.1                   | 9.3                     |
| 15,780.0     | 89.20      | 178.10               | 10,906.8      | -4,551.6      | -627.6        | 0.71                | -0.64                | -0.32               | 51.1                   | 11.5                    |
| 15,867.0     | 88.50      | 178.10               | 10,908.6      | -4,638.5      | -624.7        | 0.80                | -0.80                | 0.00                | 53.9                   | 13.7                    |
| 15,927.0     | 88.50      | 178.10               | 10,910.2      | -4,698.5      | -622.7        | 0.00                | 0.00                 | 0.00                | 56.2                   | 15.3                    |

## Design Annotations

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                | Comment                                                                     |
|-----------------------------|-----------------------------|-------------------|----------------|-----------------------------------------------------------------------------|
|                             |                             | +N-S<br>(usft)    | +E-W<br>(usft) |                                                                             |
| 10,415.0                    | 10,328.9                    | 417.7             | -714.3         | KOP, MD:10415.0', TVD:10328.9', N/S:417.7', E/W:-714.3', INC:0.32           |
| 10,688.4                    | 10,595.9                    | 378.0             | -707.1         | FTP Crossing, MD:10688.4', TVD:10595.9', N/S:378.0', E/W:-707.1', INC:15.65 |
| 15,867.0                    | 10,908.6                    | -4,638.5          | -624.7         | Last MWD Survey (MD=15867.0')                                               |
| 15,927.0                    | 10,910.2                    | -4,698.5          | -622.7         | Projection to Bit (MD=15927.0')                                             |

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



Lea County, NM (NAD 83 NME)

Savage 2 State Com #502H

Plan #1

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone  
System Datum: Mean Sea Level

WELL DETAILS: #502H

KB = 25' @ 3545.0usft 3520.0  
Northing 424612.00 Easting 763032.00 Latitude 32° 0' 55.753 N Longitude 103° 38' 57.109 W

To convert a Magnetic Direction to a Grid Direction, Add 9.44°  
To convert a Magnetic Direction to a True Direction, Add 9.80° East  
To convert a True Direction to a Grid Direction, Subtract 0.36°

#### SECTION DETAILS

| Sec | MD      | Inc   | Azi    | TVD     | +N-S    | +E-W   | Dleg  | TFace  | Vsect  | Target                          |
|-----|---------|-------|--------|---------|---------|--------|-------|--------|--------|---------------------------------|
| 1   | 0.0     | 0.00  | 0.00   | 0.0     | 0.0     | 0.0    | 0.00  | 0.00   | 0.0    |                                 |
| 2   | 1100.0  | 0.00  | 0.00   | 1100.0  | 0.0     | 0.0    | 0.00  | 0.00   | 0.0    |                                 |
| 3   | 1525.1  | 8.50  | 302.38 | 1523.5  | 18.9    | -28.6  | 2.00  | 302.38 | -13.1  |                                 |
| 4   | 6505.8  | 8.50  | 302.38 | 6449.5  | 411.1   | -848.4 | 0.00  | 0.00   | -320.1 |                                 |
| 5   | 6930.8  | 0.00  | 0.00   | 6873.0  | 428.0   | -875.0 | 2.00  | 180.00 | -333.3 |                                 |
| 6   | 10380.4 | 0.00  | 0.00   | 10322.6 | 428.0   | -875.0 | 0.00  | 0.00   | -333.3 |                                 |
| 7   | 11283.1 | 90.27 | 179.59 | 10895.6 | -147.6  | -870.8 | 10.00 | 179.59 | 236.8  | TGT#1(Savage 2 State Com #502H) |
| 8   | 11614.9 | 90.27 | 179.59 | 10894.0 | -479.4  | -668.4 | 0.00  | 0.00   | 585.0  |                                 |
| 9   | 11619.2 | 90.35 | 179.59 | 10894.0 | -483.7  | -668.4 | 2.00  | 0.00   | 569.2  | TGT#2(Savage 2 State Com #502H) |
| 10  | 13236.3 | 90.35 | 179.59 | 10884.0 | -2100.7 | -656.7 | 0.00  | 0.00   | 2170.0 |                                 |
| 11  | 13248.2 | 90.59 | 179.59 | 10883.9 | -2112.6 | -656.7 | 2.00  | 0.00   | 2181.8 | TGT#3(Savage 2 State Com #502H) |
| 12  | 14208.2 | 90.59 | 179.59 | 10874.0 | -3070.5 | -649.7 | 0.00  | 0.00   | 3130.0 |                                 |
| 13  | 14211.8 | 90.70 | 179.59 | 10873.9 | -3076.1 | -649.7 | 2.00  | 0.00   | 3135.6 |                                 |
| 14  | 15832.8 | 90.70 | 179.59 | 10854.0 | -4897.0 | -638.0 | 0.00  | 0.00   | 4740.1 | PBHL(Savage 2 State Com #502H)  |

#### CASING DETAILS

No casing data is available

#### WELLSHORE TARGET DETAILS (MAP CO-ORDINATES)

| Name                                 | TVD     | +N-S    | +E-W   | Northing  | Easting   |
|--------------------------------------|---------|---------|--------|-----------|-----------|
| Snashy Top(Savage 2 State Com #502H) | 7251.0  | 428.0   | -876.0 | 425040.00 | 762357.00 |
| PBHL(Savage 2 State Com #502H)       | 10854.0 | -487.0  | -639.0 | 418116.00 | 762384.00 |
| TGT#1(Savage 2 State Com #502H)      | 10874.0 | -3070.5 | -649.7 | 421541.50 | 762382.28 |
| TGT#2(Savage 2 State Com #502H)      | 10884.0 | -2100.7 | -656.7 | 422511.30 | 762376.28 |
| TGT#3(Savage 2 State Com #502H)      | 10884.0 | -479.4  | -668.4 | 424112.80 | 762383.55 |
| FTP(Savage 2 State Com #502H)        | 10888.0 | 378.0   | -476.0 | 424890.00 | 762357.00 |

